Appendix A

Pavement Management Plan

PAVEMENT MANAGEMENT SYSTEM UPDATE

for

NIAGARA FALLS INTERNATIONAL AIRPORT

Prepared for:

McFARLAND-JOHNSON, INC.
Concord, New Hampshire

December 22, 2013

by:

ROY D. MCQUEEN & ASSOCIATES, LTD.
14310 Sully Field Circle; Suite 600
Chantilly, Virginia 20151
703-709-2540 • FAX 703-709-2535
www.rdmcqueen.com

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF DRAWINGS

EXECUTIVE SUMMARY

INTRODUCTION

Roy D. McQueen & Associates, Ltd. (RDM) was retained by McFarland-Johnson, Inc. (MJI) to perform a network level Pavement Management System (PMS) update of airfield pavements at Niagara Falls International Airport (NFIA), Niagara Falls, New York.

The primary objective of this study was to update the 2004 PMS to reflect changes in pavement conditions and evaluate the functional and structural condition of existing airfield pavements and identify both short term and long range maintenance and rehabilitation requirements for airside pavements. To meet these overall objectives, a multi-phased program of testing and analysis was developed to provide an integrated framework for continued airfield pavement maintenance and rehabilitation. Specific objectives included:

- Evaluate existing pavement structural conditions by nondestructive testing (NDT).
- Update as-built pavement thickness and composition through records research and pavement cores.
- Classify existing surface distresses and functional condition by visual condition survey.
- Develop design inputs for existing and future aircraft traffic.
- Estimate pavement structural life.
- Develop and prioritize pavement rehabilitation and maintenance requirements.
- Identify pavements requiring major rehabilitation or reconstruction.
- Generate budget estimates for maintenance and rehabilitation (M&R) projects, using MicroPAVER budgeting techniques.
- Organize all requirements and projects in an integrated 5 year pavement management plan as a function of need, priorities, and budget.
- Update PMS MicroPAVER database and Network Identification Drawing from the 2004 PMS study.

The findings and recommendations are summarized in the following sections.

FINDINGS

Functional Condition

Pavement surface or functional condition evaluation provides valuable and necessary information for both network-level pavement maintenance and rehabilitation decision-making and overall pavement management.

The pavement condition survey was performed to record pavement distress types, quantities, and severity for computation of the current Pavement Condition Index (PCI) in accordance with the Federal Aviation Administration (FAA) Advisory Circular 150/5380-7A, "*Airport Pavement Management Program*". In addition to computing the current PCI, the family performance model in the MicroPAVER program was used to project the pavement performance over the next five years.

The overall current functional condition of the airfield pavements at NFIA is 74, indicating that the pavements are in a "Satisfactory" condition. The airfield pavements are expected to decline to a PCI of 66 or "Fair" condition. It is predicted that only 40% of airfield pavements will have a 2017 PCI above the critical PCI of 70. The current and 5-year predicted conditions for the pavement at NFIA are summarized in the following table, and are illustrated graphically in Drawing 6-1 "Current PCI (2012)" in Section 6.0 and Drawing 7-1 "Predicted PCI (2017)" in Section 7.0". As indicated, many of the pavement sections are below the critical PCI, i.e., the condition for these pavement sections are expected to deteriorate rapidly. Based upon the current pavement condition, all airfield pavements with a current PCI below 50 are considered candidates for major rehabilitation and were included in the major rehabilitation programs.

Facility	Current PCI	Current Condition	2017 PCI	2017 Condition
Runway 10L-28R	100	Good	96	Good
Runway 10R-28L	35	Very Poor	31	Very Poor
Runway 6-24	78	Satisfactory	67	Fair
Overrun	90	Good	79	Satisfactory
Taxiways	61	Fair	53	Poor
Helipad	35	Very Poor	28	Very Poor
Apron	68	Fair	59	Fair

Structural Condition

The functional condition corresponds to the condition of the airside pavement surface, and is not indicative of the pavement's structural capabilities. Therefore, structural pavement evaluation is also required as a key element in the PMS. The structural capacity is defined as the ability of a pavement to support traffic without developing considerable structural distress or in other words, decreasing load carrying capacity of a pavement. The structural condition of the pavements were evaluated by nondestructive testing and theoretical analyses in accordance with FAA Advisory Circulars 150/5370-11B, "*Use of Nondestructive Testing for the Evaluation of Airport Pavements*", 150/5320-6E, "*Airport Pavement Design and Evaluation*", and 150/5335-5A, "*Standardized Method of Reporting Airport Pavement Strength-PCN*".

Forecasted aircraft operation data conducted by InterVISTAS for the master plan update was provided by MJI for structural evaluation purpose. InterVISTAS's report did not have detailed aircraft fleet mix information for each traffic category that is necessary for pavement design and evaluation. Therefore, MJI provided representative aircraft types that are currently using the airport or anticipated to use the airport in the future. It should be noted that aircraft fleet mix and distributions to individual facility that are shown in Table 9-2 to Table 9-9 in Section 9 are based on limited information. Therefore, it is recommended that MJI carefully review the traffic data and assumptions discussed in the Section 9 and report any changes to RDM for revision.

InterVISTAS and MJI data showed that relatively heavy commercial aircraft will not use Runway 6-24. However, when Runway 10L-28R is closed for maintenance or other reasons, Runway 6-24 will receive those types of aircraft. Therefore, the design traffic used for Runway 10L-28R rehabilitation in 2012 was also considered for Runway 10L-28R, Runway 6-24, and Taxiway D. Design traffic for Runway 10L-28R includes relatively detailed fleet mix information.

The FAA's developed program, FAARFIELD, was used for the structural computations. All pavements with a structural life below 10-years were considered as structurally inadequate to various degrees and should be considered for strengthening.

During the structural analysis, it was observed that some of the pavement sections are in "Fair" to "Good" condition based on current functional condition but structurally inadequate. One of the reason causing structurally inadequate conditions may be attributed to conservative traffic. For example, general aviation apron has current PCI ranging from 63 to 88. However, as per traffic information provided by MJI, general aviation apron is structurally inadequate. Hence to account the effect of heavier traffic, general aviation apron is considered for reconstruction. Based on the structural evaluation, the following airside facilities were found to be structurally inadequate are shown in Table ES-1

Rehabilitation Requirement for Structurally Inadequate Pavement Sections

Section Code	Current PCI	Description	Strengthening	
			AC Reconstruction	PCC Reconstruction
CONDA-01	62	Cargo Apron	6.5" AC overlay	14" PCC on existing AC surface
TWG-01	32	Apron Taxiway	n/a	14" PCC/6" AC base on existing AGBS
TWH-01	66	Apron Taxiway	n/a	14" PCC/6" AC base on existing AGBS
TERMA-02	35	Original terminal apron	n/a	14" PCC/6" AC base on existing AGBS
TERMA-03	66	GA apron	3" AC overlay	9" PCC /existing AGBS
GAA-02	80	West ramp area	Removing 6.5" PCC, Replacing 6.5" AC	9" PCC /existing AGBS
GAA-02A	85	West ramp area	Removing 6.5" PCC, Replacing 6.5" AC	9" PCC /existing AGBS
GAA-03	63	West ramp area	Removing 6.5" PCC, Replacing 6.5" AC	9" PCC /existing AGBS
GAA-03A	88	West ramp area	Removing 6.5" PCC, Replacing 6.5" AC	9" PCC /existing AGBS
HELIA-01	37	NY ARNG apron	Removing AC and PCC, Replacing 6.5" AC	9" PCC /existing AGBS
HELIA-02	25	NY ARNG apron PCC pads, no NDT	Removing PCC, Replacing 6.5" AC	9" PCC /existing AGBS
OVR28-1B	65	Taxiway D/RW 10L-28R Intersection	Removing 11"PCC, Replacing 11" AC	Removing 11"PCC and milling 2" AC, Replacing 13" PCC

Table ES-1

Pavement Classification Number

The pavement load-carrying capacity is expressed with Pavement Classification Number (PCN). The PCN evaluation was performed for Runway 10L-28R, 10R-28L, and Runway 6-24. The PCN evaluation was performed for all different runway pavement sections and the critical one is reported for the entire runway.

The PCN for existing Runway 10L-28R is:

74/R/B/W/T

The PCN for existing Runway 6-24 is:

69/F/B/W/T

The PCN for existing Runway 10R-28L is:

29/F/C/X/T

MAINTENANCE AND REHABILITATION PROGRAMS

By utilizing the results of the structural and functional investigations RDM has developed a maintenance program suitable for NFIA. The results of the investigations were used to determine the need for major rehabilitation in the short term and long range. Section 12.0 discusses the recommended maintenance activity by facility and pavement section. Those pavement sections not requiring major rehabilitation should receive routine maintenance.

Maintenance Program

MicroPAVER budgeting tools were used to determine the maintenance budget and required projects. Using MicroPAVER, several M&R program scenarios were investigated and compared for the airfield pavements at NFIA to estimate the required annual maintenance budget.

- **Scenario 1:** Cost per year to Eliminate Major M&R Backlog in 5-Years

This scenario will improve the PCI gradually by eliminating the backlog by the end of the 5-year program. At the end of this 5-year program no major rehabilitation and safety (stop-gap) activities will be required.

The costs of major rehabilitation projects were spread over a 5-year duration in order to eliminate all required projects by the end of the 5-year program. The annual budget required for this scenario is approximately $7,000,000. During this 5-year period, the area weighted PCI increases from 74 to 92. Refer to Appendix D-1 for further details.

- **Scenario 2:** Cost per year to Maintain Current Area Weighted PCI for 5-Years

The airfield pavements at NFIA have a current PCI of 74. In order to maintain the current PCI annually, significant repairs will be required. An annual budget of $2,000,000 is required to maintain the current area weighted PCI. During this 5-year period, the area weighted PCI will be maintained at 74. Refer to Appendix D-2 for further details.

- **Scenario 3:** Optimum Budget Scenario

After analyzing various scenarios, MicroPAVER was used to determine the optimum annual budget based on structural and functional condition. MicroPAVER indicates a budget of approximately $6,000,000 per annum is optimum budget to reduce the back log and maintain the current condition. The list of projects by pavement section is discussed in more detail in Section 13.0 and Appendix D.

Major Rehabilitation Program

The maintenance and repair strategies were developed to repair existing distresses and address any structural deficiencies. Based on the structural evaluation, several pavement sections also require strengthening or reconstruction. At the same time, the functional serviceability of some of the facilities, as characterized by the PCI, have deteriorated to the point where maintenance and repair activities alone are no longer cost-effective and major rehabilitation will be required. A five-year plan to prioritize the major rehabilitation activities was analyzed for the NFIA pavement and presented in Table E-1, “Rehabilitation Program Costs”. The analyses presented herein represent a network level analysis which was prepared for planning and fiscal programming purposes. Additional project level analyses will still be required for project implementation.

It should be noted that the costs shown in the table are for the rehabilitation option with the largest estimated costs. This will allow for a degree of conservatism in regards to the estimated budget. Project level design and investigation should be performed to choose the best rehabilitation option.

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE
REHABILITATION PROGRAM COSTS

Branch ID	Section ID	Last Const. Date	True Area (SF)	PCI 2012	PCI 2017	Reqt	Rehabilitation Description	Project Cost	Markup	Section Cost
Program Year 1 - 2014 Construction Year										
TERMA (TERMINAL APRON)	02	06/01/1967	89,580	35	30	Struct	14" PCC/6" AC base on existing AGBS	$2,221,584	116%	$2,577,037
TERMA (TERMINAL APRON)	03	03/01/1996	128,309	66	63	Struct	2" Mill AC and Replace with 5" AC	$1,060,688	116%	$1,230,398
								Program Year 1 Total Cost		**$3,807,435**
Program Year 2 - 2015 Construction Year										
OVER28 (OVERRUN 28)	01B	06/01/1996	29,600	65	51	Struct	Removing 11"PCC and milling 2" AC, Replacing 13" PCC	$455,182	132%	$600,841
RW624 (RUNWAY 6-24)	01	06/01/1986	17,500	16	14	Funct	Surface Reconstruction	$238,000	132%	$314,160
RW624 (RUNWAY 6-24)	01A	06/01/1986	35,000	19	17	Funct	Surface Reconstruction	$476,000	132%	$628,320
TWC (TAXIWAY C)	01	06/01/2004	39,610	39	30	Funct	2" Mill and Replace	$128,512	145%	$186,343
TWC (TAXIWAY C)	02	06/01/1970	97,678	53	45	Funct	CPR	$503,584	127%	$639,552
TWC (TAXIWAY C)	03	06/01/1970	47,000	47	39	Funct	CPR	$242,311	132%	$319,851
TWG (TAXIWAY G)	01	06/01/1970	29,117	32	27	Struct	14" PCC/6" AC base on existing AGBS	$722,102	127%	$917,069
TWH (TAXIWAY H)	01	06/01/1970	41,366	66	63	Struct	14" PCC/6" AC base on existing AGBS	$1,025,877	116%	$1,190,017
								Program Year 2 Total Cost		**$4,796,152**
Program Year 3 - 2016 Construction Year										
HELIA (HELIPAD APRON)	01	06/01/1976	163,590	37	31	Struct	9" PCC /existing AGBS	$1,875,832	116%	$2,175,965
HELIA (HELIPAD APRON)	02	06/01/1968	27,707	25	12	Struct	9" PCC /existing AGBS	$317,707	132%	$419,373
TWD3 (TAXIWAY D3)	01	06/01/1976	12,934	38	29	Funct	2" Mill and Replace	$41,964	150%	$62,945
TWD3 (TAXIWAY D3)	02	06/01/2000	8,686	57	42	Funct	2" Mill and Replace	$28,181	150%	$42,272
TWD3 (TAXIWAY D3)	03	06/01/1976	45,811	46	34	Funct	2" Mill and Replace	$148,631	132%	$196,193
TWJ (TAXIWAY J)	02	06/01/1970	54,817	49	36	Funct	2" Mill and Replace	$177,851	132%	$234,763
TWK (TAXIWAY K)	01	06/01/1970	51,718	43	35	Funct	CPR	$459,716	132%	$606,825
TWL (TAXIWAY L)	01	06/01/1970	22,750	22	17	Funct	Surface Reconstruction	$325,578	132%	$429,763
TWL (TAXIWAY L)	02	06/01/1970	8,752	27	22	Funct	Surface Reconstruction	$112,804	132%	$148,901
TWL (TAXIWAY L)	03	06/01/1970	23,463	47	39	Funct	2" Mill and Replace	$76,124	145%	$110,380
								Program Year 3 Total Cost		**$4,427,380**

Table ES-2

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE
REHABILITATION PROGRAM COSTS

Branch ID	Section ID	Last Const. Date	True Area (SF)	PCI 2012	PCI 2017	Reqt	Rehabilitation Description	Project Cost	Markup	Section Cost
Program Year 4 - 2017 Construction Year										
CONDA (CONDOR APRON)	01	07/01/2004	91,185	62	54	Struct	14" PCC on existing AC surface	$1,564,329	116%	$1,814,622
RW10R (RUNWAY 10R-28L)	01	06/01/1976	245,317	28	26	Funct	Surface Reconstruction	$2,987,416	116%	$3,465,402
RW10R (RUNWAY 10R-28L)	02	06/01/1976	6,531	41	32	Funct	CPR	$58,053	145%	$84,177
								Program Year 4 Total Cost		**$5,364,202**
Program Year 5 - 2018 Construction Year										
GAA (GENERAL AVIATION APRON)	02	06/01/1986	159,000	80	71	Struct	9" PCC /existing AGBS	$1,823,200	116%	$2,114,912
GAA (GENERAL AVIATION APRON)	03	06/01/1986	92,767	63	56	Struct	9" PCC /existing AGBS	$1,063,728	116%	$1,233,925
GAA (GENERAL AVIATION APRON)	02A	06/01/1989	141,550	85	74	Struct	9" PCC /existing AGBS	$1,623,107	116%	$1,882,804
GAA (GENERAL AVIATION APRON)	03A	06/01/1989	22,009	88	76	Struct	9" PCC /existing AGBS	$252,370	132%	$333,128
								Program Year 5 Total Cost		**$5,564,769**

Legend: AC = Asphalt Concrete Pavement PCC = Portland Cement Concrete Pavement AGBS = Aggregate Base Course

Table ES – 2 continued

SECTION 1.0

INTRODUCTION

SECTION 1.0 INTRODUCTION

Roy D. McQueen & Associates, Ltd. (RDM), under subcontract to McFarland-Johnson, Inc. (MJI), performed a network level Pavement Management System (PMS) update of airfield pavements at Niagara Falls International Airport (NFIA), Niagara Falls, New York. The airfield pavements include runways, taxiways, and aprons. The last completed PMS for NFIA was in 2004. Since then several rehabilitation and maintenance projects were completed, and the airside pavements have experienced over 8-years of traffic loading and environmental exposure.

The primary objective of this study is to update the 2004 PMS to reflect current pavement conditions and evaluate the functional and structural condition of the existing airfield pavements. The update will identify both short term and long range maintenance and rehabilitation requirements. To meet these overall objectives, a multi-phased program of testing and analysis has been developed to provide an integrated framework for continued airfield pavement maintenance and rehabilitation. Specific objectives included:

- Evaluate existing pavement structural conditions by nondestructive testing (NDT) and theoretical analysis.
- Update as-built pavement thickness and composition through records research and pavement cores.
- Classify existing surface distresses and functional condition by visual survey using the Pavement Condition Index (PCI). The visual survey was performed by RDM.
- Develop design inputs for existing and future aircraft traffic.
- Estimate pavement structural life.
- Develop and prioritize pavement rehabilitation and maintenance requirements.
- Identify pavements requiring major rehabilitation or reconstruction.
- Generate budget estimates for maintenance and rehabilitation (M&R) projects, using MicroPAVER budgeting techniques.
- Organize all requirements and projects in an integrated 5 year pavement management

plan as a function of need, priorities, and budget.

- Update PMS MicroPAVER database and Network Identification Drawing from the 2004 PMS study.

This report should be used primarily as a planning document for programming and budgeting purposes. Additional design and project level analysis are still required for project implementation. All testing and analytical procedures utilized for this study conformed to documented Federal Aviation Administration (FAA) criteria for the evaluation and design of airfield pavements.

The observations, comments, and recommendations contained in this report have been prepared for the exclusive use of NFTA and MJI for this project in accordance with generally accepted engineering practice. No other warranty is expressed or implied. Performance of any engineering investigation is subject to many qualifications inherent to the practice of that profession and to the accuracy of data obtained.

SECTION 2.0

METHOD OF ANALYSIS

SECTION 2.0 METHOD OF ANALYSIS

The technical approach to the PMS at NFIA consisted of the following basic elements:

- **Records Research and Update Identification Drawing** - To organize, catalogue, update as-built pavement thickness, composition data, last construction date (LCD), and update the Network Identification Drawing from the 2004 PMS study.

- **Visual Condition Survey** - To identify surface distresses and collect sufficient data on the existing functional conditions of the airfield pavements.

- **Non-destructive Testing (NDT)** - To obtain field data on the in-situ strength of the existing pavement and subgrade layers.

- **Conventional Testing -** To take pavement cores and measure the existing airfield pavement thicknesses and compositions at twenty (20) select locations.

- **Traffic Analysis** – To collect current and forecast data on the type and operational frequency of aircraft utilizing the airport.

- **Pavement Analysis** - To evaluate the functional and structural condition and identify maintenance and rehabilitation needs.

- **MicroPAVER Update** – To update the 2004 PMS database using the latest version of MicroPAVER (Version 6.5.7).

A brief description of each element is included with details provided in subsequent sections.

2.1 RECORDS RESEARCH

Reviews of as-built records and prior reports form the basis for establishing known pavement conditions. RDM performed records research with assistance from NFTA; a summary of the findings for the surveyed sections are included in Table 2-1, “Pavement Construction History”.

All pavements at NFIA are defined using the procedures listed in the FAA Advisory Circular 150/5380-6A, "*Guidelines and Procedures for Maintenance of Airport Pavements*" and are discussed in Section 3.0 of this report. Pavement coring was utilized as necessary to verify and record thicknesses. These are discussed below.

2.2 VISUAL CONDITION SURVEY

The current distresses witnessed in the pavement surface were visually surveyed by experienced engineers and technicians for the purpose of computing the Pavement Condition Index (PCI) using procedures detailed in the FAA Advisory Circular 150/5380-6A, and for determining requirements for maintenance and repair. MicroPAVER Version 6.5.7 was used to calculate the PCI for all pavements.

2.3 NONDESTRUCTIVE TESTING

A series of nondestructive tests (NDT) were performed using a heavy falling weight deflectometer to obtain the structural properties of the airfield pavements. The NDT data were reduced to yield the elastic moduli of pavement layers, subgrade, and the overall stiffness of the composite pavement system. NDT was performed in accordance with FAA Advisory Circular 150/5370-11A, "*Use of Nondestructive Testing in the Evaluation of Airport Pavements*".

2.4 CONVENTIONAL TESTING

Approximately 17 cores and three (3) borings were taken by SJB/Empire Geo Services, Inc. (SJB) to verify the pavement thicknesses and material compositions for the various sections obtained during record research. Coring/boring locations were chosen based on the evaluation of NDT data. Soil test data obtained from 3 borings along with previous studies and projects at NFIA were used in conjunction with the NDT data to perform the current structural analysis. Results of the coring can be found in Appendix E "Conventional Testing Results". A map showing the locations of each core can also be found in Appendix E.

2.5 TRAFFIC ANALYSIS

Estimates of current aircraft type, movements, and operational weights were provided by MJI and determined by InterVISTAS for the current master plan update. Annual aircraft operations are characterized by commercial, cargo, military and general aviation (GA) use. The traffic information provided has been arranged according to aircraft similarity to formulate multiple scenarios for the pavement structural analysis.

2.6 PAVEMENT ANALYSIS

The results obtained from the visual survey along with prior condition survey data were used to evaluate the current and future functional condition of the airfield pavements. The processed NDT data and traffic projections were used in comprehensive mechanistic FAA design analyses to evaluate the structural condition of the pavements and to identify cost-effective strategies for maintenance and rehabilitation. FAA Advisory Circular 150/5320-6E, "*Airport Pavement Design and Evaluation*", was used to evaluate the pavement’s structural condition.

2.7 MICROPAVER PMS UPDATE

After careful evaluation of the existing 2004 pavement network, the network definition in the MicroPAVER database was updated and used for the current inspection (2012). The type, quantity, and severity of the distresses surveyed in 2012 were input into Version 6.5.7 of the MicroPAVER program. The results of this evaluation will form the basis for the continued pavement management at NFIA.

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE
PAVEMENT CONSTRUCTION HISTORY

Branch ID	Name	Section ID	From	To	True Area (SF)	LCD	Surface Course		Base Course
CALSPAN	CALSPAN APRON	1	0+00 EDGE TWL	3+20	48,039	1/1/2012	-	13"PCC	22"AGBS
CONDA	CONDOR APRON	1	0+00 EDGE TWD	6+82	911,185	7/1/2004	6.5"AC	7.5"PCC	-
GAA	GENERAL AVIATION APRON	1	1+60 FROM EDGE OR TWK	13+40	202,758	6/1/1989	-	10"PCC	11"AGBS
GAA	GENERAL AVIATION APRON	2	TWC	7+30 SOUTH	159,000	6/1/1986	-	6.5"PCC	12"AGBS
GAA	GENERAL AVIATION APRON	3	NA	NA	92,767	6/1/1986	-	6.5"PCC	12"AGBS
GAA	GENERAL AVIATION APRON	02A	EDGE TWC-01A	TWJ	141,550	6/1/1989	-	6.5"PCC	12"AGBS
GAA	GENERAL AVIATION APRON	03A	NA	NA	22,009	6/1/1989	-	6.5"PCC	12"AGBS
HELIA	HELIPAD APRON	1	NA	NA	163,590	6/1/1976	2.5"AC	7"PCC	12"AGBS
HELIA	HELIPAD APRON	2	NA	NA	27,707	6/1/1968	-	8"PCC	12"AGBS
OVER10	OVERRUN 10L	1	0+00 EDGE RW10L	7+00	105,120	1/1/2012	-	14.5"PCC	26"AGBS
OVER10	OVERRUN 10L	2	7+00	12+13	91,979	1/1/2012	-	14.5"PCC	26"AGBS
OVER28	OVERRUN	2	4+70	9+80	76,500	1/1/2012	4"AC	-	12"AGBS
OVER28	OVERRUN	01A	0+00 EDEGE RW28R	3+60	41,300	1/1/2012	4"AC	7"PCC	14"AGBS
OVER28	OVERRUN	01B	3+60	4+70	29,600	6/1/1996	6"AC	11"PCC	14"AGBS
RW10L	RUNWAY	1	0+00 KEEL	2+02	30,300	1/1/2012	-	14.5"PCC	26"AGBS
RW10L	RUNWAY	2	2+02	41+00	194,900	1/1/2012	6"AC	10" Rubblized PCC	16"AGBS
RW10L	RUNWAY	3	41+00 KEEL	45+97	24,850	1/1/2012	11"AC	7" Rubblized PCC	14"AGBS
RW10L	RUNWAY	4	45+97 KEEL	78+87	164,500	1/1/2012	11"AC	7.5" Rubblized PCC	12"AGBS
RW10L	RUNWAY	5	78+87	91+22	61,750	1/1/2012	11"AC	10" Rubblized PCC	11"AGBS
RW10L	RUNWAY	02A	2+02 SIDES	41+00 SIDES	389,800	1/1/2012	6"AC	10" Rubblized PCC	16"AGBS
RW10L	RUNWAY	03A	41+00 SIDES	45+97	49,700	1/1/2012	13"AC	7" Rubblized PCC	14"AGBS
RW10L	RUNWAY	04A	45+97	78+87	329,000	1/1/2012	13"AC	7.5" Rubblized PCC	12"AGBS
RW10L	RUNWAY	05A	78+87	91+22	123,500	1/1/2012	11"AC	10" Rubblized PCC	11"AGBS
RW10R	RUNWAY 10R-28L	1	0+00	EDGE TWM	245,317	6/1/1976	10"AC	-	8"AGBS
RW10R	RUNWAY 10R-28L	2	38+85	39+70	6,531	6/1/1976	-	12"PCC	15"AGBS
RW10R	RUNWAY 10R-28L	01A	26+05	36+30	38,888	3/1/1997	10"AC	-	8"AGBS
RW624	RUNWAY 6-24	1	0+00 KEEL	3+50	17,500	6/1/1986	12"AC	-	14"AGBS
RW624	RUNWAY 6-24	2	3+50	6+50	45,100	6/1/1989	-	12"PCC	16"AGBS
RW624	RUNWAY 6-24	3	6+50 KEEL	45+90	192,750	3/1/1997	10" to 12"AC	-	14" to 16"AGBS
RW624	RUNWAY 6-24	4	45+90	56+38	42,700	1/1/2012	>10"AC	-	24"AGBS
RW624	RUNWAY 6-24	01A	0+00 SIDES	3+50	35,000	6/1/1986	12"AC	-	14"AGBS

Table 2-1

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE
PAVEMENT CONSTRUCTION HISTORY

Branch ID	Name	Section ID	From	To	True Area (SF)	LCD	Surface Course		Base Course
RW624	RUNWAY 6-24	03A	6+50 SIDES	45+90	399,600	3/1/1997	10"AC	-	14"AGBS
RW624	RUNWAY 6-24	04A	45+90	56+38	81,600	1/1/2012	>10"AC	-	24"AGBS
TERMA	TERMINAL APRON	1	NA	NA	8,635	1/1/2012	N/A		
TERMA	TERMINAL APRON	2	NA	NA	89,580	6/1/1967	-	12"PCC	12"AGBS
TERMA	TERMINAL APRON	3	NA	NA	128,309	3/1/1996	4.6"AC	-	9"AGBS
TERMA	TERMINAL APRON	4	NA	NA	139,772	1/1/2012	6"AC	14"PCC	12"AGBS
TWC	TAXIWAY C	1	0+00 EDGE RW10R	8+18 EDGE TW C	39,610	6/1/2004	12"AC	-	12"AGBS
TWC	TAXIWAY C	2	12+42	25+90 EDGE RW624	97,678	6/1/1970	-	10.5"PCC	12"AGBS
TWC	TAXIWAY C	3	EDGE RW624	6+68	47,000	6/1/1970	-	10.5"PCC	12"AGBS
TWC	TAXIWAY C	4	6+68	10+60	43,000	6/1/1970	N/A		
TWD	TAXIWAY D	1	0+00	19+26.50	151,129	3/1/1999	10"AC	-	12"AGBS
TWD	TAXIWAY D	2	19+26	23+60	32,545	3/1/1999	8"AC	10"PCC	-
TWD	TAXIWAY D	3	23+60	37+20	108,876	3/1/2002	8"AC	10"PCC	-
TWD	TAXIWAY D	4	END OF RW624	EDGE TWD	69,507	1/1/2012	10"AC	-	24"AGBS
TWD	TAXIWAY D	01A	0+00 EDGE OF TWH	3+31	33,554	3/1/1999	10"AC	-	12"AGBS
TWD1	TAXIWAY D1	1	37+20	EDGE RW10L	15,913	1/1/2012	7 to 11"AC	9"PCC	12"AGBS
TWD2	TAXIWAY D2	1	0+00 EDGDE RW624	0+46	10,280	3/1/1997	N/A		
TWD2	TAXIWAY D2	2	0+45	3+25 EDGDE TW D	2,900	6/1/1990	8"AC	-	26"AGBS
TWD3	TAXIWAY D3	1	0+00 EDGE RW624	1+71	12,934	6/1/1976	7 to 12.5"AC	-	21 to 12.5"AGBS
TWD3	TAXIWAY D3	2	1+71	2+81	8,686	6/1/2000	12.5"AC	-	12.5"AGBS
TWD3	TAXIWAY D3	3	0+00 EDGE TWD	2+55	45,811	6/1/1976	12.5 to 7"AC	-	12.5 to 21"AGBS
TWG	TAXIWAY G	1	0+00 EDGE	2+50	29,117	6/1/1970	-	12"PCC	12"AGBS
TWH	TAXIWAY H	1	0+00 EDGE OF TWC	3+50 EDGE TERMINAL APRON	41,366	6/1/1970	-	11"PCC	12"AGBS
TWJ	TAXIWAY J	1	0+00 AT TWC	3+50 EDGE RW624	16,152	6/1/1989	7"AC	-	12"AGBS
TWJ	TAXIWAY J	2	0+00 EDGE RW624	4+85 EDGE OF TERMINAL APRON	54,817	6/1/1970	7 to 5"AC	-	16 to 9"AGBS
TWK	TAXIWAY K	1	1+00	8+00	51,718	6/1/1970	-	12"PCC	12"AGBS
TWK	TAXIWAY K	2	8+00	24+34 EDGE TWC	129,561	6/1/1970	-	13"PCC	8"AGBS
TWK	TAXIWAY K	3	0+00 EDGE TW K	12+42	91,775	6/1/1970	-	13"PCC	8"AGBS
TWK	TAXIWAY K	01A	0+00 EDGE RW10L	1+00	19,378	1/1/2012	2 to 5 "AC	12"PCC	12"AGBS
TWL	TAXIWAY L	1	0+00 EDGE RW10R	2+85	22,750	6/1/1970	"AC	12"PCC	16"AGBS
TWL	TAXIWAY L	2	2+85	4+00	8,752	6/1/1970	11"AC	7"PCC	-
TWL	TAXIWAY L	3	4+00	6+25	23,463	6/1/1970	N/A		
TWL	TAXIWAY L	4	6+25	8+15	15,979	6/1/1970	N/A		
TWM	TAXIWAY M	1	0+00 EDGE RW10R	2+54	21,377	6/1/1970	-	13"PCC	13"AGBS
TWM	TAXIWAY M	2	2+54	EDGE OF TWD	9,524	1/1/2000	4.5"AC	12.5"PCC	-

Table 2-1 continued

SECTION 3.0

MICROPAVER PAVEMENT NETWORK DEFINITION

SECTION 3.0 MICROPAVER PAVEMENT NETWORK DEFINITION

The definition of the pavement network at NFIA was developed by RDM based on records research and previous PMS Studies performed. The definition follows the procedures detailed in the FAA Advisory Circular 150/5380-6A. For airfield pavement at NFIA, the pavement network definition was updated from the 2004 PMS study for the 2012 PMS update. The network is subdivided into a series of manageable units based on usage, pavement composition, condition, etc. At NFIA the network was subdivided into successively smaller units, as:

- Branch
- Section
- Sample Unit

3.1 BRANCH

A branch is any identifiable part of the pavement network, which is a single entity and has a distinct function. For example, individual runways are separate branches of a pavement network. In the MicroPAVER system, the branches at NFIA are typically coded with alphanumeric characters. The first letters of the code will identify the type of branch, as:

RW = Runway
TW = Taxiway
APR = Apron
BP = Blast Pad
HP = Hold Pad

This is followed by the facility designation (e.g., TWB).

3.2 SECTION

Since branches are large units in the pavement network, they often do not have consistent characteristics throughout. Therefore, for pavement management purposes, branches are subdivided into sections with the following consistent characteristics throughout its area or length:

- Structural composition
- Construction history
- Traffic patterns
- Pavement condition

The pavement section is the basic management unit in the MicroPAVER system. Each section is typically coded with alphanumeric characters for runway, taxiway, overrun, hold pads, and aprons, depending on the number of sections per branch.

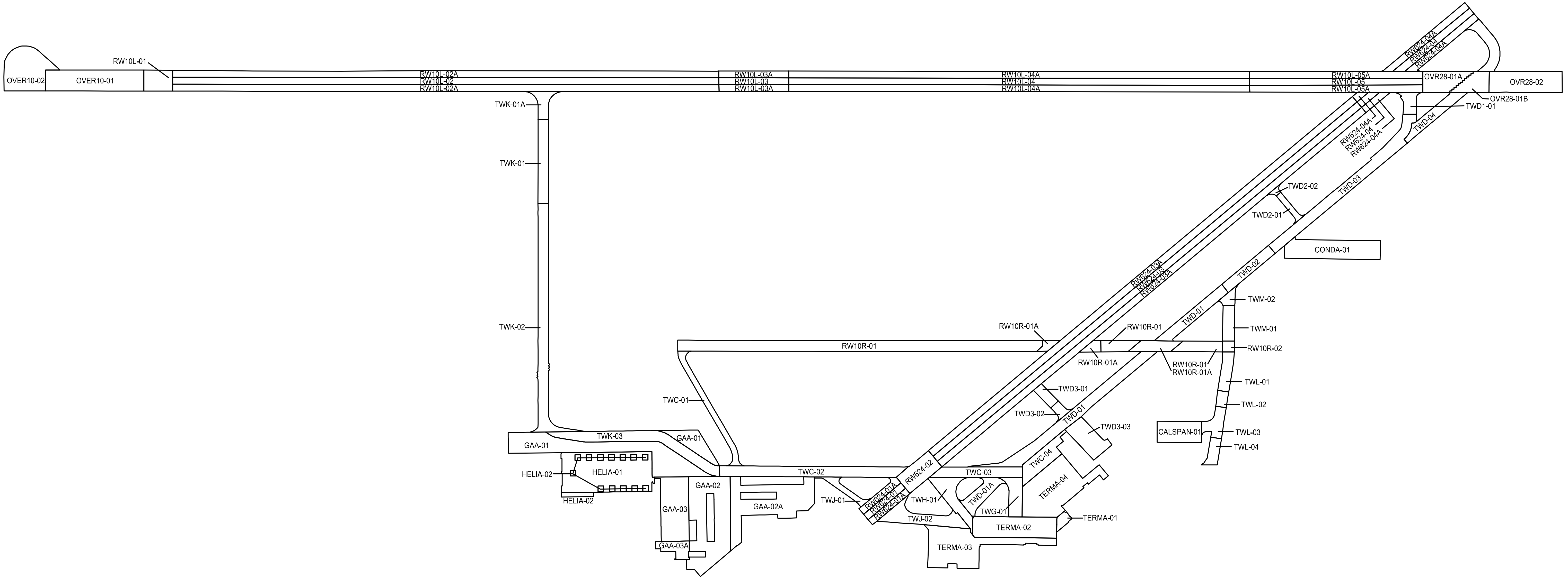
3.3 SAMPLE UNIT

A sample unit (SU) is the smallest component of the pavement network and is used for inspection purposes to determine existing pavement distress and condition. Sample unit sizes are defined as follows (ref. FAA Advisory Circular 150/5380-6A):

> *For airfield asphalt or tar surfaced pavements (including asphalt overlay of concrete), a sample unit is defined as an area of approximately 5,000 square feet (plus or minus 2,000 square feet).*
>
> *For airfield concrete pavements with joint spacing less than or equal to 25 feet, the sample unit is an area of 20 slabs (plus or minus 8 slabs).*
>
> *For slabs with joint spacing greater than 25 feet, imaginary joints should be assumed. These imaginary joints should be less than 25 feet apart. This is done for the purpose of defining the sample unit. For example, if slabs have a joint spacing of 40 feet, imaginary joints may be assumed at 20 feet. Thus, each slab would be counted as two slabs for the purpose of pavement inspection.*

Using the above criteria, each section is divided into the requisite number of sample units (i.e., total area divided by sample unit size). A representative sample unit is then chosen randomly for detailed inspection. In the MicroPAVER system, the randomly selected sample unit is coded with an "R" for random. If a sample unit was not selected randomly, but showed non-typical distress, it was also inspected but coded with an "A" for an additional sample unit surveyed. MicroPAVER then extrapolates total distress from all random sample units on an area basis, excluding any additional sample units, which are added separately.

The NFIA network consists of 21 branches which are further subdivided into 66 sections. The NFIA pavement network update by RDM is depicted in Drawing 3-1, “Network Identification”. Due to the large number of pavement projects completed since the 2004 PMS study the pavement network has been completely revised. Construction and condition data from the previous report has been implemented into the updated network at NFIA.



LEGEND

TWC-10
Section ID
Branch ID

NO.	REVISION	DATE

Engineering Technology Research

DATE 12/19/2013
SCALE 1"=700'
DESIGNED
CHECKED
DRAWN NCA
ACCEPTED
SUBMITTED
APPROVED

NIAGARA FALLS INTERNATIONAL AIRPORT

NETWORK ID MAP

PROJECT IDENTIFIER
SHEET NAME
3-1
VOLUME of

SECTION 4.0

CONDITION SURVEY

SECTION 4.0 CONDITION SURVEY

Using procedures detailed in FAA Advisory Circular 150/5380-6A, a detailed condition survey was performed during October 2012 by RDM personnel. Existing pavement areas surveyed are shown in Drawing 3-1 found in Section 3.0.

4.1 OBJECTIVES

Essentially, the condition survey is a visual analysis of the primary distress manifestations (i.e., cracking and deformation) exhibited on the surface of the pavement. Distresses witnessed in the surface are indicators of potential pavement failure modes and mechanisms. After data processing, the NDT results are compared to the visual inspection results to ascertain causative relationships for the various pavement distresses surveyed.

The specific objectives of the condition survey are:

- To determine the present and future functional condition of the pavement surface.
- To provide a common index for comparing the condition and performance of pavements, using the Pavement Condition Index (PCI).
- To estimate repair requirements for pavement maintenance and rehabilitation.

The airport pavement condition survey is the primary means of obtaining and recording airfield pavement distress data and computing the PCI. The condition survey for both rigid and flexible pavement facilities consists of a visual inspection of the pavement surfaces for signs of pavement distress resulting from the influence of aircraft traffic and the environment.

4.2 PROCEDURES

The airfield pavements were divided into branches based on facility use (e.g., runway, taxiway, and apron). A listing of the 21 branches comprising the NFIA network is included in Table 4-1, "Branch Listing Report". Each branch was further subdivided into sections, according to pavement composition, construction history, aircraft traffic, and condition. Pavement sections utilized for the condition survey are depicted in Drawing 3-1. All pavement inspections conformed to ASTM D 5340-10, "*Standard Test Method for Airport Pavement Condition Index Surveys*".

Sample units were selected at random, on a network level frequency, and inspected for various pavement distresses. The distress type, severity rating, and quantity were measured and recorded according to the procedures outlined in the advisory circular. After the completion of the inspection the recorded distresses were entered into the MicroPAVER program to calculate the PCI and extrapolated distress quantities for each section. A copy of the inspection report can be found in Appendix A.

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE
BRANCH LISTING REPORT

Network ID	Branch ID	Branch Name	Use	Number of Sections	True Area (SF)
NFIA	CALSPAN	CALSPAN APRON	APRON	1	48,039
NFIA	CONDA	CONDOR APRON	APRON	1	911,185
NFIA	GAA	GENERAL AVIATION APRON	APRON	5	618,084
NFIA	HELIA	HELIPAD APRON	HELIPAD	2	191,297
NFIA	OVER10	OVERRUN 10L	OVERRUN	2	197,099
NFIA	OVR28	OVERRUN	OVERRUN	3	147,400
NFIA	RW10L	RUNWAY	RUNWAY	9	1,368,300
NFIA	RW10R	RUNWAY 10R-28L	RUNWAY	3	290,736
NFIA	RW624	RUNWAY 6-24	RUNWAY	7	814,250
NFIA	TERMA	TERMINAL APRON	APRON	4	366,296
NFIA	TWC	TAXIWAY C	TAXIWAY	4	227,288
NFIA	TWD	TAXIWAY D	TAXIWAY	5	395,611
NFIA	TWD1	TAXIWAY D1	TAXIWAY	1	15,913
NFIA	TWD2	TAXIWAY D2	TAXIWAY	2	13,180
NFIA	TWD3	TAXIWAY D3	TAXIWAY	3	67,431
NFIA	TWG	TAXIWAY G	TAXIWAY	1	29,117
NFIA	TWH	TAXIWAY H	TAXIWAY	1	41,366
NFIA	TWJ	TAXIWAY J	TAXIWAY	2	70,969
NFIA	TWK	TAXIWAY K	TAXIWAY	4	292,432
NFIA	TWL	TAXIWAY L	TAXIWAY	4	70,944
NFIA	TWM	TAXIWAY M	TAXIWAY	2	30,901

Total Number of Networks:	**1**
Total Number of Branches:	**21**
Total Number of Sections:	**66**
Total True Area:	**6,207,838 SF**
Average Branch Area:	**295,611 SF**

Table 4-1

SECTION 5.0

PCI CONCEPTS AND DISTRESS MECHANISMS

SECTION 5.0 PCI CONCEPTS AND DISTRESS MECHANISMS

The Pavement Condition Index (PCI) is based on a number of distinct distress types, quantities, and severities commonly found in airport pavements. Table 5-1, “MicroPAVER Distress Mechanisms” contains the distress code, distress description, and the distress mechanism. After all distresses for each sample unit are measured and catalogued, the PCI is computed as a numerical rating index between 0 to 100, with a PCI of 100 being a pavement in "Good" condition (no distress) and a PCI of 0 being a pavement in “Failed” condition. This rating is assigned following the procedures of FAA Advisory Circular 150/5380-7A, *“Airport Pavement Management Program”* and the MicroPAVER PCI estimation tool. The PCI rating range with subjective description is shown below and the color related scale is depicted in Figure 5-1 “Condition Survey PCI Rating”:

RANGE	CONDITION
86-100	Good
71-85	Satisfactory
56-70	Fair
41-55	Poor
26-40	Very Poor
11-25	Serious
0-10	Failed

While there are no specific rules or guidance regarding minimum PCI levels for airport pavements, the PCI should be maintained at a level sufficient to ensure safe, reliable aircraft operation. This requires integration of the following considerations in the evaluation process:

- Pavement condition should be such to preclude generation of foreign object debris (FOD) that can cause damage to aircraft.

- All cracks should be sealed to prevent FOD generation from affecting aircraft operations and to prevent water intrusion from weakening the pavement system.

- Accumulation of load induced distress can indicate the onset of a rapid decrease in serviceability.

- Continued maintenance and recurring distress patterns can affect the reliability of the operational surface and result in increased rehabilitation costs and decreased operational efficiency.

- Studies of pavement life cycles and costs indicate that below a certain level, termed the “critical PCI”, pavement condition and serviceability will decrease rapidly, affecting future rehabilitation costs. In other words, pavement performance does not necessarily degrade linearly. Deferral of scheduled rehabilitation for several years can result in a two to three fold increase in repair costs. This concept is illustrated on Figure 5-2, “Typical Pavement Condition Life Cycle”.

Recognizing these and other factors, military and civil pavement engineering experts have generally agreed that for primary facilities at airports (e.g., main runways, taxiways, and aprons), the PCI should be maintained above 70 (critical PCI). A PCI of 56 is often considered adequate for secondary facilities; however, these minimum PCI levels, to some degree, are a matter of policy that should be established for a particular airport.

PCI ranges and corresponding subjective ratings are illustrated in Figure 5-1, “Condition Survey PCI Rating”. This figure illustrates a representation of the PCI ranges of condition using the seven (7) basic MicroPAVER color scheme.

MicroPAVER DISTRESS MECHANISMS

Portland Cement Concrete Surfaced Airfield Pavements

CODE	DISTRESS	MECHANISM
61	Blow-up/Buckling	Climate
62	Corner Break	Load
63	Linear Cracking	Load
64	Durability ("D") Cracking	Climate
65	Joint Seal Damage	Climate
66	Patching, Small	Other
67	Patching, Large/Utility Cut	Other
68	Popouts	Other
69	Pumping	Other
70	Scaling/Map Cracking/Crazing	Other
71	Faulting	Other
72	Shattered Slab	Load
73	Shrinkage Cracking	Other
74	Spalling, Joint	Other
75	Spalling, Corner	Other
76	ASR	Other

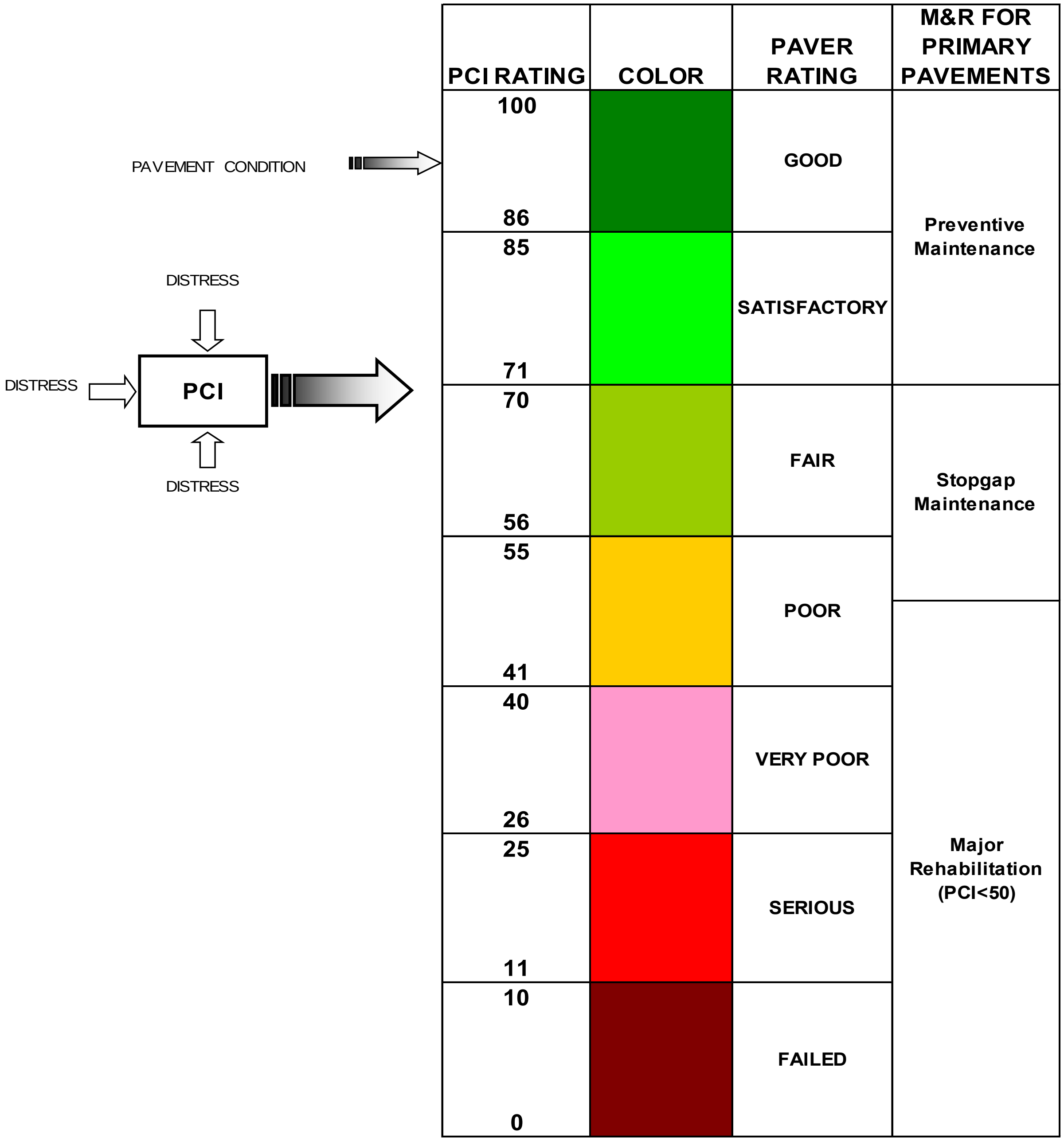
Asphalt Surfaced Airfield Pavements

CODE	DISTRESS	MECHANISM
41	Alligator Cracking	Load
42	Bleeding	Other
43	Block Cracking	Climate
44	Corrugation	Other
45	Depression	Other
46	Jet Blast	Other
47	Joint Reflection Cracking	Climate
48	Longitudinal/Transverse Cracking	Climate
49	Oil Spillage	Other
50	Patching	Climate
51	Polished Aggregate	Other
52	Raveling	Climate
53	Rutting	Load
54	Shoving	Other
55	Slippage Cracking	Other
56	Swell	Other
57	Weathering	Climate

Table 5-1

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

CONDITION SURVEY PCI RATING



PCI RATING	COLOR	PAVER RATING	M&R FOR PRIMARY PAVEMENTS
100 86	🟩	GOOD	Preventive Maintenance
85 71	🟩	SATISFACTORY	
70 56	🟩	FAIR	Stopgap Maintenance
55 41	🟨	POOR	
40 26	🟪	VERY POOR	Major Rehabilitation (PCI<50)
25 11	🟥	SERIOUS	
10 0	🟫	FAILED	

Figure 5-1

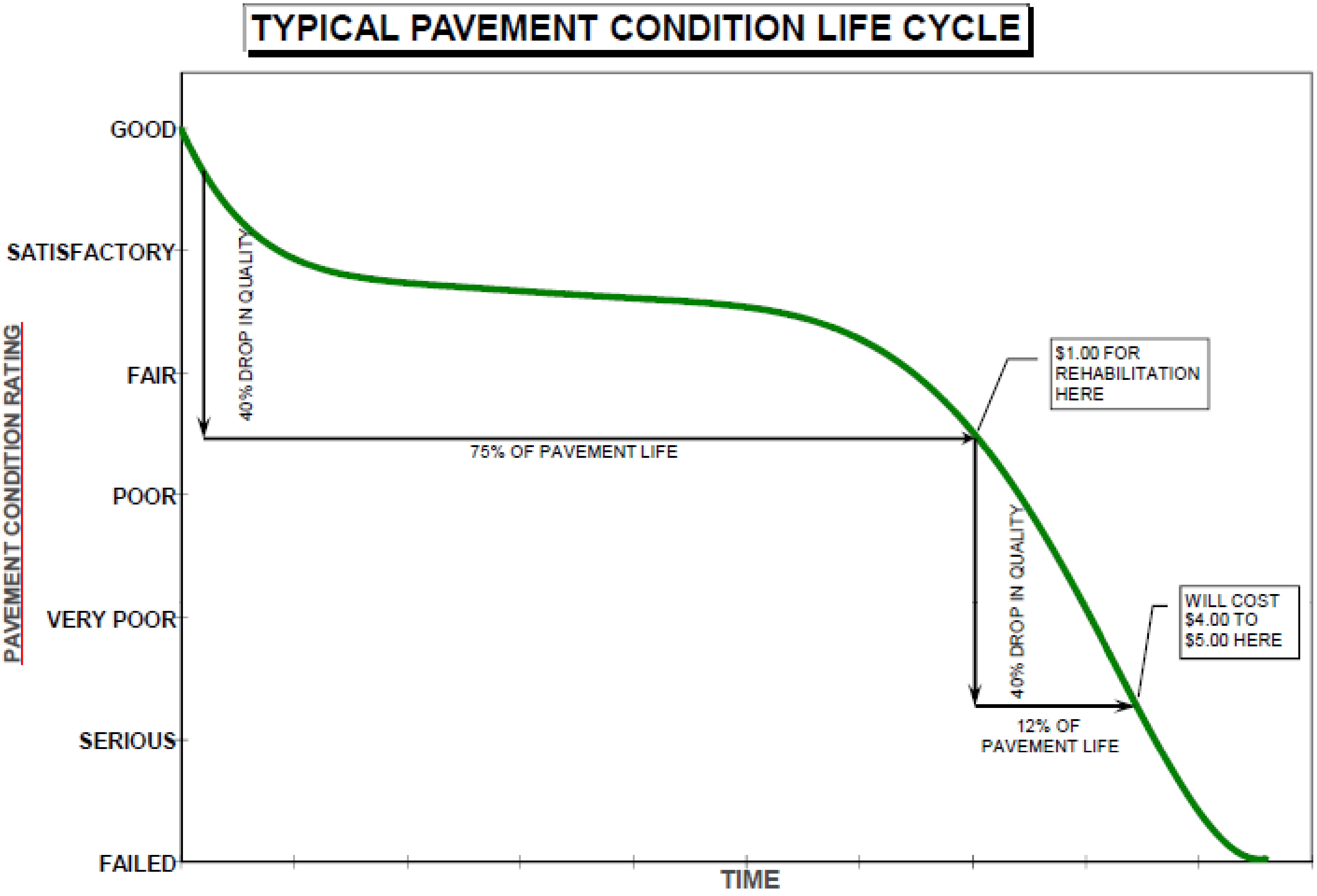

TYPICAL PAVEMENT CONDITION LIFE CYCLE
PAVEMENT CONDITION RATING
GOOD
SATISFACTORY
FAIR
POOR
VERY POOR
SERIOUS
FAILED
TIME
40% DROP IN QUALITY
75% OF PAVEMENT LIFE
$1.00 FOR REHABILITATION HERE
40% DROP IN QUALITY
12% OF PAVEMENT LIFE
WILL COST $4.00 TO $5.00 HERE

Figure 5-2

SECTION 6.0

CURRENT PAVEMENT CONDITION ASSESSMENTS

SECTION 6.0 CURRENT PAVEMENT CONDITION ASSESSMENTS

The PCI of each branch is shown in Table 6-1, “Branch Condition (PCI) Report”. Table 6-2, “Section Condition (PCI) Report” summarizes the PCI for each section in the airport network. Overall, the current area-weighted PCI for airfield pavement at NFIA is 74 (Satisfactory), which is above the critical PCI of 70 for runway, taxiway, and apron pavements. Based upon the PCI data, the following observations are highlighted.

- The area-weighted PCI for the primary runway, Runway 10L-28R, is 100 (Good), which is well above the critical PCI of 70.

- The area-weighted PCI for the secondary runway, Runway 6-24, is 78 (Satisfactory), which is above the critical PCI of 70.

- The area-weighted PCI for Runway 10R-28L is 35 (Very Poor), which is well below the critical PCI of 56.

- The area-weighted PCI for the taxiway pavement is 61 (Fair), which is below the critical PCI of 70.

- The area-weighted PCI for the overrun pavement is 90 (Good), which is well above the critical PCI of 70.

- The area-weighted PCI for Helipad is 35 (Very Poor), which is well below the critical PCI of 56.

- The area-weighted PCI for all apron pavements is 68 (Fair), which is slightly below the critical PCI of 70.

The current (2012) PCI values are also depicted graphically on the color-coded Drawing 6-1, “Current PCI (2012)”. Inspection summary reports for each section are included in Appendix A.

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

BRANCH CONDITION PCI REPORT

Branch ID	Section ID	Sum Section Length (LF)	Avg Section Width (LF)	True Area (SF)	Use	Average PCI	PCI Standard Deviation	Weighted Average PCI
CALSPAN (CALSPAN APRON)	01	320	150	48,039	APRON	99	0	99
CONDA (CONDOR APRON)	01	682	135	911,185	APRON	62	0	62
GAA (GENERAL AVIATION APRON)	05	3,471	274	618,084	APRON	75	12	72
HELIA (HELIPAD APRON)	02	554	645	191,297	HELIPAD	31	6	35
OVER10 (OVERRUN 10L)	02	1,213	165	197,099	OVERRUN	93	2	92
OVER28 (OVERRUN 28)	03	980	150	147,400	OVERRUN	84	14	86
RW10L (RUNWAY 10L-28R)	09	18,042	89	1,368,300	RUNWAY	99	3	100
RW10R (RUNWAY 10R-28L)	03	4,995	75	290,736	RUNWAY	48	20	35
RW624 (RUNWAY 6-24)	07	10,976	86	814,250	RUNWAY	68	33	78
TERMA (TERMINAL APRON)	04	1,326	446	366,296	APRON	74	26	71
TWC (TAXIWAY C)	04	3,232	77	227,288	TAXIWAY	58	21	57
TWD (TAXIWAY D)	05	4,925	78	395,611	TAXIWAY	74	14	73
TWD1 (TAXIWAY D1)	01	153	75	15,913	TAXIWAY	100	0	100
TWD2 (TAXIWAY D2)	02	325	40	13,180	TAXIWAY	66	4	64
TWD3 (TAXIWAY D3)	03	536	100	67,431	TAXIWAY	47	8	46
TWG (TAXIWAY G)	01	250	95	29,117	TAXIWAY	32	0	32
TWH (TAXIWAY H)	01	350	75	41,366	TAXIWAY	66	0	66
TWJ (TAXIWAY J)	02	835	57	70,969	TAXIWAY	61	12	54
TWK (TAXIWAY K)	04	3,676	75	292,432	TAXIWAY	65	21	58
TWL (TAXIWAY L)	04	813	77	70,944	TAXIWAY	38	14	39
TWM (TAXIWAY M)	02	354	85	30,901	TAXIWAY	69	2	68

Category	Number of Section	Total Area (SF)	Arithmetic Average PCI	Average PCI STD.	Weighted Average PCI
APRON	11	1,943,604	76	19	68
HELIPAD	2	191,297	31	6	35
OVERRUN	5	344,499	87	12	90
RUNWAY	19	2,473,286	80	29	85
TAXIWAY	29	1,255,152	60	20	61
All	66	6,207,838	70	25	74

Table 6-1

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

SECTION CONDITION PCI REPORT

Branch ID	Section ID	Last Const. Date	Surface	Use	True Area (SF)	Last Inspection Date	Age At Inspection	Current PCI (Dec 2012)
CALSPAN (CALSPAN APRON)	01	01/01/2012	PCC	APRON	48,039	10/22/2012	0	99
CONDA (CONDOR APRON)	01	07/01/2004	APC	APRON	911,185	10/22/2012	8	62
GAA (GENERAL AVIATION APRON)	01	06/01/1989	PCC	APRON	202,758	10/22/2012	23	60
GAA (GENERAL AVIATION APRON)	02	06/01/1986	PCC	APRON	159,000	10/22/2012	26	80
GAA (GENERAL AVIATION APRON)	03	06/01/1986	PCC	APRON	92,767	10/22/2012	26	63
GAA (GENERAL AVIATION APRON)	02A	06/01/1989	PCC	APRON	141,550	10/22/2012	23	85
GAA (GENERAL AVIATION APRON)	03A	06/01/1989	PCC	APRON	22,009	10/22/2012	23	88
HELIA (HELIPAD APRON)	01	06/01/1976	APC	HELIPAD	163,590	10/22/2012	36	37
HELIA (HELIPAD APRON)	02	06/01/1968	PCC	HELIPAD	27,707	10/22/2012	44	25
OVER10 (OVERRUN 10L)	01	01/01/2012	PCC	OVERRUN	105,120	10/22/2012	0	91
OVER10 (OVERRUN 10L)	02	01/01/2012	PCC	OVERRUN	91,979	10/22/2012	0	94
OVER28 (OVERRUN 28)	02	01/01/2012	AAC	OVERRUN	76,500	10/22/2012	0	86
OVER28 (OVERRUN 28)	01A	01/01/2012	AAC	OVERRUN	41,300	10/22/2012	0	100
OVER28 (OVERRUN 28)	01B	06/01/1996	PCC	OVERRUN	29,600	10/22/2012	16	65
RW10L (RUNWAY 10L-28R)	01	01/01/2012	PCC	RUNWAY	30,300	10/22/2012	0	91
RW10L (RUNWAY 10L-28R)	02	01/01/2012	APC	RUNWAY	194,900	10/22/2012	0	100
RW10L (RUNWAY 10L-28R)	03	01/01/2012	APC	RUNWAY	24,850	10/22/2012	0	100
RW10L (RUNWAY 10L-28R)	04	01/01/2012	APC	RUNWAY	164,500	10/22/2012	0	100
RW10L (RUNWAY 10L-28R)	05	01/01/2012	APC	RUNWAY	61,750	10/22/2012	0	100
RW10L (RUNWAY 10L-28R)	02A	01/01/2012	APC	RUNWAY	389,800	10/22/2012	0	100
RW10L (RUNWAY 10L-28R)	03A	01/01/2012	APC	RUNWAY	49,700	10/22/2012	0	100
RW10L (RUNWAY 10L-28R)	04A	01/01/2012	APC	RUNWAY	329,000	10/22/2012	0	100
RW10L (RUNWAY 10L-28R)	05A	01/01/2012	APC	RUNWAY	123,500	10/22/2012	0	100
RW10R (RUNWAY 10R-28L)	01	06/01/1976	AAC	RUNWAY	245,317	10/22/2012	36	28
RW10R (RUNWAY 10R-28L)	02	06/01/1976	PCC	RUNWAY	6,531	10/22/2012	36	41
RW10R (RUNWAY 10R-28L)	01A	03/01/1997	AAC	RUNWAY	38,888	10/22/2012	15	76
RW624 (RUNWAY 6-24)	01	06/01/1986	AAC	RUNWAY	17,500	10/22/2012	26	16
RW624 (RUNWAY 6-24)	02	06/01/1989	PCC	RUNWAY	45,100	10/22/2012	23	87
RW624 (RUNWAY 6-24)	03	03/01/1997	AAC	RUNWAY	192,750	10/22/2012	15	77
RW624 (RUNWAY 6-24)	04	01/01/2012	AAC	RUNWAY	42,700	10/22/2012	0	100
RW624 (RUNWAY 6-24)	01A	06/01/1986	AAC	RUNWAY	35,000	10/22/2012	26	19
RW624 (RUNWAY 6-24)	03A	03/01/1997	AAC	RUNWAY	399,600	10/22/2012	15	79
RW624 (RUNWAY 6-24)	04A	01/01/2012	AAC	RUNWAY	81,600	10/22/2012	0	100
TERMA (TERMINAL APRON)	01	01/01/2012	AAC	APRON	8,635	10/22/2012	0	100
TERMA (TERMINAL APRON)	02	06/01/1967	PCC	APRON	89,580	10/22/2012	45	35
TERMA (TERMINAL APRON)	03	03/01/1996	AAC	APRON	128,309	10/22/2012	16	66
TERMA (TERMINAL APRON)	04	01/01/2012	PCC	APRON	139,772	10/22/2012	0	96
TWC (TAXIWAY C)	01	06/01/2004	AAC	TAXIWAY	39,610	10/22/2012	8	39
TWC (TAXIWAY C)	02	06/01/1970	PCC	TAXIWAY	97,678	10/22/2012	42	53
TWC (TAXIWAY C)	03	06/01/1970	PCC	TAXIWAY	47,000	10/22/2012	42	47
TWC (TAXIWAY C)	04	06/01/1970	AC	TAXIWAY	43,000	10/22/2012	42	93
TWD (TAXIWAY D)	01	03/01/1999	APC	TAXIWAY	151,129	10/22/2012	13	66
TWD (TAXIWAY D)	02	03/01/1999	AC	TAXIWAY	32,545	10/22/2012	13	61
TWD (TAXIWAY D)	03	03/01/2002	APC	TAXIWAY	108,876	10/22/2012	10	70

Table 6-2

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

SECTION CONDITION PCI REPORT

Branch ID	Section ID	Last Const. Date	Surface	Use	True Area (SF)	Last Inspection Date	Age At Inspection	Current PCI (Dec 2012)
TWD (TAXIWAY D)	04	01/01/2012	AAC	TAXIWAY	69,507	10/22/2012	0	100
TWD (TAXIWAY D)	01A	03/01/1999	AAC	TAXIWAY	33,554	10/22/2012	13	73
TWD1 (TAXIWAY D1)	01	01/01/2012	APC	TAXIWAY	15,913	10/22/2012	0	100
TWD2 (TAXIWAY D2)	01	03/01/1997	AAC	TAXIWAY	10,280	10/22/2012	15	62
TWD2 (TAXIWAY D2)	02	06/01/1990	AAC	TAXIWAY	2,900	10/22/2012	22	70
TWD3 (TAXIWAY D3)	01	06/01/1976	AAC	TAXIWAY	12,934	10/22/2012	36	38
TWD3 (TAXIWAY D3)	02	06/01/2000	AAC	TAXIWAY	8,686	10/22/2012	12	57
TWD3 (TAXIWAY D3)	03	06/01/1976	AAC	TAXIWAY	45,811	10/22/2012	36	46
TWG (TAXIWAY G)	01	06/01/1970	PCC	TAXIWAY	29,117	10/22/2012	42	32
TWH (TAXIWAY H)	01	06/01/1970	PCC	TAXIWAY	41,366	10/22/2012	42	66
TWJ (TAXIWAY J)	01	06/01/1989	AAC	TAXIWAY	16,152	10/22/2012	23	72
TWJ (TAXIWAY J)	02	06/01/1970	AAC	TAXIWAY	54,817	10/22/2012	42	49
TWK (TAXIWAY K)	01	06/01/1970	PCC	TAXIWAY	51,718	10/22/2012	42	43
TWK (TAXIWAY K)	02	06/01/1970	PCC	TAXIWAY	129,561	10/22/2012	42	56
TWK (TAXIWAY K)	03	06/01/1970	PCC	TAXIWAY	91,775	10/22/2012	42	62
TWK (TAXIWAY K)	01A	01/01/2012	APC	TAXIWAY	19,378	10/22/2012	0	100
TWL (TAXIWAY L)	01	06/01/1970	PCC	TAXIWAY	22,750	10/22/2012	42	22
TWL (TAXIWAY L)	02	06/01/1970	APC	TAXIWAY	8,752	10/22/2012	42	27
TWL (TAXIWAY L)	03	06/01/1970	APC	TAXIWAY	23,463	10/22/2012	42	47
TWL (TAXIWAY L)	04	06/01/1970	PCC	TAXIWAY	15,979	10/12/2012	42	56
TWM (TAXIWAY M)	01	06/01/1970	PCC	TAXIWAY	21,377	10/22/2012	42	67
TWM (TAXIWAY M)	02	01/01/2000	APC	TAXIWAY	9,524	10/22/2012	12	71

Legend:

AC = Asphalt Concrete Pavement
PCC = Portland Cement Concrete Pavement
APC = Asphalt on Portland Cement Concrete Pavement
AAC = Asphalt Concrete on Aspahlt Concrete Base

Table 6-2 continued

Table 6-3, "PCI Frequency Report" was developed to indicate the overall pavement conditions at NFIA. From Table 6-3, only 52% of the pavements at NFIA have a PCI above 70. The average PCI of the 66 sections is 74 (at the time of survey).

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

PCI FREQUENCY REPORT

Condition	PCI Range	No. Of Sections	% of Sections	Total Area (SF)	% of Area
Failed	0 - 10	0	0%	0	0%
Serious	11 - 25	4	6%	102,957	2%
Very Poor	26- 40	7	11%	588,900	9%
Poor	41 - 55	9	14%	472,558	8%
Fair	56 - 70	14	21%	1,833,553	30%
Satisfactory	71 - 85	8	12%	991,018	16%
Good	86 - 100	24	36%	2,218,852	36%

Total Number of Sections:	66
Average PCI:	74
Total Section area:	6,207,838

Table 6-3

All of the airfield pavements at NFIA that exhibit PCIs at or below the critical PCI are shown in Table 6-4, "Pavement Sections with Current PCI at or Below Critical PCI" from which it is observed that the total area of the airfield pavements at NFIA is 6,207,838 sf., of which 2,997,968 sf., or 48%, are at or below the critical PCI.

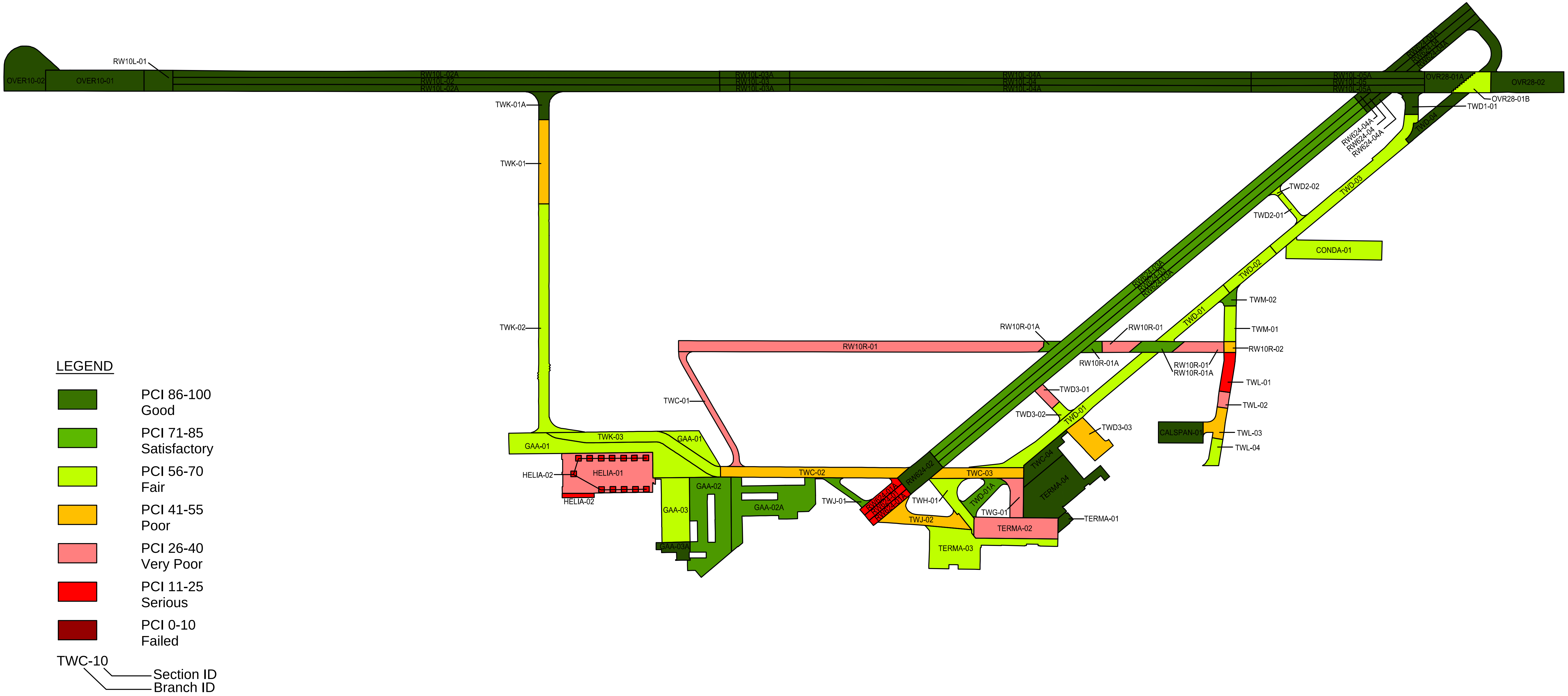
NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

SECTIONS WITH PCI BELOW OR AT CRITICAL PCI

Branch ID	Section ID	Last Const. Date	Surface	Use	True Area (SF)	Last Inspection Date	Age At Inspection	Current PCI
CONDA (CONDOR APRON)	01	07/01/2004	APC	APRON	911,185	10/22/2012	8	62
GAA (GENERAL AVIATION APRON)	01	06/01/1989	PCC	APRON	202,758	10/22/2012	23	60
GAA (GENERAL AVIATION APRON)	03	06/01/1986	PCC	APRON	92,767	10/22/2012	26	63
HELIA (HELIPAD APRON)	01	06/01/1976	APC	HELIPAD	163,590	10/22/2012	36	37
HELIA (HELIPAD APRON)	02	06/01/1968	PCC	HELIPAD	27,707	10/22/2012	44	25
OVER28 (OVERRUN 28)	01B	06/01/1996	PCC	OVERRUN	29,600	10/22/2012	16	65
RW10R (RUNWAY 10R-28L)	01	06/01/1976	AAC	RUNWAY	245,317	10/22/2012	36	28
RW10R (RUNWAY 10R-28L)	02	06/01/1976	PCC	RUNWAY	6,531	10/22/2012	36	41
RW624 (RUNWAY 6-24)	01	06/01/1986	AAC	RUNWAY	17,500	10/22/2012	26	16
RW624 (RUNWAY 6-24)	01A	06/01/1986	AAC	RUNWAY	35,000	10/22/2012	26	19
TERMA (TERMINAL APRON)	02	06/01/1967	PCC	APRON	89,580	10/22/2012	45	35
TERMA (TERMINAL APRON)	03	03/01/1996	AAC	APRON	128,309	10/22/2012	16	66
TWC (TAXIWAY C)	01	06/01/2004	AAC	TAXIWAY	39,610	10/22/2012	8	39
TWC (TAXIWAY C)	02	06/01/1970	PCC	TAXIWAY	97,678	10/22/2012	42	53
TWC (TAXIWAY C)	03	06/01/1970	PCC	TAXIWAY	47,000	10/22/2012	42	47
TWD (TAXIWAY D)	01	03/01/1999	APC	TAXIWAY	151,129	10/22/2012	13	66
TWD (TAXIWAY D)	02	03/01/1999	AC	TAXIWAY	32,545	10/22/2012	13	61
TWD (TAXIWAY D)	03	03/01/2002	APC	TAXIWAY	108,876	10/22/2012	10	70
TWD2 (TAXIWAY D2)	01	03/01/1997	AAC	TAXIWAY	10,280	10/22/2012	15	62
TWD2 (TAXIWAY D2)	02	06/01/1990	AAC	TAXIWAY	2,900	10/22/2012	22	70
TWD3 (TAXIWAY D3)	01	06/01/1976	AAC	TAXIWAY	12,934	10/22/2012	36	38
TWD3 (TAXIWAY D3)	02	06/01/2000	AAC	TAXIWAY	8,686	10/22/2012	12	57
TWD3 (TAXIWAY D3)	03	06/01/1976	AAC	TAXIWAY	45,811	10/22/2012	36	46
TWG (TAXIWAY G)	01	06/01/1970	PCC	TAXIWAY	29,117	10/22/2012	42	32
TWH (TAXIWAY H)	01	06/01/1970	PCC	TAXIWAY	41,366	10/22/2012	42	66
TWJ (TAXIWAY J)	02	06/01/1970	AAC	TAXIWAY	54,817	10/22/2012	42	49
TWK (TAXIWAY K)	01	06/01/1970	PCC	TAXIWAY	51,718	10/22/2012	42	43
TWK (TAXIWAY K)	02	06/01/1970	PCC	TAXIWAY	129,561	10/22/2012	42	56
TWK (TAXIWAY K)	03	06/01/1970	PCC	TAXIWAY	91,775	10/22/2012	42	62
TWL (TAXIWAY L)	01	06/01/1970	PCC	TAXIWAY	22,750	10/22/2012	42	22
TWL (TAXIWAY L)	02	06/01/1970	APC	TAXIWAY	8,752	10/22/2012	42	27
TWL (TAXIWAY L)	03	06/01/1970	APC	TAXIWAY	23,463	10/22/2012	42	47
TWL (TAXIWAY L)	04	06/01/1970	PCC	TAXIWAY	15,979	10/12/2012	42	56
TWM (TAXIWAY M)	01	06/01/1970	PCC	TAXIWAY	21,377	10/22/2012	42	67

Legend:
AC = Asphalt Concrete Pavement
PCC = Portland Cement Concrete Pavement
APC = Asphalt on Portland Cement Concrete Pavement

Table 6-4



NO.	REVISION	DATE

Engineering Technology Research

DATE 12/19/2013
SCALE 1"=700'
DESIGNED
CHECKED
DRAWN NCA
ACCEPTED
SUBMITTED
APPROVED

NIAGARA FALLS INTERNATIONAL AIRPORT

CURRENT(2012)
PCI MAP

PROJECT IDENTIFIER
SHEET NAME
6-1
VOLUME of

SECTION 7.0

CONDITION FORECAST

SECTION 7.0 CONDITION FORECAST

MicroPAVER family curve analysis was used to develop condition prediction algorithms for flexible and rigid pavements based on the last construction date (i.e., the date at which the pavement PCI was at 100), previous inspections, and the current PMS inspection results. An example of prediction model developed for Runway 10L-28R and Runway 6-24 is shown in Figure 7-1, “Prediction Model for Asphalt Runways”.

A summary of the 5-year airfield pavement condition forecast is presented in Table 7-1, “5-Year Predicted PCI Report”. Drawing 7-1, “Predicted PCI (2017)” depicts the predicted condition of the airfield pavements in the Year 2017 on a color-coded map using the seven color rating scheme. ***The forecast was generated using the prediction models developed assuming no major rehabilitation activities will be performed.*** The following can be summarized from the predicted PCI data shown in Table 7-1:

- The forecasted area-weighted PCI for the airfield pavement is 66 (Fair), which is below the critical PCI of 70.

- The forecasted area-weighted PCI for the primary runway, Runway 10L-28R, is 96 (Good), which is above the critical PCI of 70.

- The forecasted area-weighted PCI for secondary runway, Runway 6-24 is 67 (Fair), which is below the critical PCI of 70.

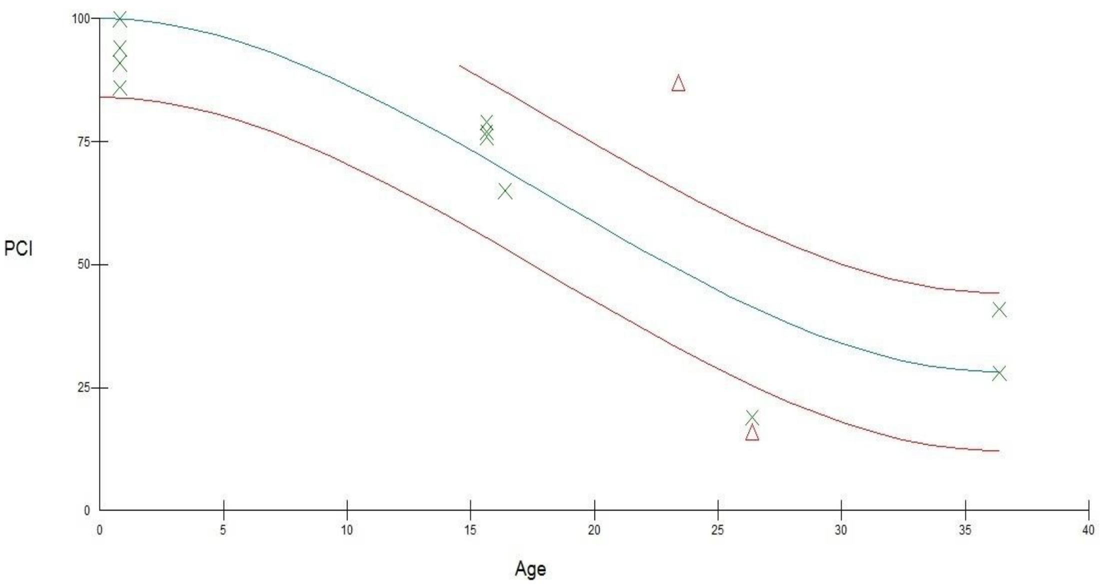
- The forecasted area-weighted PCI for Runway 10R-28L is 31 (Very Poor), which is well below the critical PCI of 56.

- The forecasted area-weighted PCI for the taxiways is 53 (Poor), which is below the critical PCI of 70.

- The forecasted area-weighted PCI for apron pavements is 59 (Fair), which is below the critical PCI of 70.

- The forecasted area-weighted PCI for Helipad is 28 (Very Poor), which is below the critical PCI of 56.

- The forecasted area weighted PCI for Overrun is 79 (Satisfactory), which is above the critical PCI of 70.



NIAGARA FALLS INTERNATIONAL AIRPORT
Airfield Pavement

Prediction Model for Asphalt Runways

Legend:

—— Best-fit prediction model curve

Δ Outlier points

X In bound points

Figure 7-1

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

5-YEAR PREDICTED PCI REPORT

Branch ID	Section ID	Current PCI (Dec 2012)	Aug-13	Aug-14	Aug-15	Aug-16	Aug-17
CALSPAN (CALSPAN APRON)	01	99	97	95	92	89	86
CONDA (CONDOR APRON)	01	62	61	60	58	56	54
GAA (GENERAL AVIATION APRON)	01	60	59	57	55	53	51
GAA (GENERAL AVIATION APRON)	02	80	78	76	74	73	71
GAA (GENERAL AVIATION APRON)	03	63	62	61	59	58	56
GAA (GENERAL AVIATION APRON)	02A	85	83	80	78	76	74
GAA (GENERAL AVIATION APRON)	03A	88	86	83	80	78	76
HELIA (HELIPAD APRON)	01	37	36	34	33	32	31
HELIA (HELIPAD APRON)	02	25	23	20	17	15	12
OVER10 (OVERRUN 10L)	01	91	89	87	85	82	79
OVER10 (OVERRUN 10L)	02	94	93	91	88	86	84
OVER28 (OVERRUN 28)	02	86	84	81	79	76	73
OVER28 (OVERRUN 28)	01A	100	100	99	99	98	96
OVER28 (OVERRUN 28)	01B	65	63	60	57	54	51
RW10L (RUNWAY 10L-28R)	01	91	89	87	85	82	79
RW10L (RUNWAY 10L-28R)	02	100	100	99	99	98	96
RW10L (RUNWAY 10L-28R)	03	100	100	99	99	98	96
RW10L (RUNWAY 10L-28R)	04	100	100	99	99	98	96
RW10L (RUNWAY 10L-28R)	05	100	100	99	99	98	96
RW10L (RUNWAY 10L-28R)	02A	100	100	99	99	98	96
RW10L (RUNWAY 10L-28R)	03A	100	100	99	99	98	96
RW10L (RUNWAY 10L-28R)	04A	100	100	99	99	98	96
RW10L (RUNWAY 10L-28R)	05A	100	100	99	99	98	96
RW10R (RUNWAY 10R-28L)	01	28	28	27	27	26	26
RW10R (RUNWAY 10R-28L)	02	41	39	37	35	33	32
RW10R (RUNWAY 10R-28L)	01A	76	74	71	68	65	62
RW624 (RUNWAY 6-24)	01	16	16	15	15	14	14
RW624 (RUNWAY 6-24)	02	87	85	83	80	77	74
RW624 (RUNWAY 6-24)	03	77	75	72	69	66	63
RW624 (RUNWAY 6-24)	04	100	100	99	99	98	96
RW624 (RUNWAY 6-24)	01A	19	19	18	18	17	17
RW624 (RUNWAY 6-24)	03A	79	77	74	71	68	65
RW624 (RUNWAY 6-24)	04A	100	100	99	99	98	96
TERMA (TERMINAL APRON)	01	100	100	98	96	93	90
TERMA (TERMINAL APRON)	02	35	34	32	31	31	30
TERMA (TERMINAL APRON)	03	66	66	65	65	64	63
TERMA (TERMINAL APRON)	04	96	94	91	87	84	81

Table 7-1

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

5-YEAR PREDICTED PCI REPORT

Branch ID	Section ID	Current PCI (Dec 2012)	Aug-13	Aug-14	Aug-15	Aug-16	Aug-17
TWC (TAXIWAY C)	01	39	37	35	33	31	30
TWC (TAXIWAY C)	02	53	52	50	49	47	45
TWC (TAXIWAY C)	03	47	46	44	42	41	39
TWC (TAXIWAY C)	04	93	91	88	84	81	77
TWD (TAXIWAY D)	01	66	66	65	65	64	63
TWD (TAXIWAY D)	02	61	58	55	51	48	45
TWD (TAXIWAY D)	03	70	69	68	68	67	66
TWD (TAXIWAY D)	04	100	100	99	97	96	93
TWD (TAXIWAY D)	01A	73	70	66	62	59	55
TWD1 (TAXIWAY D1)	01	100	96	91	87	84	81
TWD2 (TAXIWAY D2)	01	62	59	55	52	49	46
TWD2 (TAXIWAY D2)	02	70	67	63	60	56	53
TWD3 (TAXIWAY D3)	01	38	36	34	32	31	29
TWD3 (TAXIWAY D3)	02	57	54	51	48	45	42
TWD3 (TAXIWAY D3)	03	46	44	41	38	36	34
TWG (TAXIWAY G)	01	32	31	30	29	28	27
TWH (TAXIWAY H)	01	66	66	65	65	64	63
TWJ (TAXIWAY J)	01	72	69	65	61	58	54
TWJ (TAXIWAY J)	02	49	46	44	41	38	36
TWK (TAXIWAY K)	01	43	42	40	38	37	35
TWK (TAXIWAY K)	02	56	55	53	52	50	49
TWK (TAXIWAY K)	03	62	61	60	59	58	57
TWK (TAXIWAY K)	01A	100	96	91	87	84	81
TWL (TAXIWAY L)	01	22	21	20	19	18	17
TWL (TAXIWAY L)	02	27	26	25	24	23	22
TWL (TAXIWAY L)	03	47	46	44	42	41	39
TWL (TAXIWAY L)	04	56	55	53	52	50	49
TWM (TAXIWAY M)	01	67	67	66	66	65	64
TWM (TAXIWAY M)	02	71	70	69	68	68	67

Table 7-1 continued

Table 7-2, “Predicted (2017) PCI Frequency Report” shows the deteriorated predicted condition for the pavement sections.

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

PREDICTED (2017) PCI FREQUENCY REPORT

Condition	PCI Range	No. Of Sections	% of Sections	Total Area (SF)	% of Area
Failed	0 - 10	0	0%	0	0%
Serious	11 - 25	5	8%	111,709	2%
Very Poor	26- 40	12	18%	809,488	13%
Poor	41 - 55	13	20%	1,583,645	26%
Fair	56 - 70	10	15%	1,183,594	19%
Satisfactory	71 - 85	12	18%	889,621	14%
Good	86 - 100	14	21%	1,629,781	26%

Total Number of Sections:	66
Average PCI:	66
Total Section area:	6,207,838

Table 7-2

It is more important to view predicted PCI on a section by section basis when planning maintenance and rehabilitation. As shown in Tables 7-1 and Table 7-2 approximately 39% of the pavement sections at NFIA are expected to have a PCI above 70 in the next 5 years. Therefore, varying degrees of maintenance and/or rehabilitation will be required over the next 5 years to maintain and enhance the operational effectiveness of the airport pavements. Table 7-3, “Sections with Predicted 5-Year PCI below Critical PCI” lists the pavement sections predicted to have a PCI below 70 by Year 2017.

The extrapolation of the future PCI is heavily dependent on the accuracy of past surveys, the accuracy of the last construction date, and the accurate development of the prediction models. Changes in traffic patterns from those experienced in the past can result in erroneous projections. Therefore, while the future PCI projections are useful, they should be used with caution and tempered with practical experience and the results of the structural analysis. As NFIA continues to build its database through re-inspections, the accuracy of the PCI projections will improve, provided that the inspections are done within a reasonable timeframe or every 3 to 5 years.

In upcoming sections, the current and projected PCI results will be related to other testing and analytical program elements which develop a logical basis for pavement maintenance and rehabilitation at NFIA.

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

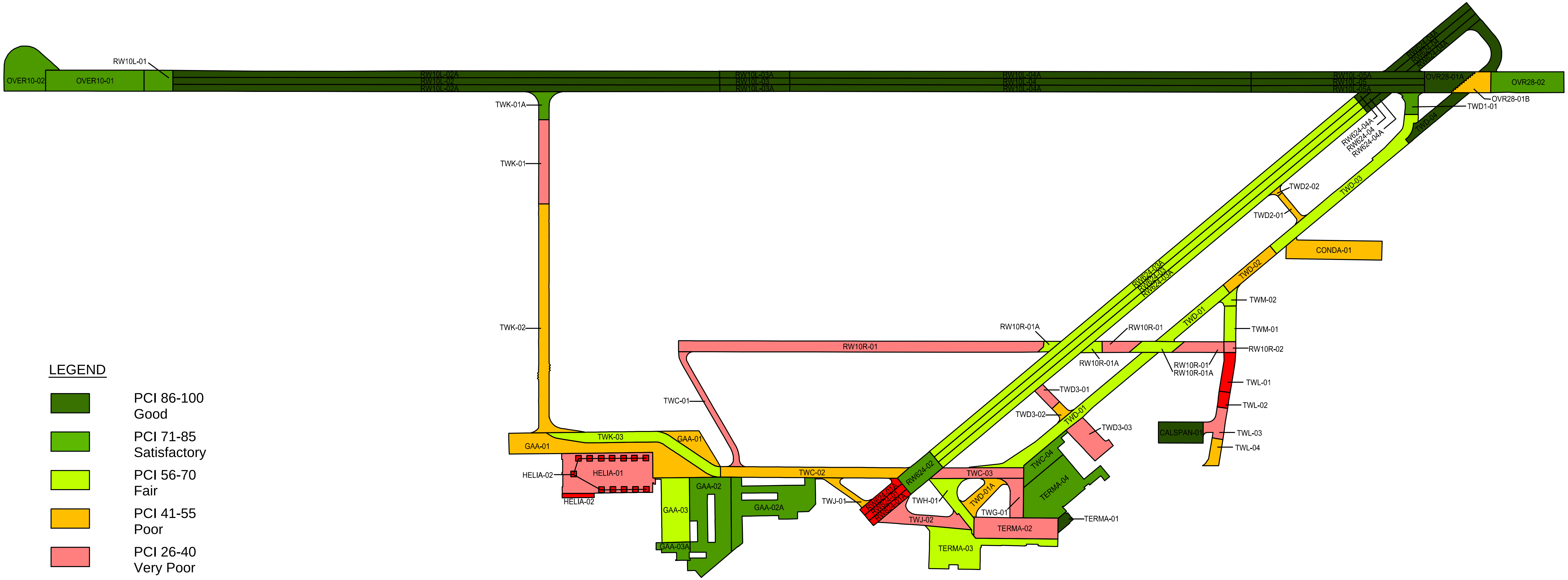
SECTIONS WITH PREDICTED 5-YEAR PCI AT OR BELOW CRITICAL PCI

Branch ID	Section ID	Last Const. Date	Surface	Use	True Area (SF)	Last Inspection Date	Age At Inspection	Predicted PCI (2017)
CONDA (CONDOR APRON)	01	07/01/2004	APC	APRON	911,185	10/22/2012	8	54
GAA (GENERAL AVIATION APRON)	01	06/01/1989	PCC	APRON	202,758	10/22/2012	23	51
GAA (GENERAL AVIATION APRON)	03	06/01/1986	PCC	APRON	92,767	10/22/2012	26	56
HELIA (HELIPAD APRON)	01	06/01/1976	APC	HELIPAD	163,590	10/22/2012	36	31
HELIA (HELIPAD APRON)	02	06/01/1968	PCC	HELIPAD	27,707	10/22/2012	44	12
OVER28 (OVERRUN 28)	01B	06/01/1996	PCC	OVERRUN	29,600	10/22/2012	16	51
RW10R (RUNWAY 10R-28L)	01	06/01/1976	AAC	RUNWAY	245,317	10/22/2012	36	26
RW10R (RUNWAY 10R-28L)	02	06/01/1976	PCC	RUNWAY	6,531	10/22/2012	36	32
RW10R (RUNWAY 10R-28L)	01A	03/01/1997	AAC	RUNWAY	38,888	10/22/2012	15	62
RW624 (RUNWAY 6-24)	01	06/01/1986	AAC	RUNWAY	17,500	10/22/2012	26	14
RW624 (RUNWAY 6-24)	03	03/01/1997	AAC	RUNWAY	192,750	10/22/2012	15	63
RW624 (RUNWAY 6-24)	01A	06/01/1986	AAC	RUNWAY	35,000	10/22/2012	26	17
RW624 (RUNWAY 6-24)	03A	03/01/1997	AAC	RUNWAY	399,600	10/22/2012	15	65
TERMA (TERMINAL APRON)	02	06/01/1967	PCC	APRON	89,580	10/22/2012	45	30
TERMA (TERMINAL APRON)	03	03/01/1996	AAC	APRON	128,309	10/22/2012	16	63
TWC (TAXIWAY C)	01	06/01/2004	AAC	TAXIWAY	39,610	10/22/2012	8	30
TWC (TAXIWAY C)	02	06/01/1970	PCC	TAXIWAY	97,678	10/22/2012	42	45
TWC (TAXIWAY C)	03	06/01/1970	PCC	TAXIWAY	47,000	10/22/2012	42	39
TWD (TAXIWAY D)	01	03/01/1999	APC	TAXIWAY	151,129	10/22/2012	13	63
TWD (TAXIWAY D)	02	03/01/1999	AC	TAXIWAY	32,545	10/22/2012	13	45
TWD (TAXIWAY D)	03	03/01/2002	APC	TAXIWAY	108,876	10/22/2012	10	66
TWD (TAXIWAY D)	01A	03/01/1999	AAC	TAXIWAY	33,554	10/22/2012	13	55
TWD2 (TAXIWAY D2)	01	03/01/1997	AAC	TAXIWAY	10,280	10/22/2012	15	46
TWD2 (TAXIWAY D2)	02	06/01/1990	AAC	TAXIWAY	2,900	10/22/2012	22	53
TWD3 (TAXIWAY D3)	01	06/01/1976	AAC	TAXIWAY	12,934	10/22/2012	36	29
TWD3 (TAXIWAY D3)	02	06/01/2000	AAC	TAXIWAY	8,686	10/22/2012	12	42
TWD3 (TAXIWAY D3)	03	06/01/1976	AAC	TAXIWAY	45,811	10/22/2012	36	34
TWG (TAXIWAY G)	01	06/01/1970	PCC	TAXIWAY	29,117	10/22/2012	42	27
TWH (TAXIWAY H)	01	06/01/1970	PCC	TAXIWAY	41,366	10/22/2012	42	63
TWJ (TAXIWAY J)	01	06/01/1989	AAC	TAXIWAY	16,152	10/22/2012	23	54
TWJ (TAXIWAY J)	02	06/01/1970	AAC	TAXIWAY	54,817	10/22/2012	42	36
TWK (TAXIWAY K)	01	06/01/1970	PCC	TAXIWAY	51,718	10/22/2012	42	35
TWK (TAXIWAY K)	02	06/01/1970	PCC	TAXIWAY	129,561	10/22/2012	42	49
TWK (TAXIWAY K)	03	06/01/1970	PCC	TAXIWAY	91,775	10/22/2012	42	57
TWL (TAXIWAY L)	01	06/01/1970	PCC	TAXIWAY	22,750	10/22/2012	42	17
TWL (TAXIWAY L)	02	06/01/1970	APC	TAXIWAY	8,752	10/22/2012	42	22
TWL (TAXIWAY L)	03	06/01/1970	APC	TAXIWAY	23,463	10/22/2012	42	39
TWL (TAXIWAY L)	04	06/01/1970	PCC	TAXIWAY	15,979	10/12/2012	42	49
TWM (TAXIWAY M)	01	06/01/1970	PCC	TAXIWAY	21,377	10/22/2012	42	64
TWM (TAXIWAY M)	02	01/01/2000	APC	TAXIWAY	9,524	10/22/2012	12	67

Legend:

AC = Asphalt Concrete Pavement
PCC = Portland Cement Concrete Pavement
APC = Asphalt on Portland Cement Concrete Pavement
AAC = Asphalt Concrete on Ashaplt Base

Table 7-3



LEGEND

🟩	PCI 86-100 Good
🟩	PCI 71-85 Satisfactory
🟩	PCI 56-70 Fair
🟧	PCI 41-55 Poor
🟥	PCI 26-40 Very Poor
🟥	PCI 11-25 Serious
🟥	PCI 0-10 Failed

TWC-10
Section ID
Branch ID

NO.	REVISION	DATE

Engineering Technology Research

DATE 12/19/2013
SCALE 1"=700'
DESIGNED
CHECKED
DRAWN NCA
ACCEPTED
SUBMITTED
APPROVED

NIAGARA FALLS INTERNATIONAL AIRPORT

PREDICTED(2018) PCI MAP

PROJECT IDENTIFIER
SHEET NAME
7-1
VOLUME of

SECTION 8.0

NONDESTRUCTIVE TESTING

SECTION 8.0 NONDESTRUCTIVE TESTING

In October 2012, approximately 1,280 nondestructive tests (NDT) were conducted on airfield pavements at NFIA. NDTs were generally located on a 100 ft. staggered grid in trafficked areas as recommended by the FAA for airport pavements. NDT field data are included in Appendix B.

The primary purpose of NDT is to measure the structural properties of pavement systems. The load response data resulting from the dynamic force simulates the effect of moving aircraft loads. The data obtained can be used as reliable input for structural analysis utilizing elastic theory for pavement design and evaluation. Additional advantages of NDT include:

- Minimal interference with airport operations;
- Measurement of in-situ structural response;
- Rapid data acquisition; and
- Low unit testing and data processing costs.

Generally speaking, about 50 NDTs can be performed for the cost approximately equivalent to one California Bearing Ratio (CBR) test. A primary value of NDT, then, is the ability to economically evaluate much broader areas of pavement in a short time to better define variability in pavement strength.

The NDT equipment used for the testing program was designed to generate a dynamic force on the pavement surface and measure the resultant vertical response of the pavement system, including subgrade, base courses, and surface layers. The equipment's microcomputer allows rapid data processing in the field. Therefore, NDT results can be directly referenced to field conditions, improving the reliability and speed of data acquisition.

NDT equipment, test procedures, and data reduction methods conformed to the requirements of FAA Advisory Circular 150/5370-11B, "*Use of Nondestructive Testing in the Evaluation of Airport Pavements*".

8.1 NDT PROCEDURES

To provide a meaningful database for evaluation, the following NDT sequences were utilized:

- Deflection Basin
- Impulse Stiffness Modulus (ISM)
- Concrete Joint Deflection Ratio

All tests were conducted under an impulse (i.e., Heavy Falling Weight Deflectometer (HWD) type) forcing function at a nominal amplitude of 20,000 lbs. to 35,000 lbs.

8.1.1 DEFLECTION BASIN

This test method involves measuring deflection at the center of the machine loading plate and at fixed distances from the center. After pavement thickness and composition were established, layered-elastic or closed-form back-calculation procedures can be used to reduce the NDT data of flexible pavement and rigid pavement for structural evaluation purposes.

The layered elastic back-calculation procedures process the deflection basin data to compute the elastic moduli (E) of pavement layers and subgrade that provides a best fit between the measured and computed deflection basins.

The closed-form back-calculation procedures use the AREA method to compute the modulus of subgrade reaction (*k*) and elastic modulus (E) of Portland cement concrete (PCC) and base layers. This method is based on the unique relationship that exists between the normalized area under the deflection basin (i.e., AREA) and the radius of relative stiffness (ℓ) of the concrete slab. Once ℓ is computed from AREA, computation of *k* and E is a straightforward process.

The Army Corps of Engineers and FAA research have found the back-calculated subgrade *k*-value or CBR and correlated elastic modulus to be a reliable estimate of in-situ subgrade strength. Sensitivity analyses also found the subgrade modulus from the back-calculation to be relatively insensitive to minor variations in base course and surface course moduli or thicknesses. Therefore, the subgrade modulus from NDT is believed to be a reasonably accurate representation of in-situ subgrade strength.

8.1.2 IMPULSE STIFFNESS MODULUS (ISM)

The ISM test procedure is defined as a dynamic force divided by pavement deflection measured at the loading plate. As such, it is a measure of overall support conditions from all influencing pavement and subgrade layers. For this study, the ISM data were used to segment the various facilities tested into statistically equivalent areas for structural analysis and to evaluate overall patterns of variability in pavement support conditions. The ISM data were also used to help identify different pavement structures constructed at separate times.

8.1.3 CONCRETE JOINT DEFLECTION RATIO

As described in FAA Report DOT/FAA PM-83/22, "*Investigation of the FAA Overlay Design Procedures for Rigid Pavements*", load transfer at Portland cement concrete (PCC) slab joints was also evaluated using the deflection ratio, defined as:

$$Deflection\ Ratio = \frac{Deflection - unloaded - side}{Deflection - loaded - side}$$

The deflection ratio is used in the elastic structural analysis computation to compute a load reduction factor that is used in determining allowable aircraft loading and rehabilitation requirements for existing pavements. From FAA Report DOT/FAA PM-83/22, it can be implied that a deflection ratio greater than 0.72 indicates adequate load transfer consistent with the FAA's design assumption of 25% load transfer between concrete slabs.

8.2 EQUIPMENT REQUIREMENTS

RDMs' Heavy Falling Weight Deflectometer (HWD) was used for the testing program. This machine meets the requirements of FAA Advisory Circular 150/5370-11B and is capable of performing deflection basin and ISM test sequences. The HWD has a dynamic force range of 8,000 lbs. to 55,000 lbs. and uses seven (7) sensors to record pavement response (deflection). The sensors were placed at the center of the loading plate and at radial offsets of 8, 12, 24, 36, 48, and 60 inches. All test functions and data recordings are controlled by a computer on the tow vehicle.

8.3 EXISTING PAVEMENT STRUCTURE

The construction history records from 2004 PMS report and the most recent construction / existing projects since 2004 were referenced to establish the current pavement structures. For additional verification, a total of 20 pavement cores were recommended based on variations noted in the NDT data for this project.

The prescribed changes to the existing pavement structures for Runway 10L-28R were obtained from the rehabilitation project documents for this runway in 2012. For rehabilitation of sections RW10L-03 to RW10L-05, the entire AC pavement was milled to the top of PCC pavement and the existing PCC pavement was then rubblized. After rubblization of PCC pavement, new AC pavement was placed on the top, utilizing the rubblized PCC as a base course. The new AC pavement thickness of Runway 10L-28R was primarily obtained from design drawings.

The 20 pavement cores were performed by SJB Services, Inc. (SJB). Three (3) of the cores were further advanced to approximately 10 feet below the surface to obtain subgrade soil information. Summary of SJB's core data was indicated in Table 8-1, "Pavement Core Data Summary". Past project core data were also summarized in Table 8-2, "Past Pavement Core Data Summary" for reference. These data along with construction history data were cross checked to establish representative pavement structures for NDT data analysis and subsequent structural evaluations.

Subgrade soils from borings indicate that the top portion of the subgrade is composed of fill material. Based on the three (3) borings conducted for this project it is found that fill material extended to depths approximately four (4) to 10 feet below the existing surface. This information for the subgrade appears to be consistent with boring data conducted in the past.

Under the fill material, the observed native soils were classified as clay (CL) or silty clay (ML) according to Unified Soil Classification System (USCS). SJB's data report is included in Appendix E.

Pavement Core Data Summary

Core	PMS	Layer Thickness, inch			
No.	Section	AC	PCC	AGBS	Remark
B-1	TWC-02		10.1	9.0	fills to approximately 4' below surface, then CL soils
B-2	TWK-02		12.7	9.0	fills to 10' drilling depth
B-3	TERMA-03	4.6		9.0	fills to approximately 4' below surface, then CL soils
C-1	RW10R-01	10.9		13.0	
C-2	RW10R-01	10.6		12.0	
C-3	RW10R-01	9.9		8.0	
C-4	RW10R-01	10.0		12.0	
C-5	RW624-03	12.6		14.0	
C-6	RW624-03	10.5		14.0	
C-7	TWD3-02	12.6		12.5	
C-8	TWM-01		13.3	13.0	
C-9	TWJ-02	7.6		12.0	
C-10	TWC-01A	12.5		12.0	
C-11	TWC-02		11.6	12.0	
C-12	TWC-03		10.5	14.0	
C-13	TWK-01		11.6	12.0	
C-14	TWK-03		13.3	8.0	
C-15	HELIA-01	2.4	6.8	12.0	
C-16	GAA-02		6.5	12.0	
C-17	TWG-01		11.8	12.0	

Table 8-1

Past Pavement Core Data Summary

Core	PMS	Layer Thickness, inch			
No.	Section	AC	PCC	AGBS	Remark
Core Data in 2004 PMS					
C-44	RW10L-02	4.8			AC surface thickness changed since
C-45	RW10L-02	5.5			AC surface thickness changed since
C-46	RW10L-02	4.8			AC surface thickness changed since
C-47	RW10L-03	6.0	7.0		AC surface thickness changed since
C-48	RW10L-05	4.5	11.8		AC surface thickness changed since
C-49	RW624-03	18.5			
C-50	RW624-03	9.8			
C-51	TWD-01	9.8		24	
C-52	TWD-01	9.0		21	
C-53	TWD-03	7.8	8.8		
C-54	CONDA-01	6.5	7.3		
C-55	TERMA-03	4.5			
Core Data in 2012 RW 10L-28R Rehabilitation					
B-120	RW10L-01		14.5	36.0	Crushed stone subbase, clay subgrade
C-121	RW10L-02	5.3	11.5	12.0	PCC rubblized, AC thickness changed
C-122	RW10L-02	5.8	9.0	18.0	PCC rubblized, AC thickness changed
C-123	RW10L-02	5.5	7.0	18.0	PCC rubblized, AC thickness changed
B-124	RW10L-02	4.3	9.0	18.0	PCC rubblized, slag subbse, AC thickness changed
C-125	RW10L-03	6.0	10.0	18.0	PCC rubblized, AC thickness changed
C-126	RW10L-04A	5.0	10.0	12.0	PCC rubblized, slag subbse, AC thickness changed
M-127	RW10L-04A	5.0	8.3	12.0	PCC rubblized, AC thickness changed
B-128	RW10L-04	5.3	6.8	12.0	PCC rubblized, AC thickness changed
C-129	RW10L-04A	6.0	10.0	12.0	PCC rubblized, AC thickness changed
C-130	RW10L-04	7.4	6.4	12.0	PCC rubblized, AC thickness changed
B-131	RW10L-05	10.6	9.5	12.0	PCC rubblized, AC thickness changed
M-133	RW10L-05	6.4	7.0	10.0	PCC rubblized, AC thickness changed
M-134	RW10L-05A	4.4	11.3	8.0	PCC rubblized, AC thickness changed
C-132	RW10L-05	6.9	10.3	6.0	PCC rubblized, AC thickness changed
B-135	OVR28-01A		6.3	12.0	AC overlay applied
C-136	OVR28-02	3.2		12.0	Surface repaired
C-138	RW624-04	10.8	5.8	10.0	AC milled and overlaid
C-139	TWD1-01	6.3	9.5	12.0	AC milled and overlaid
C-140	TWK-1		12.6	8.0	Crushed stone subbase

AC = Asphalt Concrete
PCC – Portland Cement Concrete
AGBS = Aggregate Base or Subbase

Table 8-2

8.4 DATA ANALYSIS

The primary purpose of the NDT program is to derive pavement layer and subgrade strengths for input to the structural analysis. For the layered elastic design procedures used in pavement analysis, the primary strength characterization is the elastic modulus (E) of the pavement layers and subgrade. The ISM is used to qualitatively evaluate variability in pavement support conditions.

8.4.1 IMPULSE STIFFNESS MODULUS (ISM)

Based on the pavement composition and thickness and the computed ISM, the NDT field data are used to segment the pavement network into analytical sections. Examination of the NDT field data found variability in the support conditions for the various pavement areas that were tested. Plots of ISM vs. longitudinal station, depicting patterns of variability in pavement strength for linear pavement facilities such as runways and taxiways, are included in Appendix B.

The variation in ISM is primarily attributed to the difference in pavement structures and layer thicknesses. In some pavement features, the existing pavements include asphalt overlaid PCC pavement and conventional asphalt pavements. For the asphalt overlaid PCC pavements, the overlay thicknesses sometimes varied significantly due to changes in grade requirements. For example, Runway 10L-28R was overlaid with AC by rubblizing PCC slabs underneath. Thickness of the AC overlay in some locations on one side is much thicker than the other due to the prescribed grade design change.

8.4.2 ELASTIC MODULI

The NDT data for the various pavement areas were reduced to sets of elastic moduli using layered-elastic back-calculation for the flexible pavements and the closed-form AREA methods for the rigid pavements. The layered-elastic back-calculation method is also used to obtain best representative results for the asphalt overlaid PCC pavements (APC) if the AC overlay thickness is close to or greater than the underlying PCC slab thickness. For some pavement areas without NDT data, back-calculation results from the adjacent areas were assumed for the evaluation. The results are summarized in Table 8.3, “Back-calculation Summary”.

The back-calculated PCC elastic moduli generally were greater than 4,000,000 to 5,000,000 psi for PCC surfaced pavement sections. For APC pavement, back-calculated PCC elastic moduli ranged from approximately 660,000 to 1,800,000 psi.

The Runway 10L-28R rehabilitation consists of AC overlay on rubblized PCC slabs. Back-calculation results indicated that elastic moduli of the rubblized PCC varied from approximately 200,000 psi to greater than 500,000 psi, which are typical values obtained for PCC rubblization.

Back-calculated elastic moduli of the AC layer varied depending on pavement condition and structures. The values generally were greater than 400,000 psi for most of the pavement sections. However, lower values less than 200,000 psi were obtained for some pavement sections with low PCI values. These sections are mainly noted on Runway 10R-28L.

Similar to AC surface, aggregate base also had varied elastic modulus from the back-calculations. For most sections, back-calculated elastic moduli of the aggregate base were greater than 75,000 psi. However, lower values are also indicated in some sections and are mainly located on Runway 10R-28L.

For pavement with PCC surface, closed-form back-calculation procedures were used to obtain the subgrade *k*-value. For AC surfaced pavements, elastic modulus of the subgrade were obtained. Average values were indicated in Table 8-3. The elastic modulus of the subgrade can be correlated using E = 1500 CBR to estimate subgrade CBR. Design subgrade *k*-value or correlated CBRs were obtained by subtracting one standard deviation from the average in accordance with FAA’s design standard. These are also indicated in Table 8-3.

As indicated, design subgrade *k*-values ranged from approximately 110 psi/in. to greater than 200 psi/in. with a majority above 150 psi/in. Design CBRs varied from approximately 6.5% to more than 15%. These ranges for subgrade strength are generally consistent with typical ranges noted for fills consisting of clays and silts.

8.4.3 DEFLECTION RATIO

Deflection ratios from limited joint tests on PCC surfaced sections were computed. It appeared that some sections have insufficient load transfer with much lower deflection ratios. The results may have been affected by the pavement temperature at the time of tests and load transfer mechanism used in the construction. Lack of load transfer may result in excessive stress in the slab and a high potential for cracking to develop.

Back-calculation Summary

Section	Current	NDT Station		Description	Thickness (in.)			Elastic Modulus (psi)				Deflection	Design Subgrade	
Code	PCI	From	To		AC	PCC	AGBS	AC	PCC	Base	Subgrade[1]	Ratio	k, psi/in.	CBR, %
OVR10-01	91			Runway 10L overrun		14.5	26		5,000,000	79,800	212	0.28	173	
OVR10-02	94			Runway 10L overrun and turn-around		14.5	26		5,000,000	79,800	212	0.28	173	
RW10L-01	91	0+00	1+90	Runway 10L end PCC		14.5	26		5,000,000	79,800	212	0.28	173	
RW10L-02	100	1+90	32+75	Keel, rubblized PCC	6	10	16	1,243,000	197,700	43,760	15,990			8.3
	100	32+75	41+00		6	10	16	1,356,000	224,200	119,900	35,310			18.5
RW10L-02A	100	1+90	41+00	Sides, rubblized PCC	6	10	16	1,096,000	245,000	98,640	13,760			8.3
RW10L-03	100	41+00	46+00	Keel, rubblized PCC	11	7	14	1,315,000	337,500	140,100	29,820			16.9
RW10L-03A	100	41+00	46+00	Thick AC from overlay	13	7	14	1,092,000	342,200	118,300	14,460			6.5
RW10L-04	100	46+00	65+25	Keel, rubblized PCC	11	7.5	12	1,524,000	209,600	126,800	19,300			9.4
	100	65+25	70+75		14	7.5	12	1,599,000	>500,000	255,200	16,060			8.5
	100	70+75	79+00		11	7.5	12	1,432,000	313,500	116,200	17,810			7.6
RW10L-04A	100	46+00	64+00		13	7.5	12	1,092,000	342,200	118,300	14,460			6.5
	100	64+00	79+00	Right lane	13	7.5	12	835,400	277,800	110,300	12,310			7.0
	100	64+00	79+00	Left lane, thick AC from overlay	18	7.5	12	1,486,000	684,200	225,200	14,740			8.1
RW10L-05	100	79+00	91+25	Keel, rubblized PCC	11	10	11	1,219,000	349,800	117,300	13,400			6.6
RW10L-05A	100	79+00	91+25	Sides, rubblized PCC	11	10	11	1,112,000	446,900	156,300	11,640			6.5
OVR28-01A	100			Runway 28R overrun	4	7	14	450,400	5,000,000		198		177	
OVR28-01B	65			Runway 28R overrun, PCC surface	6	11	14	1,048,000	5,000,000		340		283	
OVR28-02	86				4		12	951,100		30,000	19,070			11.2

Note:

1. The value in this column is either subgrade *k*-value in psi/in. or elastic moduli in psi. Subgrade *k*-value is for pavement structure with PCC surface.

Table 8-3

Back-calculation Summary

Section	Current	NDT Station		Description	Thickness (in.)			Elastic Modulus (psi)				Design Subgrade	
Code	PCI	From	To		AC	PCC	AGBS	AC	PCC	Base	Subgrade[1]	k. psi/in.	CBR, %
RW10R-01, keel	28	0+00	18+30	Section -01, part-1	11		12	570,200		30,000	17,010		9.7
		18+30	26+00	Section -01, part-1	10		8	249,300		30,000	14,630		8.0
		30+15	32+55	Section-01, part-2	10		8	865,900		70,620	13,920		8.4
		35+55	38+80	Section-01, part-3, weak AC and base	10		8	125,600			11,810		7.2
RW10R-01, sides		0+00	22+60	Section-01, part-1, weak base	11		12	346,000		30,000	15,500		9.3
		22+60	26+00	Section-01, part-1, weak AC and base	10		8	197,900		30,000	12,290		7.5
		30+15	32+55	Section-01, part-2, weak AC and base	10		8	197,900		30,000	12,290		7.5
		35+55	38+80	Section-01, part-3	10		8	371,600		30,000	13,530		8.1
RW10R-01A, keel	76	26+00	30+15	Section-01A, part-1	10		8	249,300		30,000	14,630		8.0
		32+55	35+55	Section-01A, part-2	10		8	865,900		70,620	13,920		8.4
RW10R-01A, sides		26+00	30+15	Section-01A, part-1	10		8	197,900		30,000	12,290		7.5
		32+55	35+55	Section-01A, part-2	10		12	865,900		70,620	13,920		8.4
RW10R-02	41	38+90	39+90			12	15		5,000,000	57,150	211	175	
RW624-01	16			RW 6 end, keel section	12		14	1,023,000		100,000	28,590		17.7
RW624-01A	19			RW 6 end, side sections	12		14	954,100		100,000	25,740		16.0
RW624-02	87			RW 6-24 and TW C intersection		12	16		5,000,000	64,600	235	205	
RW624-03	77	0+00	18+61		12		14	909,500		100,000	25,680		15.8
		18+80	28+30		12		14	948,200		100,000	26,170		14.5
		29+30	33+35		10		14	715,400		80,370	25,320		15.8
		34+00	39+00		14		16	1,303,000		100,000	24,690		14.6
RW624-03A	79	0+00	9+91		10		14	626,100		61,800	21,330		12.2
		10+32	15+82	Weak base	10		14	373,500		30,000	19,720		12.5
		16+36	32+33		10		14	866,000		100,000	21,840		12.9
		33+86	40+23		14		16	1,173,000		100,000	20,910		9.0
RW624-04	100	44+10	50+00		>10		24	1,461,000		100,000	21,140		10.2
RW624-04A	100	43+81	49+90	Varied AC due to overlay	>10		24	1,568,000		100,000	21,180		9.1

Table 8-3 continued

Back-calculation Summary

Section Code	Current PCI	Description	Thickness (in.)			Elastic Modulus (psi)				Deflection Ratio	Design Subgrade	
			AC	PCC	AGBS	AC	PCC	Base	Subgrade		k, psi/in.	CBR, %
TWC-01A	39		12		12	284,100		30,000	14,160			8.0
TWC-02	53			10.5	12		5,000,000	93,340	183	0.33	163	
TWC-03	47			10.5	12		5,000,000	97,540	193	0.33	167	
TWC-04	93	No NDT										
TWD-01A	73		10		12	1,621,000		86,150	17,660			10.7
TWD-01	66		10		12	1,621,000		86,150	17,660			10.7
TWD-02	61		8	10.0		2,000,000	1,856,000		30,400			16.2
TWD-03	70		8	10.0		2,000,000	1,856,000		30,400			16.2
TWD-04	100		10		24	1,662,000		54,250	29,270			16.3
TWD1-01	100		7 to 11	9	12	2,000,000	661,700		21,560			11.3
TWD2-01	62											
TWD2-02	70		8		26	1,537,000		42,370	25,130			12.9
CONDA-01	62	Cargo Apron	6.5	7.5		1,400,000	660,900		19,750			8.8
TWD3-01	38		7 to 12.5		12.5 to 21	1,036,000		163,100	23,860			15.5
TWD3-02	57		12.5		12.5	1,036,000		163,100	23,860			15.5
TWD3-03	46	No NDT	12.5 to 7		12.5 to 21							

Table 8-3 continued

Back-calculation Summary

Section	Current	Description	Thickness (in.)			Elastic Modulus (psi)				Deflection	Design Subgrade	
Code	PCI		AC	PCC	AGBS	AC	PCC	Base	Subgrade[1]	Ratio	k, psi/in.	CBR, %
TWG-01	32			12	12		5,000,000	52,640	172		157	
TWH-01	66			11	12		5,000,000	91,390	193	0.75	172	
TWJ-01	72		7		12	1,699,000		59,830	21,420			13.7
TWJ-02	49		7 to 5		16 to 9	1,417,000		37,450	17,190			10.7
TWK-01A	100		2 to 5	12	12							
TWK-01	43			12	12		5,000,000	66,060	216	0.67	178	
TWK-02	56			13	8		5,000,000	84,020	195	0.67	166	
TWK-03	62			13	8		4,727,000	47,270	213	0.67	179	
TWL-01	22			12	16		5,000,000	50,110	207	0.32	178	
TWL-02	27		11	7		2,000,000	1,370,000		23,410			12.6
TWL-03	47	AC overlaid										
TWL-04	56	PCC										
CALSPAN-01	99	PCC		13	22							
TWM-01	67			13	13		5,000,000	64,190	215	0.29	173	
TWM-02	71		4.5	12.5		490,400	5,000,000		287		251	
TERMA-01	100	Small area linking terminal area, no NDT										
TERMA-02	35	Orinial terminal apron		12	12		5,000,000	52,640	172	0.92	157	
TERMA-03	66	GA apron	4.6		9	893,300		30,310	10,960			6.6
TERMA-04	96	Terminal aron expansion, PCC surface	6	14	12		5,000,000	609,800	273	0.81	230	
GAA-01	60	West ramp area		10	11		5,000,000	84,770	191	0.49	177	
GAA-02	80	West ramp area		6.5	12		4,224,000	42,240	134	0.66	117	
GAA-02A	85	West ramp area		6.5	12		4,026,000	40,260	141	0.66	133	
GAA-03	63	West ramp area		6.5	12		4,636,000	46,360	131	0.66	111	
GAA-03A	88	West ramp area		6.5	12							
HELIA-01	37	NY ARNG apron	2.5	7.0	12	294,100	4,412,000		169		145	
HELIA-02	25	NY ARNG apron PCC pads, no NDT		8	12							

Table 8-3 continued

SECTION 9.0

TRAFFIC ANALYSIS

SECTION 9.0 TRAFFIC ANALYSIS

A pavement design must consider the needs of the user to provide a safe, smooth, operational surface, and minimize maintenance requirements over the pavement's design life. In this regard, pavement failures generally occur gradually through increased distresses caused by successive aircraft usage. Therefore, a basic pre-requisite for pavement analysis is a realistic estimate of current and projected aircraft traffic. All airfield pavements at NFIA were evaluated based upon a 20-year design life.

Forecasted aircraft operations at NFIA were provided to RDM by MJI. The forecast was conducted by InterVISTAS for the master plan update. Annual aircraft operations are divided into commercial, cargo, military and general aviation (GA) categories without detailed aircraft fleet information. Besides baseline forecast, five other scenarios were also indicated. Based on InterVISTAS' data, average annual operations are computed based on 28 years forecast data from 2013 to 2040. Table 9-1 indicates a summary of annual aircraft operations. As shown in Scenario 4 in Table 9-1, cargo operations are anticipated for future large cargo airplanes such as the Boeing 747-8. Approximately 31 cargo operations are included in the commercial operations.

Average Annual Aircraft Operations

Traffic Category	Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
All Other US Market	3	3	3	3	3	2
US Leisure Market	2,329	2,329	2,329	3,076	2,329	1,787
Mexico & Caribbean	63	63	63	63	63	48
Trans-Atlantic (Europe)	-	195	38	-	-	-
Commercial Total	**2,395**	**2,590**	**2,433**	**3,141**	**2,395**	**1,837**
Cargo Operation	-	-	-	-	226	-
Military Operation	8,049	8,049	8,049	8,049	8,049	8,049
GA Operation	11,014	11,014	11,014	11,014	11,014	11,014

Table 9-1

The proposed traffic distributions on the runways were also provided by MJI. Approximately 10% of the traffic is using Runway 10R-28L. However, this is a short runway and future closure is being considered. Given this information, the Runway 10R-28L traffic was added to the Runway 6-24 traffic for pavement analysis. Traffic distributions for the two primary runways at NFIA are indicated in Table 9-2 and were used for subsequent pavement design traffic assumptions for various taxiways, aprons, etc.

Percentage of Traffic Distribution

Traffic Category	RW 10L	RW 28R	RW 6	RW24
Commercial	10	90		
Cargo Operation	10	90		
Military Operation	5	80	5	10
GA Operation	5		15	80

Table 9-2

InterVISTAS's report did not provide a detailed aircraft fleet mix information for each traffic category, which is necessary for pavement design and evaluation. Then, MJI provided representative aircraft types currently using the airport or are anticipated to use the airport in the proposed forecast. According to MJI, the Airbus 320 series is a typical aircraft for commercial use at Niagara Falls and the US market. The Boeing 757 is considered typical for the Mexico & Caribbean market and the Boeing 767-300 will be typical for the prescribed Trans-Atlantic operations in the future. The Boeing 747-8 is also considered for future cargo operations. There are approximately 31 cargo operations that appear to be included in commercial operations category based on InterVISTAS' data. Military aircraft usage is mainly from the C-130.

For GA operation, representative aircraft are obtained from live flight track website, www.flightware.com. Approximately two weeks departure flights from the website were obtained and grouped based on range of weights. The percentage of the aircraft in the GA operations was computed. Annual operations of representative GA aircraft were then calculated based on total GA operations. Table 9-3 summarizes the average annual aircraft operations in terms of aircraft types and take-off weights.

Average Annual Aircraft Operations

Aircraft	Take-off Weight	Traffic Forcast					
	lbs.	Baseline	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5
A320-200	163,000	2,332	2,332	2,332	3,079	2,332	1,789
B757	256,000	63	63	63	63	63	48
B767-300	361,000	-	195	38	-	-	-
B747-800	978,000	-	-	-	-	226	-
C-130	155,000	8,049	8,049	8,049	8,049	8,049	8,049
DC-9-32	90,700	97	97	97	97	97	97
Gulfstream 100	39,600	97	97	97	97	97	97
EMB-120	26,430	292	292	292	292	292	292
Learjet-55	20,000	487	487	487	487	487	487
Citatition V	18,000	877	877	877	877	877	877
SuperKingAir-B-200	15,000	1,754	1,754	1,754	1,754	1,754	1,754
Citation-525	10,000	975	975	975	975	975	975
Piper-32	3,750	6,433	6,433	6,433	6,433	6,433	6,433

Table 9-3

Combining all the data presented in the previous three tables allowed RDM to develop and estimate for the aircraft traffic distributions based on usage for the individual pavement facilities and are indicated in Table 9-4 through Table 9-9.

Total traffic from both runway ends was used for the pavement structural analysis and design. Taxiway pavement analysis and design traffic was assumed based on locations relative to the runway and apron facilities on the airfield. For the cargo apron, 31 annual operations from the A320-200 were added to the potential future large Boeing 747-8 airplanes. No specific aircraft types were available for the Calspan apron. However, it is assumed that C-130 operations on Runway 6-24 may go to this apron through Taxiway L or M.

It should be noted that the aircraft fleet mix and distributions to individual facility are based on limited information. For example, Runway 6-24 was not indicated to have commercial flight operations. But in reality, Runway 6-24 may receive commercial traffic when Runway 10L-28R is closed for maintenance. Therefore, the design traffic for Runway 10L-28R rehabilitation project in 2012 may also be considered for Runway 6-24 and will be discussed further in structural analysis in Section 11.0.

If there are significant deviations from the design traffic assumed in the tables, conclusions on pavement design and evaluation can be affected. Therefore, it is emphasized that MJI carefully examine the data and assumptions discussed in this section and report any changes to RDM for revision.

Pavement Design Traffic-Baseline (1)

Aircraft	**Take-off Weight**	**Airport**	**Pavement Facilities**							
	lbs.	**Total**	**RW10L-28R**	**RW 10R-28L**	**RW6-24**	**TW C**	**TW D, D1**	**TW D2, D3, G, H**	**TW J, K**	**TW L, M**
			a	*b*	*c*	*d=b+c*	*e=a+c*	*f=a+c*	*g*	*h=c*
A320-200	163,000	2,332	2,332	-	-	-	2,332	2,332	-	-
B757	256,000	63	63	-	-	-	63	63	-	-
B767-300	361,000	-	-	-	-	-	-	-	-	-
B747-800	978,000	-	-	-	-	-	-	-	-	-
C-130	155,000	8,049	6,842	-	1,207	1,207	8,049	-	-	1,207
DC-9-32	90,700	97	5	10	93	102	97	97	97	93
Gulfstream 100	39,600	97	5	10	93	102	97	97	97	93
EMB-120	26,430	292	15	29	278	307	292	292	292	278
Learjet-55	20,000	487	24	49	463	512	487	487	487	463
Citatition V	18,000	877	44	88	833	921	877	877	877	833
SuperKingAir-B-200	15,000	1,754	88	175	1,667	1,842	1,754	1,754	1,754	1,667
Citation-525	10,000	975	49	97	926	1,023	975	975	975	926
Piper-32	3,750	6,433	322	643	6,111	6,755	6,433	6,433	6,433	6,111

Table 9-4

Pavement Design Traffic–Baseline (2)

Aircraft	Take-off Weight	Airport	Aprons			
	lbs.	Total	Terminal	GA, ARNG	Cargo	Calspan
A320-200	163,000	2,332	2,332	-	31	-
B757	256,000	63	63	-	-	-
B767-300	361,000	-	-	-	-	-
B747-800	978,000	-	-	-	-	-
C-130	155,000	8,049	-	-	-	1,207
DC-9-32	90,700	97	-	97	-	
Gulfstream 100	39,600	97	-	97	-	
EMB-120	26,430	292	-	292	-	
Learjet-55	20,000	487	-	487	-	
Citatition V	18,000	877	-	877	-	
SuperKingAir-B-200	15,000	1,754	-	1,754	-	
Citation-525	10,000	975	-	975	-	
Piper-32	3,750	6,433	-	6,433	-	

Table 9-4 continued

Pavement Design Traffic–Scenario 1 (1)

Aircraft	**Take-off Weight**	**Airport**	**Pavement Facilities**							
	lbs.	**Total**	**RW10L-28R**	**RW 10R-28L**	**RW6-24**	**TW C**	**TW D, D1**	**TW D2, D3, G, H**	**TW J, K**	**TW L, M**
			a	*b*	*c*	*d=b+c*	*e=a+c*	*f=a+c*	*g*	*h=c*
A320-200	163,000	2,332	2,332	-	-	-	2,332	2,332	-	-
B757	256,000	63	63	-	-	-	63	63	-	-
B767-300	361,000	195	195	-	-	-	195	195	-	-
B747-800	978,000	-	-	-	-	-	-	-	-	-
C-130	155,000	8,049	6,842	-	1,207	1,207	8,049	-	-	1,207
DC-9-32	90,700	97	5	10	93	102	97	97	97	93
Gulfstream 100	39,600	97	5	10	93	102	97	97	97	93
EMB-120	26,430	292	15	29	278	307	292	292	292	278
Learjet-55	20,000	487	24	49	463	512	487	487	487	463
Citatition V	18,000	877	44	88	833	921	877	877	877	833
SuperKingAir-B-200	15,000	1,754	88	175	1,667	1,842	1,754	1,754	1,754	1,667
Citation-525	10,000	975	49	97	926	1,023	975	975	975	926
Piper-32	3,750	6,433	322	643	6,111	6,755	6,433	6,433	6,433	6,111

Table 9-5

Pavement Design Traffic–Scenario 1 (2)

Aircraft	Take-off Weight	Airport	Aprons			
	lbs.	Total	Terminal	GA, ARNG	Cargo	Calspan
A320-200	163,000	2,332	2,332	-	31	-
B757	256,000	63	63	-	-	-
B767-300	361,000	195	195	-	-	-
B747-800	978,000	-	-	-	-	-
C-130	155,000	8,049	-	-	-	1,207
DC-9-32	90,700	97	-	97	-	
Gulfstream 100	39,600	97	-	97	-	
EMB-120	26,430	292	-	292	-	
Learjet-55	20,000	487	-	487	-	
Citatition V	18,000	877	-	877	-	
SuperKingAir-B-200	15,000	1,754	-	1,754	-	
Citation-525	10,000	975	-	975	-	
Piper-32	3,750	6,433	-	6,433	-	

Table 9-5 continued

Pavement Design Traffic–Scenario 2 (1)

Aircraft	Take-off Weight	Airport	Pavement Facilities							
	lbs.	Total	RW10L-28R	RW 10R-28L	RW6-24	TW C	TW D, D1	TW D2, D3, G, H	TW J, K	TW L, M
			a	*b*	*c*	*d=b+c*	*e=a+c*	*f=a+c*	*g*	*h=c*
A320-200	163,000	2,332	2,332	-	-	-	2,332	2,332	-	-
B757	256,000	63	63	-	-	-	63	63	-	-
B767-300	361,000	38	38	-	-	-	38	38	-	-
B747-800	978,000	-	-	-	-	-	-	-	-	-
C-130	155,000	8,049	6,842	-	1,207	1,207	8,049	-	-	1,207
DC-9-32	90,700	97	5	10	93	102	97	97	97	93
Gulfstream 100	39,600	97	5	10	93	102	97	97	97	93
EMB-120	26,430	292	15	29	278	307	292	292	292	278
Learjet-55	20,000	487	24	49	463	512	487	487	487	463
Citatition V	18,000	877	44	88	833	921	877	877	877	833
SuperKingAir-B-200	15,000	1,754	88	175	1,667	1,842	1,754	1,754	1,754	1,667
Citation-525	10,000	975	49	97	926	1,023	975	975	975	926
Piper-32	3,750	6,433	322	643	6,111	6,755	6,433	6,433	6,433	6,111

Table 9-6

Pavement Design Traffic–Scenario 2 (2)

Aircraft	Take-off Weight	Airport	Aprons			
	lbs.	Total	Terminal	GA, ARNG	Cargo	Calspan
A320-200	163,000	2,332	2,332	-	31	-
B757	256,000	63	63	-	-	-
B767-300	361,000	38	38	-	-	-
B747-800	978,000	-	-	-	-	-
C-130	155,000	8,049	-	-	-	1,207
DC-9-32	90,700	97	-	97	-	
Gulfstream 100	39,600	97	-	97	-	
EMB-120	26,430	292	-	292	-	
Learjet-55	20,000	487	-	487	-	
Citatition V	18,000	877	-	877	-	
SuperKingAir-B-200	15,000	1,754	-	1,754	-	
Citation-525	10,000	975	-	975	-	
Piper-32	3,750	6,433	-	6,433	-	

Table 9-6 continued

Pavement Design Traffic–Scenario 3 (1)

Aircraft	**Take-off Weight**	**Airport**	**Pavement Facilities**							
	lbs.	**Total**	**RW10L-28R**	**RW 10R-28L**	**RW6-24**	**TW C**	**TW D, D1**	**TW D2, D3, G, H**	**TW J, K**	**TW L, M**
			a	*b*	*c*	*d=b+c*	*e=a+c*	*f=a+c*	*g*	*h=c*
A320-200	163,000	3,079	3,079	-	-	-	3,079	3,079	-	-
B757	256,000	63	63	-	-	-	63	63	-	-
B767-300	361,000	-	-	-	-	-	-	-	-	-
B747-800	978,000	-	-	-	-	-	-	-	-	-
C-130	155,000	8,049	6,842	-	1,207	1,207	8,049	-	-	1,207
DC-9-32	90,700	97	5	10	93	102	97	97	97	93
Gulfstream 100	39,600	97	5	10	93	102	97	97	97	93
EMB-120	26,430	292	15	29	278	307	292	292	292	278
Learjet-55	20,000	487	24	49	463	512	487	487	487	463
Citatition V	18,000	877	44	88	833	921	877	877	877	833
SuperKingAir-B-200	15,000	1,754	88	175	1,667	1,842	1,754	1,754	1,754	1,667
Citation-525	10,000	975	49	97	926	1,023	975	975	975	926
Piper-32	3,750	6,433	322	643	6,111	6,755	6,433	6,433	6,433	6,111

Table 9-7

Pavement Design Traffic–Scenario 3 (2)

Aircraft	Take-off Weight	Airport	Aprons			
	lbs.	Total	Terminal	GA, ARNG	Cargo	Calspan
A320-200	163,000	3,079	3,079	-	31	-
B757	256,000	63	63	-	-	-
B767-300	361,000	-	-	-	-	-
B747-800	978,000	-	-	-	-	-
C-130	155,000	8,049	-	-	-	1,207
DC-9-32	90,700	97	-	97	-	
Gulfstream 100	39,600	97	-	97	-	
EMB-120	26,430	292	-	292	-	
Learjet-55	20,000	487	-	487	-	
Citatition V	18,000	877	-	877	-	
SuperKingAir-B-200	15,000	1,754	-	1,754	-	
Citation-525	10,000	975	-	975	-	
Piper-32	3,750	6,433	-	6,433	-	

Table 9-7 continued

Pavement Design Traffic–Scenario 4 (1)

Aircraft	Take-off Weight	Airport	Pavement Facilities							
	lbs.	Total	RW10L-28R	RW 10R-28L	RW6-24	TW C	TW D, D1	TW D2, D3, G, H	TW J, K	TW L, M
			a	*b*	*c*	*d=b+c*	*e=a+c*	*f=a+c*	*g*	*h=c*
A320-200	163,000	2,332	2,332	-	-	-	2,332	2,332	-	-
B757	256,000	63	63	-	-	-	63	63	-	-
B767-300	361,000	-	-	-	-	-	-	-	-	-
B747-800	978,000	226	226	-	-	-	226	226	-	-
C-130	155,000	8,049	6,842	-	1,207	1,207	8,049	-	-	1,207
DC-9-32	90,700	97	5	10	93	102	97	97	97	93
Gulfstream 100	39,600	97	5	10	93	102	97	97	97	93
EMB-120	26,430	292	15	29	278	307	292	292	292	278
Learjet-55	20,000	487	24	49	463	512	487	487	487	463
Citatition V	18,000	877	44	88	833	921	877	877	877	833
SuperKingAir-B-200	15,000	1,754	88	175	1,667	1,842	1,754	1,754	1,754	1,667
Citation-525	10,000	975	49	97	926	1,023	975	975	975	926
Piper-32	3,750	6,433	322	643	6,111	6,755	6,433	6,433	6,433	6,111

Table 9-8

Pavement Design Traffic–Scenario 4 (2)

Aircraft	**Take-off Weight**	**Airport**	**Aprons**			
	lbs.	**Total**	**Terminal**	**GA, ARNG**	**Cargo**	**Calspan**
A320-200	163,000	2,332	2,332	-	31	-
B757	256,000	63	63	-	-	-
B767-300	361,000	-	-	-	-	-
B747-800	978,000	226	226	-	226	-
C-130	155,000	8,049	-	-	-	1,207
DC-9-32	90,700	97	-	97	-	
Gulfstream 100	39,600	97	-	97	-	
EMB-120	26,430	292	-	292	-	
Learjet-55	20,000	487	-	487	-	
Citatition V	18,000	877	-	877	-	
SuperKingAir-B-200	15,000	1,754	-	1,754	-	
Citation-525	10,000	975	-	975	-	
Piper-32	3,750	6,433	-	6,433	-	

Table 9-8 continued

Pavement Design Traffic–Scenario 5 (1)

Aircraft	**Take-off Weight**	**Airport**	**Pavement Facilities**							
	lbs.	**Total**	**RW10L-28R**	**RW 10R-28L**	**RW6-24**	**TW C**	**TW D, D1**	**TW D2, D3, G, H**	**TW J, K**	**TW L, M**
			a	*b*	*c*	*d=b+c*	*e=a+c*	*f=a+c*	*g*	*h=c*
A320-200	163,000	1,789	1,789	-	-	-	1,789	1,789	-	-
B757	256,000	48	48	-	-	-	48	48	-	-
B767-300	361,000	-	-	-	-	-	-	-	-	-
B747-800	978,000	-	-	-	-	-	-	-	-	-
C-130	155,000	8,049	6,842	-	1,207	1,207	8,049		-	1,207
DC-9-32	90,700	97	5	10	93	102	97	97	97	93
Gulfstream 100	39,600	97	5	10	93	102	97	97	97	93
EMB-120	26,430	292	15	29	278	307	292	292	292	278
Learjet-55	20,000	487	24	49	463	512	487	487	487	463
Citatition V	18,000	877	44	88	833	921	877	877	877	833
SuperKingAir-B-200	15,000	1,754	88	175	1,667	1,842	1,754	1,754	1,754	1,667
Citation-525	10,000	975	49	97	926	1,023	975	975	975	926
Piper-32	3,750	6,433	322	643	6,111	6,755	6,433	6,433	6,433	6,111

Table 9-9

Pavement Design Traffic–Scenario 5 (2)

Aircraft	Take-off Weight	Airport	Aprons			
	lbs.	Total	Terminal	GA, ARNG	Cargo	Calspan
A320-200	163,000	1,789	1,789	-	31	-
B757	256,000	48	48	-	-	-
B767-300	361,000	-	-	-	-	-
B747-800	978,000	-	-	-	-	-
C-130	155,000	8,049	-	-	-	1,207
DC-9-32	90,700	97	-	97	-	
Gulfstream 100	39,600	97	-	97	-	
EMB-120	26,430	292	-	292	-	
Learjet-55	20,000	487	-	487	-	
Citatition V	18,000	877	-	877	-	
SuperKingAir-B-200	15,000	1,754	-	1,754	-	
Citation-525	10,000	975	-	975	-	
Piper-32	3,750	6,433	-	6,433	-	

Table 9-9 continued

SECTION 10.0

STRUCTURAL ANALYSIS METHODS

SECTION 10.0 STRUCTURAL ANALYSIS METHODS

Layered elastic analysis was employed to evaluate the structural integrity of airfield pavements based on anticipated future loading conditions. The layered elastic analytical procedures are included in FAA's Advisory Circular 150/5320-6E, "*Airport Pavement Design and Evaluation*". The structural analysis computational procedures are incorporated in the computer program, FAARFIELD, developed by the FAA.

10.1 MECHANISTIC - EMPIRICAL DESIGN CONCEPT

Mechanistic design methods employ fundamental mechanistic theories to compute the pavement responses from imposed aircraft loads based on the engineering properties of the pavement materials. FAA's FAARFIELD program uses layered elastic theory for the flexible (AC) pavement response calculations. Sophisticated three-dimensional (3D) finite element methods are implemented for the rigid (PCC) pavement response (edge stress) computations. The 3-D model makes it possible to directly calculate the edge stress of the PCC slab which is used in the failure model. The fundamental engineering properties of the pavement materials are the elastic modulus and Poisson ratio.

For flexible pavement analysis, two failure modes, rutting and fatigue surface cracking, are considered critical to performance. Rutting is related to the vertical compressive strain at the top of the subgrade and the fatigue cracking is related to the tensile strain at the bottom of the AC layer. For rigid pavements, the failure criterion is the PCC fatigue cracking related to the tensile stress at the bottom of the PCC slab, computed at the edge of the slab. Mechanistic-empirical stress and strain criteria are contained in FAA Research Reports RD-74-199, *"Development of a Structural Design Procedure for Flexible Airport Pavements"* and RD-77-81, *"Development of a Structural Design Procedure for Rigid Airport Pavements"*. Modifications to the failure criteria and computational models have been made in recent years as results from the research programs conducted at the FAA's National Airport Pavement Test Facility (NAPTF) became available. These modifications have been incorporated in the FAARFIELD program.

Damage to the pavement caused by the strain or stress from the imposed load accumulates with the contribution from each aircraft in the fleet mix. FAARFIELD utilizes a cumulative damage model, whereby the structural damage is computed for each aircraft and summed until the terminal condition is reached, i.e., when the cumulative damage factor (CDF) is equal to 1.0 for flexible pavement. For rigid pavement, CDF = 1.0 represents initial bottom-up cracking, with the design terminal condition defined as a Structural Condition Index (SCI) = 80. These concepts eliminate the need for the critical design aircraft as required in prior conventional design procedure.

Rubblized PCC layer is also available in FAARFIELD for user to design and evaluate asphalt overlay pavement on rubblized PCC slabs.

10.2 DESIGN INPUTS

For proper execution of FAA's design procedures, the following user inputs are required:

- **Subgrade E, *k*, and/or CBR** - computed from NDT to establish subgrade strength (see Section 8.0) for structural evaluation and design.
- **Estimated Traffic** – as described in Section 9.0.
- **Pavement Thickness** – obtained from construction history record research and core verification as described in Section 8.0.

SECTION 11.0

STRUCTURAL EVALUATION RESULTS

SECTION 11.0 STRUCTURAL EVALUATION RESULTS

In developing a Pavement Management Plan, a primary requirement is to evaluate the existing structural condition of the airfield pavement with respect to projected traffic. For evaluation purposes, the primary outputs are the estimated structural life, Pavement Classification Number (PCN) for runways, and the requirements for pavement strengthening.

11.1 ESTIMATED STRUCTURAL LIFE

The estimated structural life is essentially the remaining time until programmed rehabilitation (i.e., theoretical fatigue life). The structural life estimate is used to prioritize and program repairs on a relative basis and does not necessarily indicate the time until structural failure or facility inoperability. Although a 20-year analysis period was utilized, due to the uncertainties inherent in aviation demand forecasting, the reported estimated life was defaulted to 10 years where theoretical computations suggested a life greater than 10 years.

The structural life analysis gives a realistic indication of pavement needs and rehabilitation priorities. The analysis should be used primarily to develop a priority of needs, rather than to precisely estimate pavement life. Although the analysis has proven reasonably accurate in predicting structural life, an increase or decrease in aircraft operations or weights can affect the service life estimate.

The asphalt overlay design on the existing asphalt overlaid PCC pavement can have quite different results depending on the existing pavement structure, subgrade strength, and traffic. It can be designed based on rigid pavement failure model or flexible pavement failure model. This in turn makes the estimated remaining structural life more difficult to predict.

As indicated in FAA’s advisory circular, when the design overlay thickness is close to the thickness of the existing PCC slab, the overlaid pavement functions more or less like flexible pavements. Most of the AC overlaid pavements at NFIA, except rubblized PCC of Runway 10L-28R, have AC overlay thickness close to or greater than the underlying PCC pavements. These pavement sections were evaluated as flexible pavements.

There are six traffic prediction scenarios for NFIA. However, the difference is not significant. Structural evaluations for all traffic scenarios were performed and not much difference were indicated by the computations among traffic scenarios. This is mainly attributed to less variation in commercial aircraft operations provided by the A320 airplane. It was indicated by computations that most of pavement sections have adequate structural capacity with more than 10 years remaining life for all traffic scenarios. A few sections were indicated with less than two (2) to 10 years remaining life for all traffic scenarios. These sections were indicated in Table 11-1 “Inadequate Pavement Sections”.

It should be noted that the expected life computations address potential load-induced damage to the pavement and essentially constitute a structural evaluation. Environmental or construction related distress categorized by the Pavement Condition Index (PCI) constitute a functional evaluation. Integration of the results of both analyses will dictate rehabilitation strategy. There are some pavement sections, for example, RW624-01, 01A, TWD3-01, etc., that have PCI less than 40. However, based on pavement section thicknesses, these sections are structurally adequate. Therefore, structurally evaluation results in this section should be combined with functional analysis discussed earlier to formulate a comprehensive pavement maintenance program.

Inadequate Pavement Sections

Section	Current	Description	Thickness (in.)			Remaining Life
Code	PCI		AC	PCC	AGBS	yr.
CONDA-01	62	Cargo Apron	6.5	7.5		5 to 10
TWG-01	32	Apron Taxiway		12	12	<2
TWH-01	66	Apron Taxiway		11	12	<2
TERMA-02	35	Original terminal apron		12	12	<2
TERMA-03	66	GA apron	4.6		9	<2
GAA-02	80	West ramp area		6.5	12	<2
GAA-02A	85	West ramp area		6.5	12	<2
GAA-03	63	West ramp area		6.5	12	<2
GAA-03A	88	West ramp area		6.5	12	<2
HELIA-01	37	NY ARNG apron	2.5	7.0	12	<2
HELIA-02	25	NY ARNG apron PCC pads, no NDT		8	12	<10
OVR28-1B	65	Taxiway D/RW 10L-28R Intersection	6" Base	11	14	<10

Table 11-1

11.2 EFFECT OF TRAFFIC ON STRUCTURAL EVALUATION

The results shown in Table 11-1 were based on assumed design traffic and distributions. If these assumptions change, the results can also change. For example, cargo apron was assumed to have A320 aircraft operations. If future Boeing 747 cargo airplane uses the cargo apron, current cargo apron will not be structurally adequate with less than two (2) years life. Taxiway G and H are near the Runway 6 end and probably serve apron traffic. All A320 aircraft for the apron was assumed to use these taxiways and have contributed to the evaluation of the less than two (2) years structural life.

For the general aviation aprons, if the DC-9 aircraft was removed from the proposed fleet mix, these sections are structurally adequate. Therefore, traffic assumptions for the sections listed in Table 11-1, as well as others, should be checked carefully.

Traffic forecast for this project is relatively basic without detailed aircraft fleet mix information. Design traffic for the Runway 10L-28R rehabilitation project conducted in 2012 provided a more detailed traffic pattern and was used to further check the traffic effects on pavement structural conditions. The check was only performed for the primary runways, Runway 10L-28R and Runway 6-24, and Taxiway D. The check traffic is indicated in Table 11-2. It was indicated that the Runway 10L-28R, Runway 6-24, and Taxiway D are all structurally adequate for the traffic in Table 11-2.

Design Check Traffic from Prior Project

Aircraft	**Weight**	**Forecasted Annual Operation**					**Average Annual**	
	lb	**2011**	**2015**	**2020**	**2025**	**2030**	**Operation**	**Departure**
A319	142,000	468	636	471	432	426	**487**	**243**
A320	151,000		368	857	1,057	1,225	**877**	**438**
B737-300	140,000	48	100	129	144	160	**116**	**58**
B737-400	150,500	834	1,473	1,542	1,638	1,757	**1,449**	**724**
B737-800	174,700	99	301	514	673	799	**477**	**239**
B757-200	256,000	6	33	171	192	213	**123**	**62**
B767-200	361,000	48	100	171	192	213	**145**	**72**
MD88	150,000	147	335	428	480	532	**384**	**192**
C-130	155,000	9,440	9,440	9,440	9,440	9,440	**9,440**	**4,720**
Other Military	29,100	327	327	327	327	327	**327**	**164**
Single Engine	5,000	16,994	17,661	18,540	19,475	20,470	**18,628**	**9,314**
Multi-Engine	30,000	5,842	6,071	6,373	6,695	7,037	**6,404**	**3,202**
Small Jet	50,000	1,593	1,656	1,738	1,826	1,919	**1,746**	**873**

Table 11-2

11.3 REHABILITATION RECOMMENDATIONS

Generally, if the estimated structural life is greater than 10 years, pavement maintenance or repairs will be governed by the functional condition survey results. When the estimated structural life is less than 10 years, strengthening should be considered for the pavement sections based on the projected traffic.

As shown in Table 11-1, some sections are not considered primary facilities. Further, those sections may have less traffic than assumed for the computations. According to MJI, final planning of airfield facilities is currently under discussion. For example, Runway 10R-28L may be closed in the future and the Boeing 747-8 cargo airplane is considered in the evaluation of the geometry for the airfield facilities.

However, for budget planning purposes, strengthening with asphalt or PCC surface were considered for those facilities with less than 10 years structural life. Generally, reconstruction options were considered when excessive grade changes were required. The results are indicated in Table 11-3.

As discussed, it is very likely that lighter traffic may use the subject facilities. Strengthening may not be necessary for those facilities that are currently not utilizing the prescribed traffic pattern. Therefore, design options indicated in Table 11-3 should be used for budget planning and prioritization. Top priority may be given to OVER28-1B, TERMA-02, Taxiway G, and Taxiway H based on locations.

Pavement rehabilitation is a process that should consider not only structural adequacy but also functional condition of the pavements. A pavement section in good condition does not necessarily mean it has adequate load carrying capacity. Conversely, structurally sound pavements may have poor surface conditions resulting from material or climatic impacts that can also influence rehabilitation requirements. Established pavement management systems with periodic updates facilitate pavement condition monitoring and maintenance candidate identification.

For sections that are structurally adequate but with poor functional condition in terms of PCI, rehabilitation such as reconstruction may also need to be considered depending on distress types. Detail rehabilitation design results providing material and layer thickness requirements are included in Section 12.0. The following discusses general considerations of different strengthening methods.

11.3.1 STRUCTURAL OVERLAY

Existing pavements at NFIA are primarily composed of asphalt surfaced pavements. Generally, asphalt overlay designs are provided to the sections that need strengthening. However, it may not be feasible or cost-effective to overlay the existing pavements if grade restraints or other issues such as drainage exist. Therefore, reconstruction may also need to be considered.

The asphalt overlay design on existing PCC pavements can have quite different results. Both rigid and flexible models were used for overlay design to check sections requiring strengthening. Engineering judgment was used for the required overlay thicknesses.

The overlay thickness designs of existing pavements are based on in-situ subgrade strength estimates and do not consider FAA frost design requirements. Consequently, it was assumed that sufficient non-frost susceptible subbase exists to satisfy FAA full or partial depth frost requirements. This should be verified during project level design analysis.

11.3.2 PAVEMENT RECONSTRUCTION

Flexible and rigid pavements are considered for reconstruction. Thickness designs were based on procedures in FAA's Advisory Circular 150/5320-6E.

A sufficient thickness of non-frost susceptible subbase materials was assumed in reconstruction areas; therefore, pavement thickness designs are based on evaluated strengths and not the FAA frost design methods. The need for additional non-frost susceptible subbase should be verified during project level design analysis.

Stabilized base (STBS) materials were incorporated into the design when aircraft gross weight exceeded 100,000 lbs. The design flexural strength of the PCC is 685 psi.

Rehabilitation Design for Budget Planning

Section Code	Current PCI	Description	Strengthening	
			AC Reconstruction	PCC Reconstruction
CONDA-01	62	Cargo Apron	6.5" AC overlay	14" PCC on existing AC surface
TWG-01	32	Apron Taxiway	n/a	14" PCC/6" AC base on existing AGBS
TWH-01	66	Apron Taxiway	n/a	14" PCC/6" AC base on existing AGBS
TERMA-02	35	Original terminal apron	n/a	14" PCC/6" AC base on existing AGBS
TERMA-03	66	GA apron	3" AC overlay	9" PCC /existing AGBS
GAA-02	80	West ramp area	Removing 6.5" PCC, Replacing 6.5" AC	9" PCC /existing AGBS
GAA-02A	85	West ramp area	Removing 6.5" PCC, Replacing 6.5" AC	9" PCC /existing AGBS
GAA-03	63	West ramp area	Removing 6.5" PCC, Replacing 6.5" AC	9" PCC /existing AGBS
GAA-03A	88	West ramp area	Removing 6.5" PCC, Replacing 6.5" AC	9" PCC /existing AGBS
HELIA-01	37	NY ARNG apron	Removing AC and PCC, Replacing 6.5" AC	9" PCC /existing AGBS
HELIA-02	25	NY ARNG apron PCC pads, no NDT	Removing PCC, Replacing 6.5" AC	9" PCC /existing AGBS
OVR28-1B	65	Taxiway D/RW 10L-28R Intersection	Removing 11"PCC, Replacing 11" AC	Removing 11"PCC and milling 2" AC, Replacing 13" PCC

Table 11-3

11.4 PAVEMENT CLASSIFICATION NUMBER

11.4.1 GENERAL CONRCEPTS

FAA’s standard pavement strength reporting methods are addressed in FAA’s Advisory Circular 150/5335-5B, *“Standardized Method of Reporting Airport Pavement Strength-PCN”*. According to Advisory Circular 150/5335-5B, runway pavement strength should be reported as the Pavement Classification Number (PCN). Correspondingly, there is an Aircraft Classification Number (ACN) for each aircraft. The ACN-PCN system was developed and adopted by the International Civil Aviation Organization (ICAO) through which it is possible to express the effect of individual aircraft on different pavements by a single unique number which varies according to pavement type, traffic volume, and subgrade strength without specifying a particular thickness.

Because ACN and PCN values are evaluated using the same technical basis, the PCN can be used by the airport to make decisions on aircraft operational weight and frequency by comparing the PCN with the ACN of the aircraft in question. The system is structured so that a pavement with a particular PCN value can support without weight restrictions to an aircraft which has an ACN value equal to or less than the pavement's PCN value.

The ACN and PCN values are defined as follows:

> **ACN -** A number which expresses the relative structural effect of an aircraft on different pavement types for specified standard subgrade strengths in terms of a standard single-wheel load.
>
> **PCN** - A number which expresses the relative load-carrying capacity of a pavement in terms of a standard single-wheel load.

The ACN-PCN is a coded index with the following formats:

PCN Reporting Format

PCN Number	**Pavement Type**	**Subgrade Strength**	**Tire Pressure**	**Determination Method**
Numerical Value	R-Rigid F-Flexible	A B C D	W X Y Z	T-Technical U-Using Aircraft

Subgrade Strength Code

Code	**Category**	Flexible Pavement **CBR, %**	Rigid Pavement ***k*, psi/in**
A	High	Over 13	Over 400
B	Medium	8 - 13	201 - 400
C	Low	4 - 8	100 - 200
D	Ultralow	< 4	< 100

Tire Pressure Code

Code	**Category**	**Pressure, psi**
W	High	no limit
X	Medium	146 - 217
Y	Low	74 - 145
Z	Ultralow	0 – 73

As described above, PCN of existing runway pavements depends on subgrade strength, design traffic, and evaluated pavement thickness. Computation of PCN with COMFAA still uses a “Design Aircraft” concept, which is not according to the prescribed standard design procedure currently followed with the FAARFIELD design software. All aircraft in the fleet mix is converted to a design aircraft and allowable load limit of that aircraft is then computed for PCN determination. Based on AC150/5335-5B, the greatest PCN from one of the aircraft in the fleet mix should generally be selected for reporting purpose.

However, this procedure sometimes may indicate a high PCN value when relatively low operations from a single aircraft in the fleet mix are forecasted for the proposed design. If the highest PCN is then reported in this case, the impression may be that the runway is over designed. Conversely, if a smaller PCN is selected, the runway use may be limited while the FAARFIELD analysis of the proposed design fleet mix may indicate otherwise. Therefore, engineering judgment has to be employed by considering COMFAA and FAARFIELD results together.

11.4.2 RESULTS AND LIMITATIONS

The FAA's COMFAA computer program was used to compute the PCN for the runway pavement sections. For pavements of variable strength, the controlling PCN numerical value for the weakest feature of the pavement should be reported by the airport as the strength of the pavement.

As discussed before, both Runway 10L-28R and Runway 6-24 have more than 10 years structural life. For PCN computation purpose, evaluation traffic was created by adding planned B-767 and B747-8 to the design traffic. The highest PCN values were obtained from the B747-8 aircraft due to infrequent operations. Since FAARFIELD analysis indicated that existing runway pavements are capable to support the aircraft use at indicated frequencies, the B-747-8 aircraft ACN was selected for reporting runway strength.

Runway 10L-28R has a PCC section at Runway 10L that resulted in PCN weaker than what was indicated when reviewing the AC on rubblized PCC sections. Therefore, Runway 10L-28R was reported as a rigid pavement section.

For Runway 10R-28L, all aircraft from GA operations were used in COMFAA computation. It was indicated that PCN from DC-9-32 (90,700 lbs.) is 51 which is significantly higher than its ACN of 25. In order not to provide an overestimation of strength, the ACN of Gulfstream-V at 90,700 lbs was used to report PCN of this runway.

In summary,

The PCN for existing Runway 10L-28R may be reported as:

74/R/B/W/T

The PCN for existing Runway 6-24 may be reported as:

69/F/B/W/T

The PCN for existing Runway 10R-28L may be reported as:

29/F/C/X/T

It is noted that prior project design traffic before this update was reviewed when evaluating Runway 10L-28R and Runway 6-24 pavement strengths in terms of PCN. Although the PCN values were not the same as indicated above, they were in line with the conclusions discussed above.

ACN-PCN system depends on the evaluation of such elements as pavement structure, aircraft weights, frequencies, and fleet mix. It should not be considered equivalent to the structural evaluation as discussed in previous sections. High PCNs sometimes may be obtained when there are infrequent uses of heavy aircraft in the fleet mix, which appeared to be the case for this project. Therefore, the airport should re-evaluate pavement strength when operational frequencies and/or weights from these aircraft change in the future.

SECTION 12.0

REHABILITATION ANALYSIS

SECTION 12.0 REHABILITATION ANALYSIS

As previously discussed, the layered elastic evaluation describes the structural condition of the pavement system, while the PCI primarily describes the functional condition of the pavement surface. Integration of the layered elastic analysis and the PCI results will determine cost-effective rehabilitation and/or maintenance strategies based on both the structural and functional requirements for the pavement system.

While no firm rules govern in prioritizing pavement rehabilitation projects, the following considerations are used for establishing the recommended repair and rehabilitation program at NFIA.

1. The functional condition of the existing pavement is evaluated with respect to PCI as discussed in Section 6.0. In Section 5.0, a Critical PCI of 70 was used as a decision point for programming pavement repairs or rehabilitation for primary airport facilities based on the functional requirements for the operational surface. For secondary facilities (General Aviation Aprons) a PCI of 56 was generally used as a decision point for programming repairs and rehabilitation. Generally, any pavement with a PCI below 50 was scheduled for major rehabilitation in lieu of routine maintenance policies as indicated in Section 13.0. However, there are some exceptions to this policy based on predicted PCI values, experience, and engineering judgment.

2. The structural condition of the pavement is evaluated with respect to its estimated structural life, PCN, and strengthening requirements. The structural life estimate enables selection of the optimal timing to affect structural strengthening based on NDT results and structural analysis. A pavement section was chosen for strengthening or reconstruction based on the calculated remaining structural life being less than ten years.

3. The operational effects of scheduling pavement repairs are also considered in an attempt to minimize disruptions to airport operations. For example, when the runway is scheduled for rehabilitation, it may also be desirable to shift the rehabilitation timing of an adjacent facility, such as an exit taxiway, to coincide with the runway project. This would preclude additional closures of major facilities to rehabilitate secondary facilities.

In some cases, the PCI (functional) and estimated life (structural) projections may not appear to coincide, depending on facility age, distress type, pavement strength, and projected traffic. For example, a facility may be in very good or excellent condition, but may require an overlay in the future to accommodate heavy traffic.

The classic example is a newly built thin asphalt pavement that is in excellent condition. If the facility would begin receiving heavy B747 traffic, the pavement would fail shortly, even though this is not reflected in the current or projected PCI. Here, the problem is structural and not within the capabilities of the functionally based PCI methodology.

On the other hand, a pavement may have a low PCI, but is of adequate strength to accommodate expected traffic. In this case, the low PCI may be a result of environmental action or a prior loading condition that no longer exists. Here, the problem is functional rather than structural and the recommended repairs would reflect restoration of the operational surface (e.g., to limit FOD) rather than the need to strengthen the pavement system.

Therefore, in developing a Pavement Management System (PMS) that includes prioritization and repair elements, the basic underlying theory governing the decision making process must be understood. The multiple factors which affect pavement performance, such as environment, pavement strength, age, distress type, theoretical computations, the effects of changing aircraft loads, etc., must be carefully integrated in developing a cost-effective long range rehabilitation program.

The following is a brief discussion of actions indicated for rehabilitation and maintenance of airfield pavements at NFIA based on functional and structural analyses. Major results from all study elements are summarized in Table 12-1 “Maintenance Options by Pavement Sections”. The corresponding pavement thicknesses utilized for this study are also listed in the table. Rehabilitation options are presented as structural overlay, mill and replace (improving functional condition), and concrete pavement restoration (CPR) or reconstruction. The reconstruction can be considered as an alternative to the mill and overlay option if the grade tie-in to the adjacent pavements is not feasible. For functional condition improvements, preventive and stop-gap maintenance activities are recommended.

All reconstruction design sections are assumed to have sufficient frost protection beneath the existing pavement section and no additional material will be needed below. Design sections may require a significant amount of material below the existing pavement section in order to prevent frost damage and should be analyzed as a project level design.

12.1 CALSPAN APRON (CALSPAN)

CALSPAN consists of one (1) pavement section. The 2012 and predicted 2017 functional conditions for the pavement section are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	99	Good	86	Good

CALSPAN is structurally and functionally adequate, therefore only routine preventative maintenance is required.

12.2 CONDOR APRON (CONDA)

CONDA consists of one (1) pavement section. The 2012 and predicted 2017 functional conditions for the pavement section are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	62	Fair	54	Poor

Section 01, consisting of approximately 94,000 s.f. of 6.5 inches AC on 7.5 inches PCC is structurally inadequate. It was observed during the condition survey that the Condor Apron is no longer in use by airfield operations. Therefore, this section has been excluded from the Maintenance and Rehabilitation (M&R) plan. However, if the airport authority decides to use this apron for cargo operation in the future then reconstruction is the recommended rehabilitation option. Reconstruction with the following pavement section should be completed:

14" PCC / Existing AC surface

12.3 GENERAL AVIATION APRON (GAA)

The general aviation apron consists of five (5) pavement sections. The 2012 and predicted 2017 functional conditions for each pavement section are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	60	Fair	51	Poor
02	80	Satisfactory	71	Satisfactory
03	63	Fair	56	Fair
02A	85	Satisfactory	74	Satisfactory
03A	88	Good	76	Satisfactory

Section 01 within general aviation apron has an adequate structural condition and the current PCI is just above the critical PCI of 56, therefore only routine preventative maintenance is required for Section 01.

The remaining four (4) pavement sections are currently in “Fair” or “Good” condition. All these pavement sections are composed of 6.5 inches PCC on 12 inches aggregate base. These pavement sections are structurally inadequate for the forecasted traffic loading. As discussed earlier, these pavement sections currently do not receive the heavy traffic that are scheduled for the future traffic condition. If these assumptions change, the results can also change. For example, if the DC-9 aircraft is removed from the future traffic scenario, these sections will be considered structurally adequate. Therefore, traffic assumptions for those sections in Table 11-1 should be checked carefully. To accommodate the future traffic loading condition, these four sections need to be reconstructed with following section:

9" PCC /Existing AGBS or Mill Existing 6.5" PCC and Replacing 6.5" AC

Project level investigation and design should be performed in order to choose the best alternative.

12.4 HELIPAD APRON (HELIA)

The Helipad apron consists of two (2) pavement sections. The 2012 and predicted 2017 functional conditions for each pavement section are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	37	Very Poor	31	Very Poor
02	25	Serious	12	Serious

Section 01, consisting of approximately 164,000 s.f. of 2.5 inches of AC on 7 inches PCC on 12 inches of aggregate base (AGBS) and Section 02, consisting of approximately 28,000 s.f. of 8.0 inches of PCC on 12.0 inches of aggregate base. Based on the current PCI, both sections are functionally inadequate for airport operations.

The traffic data for these pavement sections were not available; therefore GA traffic was used to compute structural life. Based on structural computations, both the sections are structurally inadequate and require strengthening to accommodate the future traffic loading condition. The reconstruction section analyzed is:

9" PCC / Existing AGBS

Project level investigation and design should be performed in order to choose the best alternative.

12.5 OVERRUN 10L (OVER10)

The Overrun 10 consists of two (2) pavement sections. The 2012 and predicted 2017 functional conditions for each pavement section are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	91	Good	79	Satisfactory
02	94	Good	84	Satisfactory

Overrun 10 is currently in “Good” condition and is structurally adequate for the forecasted traffic. Therefore routine, preventative maintenance is recommended to maintain the functional condition of the pavement.

12.6 OVERRUN 28 (OVER28)

The Overrun 28 consists of three (3) pavement sections. The 2012 and predicted 2017 functional conditions for each pavement section are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01A	100	Good	96	Good
01B	65	Fair	51	Poor
02	86	Good	73	Satisfactory

Overrun 28 Sections 01A and 02 are currently in “Good” condition and structurally adequate for the forecasted traffic. Therefore routine, preventative maintenance is recommended to maintain the functional condition of the pavement.

Section 01B is part of intersection of Taxiway D and Overrun 28, consisting of approximately 30,000 s.f. of 11 inches PCC on 6.0 inches AC on 14 inches of AGBS. However, the section is structurally inadequate with an expected structural life of less than ten (10) years. It is recommended that Section 01B be reconstructed in order to strengthen the pavement with a section of:

13" PCC / Existing 4” AC / Existing Aggregate Base

Project level investigation and design should be performed in order to choose the best reconstruction option.

12.7 RUNWAY 10L-28R (RW10L)

Runway 10L-28R consists of nine (9) pavement sections. The 2012 and predicted 2017 PCI for the pavement sections are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
1	91	Good	79	Satisfactory
2	100	Good	96	Good
3	100	Good	96	Good
4	100	Good	96	Good
5	100	Good	96	Good

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
02A	100	Good	96	Good
03A	100	Good	96	Good
04A	100	Good	96	Good
05A	100	Good	96	Good

From above, all pavement sections within Runway 10L-28R are in “Good” condition. Runway 10L-28R pavement is structurally adequate for the forecasted loading. The existing Pavement Classification Number (PCN) is 74/R/B/W/T for Runway 10L-28R.

Based on current functional and structural condition, rehabilitation will not be required and routine maintenance should be completed to maintain a functionally safe surface. Preventative maintenance should be used to maintain a PCI above the critical PCI of 70.

12.8 RUNWAY 10R-28L (RW10R)

Runway 10R-28L consists of three (3) pavement sections. The 2012 and predicted 2017 PCI for the pavement sections are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	28	Very Poor	26	Very Poor
02	41	Poor	32	Very Poor
01A	76	Satisfactory	62	Fair

Section 01A within Runway 10R-28L has an adequate structural condition and the current PCI is well above the critical PCI of 56, therefore only routine preventative maintenance is required for Section 01A.

Runway 10R-28L Sections 01 and 02 are not functionally adequate. However both pavement sections are structurally adequate; therefore, functional condition will govern the rehabilitation options.

12.8.1 RW10R SECTION 01

Runway 10R-28L Section 01 is approximately 245,000 s.f. of asphalt pavement ranging from 10 inches to 11 inches thick on 8 inches to 12 inches of aggregate base (AGBS). Due to the low traffic loads, Section 01 is structurally adequate; therefore, functional condition will govern the rehabilitation. Based on current PCI, surface reconstruction has been chosen as the option to correct the functional inadequacies of the Section 01. The reconstruction section is:

10" AC / Existing Aggregate Base

12.8.2 RW10R SECTION 02

Section 02, consisting of approximately 6,500 s.f. of 12 inches of PCC on 15 inches of AGBS, has a 2012 PCI of 41 or “Poor” declining to a predicted 2017 PCI of 32 or “Very Poor”. This section is structurally adequate to handle the forecasted traffic; therefore, functional condition will govern the rehabilitation options. Due to the lack of load related and high severity distresses within the pavement section CPR is the chosen method of rehabilitation. Repairs included within the CPR will be crack sealing, patching, and joint re-sealing.

12.9 RUNWAY 6-24 (RW624)

Runway 6-24 consists of seven (7) pavement sections. The 2012 and predicted 2017 PCI for the pavement sections are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	16	Serious	14	Serious
02	87	Good	74	Satisfactory
03	77	Satisfactory	63	Fair
04	100	Good	96	Good
01A	19	Serious	17	Serious
03A	79	Satisfactory	65	Fair
04A	100	Good	96	Good

All but two (2) pavement sections within Runway 6-24 are in “Satisfactory” or “Good” condition and structurally adequate for the forecasted loading. The existing Pavement Classification Number (PCN) is 69/F/B/W/T. Based on the current functional and structural condition, rehabilitation will not be required and routine maintenance should be completed to maintain a functionally safe surface. Preventative maintenance should be used to maintain a PCI above the critical PCI of 70.

Runway 6-24 Sections 01 and 01A are not functionally adequate. However both pavement sections are structurally adequate; therefore, functional condition will govern the rehabilitation options.

12.9.1 RUNWAY 6-24 SECTION 01

Section 01, consisting of approximately 17,500 s.f. of 12 inches of AC on 14 inches of aggregate base, has a 2012 PCI of 16 or “Serious” declining to a predicted 2017 PCI of 14 or “Serious”. The pavement section is structurally adequate for the forecasted traffic; therefore, functional condition will govern the rehabilitation options. Since the pavement is structurally adequate and not in need of strengthening. But due to its current PCI, surface reconstruction has been chosen as the option to correct the functional inadequacies. The reconstruction section is:

12"AC / Existing Aggregate Base

12.9.2 RUNWAY 6-24 SECTION 01A

Section 01A, consisting of approximately 35,000 s.f. of 12 inches of AC on 14 inches of aggregate base, has a 2012 PCI of 19 or “Serious” declining to a predicted 2017 PCI of 17 or “Serious”. The pavement section is structurally adequate for the forecasted traffic; therefore, functional condition will govern the rehabilitation options. Since the pavement is structurally adequate and not in need of strengthening. But due to its current PCI, surface reconstruction has been chosen as the option to correct the functional inadequacies. The reconstruction section is:

12"AC / Existing Aggregate Base

12.10 TERMINAL APRON (TERMA)

Terminal apron consists of four (4) pavement sections. The 2012 and predicted 2017 PCI for the pavement sections are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	100	Good	90	Good
02	35	Very Poor	30	Very Poor
03	66	Fair	63	Fair
04	96	Good	81	Satisfactory

Terminal Apron Sections 01 and 04 are currently in “Good” condition and structurally adequate for the forecasted traffic. Therefore routine, preventative maintenance is recommended to maintain the functional condition of the pavement sections.

Sections 02 and 03 within the Terminal Apron are structurally inadequate for the forecasted traffic loading. Strengthening and rehabilitation options for these sections are discussed below:

12.10.1 TERMINAL APRON SECTION 02

Section 03 consisting of approximately 90,000 s.f. of 12 inches of PCC on 12 inches of aggregate base, is functionally in “Very Poor” condition. Section 02 was determined to be structurally inadequate for the forecasted traffic loading. Therefore, strengthening is required. Due to the grade restraints of the surrounding pavement reconstruction was chosen as the best strengthening option. The reconstruction section is:

14" PCC / 6" AC Base / Existing 12 inches of Aggregate Base

12.10.2 TERMINAL APRON SECTION 03

Section 03 consisting of approximately 128,000 s.f. of 4.6 inches of AC on 9 inches of aggregate base, is functionally in “Fair” condition and is predicted to decline but remain in “Fair” by 2017. However, the section is structurally inadequate with an expected structural life of less than ten (10) years. It is recommended that Section 03 be rehabilitated in order to strengthen the pavement with a section of:

9" PCC / Existing Aggregate Base or Mill 2” AC and Replace with 5” AC

Project level investigation and design should be performed in order to choose the best reconstruction option.

12.11 TAXIWAY C (TWC)

Taxiway C consists of four (4) pavement sections. The 2012 and predicted 2017 PCI for the pavement sections are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	39	Very Poor	30	Very Poor
02	53	Poor	45	Poor
03	47	Poor	39	Very Poor
04	93	Good	77	Satisfactory

Section 04 within Taxiway C has an adequate structural condition and the current PCI is well above the critical PCI of 70, therefore only routine preventative maintenance is required for Section 04. Taxiway Sections 01, 02 and 03 are not functionally adequate. However all pavement sections are structurally adequate; therefore, functional condition will govern the rehabilitation options.

12.11.1 TAXIWAY C SECTION 01

Section 01, consisting of approximately 40,000 s.f. of 12 inches of AC on 12 inches of aggregate base, has a 2012 PCI of 39 or “Very Poor” declining to a predicted 2017 PCI of 30 or “Very Poor”. The pavement section is structurally adequate for the forecasted traffic; therefore, functional condition will govern the rehabilitation options. Since the pavement is structurally adequate and not in need of strengthening, a 2-inch AC mill and replace will correct the surface deficiencies.

12.11.2 TAXIWAY C SECTIONS 02 AND 03

Taxiway C Sections 02 and 03, consist of approximately 140,000 s.f. of 10.5 inches of PCC on 12 inches of aggregate base. Based on current 2012 PCI, both sections are functionally inadequate for airport operations. However, these sections are structurally adequate to support the projected aircraft traffic. Functional condition will govern the rehabilitation and maintenance activities. Based on the 2012 PCI, rehabilitation will be necessary. The two options evaluated for rehabilitation of this pavement are CPR and reconstruction. Due to the large area and the types and severity of distresses observed, CPR was chosen as the best rehabilitation alternative. Included within the CPR will be crack sealing, slab replacement, and partial depth patching.

12.12 TAXIWAY D (TWD)

Taxiway D consists of five (5) pavement sections. The 2012 and predicted 2017 PCI for the pavement sections are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	66	Fair	63	Fair
02	61	Fair	45	Poor
03	70	Fair	66	Fair
04	100	Good	93	Good
01A	73	Satisfactory	55	Poor

All pavement sections within Taxiway D are in “Fair” or “Good” condition and are structurally adequate for the forecasted traffic. Therefore, only routine maintenance shall be required to sustain or improve the pavements functional condition. Stop-gap maintenance will be required on Sections 01, 02, and 03, while preventative maintenance is required on Sections 04 and 01A.

12.13 TAXIWAY D1 (TWD1)

Taxiway D1 consists of one (1) pavement section. The 2012 and predicted 2017 PCI for the pavement section are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	100	Good	81	Satisfactory

Taxiway D1 is structurally adequate and is in “Good” condition and does not require any major rehabilitation. Therefore, routine preventative maintenance is all that is required for this pavement.

12.14 TAXIWAY D2 (TWD2)

Taxiway D2 contains two (2) pavement sections. The 2012 and predicted 2017 functional conditions for each pavement section is as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	62	Fair	46	Poor
02	70	Fair	53	Poor

Taxiway D2 has a 2012 functional condition of “Fair” and is predicted to decline to a condition of “Poor” by 2017. The pavement is structurally adequate for the forecasted traffic. Therefore, stop-gap maintenance is recommended to maintain and/or raise the PCI.

12.15 TAXIWAY D3 (TWD3)

Taxiway D3 consists of three (3) pavement sections. The 2012 and predicted 2017 functional conditions for the pavement sections are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	38	Very Poor	29	Very Poor
02	57	Fair	42	Poor
03	46	Poor	34	Very Poor

Taxiway D3 is approximately 67,000 s.f. of asphalt pavement ranging from 7 inches to 12.5 inches thick on 12.5 inches to 21 inches of AGBS. Based on structural analysis, Taxiway D3 is structurally adequate for projected traffic; therefore, functional condition will govern the rehabilitation. A 2-inch asphalt concrete mill and replace rehabilitation has been chosen as the option to correct the functional inadequacies of Taxiway D3.

12.16 TAXIWAY G (TWG)

Taxiway G consists of one (1) pavement section. The 2012 and predicted 2017 PCI for the pavement section are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	32	Very Poor	27	Very Poor

Taxiway G consisting of approximately 29,000 s.f. of 12 inches of PCC on 12 inches of AGBS, is functionally in “Very Poor” condition and is predicted to decline but remain in a condition of “Very Poor” by 2017. Based on projected traffic, Taxiway G is structurally inadequate with an expected structural life of less than ten (10) years. It is recommended that Taxiway G be reconstructed in order to strengthen the pavement with a section of:

14" PCC / 6" AC Base / Existing 12 inches of AGBS

12.17 TAXIWAY H (TWH)

Taxiway H consists of one (1) pavement section. The 2012 and predicted 2017 PCI for the pavement section are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	66	Fair	63	Fair

Taxiway H consisting of approximately 41,000 s.f. of 11 inches of PCC on 12 inches of AGBS is functionally in “Fair” condition and is predicted to decline but remain in a condition of “Fair” by 2017. However, Taxiway H is structurally inadequate with an expected structural life of less than ten (10) years. It is recommended that Taxiway H be reconstructed in order to strengthen the pavement with a section of:

14" PCC / 6" AC Base / Existing 12 inches of AGBS

12.18 TAXIWAY J (TWJ)

Taxiway J consists of two (2) pavement sections. The 2012 and predicted 2017 functional conditions for the pavement sections are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	72	Satisfactory	54	Poor
02	49	Poor	36	Very Poor

Section 01 is structurally adequate and is in “Good” condition and does not require any major rehabilitation. Therefore, routine preventative maintenance is all that is required for this pavement section.

Section 02 is approximately 55,000 s.f. of asphalt pavement ranging from 5 inches to 7 inches thick on 9 inches to 16 inches of AGBS. Based on predicted traffic, Section 02 is structurally adequate; therefore, functional condition will govern the rehabilitation. A 2-inch asphalt concrete mill and replace rehabilitation has been chosen as the option to correct the functional inadequacies of the Section 02.

12.19 TAXIWAY K (TWK)

Taxiway K consists of four (4) pavement sections. The 2012 and predicted 2017 functional conditions for the pavement sections are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	43	Poor	35	Very Poor
02	56	Fair	49	Poor
03	62	Fair	57	Fair
01A	100	Good	81	Satisfactory

Section 02, 03, and 01A is structurally adequate and is in “Fair” or “Good” condition and does not require any major rehabilitation. Therefore, stop-gap maintenance will be required on Sections 02 and 03, while preventative maintenance is required on Section 01A.

Section 01 consists of approximately 52,000 s.f. of 12 inches of PCC on 12 inches of aggregate base. Based on current 2012 PCI, Section 01 is currently functionally inadequate for airport operations. However, this section is structurally adequate to support the projected aircraft traffic. Therefore, the functional condition will govern the rehabilitation and maintenance activities. The two options evaluated for rehabilitation of this pavement were CPR and reconstruction. Due to its size and the types and severity of distresses observed CPR was chosen as the best rehabilitation alternative.

12.20 TAXIWAY L (TWL)

Taxiway L consists of four (4) pavement sections. The 2012 and predicted 2017 functional conditions for the pavement sections are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	22	Serious	17	Serious
02	27	Very Poor	22	Serious
03	47	Poor	39	Very Poor
04	56	Fair	49	Poor

All pavement sections within Taxiway L are in “Serious” to “Fair” condition and are structurally adequate for the forecasted traffic. Therefore, the functional condition will govern the rehabilitation and maintenance activities. For Section 04, the current PCI is well below the critical PCI of 70; therefore stop-gap maintenance shall be used to raise the PCI above the critical PCI.

12.20.1 TAXIWAY L SECTION 01

Section 01 consists of approximately 23,000 s.f. of 12 inches of PCC on 16 inches of aggregate base. Based on the current 2012 PCI, Section 01 is functionally inadequate for airport operations. However, this section is structurally adequate to support the projected aircraft traffic. Therefore, functional condition will govern the rehabilitation and maintenance activities. But due to its current PCI, surface reconstruction has been chosen as the option to correct the functional inadequacies. The reconstruction section is:

12"AC / Existing Aggregate Base

12.20.2 TAXIWAY L SECTION 02

Taxiway L Sections 02, consist of approximately 8,700 s.f. of 11 inches of AC on 7 inches of PCC. Based on the current 2012 PCI, Section 02 is functionally inadequate for airport operations. However, these sections are structurally adequate to support the projected aircraft traffic. But due to its current PCI, surface reconstruction has been chosen as the option to correct the functional inadequacies. The reconstruction section is:

12"AC / Existing Aggregate Base

12.20.3 TAXIWAY L SECTION 03

Taxiway L Sections 03, consist of approximately 23,400 s.f. of 11 inches of AC on 7 inches of PCC. Based on the current 2012 PCI, both sections are functionally inadequate for airport operations. However, these sections are structurally adequate to support the projected aircraft traffic. Therefore, the functional condition will govern the rehabilitation and maintenance activities. A 2-inch asphalt concrete mill and replace rehabilitation has been chosen as the option to correct the functional inadequacies of Section 03.

12.21 TAXIWAY M (TWM)

Taxiway M contains two (2) pavement sections. The 2012 and predicted 2017 functional conditions for each pavement section are as follows:

Section ID	2012 PCI	2012 Condition	2017 PCI	2017 Condition
01	67	Fair	64	Fair
02	71	Satisfactory	67	Fair

Taxiway M has a 2012 functional condition of “Fair” to “Satisfactory” and is predicted to decline to a condition of “Fair” by 2017. The pavement is structurally adequate for the forecasted traffic. The current PCI of Section 01 is just below the critical PCI of 70, therefore, stop-gap maintenance is recommended to maintain and/or raise the PCI. For Section 02, the current PCI is just above the critical PCI of 70, therefore, preventive maintenance is recommended to maintain the PCI.

SECTION 13.0

MAINTENANCE AND REPAIR (M&R) STRATEGIES

SECTION 13.0 MAINTENANCE AND REPAIR (M&R) STRATEGIES

The primary objective of a network level PMS is to formulate a logical, cost-effective plan for maintaining and repairing paved areas over time, and identify areas for major rehabilitation through evaluation of the functional and structural conditions of the pavements. The initial steps, discussed in prior sections, involved defining and inventorying the network, and assessing the functional surface condition of the pavement branches and sections. Structural evaluation was performed using the NDT data and FAA advisory circular design procedures. Once these are completed, M&R policies are established to maintain or improve pavement condition over time in a cost-effective manner.

A key element in developing a pavement management system is recognizing that pavement deterioration is not necessarily a linear process. Beyond a certain point, called the critical PCI, deferral of M&R for even a few years can result in a four or five fold increase in future repair costs. A second key element in the pavement management process is the development policies and costs for repairing the various distresses identified during the condition survey.

Repair strategies and costs were input to MicroPAVER to generate budget estimates for required pavement M&R using the M&R report generation feature of MicroPAVER. The Unit Prices for pavement construction cost estimates are included in Table 13-1, “Stopgap and Preventive M&R Activities Unit Cost.”

Maintenance projects generated from MicroPAVER are summarized in Table 13-2, “Summary of Maintenance Costs”. Appendix D, “Maintenance Work Quantities Table”, generated in MicroPAVER, shows the quantities of work for a specific type of distress (e.g., crack sealing, partial depth patching, etc.) for each pavement section. The sections recommended for major rehabilitation were not included in the list of maintenance projects. For sections where computed maintenance costs are less than $1,000, a minimum maintenance cost of $1,000 was programmed for that section. If any maintenance sections will be repaired by contract, the NFTA contract mark-up should be applied to the costs in Table 13-2. Major rehabilitation projects are discussed in more detail in Section 14.0.

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE
STOP-GAP AND PREVENTATIVE M&R ACTIVITIES UNIT COST
FLEXIBLE PAVEMENT

Distress	Description	Severity	Repair Method	Unit	Unit Cost $
Airfield Pavements					
41	Alligator Cracking	H	Patching- AC Full Depth/ 10 in. AC/ 12 in. AB	SF	$18.50
41	Alligator Cracking	M	Patching- AC Full Depth/ 10 in. AC/ 12 in. AB	SF	$18.50
43	Block Cracking	M	Crack Sealing	LF	$3.50
45	Depression	H	Patching- AC Full Depth/ 10 in. AC/ 12 in. AB	SF	$18.50
45	Depression	M	Patching- AC Full Depth/ 10 in. AC/ 12 in. AB	SF	$18.50
47	Joint Reflection Cracking	M	Crack Sealing	SF	$3.50
47	Joint Reflection Cracking	H	Mill & Fill (3 inches)	SF	$9.25
48	Longitudinal and Transverse Cracking	H	Crack Sealing	LF	$3.50
48	Longitudinal and Transverse Cracking	M	Crack Sealing	LF	$3.50
50	Patching	H	Patching- AC Full Depth/ 10 in. AC/ 12 in. AB	SF	$18.50
50	Patching	M	Patching- AC Full Depth/ 10 in. AC/ 12 in. AB	SF	$18.50
52	Raveling	H	Mill & Fill (3 inches)	SF	$9.25
52	Raveling	M	Mill & Fill (3 inches)	SF	$9.25
55	Slippage Cracking	H	Mill & Fill (3 inches)	SF	$9.25
55	Slippage Cracking	M	Mill & Fill (3 inches)	SF	$9.25
56	Swelling	H	Patching- AC Full Depth/ 10 in. AC/ 12 in. AB	SF	$18.50
56	Swelling	M	Patching- AC Full Depth/ 10 in. AC/ 12 in. AB	SF	$18.50
57	Weathering	H	Mill & Fill (3 inches)	SF	$9.25

RIGID PAVEMENT

Distress	Description	Severity	Repair Method	Unit	Unit Cost $
Airfield Pavements					
63	Linear Crack	H	Crack Sealing	LF	$10.00
63	Linear Crack	M	Crack Sealing	LF	$10.00
64	Durability Crack	H	Slab Replacement	SF	$45.00
64	Durability Crack	M	Patching- PCC Full Depth (15")	SF	$130.00
65	Joint Seal Damage	H	Joint Seal	LF	$6.00
65	Joint Seal Damage	M	Joint Seal	LF	$6.00
66	Small Patch	H	Patching- PCC Partial Depth (4")	SF	$175.00
66	Small Patch	M	Patching- PCC Partial Depth (4")	SF	$175.00
67	Large Patch	H	Patching- PCC Full Depth (15")	SF	$130.00
67	Large Patch	M	Patching- PCC Full Depth (15")	SF	$130.00
70	Scaling	H	Slab Replacement	SF	$45.00
70	Scaling	M	Patching- PCC Partial Depth (4")	SF	$175.00
72	Shattered Slab	H	Slab Replacement	SF	$45.00
72	Shattered Slab	M	Crack Sealing	LF	$10.00
74	Joint Spall	H	Patching- PCC Partial Depth (4")	SF	$175.00
74	Joint Spall	M	Patching- PCC Partial Depth (4")	SF	$175.00
75	Corner Spall	H	Patching- PCC Partial Depth (4")	SF	$175.00
75	Corner Spall	M	Patching- PCC Partial Depth (4")	SF	$175.00

Abbreviations - AC: Asphalt Concrete, PCC: Portland Cement Concrete, AB: Aggregate Base

Table 13-1

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE
MAINTENANCE COSTS

Branch ID	Section ID	Last Const. Date	Surface	True Area (SF)	PCI 2012	PCI 2017	Maint. Cost ($)	Maint. Type
CALSPAN (CALSPAN APRON)	01	01/01/2012	PCC	48,039	99	86	$1,938	Preventive
CONDA (CONDOR APRON)	01	07/01/2004	APC	911,185	62	54	$6,264	Preventive
GAA (GENERAL AVIATION APRON)	01	06/01/1989	PCC	202,758	60	51	$3,000	Preventive
GAA (GENERAL AVIATION APRON)	02	06/01/1986	PCC	159,000	80	71	$19,676	Preventive
GAA (GENERAL AVIATION APRON)	03	06/01/1986	PCC	92,767	63	56	$2,374	Preventive
GAA (GENERAL AVIATION APRON)	02A	06/01/1989	PCC	141,550	85	74	$14,831	Preventive
GAA (GENERAL AVIATION APRON)	03A	06/01/1989	PCC	22,009	88	76	$2,119	Preventive
HELIA (HELIPAD APRON)	01	06/01/1976	APC	163,590	37	31	$31,785	Stopgap
HELIA (HELIPAD APRON)	02	06/01/1968	PCC	27,707	25	12	$8,000	Stopgap
OVER10 (OVERRUN 10L)	01	01/01/2012	PCC	105,120	91	79	$8,899	Preventive
OVER10 (OVERRUN 10L)	02	01/01/2012	PCC	91,979	94	84	$6,364	Preventive
OVER28 (OVERRUN 28)	02	01/01/2012	AAC	76,500	86	73	$7,715	Preventive
OVER28 (OVERRUN 28)	01A	01/01/2012	AAC	41,300	100	96	$1,000	Preventive
OVER28 (OVERRUN 28)	01B	06/01/1996	PCC	29,600	65	51	$1,000	Preventive
RW10L (RUNWAY 10L-28R)	01	01/01/2012	PCC	30,300	91	79	$2,565	Preventive
RW10L (RUNWAY 10L-28R)	02	01/01/2012	APC	194,900	100	96	$4,237	Preventive
RW10L (RUNWAY 10L-28R)	03	01/01/2012	APC	24,850	100	96	$1,000	Preventive
RW10L (RUNWAY 10L-28R)	04	01/01/2012	APC	164,500	100	96	$3,576	Preventive
RW10L (RUNWAY 10L-28R)	05	01/01/2012	APC	61,750	100	96	$1,342	Preventive
RW10L (RUNWAY 10L-28R)	02A	01/01/2012	APC	389,800	100	96	$8,474	Preventive
RW10L (RUNWAY 10L-28R)	03A	01/01/2012	APC	49,700	100	96	$1,080	Preventive
RW10L (RUNWAY 10L-28R)	04A	01/01/2012	APC	329,000	100	96	$7,152	Preventive
RW10L (RUNWAY 10L-28R)	05A	01/01/2012	APC	123,500	100	96	$2,685	Preventive
RW10R (RUNWAY 10R-28L)	01	06/01/1976	AAC	245,317	28	26	$60,801	Stopgap
RW10R (RUNWAY 10R-28L)	02	06/01/1976	PCC	6,531	41	32	$1,121	Stopgap
RW10R (RUNWAY 10R-28L)	01A	03/01/1997	AAC	38,888	76	62	$5,714	Preventive
RW624 (RUNWAY 6-24)	01	06/01/1986	AAC	17,500	16	14	$5,887	Stopgap
RW624 (RUNWAY 6-24)	02	06/01/1989	PCC	45,100	87	74	$4,403	Preventive
RW624 (RUNWAY 6-24)	03	03/01/1997	AAC	192,750	77	63	$27,332	Preventive
RW624 (RUNWAY 6-24)	04	01/01/2012	AAC	42,700	100	96	$1,000	Preventive
RW624 (RUNWAY 6-24)	01A	06/01/1986	AAC	35,000	19	17	$10,934	Stopgap
RW624 (RUNWAY 6-24)	03A	03/01/1997	AAC	399,600	79	65	$52,545	Preventive
RW624 (RUNWAY 6-24)	04A	01/01/2012	AAC	81,600	100	96	$1,774	Preventive

Table 13-2

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE
MAINTENANCE COSTS

Branch ID	Section ID	Last Const. Date	Surface	True Area (SF)	PCI 2012	PCI 2017	Maint. Cost ($)	Maint. Type
TERMA (TERMINAL APRON)	01	01/01/2012	AAC	8,635	100	90	$1,000	Preventive
TERMA (TERMINAL APRON)	02	06/01/1967	PCC	89,580	35	30	$18,609	Stopgap
TERMA (TERMINAL APRON)	03	03/01/1996	AAC	128,309	66	63	$5,812	Stopgap
TERMA (TERMINAL APRON)	04	01/01/2012	PCC	139,772	96	81	$8,977	Preventive
TWC (TAXIWAY C)	01	06/01/2004	AAC	39,610	39	30	$7,383	Stopgap
TWC (TAXIWAY C)	02	06/01/1970	PCC	97,678	53	45	$12,352	Stopgap
TWC (TAXIWAY C)	03	06/01/1970	PCC	47,000	47	39	$6,820	Stopgap
TWC (TAXIWAY C)	04	06/01/1970	AC	43,000	93	77	$3,483	Preventive
TWD (TAXIWAY D)	01	03/01/1999	APC	151,129	66	63	$6,967	Stopgap
TWD (TAXIWAY D)	02	03/01/1999	AC	32,545	61	45	$3,575	Stopgap
TWD (TAXIWAY D)	03	03/01/2002	APC	108,876	70	66	$1,219	Stopgap
TWD (TAXIWAY D)	04	01/01/2012	AAC	69,507	100	93	$1,595	Preventive
TWD (TAXIWAY D)	01A	03/01/1999	AAC	33,554	73	55	$1,000	Stopgap
TWD1 (TAXIWAY D1)	01	01/01/2012	APC	15,913	100	81	$1,000	Preventive
TWD2 (TAXIWAY D2)	01	03/01/1997	AAC	10,280	62	46	$1,099	Stopgap
TWD2 (TAXIWAY D2)	02	06/01/1990	AAC	2,900	70	53	$1,000	Stopgap
TWD3 (TAXIWAY D3)	01	06/01/1976	AAC	12,934	38	29	$2,491	Stopgap
TWD3 (TAXIWAY D3)	02	06/01/2000	AAC	8,686	57	42	$1,054	Stopgap
TWD3 (TAXIWAY D3)	03	06/01/1976	AAC	45,811	46	34	$6,978	Stopgap
TWG (TAXIWAY G)	01	06/01/1970	PCC	29,117	32	27	$6,544	Stopgap
TWH (TAXIWAY H)	01	06/01/1970	PCC	41,366	66	63	$1,907	Stopgap
TWJ (TAXIWAY J)	01	06/01/1989	AAC	16,152	72	54	$1,000	Stopgap
TWJ (TAXIWAY J)	02	06/01/1970	AAC	54,817	49	36	$7,893	Stopgap
TWK (TAXIWAY K)	01	06/01/1970	PCC	51,718	43	35	$8,122	Stopgap
TWK (TAXIWAY K)	02	06/01/1970	PCC	129,561	56	49	$15,141	Stopgap
TWK (TAXIWAY K)	03	06/01/1970	PCC	91,775	62	57	$8,251	Stopgap
TWK (TAXIWAY K)	01A	01/01/2012	APC	19,378	100	81	$1,078	Preventive
TWL (TAXIWAY L)	01	06/01/1970	PCC	22,750	22	17	$6,705	Stopgap
TWL (TAXIWAY L)	02	06/01/1970	APC	8,752	27	22	$2,273	Stopgap
TWL (TAXIWAY L)	03	06/01/1970	APC	23,463	47	39	$3,404	Stopgap
TWL (TAXIWAY L)	04	06/01/1970	PCC	15,979	56	49	$1,869	Stopgap
TWM (TAXIWAY M)	01	06/01/1970	PCC	21,377	67	64	$1,000	Stopgap
TWM (TAXIWAY M)	02	01/01/2000	APC	9,524	71	67	$1,000	Stopgap
						Total	$477,190	

Table 13-2 continued

MAINTENANCE AND REHABILITATION PROGRAMS

By utilizing the results of the structural and functional investigations RDM has developed a maintenance program suitable for NFIA. The results of the investigations were used to determine the need for major rehabilitation in the short term and long range. Section 12.0 discusses the recommended maintenance activity by facility and pavement section. Those pavement sections not requiring major rehabilitation should receive routine maintenance.

Maintenance Program

MicroPAVER budgeting tools were used to determine the maintenance budget and required projects. Using MicroPAVER, several M&R program scenarios were investigated and compared for the airfield pavements at NFIA to estimate the required annual maintenance budget.

- **Scenario 1:** Cost per year to Eliminate Major M&R Backlog in 5-Years

This scenario will improve the PCI gradually by eliminating the backlog by the end of the 5-year program. At the end of this 5-year program no major rehabilitation and safety (stop-gap) activities will be required. The costs of major rehabilitation projects were spread over a 5-year duration in order to eliminate all required projects by the end of the 5-year program. The annual budget required for this scenario is approximately $7,000,000. During this 5-year period, the area weighted PCI increases from 74 to 92. Refer to Appendix D-1 for further details.

- **Scenario 2:** Cost per year to Maintain Current Area Weighted PCI for 5-Years

The airfield pavements at NFIA have a current PCI of 74. In order to maintain the current PCI annually, significant repairs will be required. An annual budget of $2,000,000 is required to maintain the current area weighted PCI. During this 5-year period, the area weighted PCI will be maintained at 74. Refer to Appendix D-2 for further details.

- **Scenario 3:** Optimum Budget Scenario

After analyzing various scenarios, MicroPAVER was used to determine the optimum annual budget based on structural and functional condition. MicroPAVER indicates a budget of approximately $6,000,000 per annum is optimum budget to reduce the back log and maintain the current condition. Refer to Appendix D-2 for further details.

SECTION 14.0

MAJOR REHABILITATION

SECTION 14.0 MAJOR REHABILITATION

The maintenance and repair strategies discussed in Section 13.0 can be applied for routine and periodic maintenance for the majority of the airport pavements. Based upon the structural evaluation some airfield pavement requires strengthening through either an overlay or reconstruction. Based on the PCI survey some pavement sections will require major rehabilitation in the form of mill and replace or concrete pavement restoration (CPR).

As discussed in previous sections the project listing in Table 12-1 was developed based on the results of comprehensive field investigation and theoretical analysis, tempered by practical experience. Unit prices used to generate pavement construction cost estimates for major rehabilitation are shown in Table 14-1, “Construction Unit Costs”. It should be noted that these costs listed represent only costs related to pavements and do not include other ancillary items, such as but not limited to:

- Contractor mobilization/demobilization
- Maintenance and protection of traffic
- Lighting modifications
- Re-grading shoulders and tie-ins to adjacent pavements
- Pavement markings
- Drainage
- Lighting
- Other non-pavement related or unusual construction requirements
- Degradation in condition until the rehabilitation project is initiated
- Night work differential
- Construction phasing due to operational constraints
- Engineering fees
- Contingencies

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

CONSTRUCTION UNIT COSTS

Work	Unit Cost	Unit
PCC Pavement Removal	$ 30.00	CY
AC Pavement Removal	$ 16.00	SY
Unclassified Excavation	$ 18.00	CY
Crushed Aggregate Base Course (AGBS)	$ 38.00	TON
Asphalt (AC) Concrete	$ 115.00	TON
2" Mill AC Pavement	$ 10.50	SY
Cement Treated Subbase	$ 18.00	SY
15" PCC Pavement	$ 100.00	SY
Joint Sealing	$ 10.00	LF
Partial-Depth PCC Pavement Repair	$ 175.00	SF
Full-Depth PCC Pavement Repair	$ 130.00	SF
Crack Sealing AC Pavement	$ 6.00	LF
Crack Sealing PCC Pavement	$ 10.00	LF
Patching AC Pavement (10" AC)	$ 20.50	SF
PCC Slab Replacement	$ 45.00	SF

Abbreviations:
PCC - Portland Cement Concrete
AC - Asphalt Concrete

Table 14-1

Based on the results of functional and structural analyses discussed in previous sections, and using recent construction costs data in both BNIA and Niagara Falls International Airport (NFIA), specific project and program year budget estimates were generated. Based on prior PMS reports completed at BNIA and NFIA the construction estimates for pavement related work were inflated by 60% to cover additional project level costs not included in the unit cost as discussed above.

Table 14-2, “Rehabilitation Project Costs”, summarizes the following for each section requiring rehabilitation:

- a brief description of project requirements;
- the year in which the project should be programmed;

- pavement related costs for each section;
- estimated percentage increases (60%) for additional non-pavement related work; and
- estimated project costs without NFTA administrative costs or inflation escalators.

During final project level design, all costs should be revalidated based on itemized construction cost estimates.

The rehabilitation construction costs were then adjusted to account for additional project costs associated with engineering, inspection, acceptance testing, and administration, in accordance with the following schedule:

Construction Cost	Mark Up
< $ 50,000	50%
$ 50,000 to $ 100,000	45%
$ 100,000 to $ 500,000	32%
$ 500,000 to $ 750,000	27%
$ 750,000 to $1,000,000	22%
>$ 1,000,000	16%

Finally, a compound inflation factor of 4% per year was applied to all costs to arrive at the program year cost. Table 14-3, "Rehabilitation Program Costs", includes these additional costs to arrive at the total costs on a section basis and the costs for the various elements of the multi-year program.

The major rehabilitation projects were prioritized based on budgetary and operational requirements. The project prioritizations listed in Table 14-3 are based on the functional and/or structural condition of each pavement determined during this study. NFTA should confirm these project prioritizations for consistency with operational constraints and other pavement construction planned for NFIA. It may be possible to re-group or consolidate projects to lessen the operational impacts from construction and to decrease bid prices from increased construction volume, if budgeting permits. Priorities may change over time due to changing operational and economical circumstances.

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE
REHABILITATION PROJECT COSTS

Branch ID	Section ID	Last Const. Date	True Area (SF)	Age At Inspection	PCI 2012	PCI 2017	Reqt	Rehabilitation Description	Program Year	Rehab Cost (SY)	Pavement Cost ($)	Add Work %	Project Cost
TERMA (TERMINAL APRON)	02	06/01/1967	89,580	45	35	30	Struct	14" PCC/6" AC base on existing AGBS	2014	$139.50	$1,388,490	60	$2,221,584
TERMA (TERMINAL APRON)	03	03/01/1996	128,309	16	66	63	Struct	2" Mill AC and Replace with 5" AC	2014	$46.50	$662,930	60	$1,060,688
OVER28 (OVERRUN 28)	01B	06/01/1996	29,600	16	65	51	Struct	Removing 11"PCC and milling 2" AC, Replacing 13" PCC	2015	$86.50	$284,489	60	$455,182
RW624 (RUNWAY 6-24)	01	06/01/1986	17,500	26	16	14	Funct	Surface Reconstruction	2015	$76.50	$148,750	60	$238,000
RW624 (RUNWAY 6-24)	01A	06/01/1986	35,000	26	19	17	Funct	Surface Reconstruction	2015	$76.50	$297,500	60	$476,000
TWC (TAXIWAY C)	01	06/01/2004	39,610	8	39	30	Funct	2" Mill and Replace	2015	$18.25	$80,320	60	$128,512
TWC (TAXIWAY C)	02	06/01/1970	97,678	42	53	45	Funct	CPR	2015	$29.00	$314,740	60	$503,584
TWC (TAXIWAY C)	03	06/01/1970	47,000	42	47	39	Funct	CPR	2015	$29.00	$151,444	60	$242,311
TWG (TAXIWAY G)	01	06/01/1970	29,117	42	32	27	Struct	14" PCC/6" AC base on existing AGBS	2015	$139.50	$451,314	60	$722,102
TWH (TAXIWAY H)	01	06/01/1970	41,366	42	66	63	Struct	14" PCC/6" AC base on existing AGBS	2015	$139.50	$641,173	60	$1,025,877
HELIA (HELIPAD APRON)	01	06/01/1976	163,590	36	37	31	Struct	9" PCC /existing AGBS	2016	$64.50	$1,172,395	60	$1,875,832
HELIA (HELIPAD APRON)	02	06/01/1968	27,707	44	25	12	Struct	9" PCC /existing AGBS	2016	$64.50	$198,567	60	$317,707
TWD3 (TAXIWAY D3)	01	06/01/1976	12,934	36	38	29	Funct	2" Mill and Replace	2016	$18.25	$26,227	60	$41,964
TWD3 (TAXIWAY D3)	02	06/01/2000	8,686	12	57	42	Funct	2" Mill and Replace	2016	$18.25	$17,613	60	$28,181
TWD3 (TAXIWAY D3)	03	06/01/1976	45,811	36	46	34	Funct	2" Mill and Replace	2016	$18.25	$92,895	60	$148,631
TWJ (TAXIWAY J)	02	06/01/1970	54,817	42	49	36	Funct	2" Mill and Replace	2016	$18.25	$111,157	60	$177,851
TWK (TAXIWAY K)	01	06/01/1970	51,718	42	43	35	Funct	CPR	2016	$50.00	$287,322	60	$459,716
TWL (TAXIWAY L)	01	06/01/1970	22,750	42	22	17	Funct	Surface Reconstruction	2016	$80.50	$203,486	60	$325,578
TWL (TAXIWAY L)	02	06/01/1970	8,752	42	27	22	Funct	Surface Reconstruction	2016	$72.50	$70,502	60	$112,804
TWL (TAXIWAY L)	03	06/01/1970	23,463	42	47	39	Funct	2" Mill and Replace	2016	$18.25	$47,578	60	$76,124
CONDA (CONDOR APRON)	01	07/01/2004	91,185	8	62	54	Struct	14" PCC on existing AC surface	2017	$96.50	$977,706	60	$1,564,329
RW10R (RUNWAY 10R-28L)	01	06/01/1976	245,317	36	28	26	Funct	Surface Reconstruction	2017	$68.50	$1,867,135	60	$2,987,416
RW10R (RUNWAY 10R-28L)	02	06/01/1976	6,531	36	41	32	Funct	CPR	2017	$50.00	$36,283	60	$58,053
GAA (GENERAL AVIATION APRON)	02	06/01/1986	159,000	26	80	71	Struct	9" PCC /existing AGBS	2018	$64.50	$1,139,500	60	$1,823,200
GAA (GENERAL AVIATION APRON)	03	06/01/1986	92,767	26	63	56	Struct	9" PCC /existing AGBS	2018	$64.50	$664,830	60	$1,063,728
GAA (GENERAL AVIATION APRON)	02A	06/01/1989	141,550	23	85	74	Struct	9" PCC /existing AGBS	2018	$64.50	$1,014,442	60	$1,623,107
GAA (GENERAL AVIATION APRON)	03A	06/01/1989	22,009	23	88	76	Struct	9" PCC /existing AGBS	2018	$64.50	$157,731	60	$252,370

Legend: AC = Asphalt Concrete Pavement PCC = Portland Cement Concrete Pavement AGBS = Aggregate Base Course

Table 14-2

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE
REHABILITATION PROGRAM COSTS

Branch ID	Section ID	Last Const. Date	True Area (SF)	PCI 2012	PCI 2017	Reqt	Rehabilitation Description	Project Cost	Markup	Section Cost
Program Year 1 - 2014 Construction Year										
TERMA (TERMINAL APRON)	02	06/01/1967	89,580	35	30	Struct	14" PCC/6" AC base on existing AGBS	$2,221,584	116%	$2,577,037
TERMA (TERMINAL APRON)	03	03/01/1996	128,309	66	63	Struct	2" Mill AC and Replace with 5" AC	$1,060,688	116%	$1,230,398
								Program Year 1 Total Cost		**$3,807,435**
Program Year 2 - 2015 Construction Year										
OVER28 (OVERRUN 28)	01B	06/01/1996	29,600	65	51	Struct	Removing 11"PCC and milling 2" AC, Replacing 13" PCC	$455,182	132%	$600,841
RW624 (RUNWAY 6-24)	01	06/01/1986	17,500	16	14	Funct	Surface Reconstruction	$238,000	132%	$314,160
RW624 (RUNWAY 6-24)	01A	06/01/1986	35,000	19	17	Funct	Surface Reconstruction	$476,000	132%	$628,320
TWC (TAXIWAY C)	01	06/01/2004	39,610	39	30	Funct	2" Mill and Replace	$128,512	145%	$186,343
TWC (TAXIWAY C)	02	06/01/1970	97,678	53	45	Funct	CPR	$503,584	127%	$639,552
TWC (TAXIWAY C)	03	06/01/1970	47,000	47	39	Funct	CPR	$242,311	132%	$319,851
TWG (TAXIWAY G)	01	06/01/1970	29,117	32	27	Struct	14" PCC/6" AC base on existing AGBS	$722,102	127%	$917,069
TWH (TAXIWAY H)	01	06/01/1970	41,366	66	63	Struct	14" PCC/6" AC base on existing AGBS	$1,025,877	116%	$1,190,017
								Program Year 2 Total Cost		**$4,796,152**
Program Year 3 - 2016 Construction Year										
HELIA (HELIPAD APRON)	01	06/01/1976	163,590	37	31	Struct	9" PCC /existing AGBS	$1,875,832	116%	$2,175,965
HELIA (HELIPAD APRON)	02	06/01/1968	27,707	25	12	Struct	9" PCC /existing AGBS	$317,707	132%	$419,373
TWD3 (TAXIWAY D3)	01	06/01/1976	12,934	38	29	Funct	2" Mill and Replace	$41,964	150%	$62,945
TWD3 (TAXIWAY D3)	02	06/01/2000	8,686	57	42	Funct	2" Mill and Replace	$28,181	150%	$42,272
TWD3 (TAXIWAY D3)	03	06/01/1976	45,811	46	34	Funct	2" Mill and Replace	$148,631	132%	$196,193
TWJ (TAXIWAY J)	02	06/01/1970	54,817	49	36	Funct	2" Mill and Replace	$177,851	132%	$234,763
TWK (TAXIWAY K)	01	06/01/1970	51,718	43	35	Funct	CPR	$459,716	132%	$606,825
TWL (TAXIWAY L)	01	06/01/1970	22,750	22	17	Funct	Surface Reconstruction	$325,578	132%	$429,763
TWL (TAXIWAY L)	02	06/01/1970	8,752	27	22	Funct	Surface Reconstruction	$112,804	132%	$148,901
TWL (TAXIWAY L)	03	06/01/1970	23,463	47	39	Funct	2" Mill and Replace	$76,124	145%	$110,380
								Program Year 3 Total Cost		**$4,427,380**

Table 14-3

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE
REHABILITATION PROGRAM COSTS

Branch ID	Section ID	Last Const. Date	True Area (SF)	PCI 2012	PCI 2017	Reqt	Rehabilitation Description	Project Cost	Markup	Section Cost
Program Year 4 - 2017 Construction Year										
CONDA (CONDOR APRON)	01	07/01/2004	91,185	62	54	Struct	14" PCC on existing AC surface	$1,564,329	116%	$1,814,622
RW10R (RUNWAY 10R-28L)	01	06/01/1976	245,317	28	26	Funct	Surface Reconstruction	$2,987,416	116%	$3,465,402
RW10R (RUNWAY 10R-28L)	02	06/01/1976	6,531	41	32	Funct	CPR	$58,053	145%	$84,177
								Program Year 4 Total Cost		**$5,364,202**
Program Year 5 - 2018 Construction Year										
GAA (GENERAL AVIATION APRON)	02	06/01/1986	159,000	80	71	Struct	9" PCC /existing AGBS	$1,823,200	116%	$2,114,912
GAA (GENERAL AVIATION APRON)	03	06/01/1986	92,767	63	56	Struct	9" PCC /existing AGBS	$1,063,728	116%	$1,233,925
GAA (GENERAL AVIATION APRON)	02A	06/01/1989	141,550	85	74	Struct	9" PCC /existing AGBS	$1,623,107	116%	$1,882,804
GAA (GENERAL AVIATION APRON)	03A	06/01/1989	22,009	88	76	Struct	9" PCC /existing AGBS	$252,370	132%	$333,128
								Program Year 5 Total Cost		**$5,564,769**

Legend: AC = Asphalt Concrete Pavement PCC = Portland Cement Concrete Pavement AGBS = Aggregate Base Course

Table 14-3 continued

Totaling the estimated budget costs for each program year results in the following 5-year rehabilitation budget plan (with costs rounded):

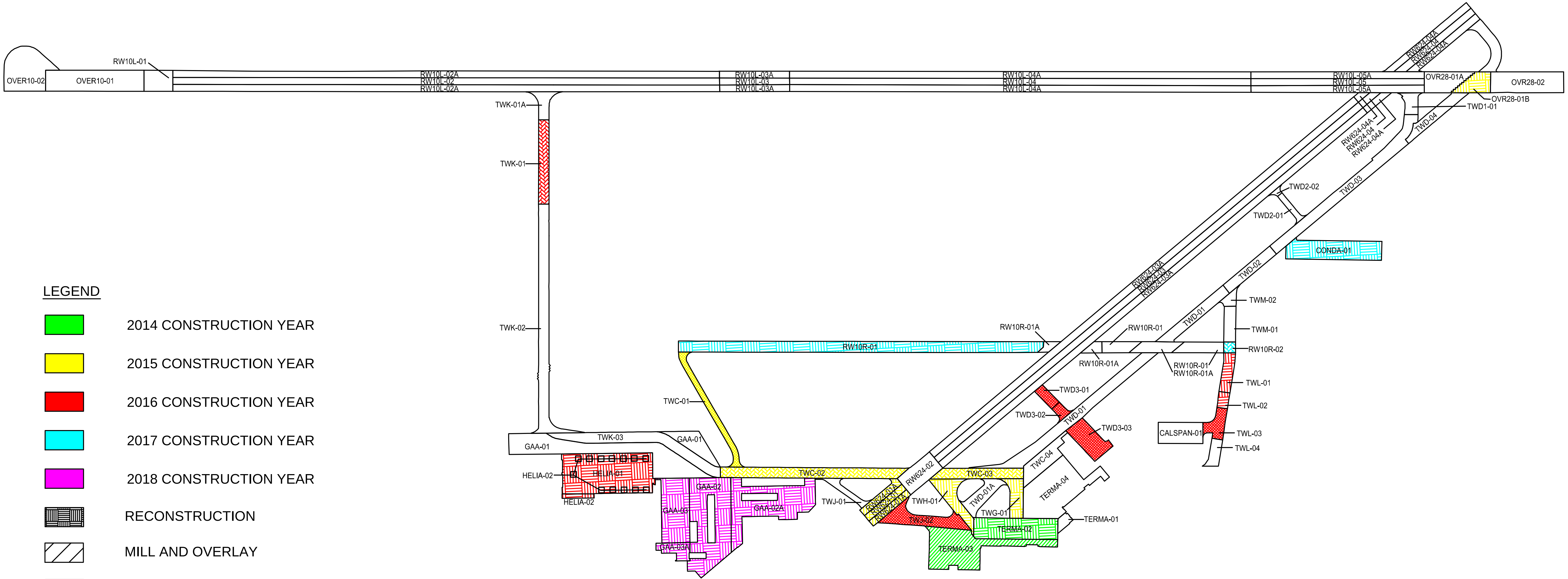
Program Year 1 (CY 2014)	$ 3,807,435
Program Year 2 (CY 2015)	$ 4,796,152
Program Year 3 (CY 2016)	$ 4,427,380
Program Year 4 (CY 2017)	$ 5,364,202
Program Year 5 (CY 2018)	$ 5,564,769
Total 2014-2018 Major Rehabilitation Budget	**$23,960,000**

It should be noted that evaluations, computations, and construction estimates were performed on a network level. Project level evaluations, computations, and construction estimates should be performed on a by project basis. Cost estimates are based on using a reconstruction option for rehabilitation. This budget may be reduced by utilizing other options such as rubblization or mill and overlay. However, further investigation is needed on a project level to determine the feasibility of the other options.

It is recommended that the airport pavements be re-evaluated on a periodic basis to ensure that projects are initiated in a timely, cost-effective manner. Pavements should be inspected a minimum of every three years, and a full-scale evaluation program with nondestructive testing repeated on a maximum 5-year cycle.

It is recognized that the precise maintenance and rehabilitation time will depend upon the availability of funds and approval of budget requests. However, the timing suggested herein is based on need resulting from the network level pavement evaluation.

For convenience, rehabilitation requirements and timing are shown on the color-coded Drawing 14-1 “Rehabilitation Staging”.



LEGEND

🟩 2014 CONSTRUCTION YEAR

🟨 2015 CONSTRUCTION YEAR

🟥 2016 CONSTRUCTION YEAR

🟦 2017 CONSTRUCTION YEAR

🟪 2018 CONSTRUCTION YEAR

▦ RECONSTRUCTION

▨ MILL AND OVERLAY

▩ MILL AND REPLACE

▧ CPR

TWC-10
Section ID
Branch ID

NO.	REVISION	DATE

Engineering Technology Research

DATE 12/19/2013
SCALE 1"=700'
DESIGNED
CHECKED
DRAWN NCA
ACCEPTED
SUBMITTED
APPROVED

NIAGARA FALLS INTERNATIONAL AIRPORT

REHABILITATION STAGING MAP

PROJECT IDENTIFIER
SHEET NAME
14-1
VOLUME of

APPENDIX

APPENDIX A

REINSPECTION REPORT

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: CALSPAN Name: CALSPAN APRON Use: APRON Area: 48,039.00SqFt

Section: 01 of 1 From: 0+00 EDGE TWL To: 3+20 Last Const.: 01/01/2012
Surface: PCC Family: NFIA_2013 Main Apron Zone: Category: Rank: S
Area: 48,039.00SqFt Length: 320.00Ft Width: 150.00Ft
Slabs: 148 Slab Width: 18.00Ft Slab Length: 18.00Ft Joint Length: 4,863.33Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 7 Surveyed: 5
Conditions: PCI : 99
Inspection Comments:

Sample Number: 1 Type: R Area: 20.00Slabs PCI = 100
Sample Comments:
<NO DISTRESSES>

Sample Number: 2 Type: R Area: 20.00Slabs PCI = 98
Sample Comments:

74 JOINT SPALLING	L	1.00 Slabs	Comments:

Sample Number: 3 Type: R Area: 20.00Slabs PCI = 98
Sample Comments:

74 JOINT SPALLING	L	1.00 Slabs	Comments:

Sample Number: 4 Type: R Area: 20.00Slabs PCI = 100
Sample Comments:
<NO DISTRESSES>

Sample Number: 5 Type: R Area: 20.00Slabs PCI = 100
Sample Comments:
<NO DISTRESSES>

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: CONDA Name: CONDOR APRON Use: APRON Area: 92,070.00SqFt

Section: 01 of 1 From: 0+00 EDGE TWD To: 6+82 Last Const.: 07/01/2004
Surface: APC Family: NFIA_2013 Apron GA and Pad Zone: Category: Rank: P
Area: 92,070.00SqFt Length: 682.00Ft Width: 135.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 182 Surveyed: 5
Conditions: PCI : 62
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 03 Type: R Area: 4,965.00SqFt PCI = 48
Sample Comments: NFIA_DATA.xlsx

```
52 RAVELING                                      M    3,724.00 SqFt     Comments:
57 WEATHERING                                    L      496.00 SqFt     Comments:
```

Sample Number: 07 Type: R Area: 4,987.00SqFt PCI = 70
Sample Comments: NFIA_DATA.xlsx

```
47 JT REF. CR                                    L      440.00 Ft       Comments:
50 PATCHING                                      L      400.00 SqFt     Comments:
57 WEATHERING                                    M    4,987.00 SqFt     Comments:
```

Sample Number: 11 Type: R Area: 4,995.00SqFt PCI = 67
Sample Comments: NFIA_DATA.xlsx

```
47 JT REF. CR                                    M      180.00 Ft       Comments:
50 PATCHING                                      L      160.00 SqFt     Comments:
57 WEATHERING                                    L    4,995.00 SqFt     Comments:
```

Sample Number: 14 Type: R Area: 4,995.00SqFt PCI = 60
Sample Comments: NFIA_DATA.xlsx

```
47 JT REF. CR                                    L      210.00 Ft       Comments:
47 JT REF. CR                                    M       30.00 Ft       Comments:
50 PATCHING                                      L      200.00 SqFt     Comments:
50 PATCHING                                      M      150.00 SqFt     Comments:
57 WEATHERING                                    L    2,498.00 SqFt     Comments:
57 WEATHERING                                    M    2,498.00 SqFt     Comments:
```

Sample Number: 17 Type: R Area: 4,995.00SqFt PCI = 63
Sample Comments: NFIA_DATA.xlsx

```
47 JT REF. CR                                    L      190.00 Ft       Comments:
47 JT REF. CR                                    M      160.00 Ft       Comments:
57 WEATHERING                                    L    2,498.00 SqFt     Comments:
57 WEATHERING                                    M    2,498.00 SqFt     Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: GAA Name: GENERAL AVIATION APRON Use: APRON Area: 618,084.00SqFt

Section: 01 of 5 From: -1+60 FROM EDGE OR TW K To: 13+40 Last Const.: 06/01/1989
Surface: PCC Family: NFIA_2013 Apron GA and Pad Zone: Category: Rank: P
Area: 202,758.00SqFt Length: 1,506.00Ft Width: 140.00Ft
Slabs: 1,171 Slab Width: 12.00Ft Slab Length: 15.00Ft Joint Length: 29,980.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 59 Surveyed: 15
Conditions: PCI : 60
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 18.00Slabs PCI = 65
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	M	1.00 Slabs	Comments:
65 JT SEAL DMG	H	18.00 Slabs	Comments:
74 JOINT SPALL	M	1.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:

Sample Number: 03 Type: R Area: 21.00Slabs PCI = 51
Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	M	1.00 Slabs	Comments:
63 LINEAR CR	L	1.00 Slabs	Comments:
63 LINEAR CR	M	1.00 Slabs	Comments:
63 LINEAR CR	H	1.00 Slabs	Comments:
65 JT SEAL DMG	H	20.00 Slabs	Comments:
70 SCALING	L	1.00 Slabs	Comments:
71 FAULTING	L	1.00 Slabs	Comments:
74 JOINT SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	M	2.00 Slabs	Comments:

Sample Number: 07 Type: R Area: 23.00Slabs PCI = 76
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	4.00 Slabs	Comments:
65 JT SEAL DMG	H	16.00 Slabs	Comments:
67 LARGE PATCH	L	4.00 Slabs	Comments:
75 CORNER SPALL	M	2.00 Slabs	Comments:

Sample Number: 09 Type: R Area: 21.00Slabs PCI = 75
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	H	20.00 Slabs	Comments:
71 FAULTING	L	5.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:

Sample Number: 12 Type: A Area: 20.00Slabs PCI = 35
Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	M	2.00 Slabs	Comments:
64 DURABIL. CR	H	2.00 Slabs	Comments:
65 JT SEAL DMG	H	20.00 Slabs	Comments:
70 SCALING	L	1.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:

74 JOINT SPALL	M	1.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:
75 CORNER SPALL	L	5.00 Slabs	Comments:
75 CORNER SPALL	H	4.00 Slabs	Comments:

Sample Number: 13 Type: R Area: 20.00Slabs PCI = 57

Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	H	18.00 Slabs	Comments:
71 FAULTING	L	1.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	M	6.00 Slabs	Comments:
75 CORNER SPALL	H	4.00 Slabs	Comments:

Sample Number: 15 Type: R Area: 32.00Slabs PCI = 29

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	H	1.00 Slabs	Comments:
64 DURABIL. CR	L	2.00 Slabs	Comments:
64 DURABIL. CR	M	3.00 Slabs	Comments:
64 DURABIL. CR	H	5.00 Slabs	Comments:
65 JT SEAL DMG	H	27.00 Slabs	Comments:
66 SMALL PATCH	L	2.00 Slabs	Comments:
71 FAULTING	L	2.00 Slabs	Comments:
71 FAULTING	M	3.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	M	2.00 Slabs	Comments:
75 CORNER SPALL	H	7.00 Slabs	Comments:

Sample Number: 19 Type: R Area: 21.00Slabs PCI = 57

Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	H	1.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	H	20.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
74 JOINT SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	L	3.00 Slabs	Comments:
75 CORNER SPALL	M	4.00 Slabs	Comments:
75 CORNER SPALL	H	1.00 Slabs	Comments:

Sample Number: 33 Type: R Area: 20.00Slabs PCI = 57

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	H	19.00 Slabs	Comments:
74 JOINT SPALL	H	4.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:
63 LINEAR CR	L	1.00 Slabs	Comments:

Sample Number: 36 Type: R Area: 21.00Slabs PCI = 52

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	H	20.00 Slabs	Comments:
71 FAULTING	L	1.00 Slabs	Comments:
74 JOINT SPALL	M	3.00 Slabs	Comments:
74 JOINT SPALL	H	2.00 Slabs	Comments:
75 CORNER SPALL	L	3.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	H	3.00 Slabs	Comments:

Sample Number: 39 Type: R Area: 21.00Slabs PCI = 66

Sample Comments: NFIA_DATA.xlsx

```
64 DURABIL. CR                                 M        2.00 Slabs    Comments:
65 JT SEAL DMG                                 H       20.00 Slabs    Comments:
71 FAULTING                                    L        1.00 Slabs    Comments:
71 FAULTING                                    M        1.00 Slabs    Comments:
74 JOINT SPALL                                 M        1.00 Slabs    Comments:
```

Sample Number: 43 Type: R Area: 29.00Slabs PCI = 65

Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                                 H       21.00 Slabs    Comments:
66 SMALL PATCH                                 H        1.00 Slabs    Comments:
71 FAULTING                                    L        1.00 Slabs    Comments:
74 JOINT SPALL                                 M        1.00 Slabs    Comments:
74 JOINT SPALL                                 H        1.00 Slabs    Comments:
75 CORNER SPALL                                L        1.00 Slabs    Comments:
75 CORNER SPALL                                M        1.00 Slabs    Comments:
75 CORNER SPALL                                H        1.00 Slabs    Comments:
```

Sample Number: 45 Type: R Area: 21.00Slabs PCI = 79

Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                                 H       20.00 Slabs    Comments:
74 JOINT SPALL                                 M        1.00 Slabs    Comments:
75 CORNER SPALL                                H        2.00 Slabs    Comments:
```

Sample Number: 49 Type: R Area: 22.00Slabs PCI = 60

Sample Comments: NFIA_DATA.xlsx

```
64 DURABIL. CR                                 M        1.00 Slabs    Comments:
65 JT SEAL DMG                                 M        1.00 Slabs    Comments:
65 JT SEAL DMG                                 H       19.00 Slabs    Comments:
74 JOINT SPALL                                 M        1.00 Slabs    Comments:
75 CORNER SPALL                                L        3.00 Slabs    Comments:
75 CORNER SPALL                                M        2.00 Slabs    Comments:
75 CORNER SPALL                                H        1.00 Slabs    Comments:
```

Sample Number: 52 Type: R Area: 18.00Slabs PCI = 66

Sample Comments: NFIA_DATA.xlsx

```
62 CORNER BREAK                                H        1.00 Slabs    Comments:
64 DURABIL. CR                                 H        1.00 Slabs    Comments:
65 JT SEAL DMG                                 H       20.00 Slabs    Comments:
```

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: GAA Name: GENERAL AVIATION APRON Use: APRON Area: 618,084.00SqFt

Section: 02 of 5 From: TWC To: 7+30 SOUTH Last Const.: 06/01/1986

Surface: PCC Family: NFIA_2013 Apron GA and Pad Zone: Category: Rank: P

Area: 159,000.00SqFt Length: 730.00Ft Width: 296.00Ft

Slabs: 1,200 Slab Width: 12.00Ft Slab Length: 15.00Ft Joint Length: 31,386.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 60 Surveyed: 12

Conditions: PCI : 80

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 04 Type: R Area: 20.00Slabs PCI = 63

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	5.00 Slabs	Comments:
65 JT SEAL DMG	M	19.00 Slabs	Comments:
65 JT SEAL DMG	H	1.00 Slabs	Comments:
67 LARGE PATCH	L	1.00 Slabs	Comments:
71 FAULTING	L	2.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:

Sample Number: 07 Type: R Area: 21.00Slabs PCI = 82

Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	L	1.00 Slabs	Comments:
65 JT SEAL DMG	L	1.00 Slabs	Comments:
65 JT SEAL DMG	M	19.00 Slabs	Comments:
75 CORNER SPALL	L	4.00 Slabs	Comments:

Sample Number: 10 Type: R Area: 17.00Slabs PCI = 87

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	7.00 Slabs	Comments:
65 JT SEAL DMG	M	13.00 Slabs	Comments:
74 JOINT SPALL	L	2.00 Slabs	Comments:

Sample Number: 13 Type: R Area: 18.00Slabs PCI = 76

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	1.00 Slabs	Comments:
65 JT SEAL DMG	L	5.00 Slabs	Comments:
65 JT SEAL DMG	M	14.00 Slabs	Comments:
67 LARGE PATCH	L	1.00 Slabs	Comments:
74 JOINT SPALL	L	2.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:

Sample Number: 18 Type: R Area: 18.00Slabs PCI = 82

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	1.00 Slabs	Comments:
64 DURABIL. CR	L	1.00 Slabs	Comments:
65 JT SEAL DMG	L	3.00 Slabs	Comments:
65 JT SEAL DMG	M	13.00 Slabs	Comments:

Sample Number: 21 Type: R Area: 20.00Slabs PCI = 82

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	1.00 Slabs	Comments:

65 JT SEAL DMG	L	1.00 Slabs	Comments:
65 JT SEAL DMG	M	15.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:

Sample Number: 22 Type: R Area: 18.00Slabs PCI = 67

Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	H	2.00 Slabs	Comments:
65 JT SEAL DMG	L	18.00 Slabs	Comments:

Sample Number: 26 Type: R Area: 16.00Slabs PCI = 78

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	4.00 Slabs	Comments:
65 JT SEAL DMG	L	16.00 Slabs	Comments:
74 JOINT SPALL	M	2.00 Slabs	Comments:

Sample Number: 27 Type: R Area: 16.00Slabs PCI = 71

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	7.00 Slabs	Comments:
65 JT SEAL DMG	M	11.00 Slabs	Comments:
65 JT SEAL DMG	H	2.00 Slabs	Comments:
67 LARGE PATCH	L	2.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:

Sample Number: 32 Type: R Area: 16.00Slabs PCI = 79

Sample Comments: NFIA_DATA.xlsx

75 CORNER SPALL	L	2.00 Slabs	Comments:
63 LINEAR CR	L	3.00 Slabs	Comments:
65 JT SEAL DMG	L	16.00 Slabs	Comments:
73 SHRINKAGE CR	N	1.00 Slabs	Comments:

Sample Number: 33 Type: R Area: 16.00Slabs PCI = 93

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	16.00 Slabs	Comments:
75 CORNER SPALL	L	2.00 Slabs	Comments:

Sample Number: 42 Type: R Area: 26.00Slabs PCI = 92

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	26.00 Slabs	Comments:
75 CORNER SPALL	L	2.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: GAA Name: GENERAL AVIATION APRON Use: APRON Area: 618,084.00SqFt

Section: 02A of 5 From: EDGE TWC-01A To: TWJ Last Const.: 06/01/1989
Surface: PCC Family: NFIA_2013 Apron GA and Pad Zone: Category: Rank: P
Area: 141,550.00SqFt Length: 533.00Ft Width: 600.00Ft
Slabs: 1,777 Slab Width: 12.00Ft Slab Length: 15.00Ft Joint Length: 46,837.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 89 Surveyed: 7
Conditions: PCI : 85
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 26.00Slabs PCI = 88
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	13.00 Slabs	Comments:
65 JT SEAL DMG	M	6.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:

Sample Number: 04 Type: R Area: 21.00Slabs PCI = 70
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	18.00 Slabs	Comments:
65 JT SEAL DMG	M	2.00 Slabs	Comments:
66 SMALL PATCH	M	1.00 Slabs	Comments:
67 LARGE PATCH	L	3.00 Slabs	Comments:
71 FAULTING	L	2.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	L	3.00 Slabs	Comments:

Sample Number: 19 Type: R Area: 21.00Slabs PCI = 77
Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	M	1.00 Slabs	Comments:
63 LINEAR CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	L	21.00 Slabs	Comments:
67 LARGE PATCH	L	1.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:

Sample Number: 24 Type: R Area: 27.00Slabs PCI = 72
Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	L	1.00 Slabs	Comments:
65 JT SEAL DMG	L	27.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
74 JOINT SPALL	M	2.00 Slabs	Comments:
74 JOINT SPALL	H	2.00 Slabs	Comments:

Sample Number: 25 Type: R Area: 27.00Slabs PCI = 97
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	27.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:

Sample Number: 28 Type: R Area: 26.00Slabs PCI = 96
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	26.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Sample Number: 35 Type: R Area: 22.00Slabs PCI = 93

Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       22.00 Slabs    Comments:
74 JOINT SPALL                              M        1.00 Slabs    Comments:
75 CORNER SPALL                             L        1.00 Slabs    Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: GAA Name: GENERAL AVIATION APRON Use: APRON Area: 618,084.00SqFt

Section: 03 of 5 From: NA To: NA Last Const.: 06/01/1986
Surface: PCC Family: NFIA_2013 Apron GA and Pad Zone: Category: Rank: P
Area: 92,767.00SqFt Length: 460.00Ft Width: 200.00Ft
Slabs: 511 Slab Width: 12.00Ft Slab Length: 15.00Ft Joint Length: 13,140.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 26 Surveyed: 7
Conditions: PCI : 63
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 03 Type: R Area: 22.00Slabs PCI = 51
Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	2.00 Slabs	Comments:
65 JT SEAL DMG	M	12.00 Slabs	Comments:
65 JT SEAL DMG	H	8.00 Slabs	Comments:
71 FAULTING	L	1.00 Slabs	Comments:
71 FAULTING	M	1.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
74 JOINT SPALL	M	1.00 Slabs	Comments:
74 JOINT SPALL	H	2.00 Slabs	Comments:

Sample Number: 05 Type: R Area: 22.00Slabs PCI = 62
Sample Comments: NFIA_DATA.xlsx

75 CORNER SPALL	L	2.00 Slabs	Comments:
63 LINEAR CR	L	4.00 Slabs	Comments:
65 JT SEAL DMG	M	11.00 Slabs	Comments:
65 JT SEAL DMG	H	9.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:
67 LARGE PATCH	M	2.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:

Sample Number: 07 Type: R Area: 22.00Slabs PCI = 67
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	M	8.00 Slabs	Comments:
65 JT SEAL DMG	H	12.00 Slabs	Comments:
66 SMALL PATCH	L	4.00 Slabs	Comments:
71 FAULTING	L	2.00 Slabs	Comments:
74 JOINT SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	M	2.00 Slabs	Comments:

Sample Number: 15 Type: R Area: 22.00Slabs PCI = 43
Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	L	1.00 Slabs	Comments:
65 JT SEAL DMG	M	16.00 Slabs	Comments:
65 JT SEAL DMG	H	4.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:
67 LARGE PATCH	L	2.00 Slabs	Comments:
71 FAULTING	H	3.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:

Sample Number: 17 Type: R Area: 22.00Slabs PCI = 70
Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	L	1.00 Slabs	Comments:
63 LINEAR CR	L	5.00 Slabs	Comments:
65 JT SEAL DMG	M	20.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	L	5.00 Slabs	Comments:

Sample Number: 19 Type: R Area: 22.00Slabs PCI = 80
Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	L	2.00 Slabs	Comments:
65 JT SEAL DMG	M	20.00 Slabs	Comments:
67 LARGE PATCH	L	2.00 Slabs	Comments:
74 JOINT SPALL	L	2.00 Slabs	Comments:

Sample Number: 21 Type: R Area: 36.00Slabs PCI = 65
Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	M	1.00 Slabs	Comments:
64 DURABIL. CR	L	2.00 Slabs	Comments:
65 JT SEAL DMG	L	8.00 Slabs	Comments:
65 JT SEAL DMG	M	10.00 Slabs	Comments:
65 JT SEAL DMG	H	1.00 Slabs	Comments:
71 FAULTING	L	1.00 Slabs	Comments:
71 FAULTING	M	1.00 Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: GAA Name: GENERAL AVIATION APRON Use: APRON Area: 618,084.00SqFt

Section: 03A of 5 From: NA To: NA Last Const.: 06/01/1989
Surface: PCC Family: NFIA_2013 Apron GA and Pad Zone: Category: Rank: P
Area: 22,009.00SqFt Length: 242.00Ft Width: 132.00Ft
Slabs: 177 Slab Width: 12.00Ft Slab Length: 15.00Ft Joint Length: 4,417.60Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 9 Surveyed: 3
Conditions: PCI : 88
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 11.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                            L       11.00 Slabs    Comments:
```

Sample Number: 02 Type: R Area: 28.00Slabs PCI = 85
Sample Comments: NFIA_DATA.xlsx

```
62 CORNER BREAK                           H        1.00 Slabs    Comments:
65 JT SEAL DMG                            L       28.00 Slabs    Comments:
74 JOINT SPALL                            M        1.00 Slabs    Comments:
```

Sample Number: 04 Type: R Area: 27.00Slabs PCI = 87
Sample Comments: NFIA_DATA.xlsx

```
63 LINEAR CR                              L        3.00 Slabs    Comments:
65 JT SEAL DMG                            L       27.00 Slabs    Comments:
75 CORNER SPALL                           L        1.00 Slabs    Comments:
```

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: HELIA Name: HELIPAD APRON Use: HELIPAD Area: 191,297.00SqFt

Section: 01 of 2 From: NA To: NA Last Const.: 06/01/1976

Surface: APC Family: NFIA_2013 Apron GA and Pad Zone: Category: Rank: P

Area: 163,590.00SqFt Length: 277.00Ft Width: 645.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 33 Surveyed: 9

Conditions: PCI : 36

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 4,608.00SqFt PCI = 41

Sample Comments: NFIA_DATA.xlsx

```
47 JT REF. CR                                   M      575.00 Ft       Comments:
50 PATCHING                                     M    1,070.00 SqFt     Comments:
57 WEATHERING                                   L    4,608.00 SqFt     Comments:
```

Sample Number: 08 Type: R Area: 3,680.00SqFt PCI = 29

Sample Comments: NFIA_DATA.xlsx

```
47 JT REF. CR                                   M      650.00 Ft       Comments:
47 JT REF. CR                                   H      250.00 Ft       Comments:
48 L & T CR                                     M      100.00 Ft       Comments:
57 WEATHERING                                   L    3,680.00 SqFt     Comments:
```

Sample Number: 12 Type: R Area: 4,848.00SqFt PCI = 45

Sample Comments: NFIA_DATA.xlsx

```
47 JT REF. CR                                   M    1,291.00 Ft       Comments:
57 WEATHERING                                   L    4,848.00 SqFt     Comments:
```

Sample Number: 15 Type: R Area: 5,105.00SqFt PCI = 30

Sample Comments: NFIA_DATA.xlsx

```
47 JT REF. CR                                   M      500.00 Ft       Comments:
47 JT REF. CR                                   H      250.00 Ft       Comments:
48 L & T CR                                     M      150.00 Ft       Comments:
48 L & T CR                                     H       50.00 Ft       Comments:
56 SWELLING                                     L      150.00 SqFt     Comments:
57 WEATHERING                                   M    5,105.00 SqFt     Comments:
```

Sample Number: 22 Type: R Area: 4,593.00SqFt PCI = 10

Sample Comments: NFIA_DATA.xlsx

```
43 BLOCK CR                                     M    4,593.00 SqFt     Comments:
45 DEPRESSION                                   H      200.00 SqFt     Comments:
47 JT REF. CR                                   M      250.00 Ft       Comments:
47 JT REF. CR                                   H      200.00 Ft       Comments:
50 PATCHING                                     H      130.00 SqFt     Comments:
57 WEATHERING                                   M    4,593.00 SqFt     Comments:
```

Sample Number: 25 Type: R Area: 6,244.00SqFt PCI = 51

Sample Comments: NFIA_DATA.xlsx

```
47 JT REF. CR                                   M      680.00 Ft       Comments:
50 PATCHING                                     M      532.00 SqFt     Comments:
57 WEATHERING                                   L    6,244.00 SqFt     Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Sample Number: 29 Type: R Area: 5,725.00SqFt PCI = 27

Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	M	5,725.00 SqFt	Comments:
45 DEPRESSION	M	50.00 SqFt	Comments:
47 JT REF. CR	M	180.00 Ft	Comments:
50 PATCHING	H	240.00 SqFt	Comments:
57 WEATHERING	L	5,725.00 SqFt	Comments:

Sample Number: 32 Type: R Area: 4,602.00SqFt PCI = 41

Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	M	2,301.00 SqFt	Comments:
47 JT REF. CR	M	314.00 Ft	Comments:
57 WEATHERING	M	4,602.00 SqFt	Comments:

Sample Number: 36 Type: R Area: 2,768.00SqFt PCI = 55

Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	M	830.00 SqFt	Comments:
47 JT REF. CR	M	196.00 Ft	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: HELIA Name: HELIPAD APRON Use: HELIPAD Area: 191,297.00SqFt

---

Section: 02 of 2 From: NA To: NA Last Const.: 06/01/1968
Surface: PCC Family: NFIA_2013 Apron GA and Pad Zone: Category: Rank: P
Area: 27,707.00SqFt Length: 277.00Ft Width: 645.00Ft
Slabs: 112 Slab Width: 40.00Ft Slab Length: 40.00Ft Joint Length: 8,011.25Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 6 Surveyed: 3
Conditions: PCI : 25
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 03 Type: R Area: 1.00Slabs PCI = 12
Sample Comments: NFIA_DATA.xlsx

```
70 SCALING                                   L        1.00 Slabs    Comments:
72 SHAT. SLAB                                M        1.00 Slabs    Comments:
```

Sample Number: 07 Type: R Area: 1.00Slabs PCI = 17
Sample Comments: NFIA_DATA.xlsx

```
72 SHAT. SLAB                                M        1.00 Slabs    Comments:
```

Sample Number: 08 Type: R Area: 1.00Slabs PCI = 46
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                               H        1.00 Slabs    Comments:
67 LARGE PATCH                               M        1.00 Slabs    Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: OVER10 Name: OVERRUN 10L Use: OVERRUN Area: 197,099.00SqFt

---

Section: 01 of 2 From: 0+00 EDGE RW10L To: 7+00 Last Const.: 01/01/2012
Surface: PCC Family: NFIA_ 2013 Secondary Runway Zone: Category: Rank: P
Area: 105,120.00SqFt Length: 700.00Ft Width: 150.00Ft
Slabs: 292 Slab Width: 18.00Ft Slab Length: 20.00Ft Joint Length: 10,233.33Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 15 Surveyed: 4
Conditions: PCI : 91
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 21.00Slabs PCI = 97
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	21.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:

Sample Number: 05 Type: R Area: 21.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	21.00 Slabs	Comments:

Sample Number: 10 Type: R Area: 21.00Slabs PCI = 83
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	21.00 Slabs	Comments:
66 SMALL PATCH	L	4.00 Slabs	Comments:
67 LARGE PATCH	L	5.00 Slabs	Comments:

Sample Number: 14 Type: R Area: 21.00Slabs PCI = 85
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	21.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:
67 LARGE PATCH	L	5.00 Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: OVER10 Name: OVERRUN 10L Use: OVERRUN Area: 197,099.00SqFt

Section: 02 of 2 From: 7+00 To: 12+13 Last Const.: 01/01/2012
Surface: PCC Family: NFIA_ 2013 Secondary Runway Zone: Category: Rank: P
Area: 91,979.00SqFt Length: 513.00Ft Width: 180.00Ft
Slabs: 256 Slab Width: 18.00Ft Slab Length: 20.00Ft Joint Length: 9,054.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 13 Surveyed: 4
Conditions: PCI : 94
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 26.00Slabs PCI = 89
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L        26.00 Slabs    Comments:
66 SMALL PATCH                              H         2.00 Slabs    Comments:
```

Sample Number: 06 Type: R Area: 21.00Slabs PCI = 96
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L        21.00 Slabs    Comments:
66 SMALL PATCH                              L         3.00 Slabs    Comments:
```

Sample Number: 09 Type: R Area: 21.00Slabs PCI = 97
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L        21.00 Slabs    Comments:
66 SMALL PATCH                              L         1.00 Slabs    Comments:
```

Sample Number: 11 Type: R Area: 20.00Slabs PCI = 97
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L        20.00 Slabs    Comments:
66 SMALL PATCH                              L         1.00 Slabs    Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: OVR28 Name: OVERRUN Use: OVERRUN Area: 147,400.00SqFt

Section: 01A of 3 From: 0+00 EDEGE RW28R To: 3+60 Last Const.: 01/01/2012
Surface: AAC Family: NFIA_ 2013 Secondary Runway Zone: Category: Rank: P
Area: 41,300.00SqFt Length: 360.00Ft Width: 150.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 8 Surveyed: 2
Conditions: PCI : 100
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 5,035.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 05 Type: R Area: 5,002.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: OVR28 Name: OVERRUN Use: OVERRUN Area: 147,400.00SqFt

Section: 01B of 3 From: 3+60 To: 4+70 Last Const.: 06/01/1996
Surface: PCC Family: NFIA_ 2013 Secondary Runway Zone: Category: Rank: P
Area: 29,600.00SqFt Length: 110.00Ft Width: 150.00Ft
Slabs: 151 Slab Width: 13.00Ft Slab Length: 15.00Ft Joint Length: 2,109.23Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 4 Surveyed: 8
Conditions: PCI : 65
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 20.00Slabs PCI = 51
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                                L       14.00 Slabs    Comments:
65 JT SEAL DMG                                M        6.00 Slabs    Comments:
66 SMALL PATCH                                M        1.00 Slabs    Comments:
74 JOINT SPALL                                L        9.00 Slabs    Comments:
74 JOINT SPALL                                H        5.00 Slabs    Comments:
75 CORNER SPALL                               L        1.00 Slabs    Comments:
```

Sample Number: 02 Type: R Area: 23.00Slabs PCI = 82
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                                L       17.00 Slabs    Comments:
65 JT SEAL DMG                                M        6.00 Slabs    Comments:
74 JOINT SPALL                                L        6.00 Slabs    Comments:
74 JOINT SPALL                                M        1.00 Slabs    Comments:
```

Sample Number: 03 Type: R Area: 20.00Slabs PCI = 76
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                                L       11.00 Slabs    Comments:
65 JT SEAL DMG                                M        3.00 Slabs    Comments:
65 JT SEAL DMG                                H        1.00 Slabs    Comments:
74 JOINT SPALL                                L        9.00 Slabs    Comments:
```

Sample Number: 04 Type: R Area: 20.00Slabs PCI = 77
Sample Comments: NFIA_DATA.xlsx

```
62 CORNER BREAK                               M        1.00 Slabs    Comments:
65 JT SEAL DMG                                L        8.00 Slabs    Comments:
65 JT SEAL DMG                                M        2.00 Slabs    Comments:
66 SMALL PATCH                                L        1.00 Slabs    Comments:
74 JOINT SPALL                                L        2.00 Slabs    Comments:
74 JOINT SPALL                                M        1.00 Slabs    Comments:
```

Sample Number: 05 Type: R Area: 19.00Slabs PCI = 46
Sample Comments: NFIA_DATA.xlsx

```
62 CORNER BREAK                               M        2.00 Slabs    Comments:
63 LINEAR CR                                  L        1.00 Slabs    Comments:
63 LINEAR CR                                  M        2.00 Slabs    Comments:
65 JT SEAL DMG                                L        4.00 Slabs    Comments:
65 JT SEAL DMG                                M        3.00 Slabs    Comments:
65 JT SEAL DMG                                H        1.00 Slabs    Comments:
66 SMALL PATCH                                L        2.00 Slabs    Comments:
67 LARGE PATCH                                L        5.00 Slabs    Comments:
```

74 JOINT SPALL	L	2.00 Slabs	Comments:

Sample Number: 06 Type: R Area: 19.00Slabs PCI = 79

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	10.00 Slabs	Comments:
65 JT SEAL DMG	M	4.00 Slabs	Comments:
65 JT SEAL DMG	H	3.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:

Sample Number: 07 Type: R Area: 16.00Slabs PCI = 52

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	M	1.00 Slabs	Comments:
63 LINEAR CR	H	1.00 Slabs	Comments:
64 DURABIL. CR	L	1.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	L	7.00 Slabs	Comments:
65 JT SEAL DMG	M	5.00 Slabs	Comments:
65 JT SEAL DMG	H	7.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:

Sample Number: 08 Type: R Area: 14.00Slabs PCI = 45

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	1.00 Slabs	Comments:
63 LINEAR CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	M	3.00 Slabs	Comments:
65 JT SEAL DMG	H	12.00 Slabs	Comments:
66 SMALL PATCH	L	2.00 Slabs	Comments:
71 FAULTING	M	3.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
74 JOINT SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: OVR28 Name: OVERRUN Use: OVERRUN Area: 147,400.00SqFt

Section: 02 of 3 From: 4+70 To: 9+80 Last Const.: 01/01/2012
Surface: AAC Family: NFIA_ 2013 Secondary Runway Zone: Category: Rank: P
Area: 76,500.00SqFt Length: 510.00Ft Width: 150.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 15 Surveyed: 4
Conditions: PCI : 86
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 10 Type: R Area: 5,087.00SqFt PCI = 89
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	75.00 Ft	Comments:
57 WEATHERING	L	5,087.00 SqFt	Comments:

Sample Number: 14 Type: R Area: 4,918.00SqFt PCI = 83
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	185.00 Ft	Comments:
57 WEATHERING	L	4,918.00 SqFt	Comments:

Sample Number: 18 Type: R Area: 4,950.00SqFt PCI = 82
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	200.00 Ft	Comments:
57 WEATHERING	L	4,950.00 SqFt	Comments:

Sample Number: 22 Type: R Area: 4,927.00SqFt PCI = 91
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	120.00 Ft	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10L Name: RUNWAY Use: RUNWAY Area: 1,368,300.00SqFt

Section: 01 of 9 From: 0+00 KEEL To: 2+02 Last Const.: 01/01/2012
Surface: PCC Family: NFIA 2013_Runway Zone: Category: Rank: P
Area: 30,300.00SqFt Length: 202.00Ft Width: 150.00Ft
Slabs: 84 Slab Width: 18.00Ft Slab Length: 20.00Ft Joint Length: 2,846.33Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 4 Surveyed: 4
Conditions: PCI : 91
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 21.00Slabs PCI = 96
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L        21.00 Slabs    Comments:
66 SMALL PATCH                              L         3.00 Slabs    Comments:
```

Sample Number: 02 Type: R Area: 20.00Slabs PCI = 93
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L        20.00 Slabs    Comments:
66 SMALL PATCH                              L         4.00 Slabs    Comments:
74 JOINT SPALL                              L         1.00 Slabs    Comments:
```

Sample Number: 03 Type: R Area: 21.00Slabs PCI = 86
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L        21.00 Slabs    Comments:
67 LARGE PATCH                              L         5.00 Slabs    Comments:
```

Sample Number: 04 Type: R Area: 22.00Slabs PCI = 90
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L        22.00 Slabs    Comments:
66 SMALL PATCH                              L         4.00 Slabs    Comments:
67 LARGE PATCH                              L         2.00 Slabs    Comments:
```

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10L Name: RUNWAY Use: RUNWAY Area: 1,368,300.00SqFt

---

Section: 02 of 9 From: 2+02 To: 41+00 Last Const.: 01/01/2012

Surface: APC Family: NFIA 2013_Runway Zone: Category: Rank: P

Area: 194,900.00SqFt Length: 3,898.00Ft Width: 100.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 39 Surveyed: 10

Conditions: PCI : 100

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 4,997.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

`<NO DISTRESSES>`

Sample Number: 06 Type: R Area: 4,997.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

`<NO DISTRESSES>`

Sample Number: 10 Type: R Area: 4,997.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

`<NO DISTRESSES>`

Sample Number: 14 Type: R Area: 4,997.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

`<NO DISTRESSES>`

Sample Number: 18 Type: R Area: 4,997.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

`<NO DISTRESSES>`

Sample Number: 22 Type: R Area: 4,997.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

`<NO DISTRESSES>`

Sample Number: 26 Type: R Area: 4,997.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

`<NO DISTRESSES>`

Sample Number: 30 Type: R Area: 4,997.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

`<NO DISTRESSES>`

Sample Number: 34 Type: R Area: 4,997.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

`<NO DISTRESSES>`

Sample Number: 38 Type: R Area: 4,997.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

`<NO DISTRESSES>`

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10L Name: RUNWAY Use: RUNWAY Area: 1,368,300.00SqFt

Section: 02A of 9 From: 2+02 SIDES To: 41+00 SIDES Last Const.: 01/01/2012

Surface: APC Family: NFIA 2013_Runway Zone: Category: Rank: P

Area: 389,800.00SqFt Length: 3,898.00Ft Width: 100.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 78 Surveyed: 20

Conditions: PCI : 100

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 4,990.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 05 Type: R Area: 4,637.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 09 Type: R Area: 4,502.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 13 Type: R Area: 4,498.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 17 Type: R Area: 4,761.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 21 Type: R Area: 4,861.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 25 Type: R Area: 4,850.00SqFt PCI = 98

Sample Comments: NFIA_DATA.xlsx

50 PATCHING L 1.00 SqFt Comments:

Sample Number: 29 Type: R Area: 4,840.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 34 Type: R Area: 4,827.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 37 Type: R Area: 4,808.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 42 Type: R Area: 4,904.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Re-inspection Report

Sample Number: 46 Type: R Area: 4,921.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 50 Type: R Area: 4,926.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 63 Type: R Area: 4,931.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 67 Type: R Area: 4,936.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 71 Type: R Area: 4,942.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 75 Type: R Area: 4,916.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 79 Type: R Area: 4,857.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 83 Type: R Area: 4,798.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 87 Type: R Area: 4,592.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10L Name: RUNWAY Use: RUNWAY Area: 1,368,300.00SqFt

Section: 03 of 9 From: 41+00 KEEL To: 45+97 Last Const.: 01/01/2012
Surface: APC Family: NFIA 2013_Runway Zone: Category: Rank: P
Area: 24,850.00SqFt Length: 497.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 5 Surveyed: 2
Conditions: PCI : 100
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 4,875.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 05 Type: R Area: 4,639.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10L Name: RUNWAY Use: RUNWAY Area: 1,368,300.00SqFt

Section: 03A of 9 From: 41+00 SIDES To: 45+97 Last Const.: 01/01/2012
Surface: APC Family: NFIA 2013_Runway Zone: Category: Rank: P
Area: 49,700.00SqFt Length: 497.00Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 10 Surveyed: 4
Conditions: PCI : 100
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 4,799.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 03 Type: R Area: 4,850.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 06 Type: R Area: 4,669.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 10 Type: R Area: 4,913.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10L Name: RUNWAY Use: RUNWAY Area: 1,368,300.00SqFt

Section: 04 of 9 From: 45+97 KEEL To: 78+87 Last Const.: 01/01/2012

Surface: APC Family: NFIA 2013_Runway Zone: Category: Rank: P

Area: 164,500.00SqFt Length: 3,290.00Ft Width: 50.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 33 Surveyed: 9

Conditions: PCI : 100

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 4,612.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 06 Type: R Area: 4,672.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 10 Type: R Area: 4,732.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 14 Type: A Area: 4,793.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 18 Type: R Area: 4,853.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 22 Type: R Area: 4,913.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 26 Type: R Area: 4,974.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 30 Type: R Area: 5,034.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 33 Type: R Area: 4,538.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10L Name: RUNWAY Use: RUNWAY Area: 1,368,300.00SqFt

Section: 04A of 9 From: 45+97 To: 78+87 Last Const.: 01/01/2012
Surface: APC Family: NFIA 2013_Runway Zone: Category: Rank: P
Area: 329,000.00SqFt Length: 3,290.00Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 66 Surveyed: 18
Conditions: PCI : 100
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 4,893.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 05 Type: R Area: 4,878.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 09 Type: R Area: 4,865.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 13 Type: R Area: 4,851.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 17 Type: R Area: 4,837.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 21 Type: R Area: 4,824.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 25 Type: R Area: 4,810.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 29 Type: R Area: 4,797.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 33 Type: R Area: 4,276.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 36 Type: R Area: 4,911.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 40 Type: R Area: 4,889.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Re-inspection Report

Sample Number: 44 Type: R Area: 4,867.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 48 Type: R Area: 4,845.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 52 Type: R Area: 4,823.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 56 Type: R Area: 4,801.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 60 Type: R Area: 4,780.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 64 Type: R Area: 4,758.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 65 Type: R Area: 4,243.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10L Name: RUNWAY Use: RUNWAY Area: 1,368,300.00SqFt

Section: 05 of 9 From: 78+87 To: 91+22 Last Const.: 01/01/2012

Surface: APC Family: NFIA 2013_Runway Zone: Category: Rank: P

Area: 61,750.00SqFt Length: 1,235.00Ft Width: 50.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 12 Surveyed: 4

Conditions: PCI : 100

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 5,025.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 06 Type: R Area: 4,864.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 10 Type: R Area: 4,704.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 12 Type: R Area: 6,290.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10L Name: RUNWAY Use: RUNWAY Area: 1,368,300.00SqFt

Section: 05A of 9 From: 78+87 To: 91+22 Last Const.: 01/01/2012
Surface: APC Family: NFIA 2013_Runway Zone: Category: Rank: P
Area: 123,500.00SqFt Length: 1,235.00Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 25 Surveyed: 8
Conditions: PCI : 100
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 4,786.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 05 Type: R Area: 4,823.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 10 Type: R Area: 4,869.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 12 Type: R Area: 6,683.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 15 Type: R Area: 4,903.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 19 Type: R Area: 5,157.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 23 Type: R Area: 5,411.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 24 Type: R Area: 7,449.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10R Name: RUNWAY 10R-28L Use: RUNWAY Area: 290,736.00SqFt

Section: 01 of 3 From: 0+00 To: EDGE TWM Last Const.: 06/01/1976
Surface: AAC Family: NFIA_ 2013 Secondary Runway Zone: Category: Rank: P
Area: 245,317.00SqFt Length: 3,885.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 49 Surveyed: 19
Conditions: PCI : 28
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 5,038.00SqFt PCI = 28
Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	M	504.00 SqFt	Comments:
48 L & T CR	L	160.00 Ft	Comments:
48 L & T CR	M	240.00 Ft	Comments:
52 RAVELING	M	5,038.00 SqFt	Comments:

Sample Number: 02 Type: R Area: 4,995.00SqFt PCI = 28
Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	L	500.00 SqFt	Comments:
48 L & T CR	L	180.00 Ft	Comments:
48 L & T CR	M	160.00 Ft	Comments:
52 RAVELING	M	4,995.00 SqFt	Comments:

Sample Number: 06 Type: R Area: 4,996.00SqFt PCI = 28
Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	M	1,998.00 SqFt	Comments:
48 L & T CR	L	120.00 Ft	Comments:
48 L & T CR	M	120.00 Ft	Comments:
52 RAVELING	M	4,996.00 SqFt	Comments:

Sample Number: 10 Type: R Area: 5,003.00SqFt PCI = 28
Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	L	500.00 SqFt	Comments:
48 L & T CR	L	130.00 Ft	Comments:
48 L & T CR	M	160.00 Ft	Comments:
52 RAVELING	M	5,003.00 SqFt	Comments:

Sample Number: 14 Type: R Area: 4,975.00SqFt PCI = 23
Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	L	498.00 SqFt	Comments:
48 L & T CR	L	100.00 Ft	Comments:
48 L & T CR	M	220.00 Ft	Comments:
48 L & T CR	H	15.00 Ft	Comments:
52 RAVELING	M	4,975.00 SqFt	Comments:

Sample Number: 16 Type: A Area: 4,970.00SqFt PCI = 33
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	120.00 Ft	Comments:
48 L & T CR	M	180.00 Ft	Comments:
52 RAVELING	M	4,970.00 SqFt	Comments:
42 BLEEDING	N	4.00 SqFt	Comments:

Sample Number: 18 Type: R Area: 4,966.00SqFt PCI = 33

Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	50.00	Ft	Comments:
48 L & T CR	M	225.00	Ft	Comments:
52 RAVELING	M	4,966.00	SqFt	Comments:

Sample Number: 19 Type: A Area: 4,964.00SqFt PCI = 12

Sample Comments: NFIA_DATA.xlsx

45 DEPRESSION	L	1,200.00	SqFt	Comments:
45 DEPRESSION	M	800.00	SqFt	Comments:
48 L & T CR	L	120.00	Ft	Comments:
48 L & T CR	M	180.00	Ft	Comments:
52 RAVELING	M	4,964.00	SqFt	Comments:

Sample Number: 21 Type: R Area: 5,013.00SqFt PCI = 38

Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	L	501.00	SqFt	Comments:
48 L & T CR	L	50.00	Ft	Comments:
48 L & T CR	M	175.00	Ft	Comments:
52 RAVELING	M	2,506.00	SqFt	Comments:
57 WEATHERING	M	2,506.00	SqFt	Comments:

Sample Number: 25 Type: R Area: 4,954.00SqFt PCI = 28

Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	L	495.00	SqFt	Comments:
48 L & T CR	L	50.00	Ft	Comments:
48 L & T CR	M	250.00	Ft	Comments:
52 RAVELING	M	4,954.00	SqFt	Comments:

Sample Number: 29 Type: R Area: 4,958.00SqFt PCI = 19

Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	30.00	Ft	Comments:
48 L & T CR	M	250.00	Ft	Comments:
52 RAVELING	M	4,462.00	SqFt	Comments:
52 RAVELING	H	496.00	SqFt	Comments:

Sample Number: 33 Type: R Area: 4,968.00SqFt PCI = 28

Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	L	745.00	SqFt	Comments:
48 L & T CR	L	50.00	Ft	Comments:
48 L & T CR	M	300.00	Ft	Comments:
52 RAVELING	M	4,968.00	SqFt	Comments:

Sample Number: 37 Type: R Area: 4,951.00SqFt PCI = 33

Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	75.00	Ft	Comments:
48 L & T CR	M	200.00	Ft	Comments:
52 RAVELING	M	4,951.00	SqFt	Comments:

Sample Number: 41 Type: R Area: 5,122.00SqFt PCI = 33

Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	180.00	Ft	Comments:
48 L & T CR	M	200.00	Ft	Comments:
52 RAVELING	M	5,122.00	SqFt	Comments:

Sample Number: 44 Type: A Area: 3,340.00SqFt PCI = 33

Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	30.00	Ft	Comments:

48 L & T CR	M	190.00	Ft	Comments:
52 RAVELING	M	3,340.00	SqFt	Comments:

Sample Number: 45 Type: R Area: 4,925.00SqFt PCI = 15

Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	L	1,478.00	SqFt	Comments:
43 BLOCK CR	M	1,970.00	SqFt	Comments:
48 L & T CR	L	150.00	Ft	Comments:
52 RAVELING	M	4,679.00	SqFt	Comments:
52 RAVELING	H	246.00	SqFt	Comments:

Sample Number: 46 Type: A Area: 6,717.00SqFt PCI = 29

Sample Comments: NFIA_DATA.xlsx

45 DEPRESSION	M	90.00	SqFt	Comments:
48 L & T CR	L	50.00	Ft	Comments:
48 L & T CR	M	80.00	Ft	Comments:
52 RAVELING	M	6,717.00	SqFt	Comments:

Sample Number: 47 Type: R Area: 6,665.00SqFt PCI = 25

Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	M	4,999.00	SqFt	Comments:
48 L & T CR	M	30.00	Ft	Comments:
52 RAVELING	M	6,665.00	SqFt	Comments:

Sample Number: 48 Type: A Area: 6,698.00SqFt PCI = 22

Sample Comments: NFIA_DATA.xlsx

45 DEPRESSION	M	1,125.00	SqFt	Comments:
48 L & T CR	L	125.00	Ft	Comments:
48 L & T CR	M	225.00	Ft	Comments:
52 RAVELING	M	6,698.00	SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10R Name: RUNWAY 10R-28L Use: RUNWAY Area: 290,736.00SqFt

Section: 01A of 3 From: 26+05 To: 36+30 Last Const.: 03/01/1997
Surface: AAC Family: NFIA_ 2013 Secondary Runway Zone: Category: Rank: P
Area: 38,888.00SqFt Length: 1,025.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 8 Surveyed: 8
Conditions: PCI : 76
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 3,928.00SqFt PCI = 74
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	60.00 Ft	Comments:
48 L & T CR	M	30.00 Ft	Comments:
50 PATCHING	L	220.00 SqFt	Comments:
57 WEATHERING	L	3,928.00 SqFt	Comments:

Sample Number: 02 Type: R Area: 2,763.00SqFt PCI = 52
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	M	75.00 Ft	Comments:
50 PATCHING	M	400.00 SqFt	Comments:
52 RAVELING	L	1,382.00 SqFt	Comments:
57 WEATHERING	M	1,382.00 SqFt	Comments:

Sample Number: 03 Type: R Area: 3,249.00SqFt PCI = 70
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	100.00 Ft	Comments:
48 L & T CR	M	100.00 Ft	Comments:
57 WEATHERING	L	3,249.00 SqFt	Comments:

Sample Number: 04 Type: R Area: 5,281.00SqFt PCI = 61
Sample Comments: NFIA_DATA.xlsx

45 DEPRESSION	L	50.00 SqFt	Comments:
48 L & T CR	L	20.00 Ft	Comments:
48 L & T CR	M	40.00 Ft	Comments:
50 PATCHING	L	440.00 SqFt	Comments:
57 WEATHERING	M	5,281.00 SqFt	Comments:

Sample Number: 05 Type: R Area: 5,638.00SqFt PCI = 94
Sample Comments: NFIA_DATA.xlsx

57 WEATHERING	L	5,638.00 SqFt	Comments:

Sample Number: 06 Type: R Area: 6,321.00SqFt PCI = 79
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	50.00 Ft	Comments:
48 L & T CR	M	60.00 Ft	Comments:
57 WEATHERING	L	6,321.00 SqFt	Comments:

Sample Number: 07 Type: R Area: 7,240.00SqFt PCI = 81
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	90.00 Ft	Comments:
48 L & T CR	M	40.00 Ft	Comments:
57 WEATHERING	L	7,240.00 SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Sample Number: 08 Type: R Area: 4,467.00SqFt PCI = 74

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                 L       20.00 Ft        Comments:
48 L & T CR                                 M      100.00 Ft        Comments:
57 WEATHERING                               L    4,467.00 SqFt      Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW10R Name: RUNWAY 10R-28L Use: RUNWAY Area: 290,736.00SqFt

Section: 02 of 3 From: 38+85 To: 39+70 Last Const.: 06/01/1976
Surface: PCC Family: NFIA_ 2013 Secondary Runway Zone: Category: Rank: P
Area: 6,531.00SqFt Length: 85.00Ft Width: 75.00Ft
Slabs: 18 Slab Width: 20.00Ft Slab Length: 18.00Ft Joint Length: 512.92Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 1 Surveyed: 1
Conditions: PCI : 42
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 18.00Slabs PCI = 42
Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	M	1.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	L	1.00 Slabs	Comments:
65 JT SEAL DMG	M	7.00 Slabs	Comments:
65 JT SEAL DMG	H	16.00 Slabs	Comments:
68 POPOUTS	N	1.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
74 JOINT SPALL	H	2.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	H	3.00 Slabs	Comments:

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW624 Name: RUNWAY 6-24 Use: RUNWAY Area: 814,250.00SqFt

Section: 01 of 7 From: 0+00 KEEL To: 3+50 Last Const.: 06/01/1986

Surface: AAC Family: NFIA 2013_Runway Zone: Category: Rank: P

Area: 17,500.00SqFt Length: 350.00Ft Width: 50.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 4 Surveyed: 2

Conditions: PCI : 16

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 5,809.00SqFt PCI = 16

Sample Comments: NFIA_DATA.xlsx

```
43 BLOCK CR                                M    1,452.00 SqFt     Comments:
48 L & T CR                                M      100.00 Ft       Comments:
52 RAVELING                                M    5,228.00 SqFt     Comments:
52 RAVELING                                H      581.00 SqFt     Comments:
```

Sample Number: 03 Type: A Area: 5,853.00SqFt PCI = 16

Sample Comments: NFIA_DATA.xlsx

```
43 BLOCK CR                                M    1,463.00 SqFt     Comments:
48 L & T CR                                M       30.00 Ft       Comments:
52 RAVELING                                M    5,268.00 SqFt     Comments:
52 RAVELING                                H      585.00 SqFt     Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW624 Name: RUNWAY 6-24 Use: RUNWAY Area: 814,250.00SqFt

Section: 01A of 7 From: 0+00 SIDES To: 3+50 Last Const.: 06/01/1986
Surface: AAC Family: NFIA 2013_Runway Zone: Category: Rank: P
Area: 35,000.00SqFt Length: 350.00Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 7 Surveyed: 4
Conditions: PCI : 19
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: A Area: 5,948.00SqFt PCI = 16
Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                  L      120.00 Ft       Comments:
48 L & T CR                                  M      300.00 Ft       Comments:
52 RAVELING                                  M    3,569.00 SqFt     Comments:
52 RAVELING                                  H    2,379.00 SqFt     Comments:
```

Sample Number: 03 Type: R Area: 6,808.00SqFt PCI = 9
Sample Comments: NFIA_DATA.xlsx

```
43 BLOCK CR                                  M    5,446.00 SqFt     Comments:
52 RAVELING                                  M    5,446.00 SqFt     Comments:
52 RAVELING                                  H    1,362.00 SqFt     Comments:
```

Sample Number: 04 Type: R Area: 5,656.00SqFt PCI = 33
Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                  L      150.00 Ft       Comments:
48 L & T CR                                  M      100.00 Ft       Comments:
52 RAVELING                                  M    5,656.00 SqFt     Comments:
```

Sample Number: 06 Type: A Area: 5,683.00SqFt PCI = 21
Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                  L      270.00 Ft       Comments:
48 L & T CR                                  M      120.00 Ft       Comments:
52 RAVELING                                  M    5,115.00 SqFt     Comments:
52 RAVELING                                  H      568.00 SqFt     Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW624 Name: RUNWAY 6-24 Use: RUNWAY Area: 814,250.00SqFt

Section: 02 of 7 From: 3+50 To: 6+50 Last Const.: 06/01/1989
Surface: PCC Family: NFIA 2013_Runway Zone: Category: Rank: P
Area: 45,100.00SqFt Length: 300.00Ft Width: 150.00Ft
Slabs: 231 Slab Width: 13.00Ft Slab Length: 15.00Ft Joint Length: 6,011.54Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 12 Surveyed: 4
Conditions: PCI : 87
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 19.00Slabs PCI = 95
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       19.00 Slabs    Comments:
66 SMALL PATCH                              L        4.00 Slabs    Comments:
```

Sample Number: 03 Type: A Area: 20.00Slabs PCI = 78
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       20.00 Slabs    Comments:
66 SMALL PATCH                              L        7.00 Slabs    Comments:
67 LARGE PATCH                              L        7.00 Slabs    Comments:
```

Sample Number: 05 Type: R Area: 19.00Slabs PCI = 80
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       19.00 Slabs    Comments:
66 SMALL PATCH                              L        9.00 Slabs    Comments:
67 LARGE PATCH                              L        5.00 Slabs    Comments:
```

Sample Number: 12 Type: R Area: 19.00Slabs PCI = 88
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       19.00 Slabs    Comments:
66 SMALL PATCH                              L        1.00 Slabs    Comments:
71 FAULTING                                 L        1.00 Slabs    Comments:
75 CORNER SPALL                             M        1.00 Slabs    Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW624 Name: RUNWAY 6-24 Use: RUNWAY Area: 814,250.00SqFt

Section: 03 of 7 From: 6+50 KEEL To: 45+90 Last Const.: 03/01/1997
Surface: AAC Family: NFIA 2013_Runway Zone: Category: Rank: P
Area: 192,750.00SqFt Length: 3,940.00Ft Width: 50.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 39 Surveyed: 11
Conditions: PCI : 77
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: A Area: 7,361.00SqFt PCI = 85
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	230.00 Ft	Comments:
57 WEATHERING	L	7,361.00 SqFt	Comments:

Sample Number: 02 Type: R Area: 5,026.00SqFt PCI = 81
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	230.00 Ft	Comments:
57 WEATHERING	L	5,026.00 SqFt	Comments:

Sample Number: 06 Type: R Area: 4,994.00SqFt PCI = 76
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	360.00 Ft	Comments:
57 WEATHERING	L	4,994.00 SqFt	Comments:

Sample Number: 10 Type: R Area: 4,963.00SqFt PCI = 73
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	300.00 Ft	Comments:
48 L & T CR	M	30.00 Ft	Comments:
57 WEATHERING	L	4,963.00 SqFt	Comments:

Sample Number: 14 Type: R Area: 4,931.00SqFt PCI = 68
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	60.00 SqFt	Comments:
48 L & T CR	L	230.00 Ft	Comments:
57 WEATHERING	L	4,931.00 SqFt	Comments:

Sample Number: 18 Type: R Area: 4,899.00SqFt PCI = 81
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	220.00 Ft	Comments:
57 WEATHERING	L	4,899.00 SqFt	Comments:

Sample Number: 22 Type: R Area: 4,868.00SqFt PCI = 80
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	260.00 Ft	Comments:
57 WEATHERING	L	4,868.00 SqFt	Comments:

Sample Number: 26 Type: R Area: 4,836.00SqFt PCI = 76
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	230.00 Ft	Comments:
48 L & T CR	M	25.00 Ft	Comments:
57 WEATHERING	L	4,836.00 SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Sample Number: 30 Type: R Area: 4,804.00SqFt PCI = 74

Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	230.00	Ft	Comments:
48 L & T CR	M	100.00	Ft	Comments:
57 WEATHERING	L	4,804.00	SqFt	Comments:

Sample Number: 34 Type: R Area: 4,773.00SqFt PCI = 74

Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	150.00	Ft	Comments:
48 L & T CR	M	100.00	Ft	Comments:
57 WEATHERING	L	4,773.00	SqFt	Comments:

Sample Number: 38 Type: R Area: 4,741.00SqFt PCI = 85

Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	150.00	Ft	Comments:
57 WEATHERING	L	4,741.00	SqFt	Comments:

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW624 Name: RUNWAY 6-24 Use: RUNWAY Area: 814,250.00SqFt

Section: 03A of 7 From: 6+50 SIDES To: 45+90 Last Const.: 03/01/1997

Surface: AAC Family: NFIA 2013_Runway Zone: Category: Rank: P

Area: 399,600.00SqFt Length: 3,940.00Ft Width: 100.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 80 Surveyed: 21

Conditions: PCI : 79

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 7,501.00SqFt PCI = 86

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                L       350.00 Ft        Comments:
```

Sample Number: 02 Type: R Area: 5,141.00SqFt PCI = 82

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                L       350.00 Ft        Comments:
```

Sample Number: 05 Type: R Area: 5,141.00SqFt PCI = 75

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                L       300.00 Ft        Comments:
57 WEATHERING                              M    5,141.00 SqFt      Comments:
```

Sample Number: 09 Type: R Area: 5,142.00SqFt PCI = 75

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                L       300.00 Ft        Comments:
57 WEATHERING                              M    5,142.00 SqFt      Comments:
```

Sample Number: 13 Type: R Area: 5,143.00SqFt PCI = 75

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                L       275.00 Ft        Comments:
57 WEATHERING                              M    5,143.00 SqFt      Comments:
```

Sample Number: 17 Type: R Area: 5,144.00SqFt PCI = 79

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                L       300.00 Ft        Comments:
57 WEATHERING                              M    2,572.00 SqFt      Comments:
```

Sample Number: 21 Type: R Area: 5,145.00SqFt PCI = 75

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                L       300.00 Ft        Comments:
57 WEATHERING                              M    5,145.00 SqFt      Comments:
```

Sample Number: 25 Type: R Area: 5,160.00SqFt PCI = 75

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                L       260.00 Ft        Comments:
57 WEATHERING                              M    5,160.00 SqFt      Comments:
```

Sample Number: 29 Type: R Area: 5,170.00SqFt PCI = 75

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                L       330.00 Ft        Comments:
57 WEATHERING                              M    5,170.00 SqFt      Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Sample Number: 33 Type: R Area: 5,142.00SqFt PCI = 75
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	350.00	Ft	Comments:
57 WEATHERING	M	5,142.00	SqFt	Comments:

Sample Number: 37 Type: R Area: 5,132.00SqFt PCI = 75
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	400.00	Ft	Comments:
57 WEATHERING	M	5,132.00	SqFt	Comments:

Sample Number: 42 Type: R Area: 4,872.00SqFt PCI = 78
Sample Comments: NFIA_DATA.xlsx

47 JT REF. CR	L	300.00	Ft	Comments:
48 L & T CR	L	60.00	Ft	Comments:
57 WEATHERING	L	4,872.00	SqFt	Comments:

Sample Number: 46 Type: R Area: 4,872.00SqFt PCI = 87
Sample Comments: NFIA_DATA.xlsx

47 JT REF. CR	L	36.00	Ft	Comments:
48 L & T CR	L	45.00	Ft	Comments:
57 WEATHERING	L	4,872.00	SqFt	Comments:

Sample Number: 50 Type: R Area: 4,903.00SqFt PCI = 81
Sample Comments: NFIA_DATA.xlsx

47 JT REF. CR	L	250.00	Ft	Comments:
48 L & T CR	L	10.00	Ft	Comments:
57 WEATHERING	L	4,903.00	SqFt	Comments:

Sample Number: 54 Type: R Area: 4,933.00SqFt PCI = 81
Sample Comments: NFIA_DATA.xlsx

47 JT REF. CR	L	200.00	Ft	Comments:
48 L & T CR	L	100.00	Ft	Comments:
57 WEATHERING	L	4,933.00	SqFt	Comments:

Sample Number: 58 Type: R Area: 4,964.00SqFt PCI = 72
Sample Comments: NFIA_DATA.xlsx

47 JT REF. CR	L	220.00	Ft	Comments:
48 L & T CR	L	30.00	Ft	Comments:
57 WEATHERING	L	2,978.00	SqFt	Comments:
57 WEATHERING	M	1,986.00	SqFt	Comments:

Sample Number: 62 Type: R Area: 5,002.00SqFt PCI = 85
Sample Comments: NFIA_DATA.xlsx

47 JT REF. CR	L	75.00	Ft	Comments:
48 L & T CR	L	50.00	Ft	Comments:
57 WEATHERING	L	5,002.00	SqFt	Comments:

Sample Number: 66 Type: R Area: 5,059.00SqFt PCI = 79
Sample Comments: NFIA_DATA.xlsx

47 JT REF. CR	L	150.00	Ft	Comments:
48 L & T CR	L	175.00	Ft	Comments:
57 WEATHERING	L	5,059.00	SqFt	Comments:

Sample Number: 70 Type: R Area: 5,056.00SqFt PCI = 85
Sample Comments: NFIA_DATA.xlsx

47 JT REF. CR	L	240.00	Ft	Comments:
57 WEATHERING	L	5,056.00	SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Sample Number: 74 Type: R Area: 5,099.00SqFt PCI = 81

Sample Comments: NFIA_DATA.xlsx

47 JT REF. CR	L	200.00 Ft	Comments:
48 L & T CR	L	120.00 Ft	Comments:
57 WEATHERING	L	5,099.00 SqFt	Comments:

Sample Number: 78 Type: R Area: 5,055.00SqFt PCI = 81

Sample Comments: NFIA_DATA.xlsx

47 JT REF. CR	L	200.00 Ft	Comments:
48 L & T CR	L	125.00 Ft	Comments:
57 WEATHERING	L	5,055.00 SqFt	Comments:

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW624 Name: RUNWAY 6-24 Use: RUNWAY Area: 814,250.00SqFt

Section: 04 of 7 From: 45+90 To: 56+38 Last Const.: 01/01/2012

Surface: AAC Family: NFIA 2013_Runway Zone: Category: Rank: P

Area: 42,700.00SqFt Length: 1,048.00Ft Width: 50.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 9 Surveyed: 4

Conditions: PCI : 100

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 03 Type: R Area: 5,216.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 06 Type: R Area: 5,425.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 07 Type: R Area: 4,333.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Sample Number: 08 Type: R Area: 6,839.00SqFt PCI = 100

Sample Comments: NFIA_DATA.xlsx

<NO DISTRESSES>

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: RW624 Name: RUNWAY 6-24 Use: RUNWAY Area: 814,250.00SqFt

Section: 04A of 7 From: 45+90 To: 56+38 Last Const.: 01/01/2012
Surface: AAC Family: NFIA 2013_Runway Zone: Category: Rank: P
Area: 81,600.00SqFt Length: 1,048.00Ft Width: 100.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 16 Surveyed: 7
Conditions: PCI : 100
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 5,070.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 06 Type: R Area: 4,794.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 08 Type: R Area: 3,854.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 09 Type: R Area: 5,112.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 12 Type: R Area: 5,133.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 15 Type: R Area: 4,153.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 16 Type: R Area: 5,409.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TERMA Name: TERMINAL APRON Use: APRON Area: 366,296.00SqFt

Section: 01 of 4 From: NA To: NA Last Const.: 01/01/2012
Surface: AAC Family: NFIA_2013 Main Apron Zone: Category: Rank: P
Area: 8,635.00SqFt Length: 147.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 2 Surveyed: 1
Conditions: PCI : 100
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 5,105.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx

```
<NO DISTRESSES>
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TERMA Name: TERMINAL APRON Use: APRON Area: 366,296.00SqFt

Section: 02 of 4 From: NA To: NA Last Const.: 06/01/1967
Surface: PCC Family: NFIA_2013 Main Apron Zone: Category: Rank: P
Area: 89,580.00SqFt Length: 600.00Ft Width: 150.00Ft
Slabs: 302 Slab Width: 12.00Ft Slab Length: 25.00Ft Joint Length: 10,350.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 15 Surveyed: 14
Conditions: PCI : 34
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 21.00Slabs PCI = 25
Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	L	3.00 Slabs	Comments:
64 DURABIL. CR	H	1.00 Slabs	Comments:
65 JT SEAL DMG	L	4.00 Slabs	Comments:
65 JT SEAL DMG	M	14.00 Slabs	Comments:
65 JT SEAL DMG	H	1.00 Slabs	Comments:
74 JOINT SPALL	L	4.00 Slabs	Comments:
74 JOINT SPALL	M	5.00 Slabs	Comments:
74 JOINT SPALL	H	3.00 Slabs	Comments:
75 CORNER SPALL	L	2.00 Slabs	Comments:
75 CORNER SPALL	M	5.00 Slabs	Comments:
75 CORNER SPALL	H	8.00 Slabs	Comments:

Sample Number: 02 Type: R Area: 21.00Slabs PCI = 35
Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	L	5.00 Slabs	Comments:
64 DURABIL. CR	H	2.00 Slabs	Comments:
65 JT SEAL DMG	M	1.00 Slabs	Comments:
65 JT SEAL DMG	H	17.00 Slabs	Comments:
73 SHRINKAGE CR	N	1.00 Slabs	Comments:
74 JOINT SPALL	L	2.00 Slabs	Comments:
74 JOINT SPALL	M	4.00 Slabs	Comments:
75 CORNER SPALL	L	3.00 Slabs	Comments:
75 CORNER SPALL	M	9.00 Slabs	Comments:
76 ASR	L	1.00 Slabs	Comments:

Sample Number: 03 Type: R Area: 21.00Slabs PCI = 38
Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	M	1.00 Slabs	Comments:
64 DURABIL. CR	L	2.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	L	2.00 Slabs	Comments:
65 JT SEAL DMG	M	18.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:
67 LARGE PATCH	L	2.00 Slabs	Comments:
74 JOINT SPALL	L	4.00 Slabs	Comments:
74 JOINT SPALL	M	3.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:
75 CORNER SPALL	M	4.00 Slabs	Comments:
75 CORNER SPALL	H	8.00 Slabs	Comments:
63 LINEAR CR	L	2.00 Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Sample Number: 04 Type: R Area: 21.00Slabs PCI = 28

Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	L	1.00 Slabs	Comments:
63 LINEAR CR	L	6.00 Slabs	Comments:
64 DURABIL. CR	L	9.00 Slabs	Comments:
64 DURABIL. CR	M	4.00 Slabs	Comments:
65 JT SEAL DMG	M	1.00 Slabs	Comments:
65 JT SEAL DMG	H	19.00 Slabs	Comments:
72 SHAT. SLAB	L	2.00 Slabs	Comments:
72 SHAT. SLAB	M	1.00 Slabs	Comments:
73 SHRINKAGE CR	N	1.00 Slabs	Comments:
75 CORNER SPALL	L	2.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:

Sample Number: 05 Type: R Area: 21.00Slabs PCI = 33

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	1.00 Slabs	Comments:
64 DURABIL. CR	L	4.00 Slabs	Comments:
64 DURABIL. CR	M	3.00 Slabs	Comments:
64 DURABIL. CR	H	2.00 Slabs	Comments:
65 JT SEAL DMG	L	2.00 Slabs	Comments:
65 JT SEAL DMG	M	7.00 Slabs	Comments:
65 JT SEAL DMG	H	11.00 Slabs	Comments:
66 SMALL PATCH	L	5.00 Slabs	Comments:
72 SHAT. SLAB	L	1.00 Slabs	Comments:
74 JOINT SPALL	L	3.00 Slabs	Comments:
74 JOINT SPALL	M	3.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:
75 CORNER SPALL	L	3.00 Slabs	Comments:
75 CORNER SPALL	M	4.00 Slabs	Comments:
75 CORNER SPALL	H	2.00 Slabs	Comments:

Sample Number: 06 Type: R Area: 21.00Slabs PCI = 30

Sample Comments: NFIA_DATA.xlsx

75 CORNER SPALL	M	3.00 Slabs	Comments:
75 CORNER SPALL	H	1.00 Slabs	Comments:
63 LINEAR CR	L	3.00 Slabs	Comments:
64 DURABIL. CR	L	3.00 Slabs	Comments:
64 DURABIL. CR	M	3.00 Slabs	Comments:
64 DURABIL. CR	H	3.00 Slabs	Comments:
65 JT SEAL DMG	L	1.00 Slabs	Comments:
65 JT SEAL DMG	M	3.00 Slabs	Comments:
65 JT SEAL DMG	H	15.00 Slabs	Comments:
66 SMALL PATCH	L	13.00 Slabs	Comments:
67 LARGE PATCH	L	3.00 Slabs	Comments:
70 SCALING	L	1.00 Slabs	Comments:
74 JOINT SPALL	L	2.00 Slabs	Comments:
74 JOINT SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	L	2.00 Slabs	Comments:

Sample Number: 07 Type: R Area: 21.00Slabs PCI = 37

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	H	1.00 Slabs	Comments:
64 DURABIL. CR	L	3.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
64 DURABIL. CR	H	2.00 Slabs	Comments:
65 JT SEAL DMG	H	18.00 Slabs	Comments:
66 SMALL PATCH	L	17.00 Slabs	Comments:
67 LARGE PATCH	L	2.00 Slabs	Comments:

74 JOINT SPALL	L	2.00 Slabs	Comments:
74 JOINT SPALL	M	1.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:
75 CORNER SPALL	M	2.00 Slabs	Comments:
75 CORNER SPALL	H	2.00 Slabs	Comments:

Sample Number: 08 Type: R Area: 21.00Slabs PCI = 48

Sample Comments: NFIA_DATA.xlsx

67 LARGE PATCH	L	4.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
74 JOINT SPALL	M	3.00 Slabs	Comments:
75 CORNER SPALL	M	2.00 Slabs	Comments:
75 CORNER SPALL	H	1.00 Slabs	Comments:
64 DURABIL. CR	L	2.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	H	19.00 Slabs	Comments:
66 SMALL PATCH	L	13.00 Slabs	Comments:
66 SMALL PATCH	M	2.00 Slabs	Comments:

Sample Number: 09 Type: R Area: 21.00Slabs PCI = 35

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	3.00 Slabs	Comments:
63 LINEAR CR	M	1.00 Slabs	Comments:
64 DURABIL. CR	L	1.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	H	19.00 Slabs	Comments:
66 SMALL PATCH	L	11.00 Slabs	Comments:
67 LARGE PATCH	L	5.00 Slabs	Comments:
67 LARGE PATCH	M	1.00 Slabs	Comments:
70 SCALING	L	1.00 Slabs	Comments:
70 SCALING	M	4.00 Slabs	Comments:
70 SCALING	H	2.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	M	2.00 Slabs	Comments:

Sample Number: 10 Type: R Area: 21.00Slabs PCI = 10

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	1.00 Slabs	Comments:
63 LINEAR CR	M	2.00 Slabs	Comments:
64 DURABIL. CR	L	4.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	H	20.00 Slabs	Comments:
66 SMALL PATCH	L	9.00 Slabs	Comments:
67 LARGE PATCH	L	7.00 Slabs	Comments:
67 LARGE PATCH	M	5.00 Slabs	Comments:
70 SCALING	L	1.00 Slabs	Comments:
70 SCALING	M	13.00 Slabs	Comments:
70 SCALING	H	4.00 Slabs	Comments:

Sample Number: 11 Type: R Area: 21.00Slabs PCI = 20

Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	L	3.00 Slabs	Comments:
64 DURABIL. CR	M	2.00 Slabs	Comments:
65 JT SEAL DMG	H	19.00 Slabs	Comments:
66 SMALL PATCH	L	10.00 Slabs	Comments:
66 SMALL PATCH	H	1.00 Slabs	Comments:
67 LARGE PATCH	L	9.00 Slabs	Comments:
67 LARGE PATCH	M	4.00 Slabs	Comments:
70 SCALING	L	5.00 Slabs	Comments:

70 SCALING	M	3.00	Slabs	Comments:
70 SCALING	H	6.00	Slabs	Comments:
75 CORNER SPALL	L	2.00	Slabs	Comments:
75 CORNER SPALL	M	1.00	Slabs	Comments:

Sample Number: 12 Type: R Area: 21.00Slabs PCI = 40
Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	L	1.00	Slabs	Comments:
64 DURABIL. CR	L	2.00	Slabs	Comments:
64 DURABIL. CR	M	5.00	Slabs	Comments:
65 JT SEAL DMG	H	21.00	Slabs	Comments:
66 SMALL PATCH	L	12.00	Slabs	Comments:
67 LARGE PATCH	L	2.00	Slabs	Comments:
70 SCALING	L	2.00	Slabs	Comments:
70 SCALING	M	1.00	Slabs	Comments:
74 JOINT SPALL	L	2.00	Slabs	Comments:
74 JOINT SPALL	M	3.00	Slabs	Comments:
75 CORNER SPALL	L	2.00	Slabs	Comments:
75 CORNER SPALL	M	3.00	Slabs	Comments:

Sample Number: 13 Type: R Area: 25.00Slabs PCI = 50
Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	1.00	Slabs	Comments:
64 DURABIL. CR	L	3.00	Slabs	Comments:
64 DURABIL. CR	M	2.00	Slabs	Comments:
65 JT SEAL DMG	L	1.00	Slabs	Comments:
65 JT SEAL DMG	M	10.00	Slabs	Comments:
65 JT SEAL DMG	H	11.00	Slabs	Comments:
66 SMALL PATCH	L	1.00	Slabs	Comments:
74 JOINT SPALL	L	1.00	Slabs	Comments:
74 JOINT SPALL	M	1.00	Slabs	Comments:
74 JOINT SPALL	H	1.00	Slabs	Comments:
75 CORNER SPALL	L	1.00	Slabs	Comments:
75 CORNER SPALL	M	1.00	Slabs	Comments:
75 CORNER SPALL	H	3.00	Slabs	Comments:

Sample Number: 14 Type: R Area: 25.00Slabs PCI = 45
Sample Comments: NFIA_DATA.xlsx

75 CORNER SPALL	H	2.00	Slabs	Comments:
62 CORNER BREAK	L	1.00	Slabs	Comments:
64 DURABIL. CR	L	3.00	Slabs	Comments:
64 DURABIL. CR	M	1.00	Slabs	Comments:
64 DURABIL. CR	H	1.00	Slabs	Comments:
65 JT SEAL DMG	L	1.00	Slabs	Comments:
65 JT SEAL DMG	M	3.00	Slabs	Comments:
65 JT SEAL DMG	H	20.00	Slabs	Comments:
66 SMALL PATCH	L	13.00	Slabs	Comments:
66 SMALL PATCH	M	1.00	Slabs	Comments:
67 LARGE PATCH	L	3.00	Slabs	Comments:
70 SCALING	L	1.00	Slabs	Comments:
70 SCALING	M	4.00	Slabs	Comments:
75 CORNER SPALL	L	3.00	Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TERMA Name: TERMINAL APRON Use: APRON Area: 366,296.00SqFt

Section: 03 of 4 From: NA To: NA Last Const.: 03/01/1996
Surface: AAC Family: NFIA_2013 Main Apron Zone: Category: Rank: P
Area: 128,309.00SqFt Length: 304.00Ft Width: 914.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 26 Surveyed: 13
Conditions: PCI : 66
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 4,303.00SqFt PCI = 58
Sample Comments: NFIA_DATA.xlsx

45 DEPRESSION	L	100.00 SqFt	Comments:
48 L & T CR	L	60.00 Ft	Comments:
48 L & T CR	M	240.00 Ft	Comments:
57 WEATHERING	M	4,303.00 SqFt	Comments:

Sample Number: 04 Type: R Area: 4,969.00SqFt PCI = 73
Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	M	50.00 SqFt	Comments:
48 L & T CR	L	175.00 Ft	Comments:
48 L & T CR	M	50.00 Ft	Comments:
57 WEATHERING	L	4,969.00 SqFt	Comments:

Sample Number: 06 Type: R Area: 5,000.00SqFt PCI = 40
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	160.00 SqFt	Comments:
41 ALLIGATOR CR	M	100.00 SqFt	Comments:
48 L & T CR	M	200.00 Ft	Comments:
57 WEATHERING	M	5,000.00 SqFt	Comments:

Sample Number: 07 Type: R Area: 2,816.00SqFt PCI = 82
Sample Comments: NFIA_DATA.xlsx

45 DEPRESSION	L	80.00 SqFt	Comments:
48 L & T CR	L	10.00 Ft	Comments:

Sample Number: 11 Type: R Area: 4,273.00SqFt PCI = 87
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	15.00 Ft	Comments:
50 PATCHING	L	200.00 SqFt	Comments:

Sample Number: 14 Type: R Area: 5,000.00SqFt PCI = 55
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	150.00 SqFt	Comments:
48 L & T CR	M	180.00 Ft	Comments:
57 WEATHERING	M	5,000.00 SqFt	Comments:

Sample Number: 17 Type: R Area: 5,000.00SqFt PCI = 71
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	5.00 SqFt	Comments:
45 DEPRESSION	M	30.00 SqFt	Comments:
48 L & T CR	L	15.00 Ft	Comments:
48 L & T CR	M	100.00 Ft	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Sample Number: 20 Type: R Area: 4,987.00SqFt PCI = 60
Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	L	250.00	SqFt	Comments:
43 BLOCK CR	M	250.00	SqFt	Comments:
48 L & T CR	L	200.00	Ft	Comments:
48 L & T CR	M	50.00	Ft	Comments:
57 WEATHERING	M	4,987.00	SqFt	Comments:

Sample Number: 24 Type: R Area: 5,810.00SqFt PCI = 70
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	60.00	Ft	Comments:
48 L & T CR	M	100.00	Ft	Comments:
50 PATCHING	M	170.00	SqFt	Comments:
57 WEATHERING	L	5,810.00	SqFt	Comments:

Sample Number: 25 Type: R Area: 4,950.00SqFt PCI = 65
Sample Comments: NFIA_DATA.xlsx

45 DEPRESSION	L	60.00	SqFt	Comments:
48 L & T CR	L	30.00	Ft	Comments:
48 L & T CR	M	120.00	Ft	Comments:
57 WEATHERING	M	4,950.00	SqFt	Comments:

Sample Number: 26 Type: R Area: 4,770.00SqFt PCI = 59
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	90.00	SqFt	Comments:
48 L & T CR	L	30.00	Ft	Comments:
48 L & T CR	M	60.00	Ft	Comments:
57 WEATHERING	M	4,770.00	SqFt	Comments:

Sample Number: 27 Type: R Area: 4,380.00SqFt PCI = 60
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	50.00	SqFt	Comments:
48 L & T CR	L	50.00	Ft	Comments:
48 L & T CR	M	120.00	Ft	Comments:
57 WEATHERING	M	4,380.00	SqFt	Comments:

Sample Number: 28 Type: R Area: 5,241.00SqFt PCI = 83
Sample Comments: NFIA_DATA.xlsx

45 DEPRESSION	L	60.00	SqFt	Comments:
48 L & T CR	L	40.00	Ft	Comments:
57 WEATHERING	L	5,241.00	SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TERMA Name: TERMINAL APRON Use: APRON Area: 366,296.00SqFt

Section: 04 of 4 From: NA To: NA Last Const.: 01/01/2012
Surface: PCC Family: NFIA_2013 Main Apron Zone: Category: Rank: P
Area: 139,772.00SqFt Length: 275.00Ft Width: 644.00Ft
Slabs: 787 Slab Width: 15.00Ft Slab Length: 15.00Ft Joint Length: 22,694.33Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 39 Surveyed: 29
Conditions: PCI : 96
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 20.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       20.00 Slabs    Comments:
```

Sample Number: 02 Type: R Area: 21.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       21.00 Slabs    Comments:
```

Sample Number: 03 Type: R Area: 21.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       21.00 Slabs    Comments:
```

Sample Number: 04 Type: R Area: 21.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       21.00 Slabs    Comments:
```

Sample Number: 05 Type: R Area: 17.00Slabs PCI = 97
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       17.00 Slabs    Comments:
73 SHRINKAGE CR                             N        1.00 Slabs    Comments:
```

Sample Number: 06 Type: R Area: 18.00Slabs PCI = 97
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       18.00 Slabs    Comments:
73 SHRINKAGE CR                             N        1.00 Slabs    Comments:
```

Sample Number: 07 Type: R Area: 20.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       20.00 Slabs    Comments:
```

Sample Number: 08 Type: R Area: 20.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       20.00 Slabs    Comments:
```

Sample Number: 09 Type: R Area: 20.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       20.00 Slabs    Comments:
```

Sample Number: 10 Type: R Area: 20.00Slabs PCI = 96
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       20.00 Slabs    Comments:
74 JOINT SPALL                              L        1.00 Slabs    Comments:
```

Sample Number: 11 Type: R Area: 17.00Slabs PCI = 92
Sample Comments: NFIA_DATA.xlsx
63 LINEAR CR L 1.00 Slabs Comments:
65 JT SEAL DMG L 17.00 Slabs Comments:

Sample Number: 12 Type: R Area: 21.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx
65 JT SEAL DMG L 21.00 Slabs Comments:

Sample Number: 13 Type: R Area: 21.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx
65 JT SEAL DMG L 21.00 Slabs Comments:

Sample Number: 14 Type: R Area: 21.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx
65 JT SEAL DMG L 21.00 Slabs Comments:

Sample Number: 15 Type: R Area: 21.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx
65 JT SEAL DMG L 21.00 Slabs Comments:

Sample Number: 16 Type: R Area: 21.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx
65 JT SEAL DMG L 21.00 Slabs Comments:

Sample Number: 17 Type: R Area: 20.00Slabs PCI = 94
Sample Comments: NFIA_DATA.xlsx
65 JT SEAL DMG L 20.00 Slabs Comments:
74 JOINT SPALL M 1.00 Slabs Comments:

Sample Number: 18 Type: R Area: 21.00Slabs PCI = 94
Sample Comments: NFIA_DATA.xlsx
65 JT SEAL DMG L 21.00 Slabs Comments:
74 JOINT SPALL L 1.00 Slabs Comments:
75 CORNER SPALL L 1.00 Slabs Comments:

Sample Number: 19 Type: R Area: 19.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx
65 JT SEAL DMG L 19.00 Slabs Comments:

Sample Number: 20 Type: R Area: 19.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx
65 JT SEAL DMG L 19.00 Slabs Comments:

Sample Number: 21 Type: R Area: 20.00Slabs PCI = 93
Sample Comments: NFIA_DATA.xlsx
63 LINEAR CR L 1.00 Slabs Comments:
65 JT SEAL DMG L 20.00 Slabs Comments:

Sample Number: 23 Type: R Area: 19.00Slabs PCI = 93
Sample Comments: NFIA_DATA.xlsx
63 LINEAR CR L 1.00 Slabs Comments:
65 JT SEAL DMG L 19.00 Slabs Comments:

Sample Number: 24 Type: R Area: 20.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx
65 JT SEAL DMG L 20.00 Slabs Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Sample Number: 25 Type: R Area: 20.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       20.00 Slabs    Comments:
```

Sample Number: 26 Type: R Area: 18.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       18.00 Slabs    Comments:
```

Sample Number: 27 Type: R Area: 20.00Slabs PCI = 98
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       20.00 Slabs    Comments:
```

Sample Number: 28 Type: R Area: 20.00Slabs PCI = 96
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       20.00 Slabs    Comments:
74 JOINT SPALL                              L        1.00 Slabs    Comments:
```

Sample Number: 29 Type: R Area: 18.00Slabs PCI = 79
Sample Comments: NFIA_DATA.xlsx

```
63 LINEAR CR                                L        1.00 Slabs    Comments:
65 JT SEAL DMG                              L       18.00 Slabs    Comments:
74 JOINT SPALL                              H        1.00 Slabs    Comments:
```

Sample Number: 31 Type: R Area: 40.00Slabs PCI = 94
Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              L       40.00 Slabs    Comments:
74 JOINT SPALL                              L        3.00 Slabs    Comments:
75 CORNER SPALL                             L        1.00 Slabs    Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWC Name: TAXIWAY C Use: TAXIWAY Area: 227,288.00SqFt

Section: 01 of 4 From: 0+00 EDGE RW10R To: 8+18 EDGE TW C Last Const.: 06/01/2004
Surface: AAC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P
Area: 39,610.00SqFt Length: 818.00Ft Width: 40.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 8 Surveyed: 2
Conditions: PCI : 39
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 03 Type: R Area: 5,042.00SqFt PCI = 23
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	100.00 SqFt	Comments:
43 BLOCK CR	L	15.00 SqFt	Comments:
48 L & T CR	L	180.00 Ft	Comments:
48 L & T CR	M	150.00 Ft	Comments:
57 WEATHERING	H	5,042.00 SqFt	Comments:

Sample Number: 07 Type: R Area: 4,442.00SqFt PCI = 57
Sample Comments: NFIA_DATA.xlsx

43 BLOCK CR	L	2,221.00 SqFt	Comments:
45 DEPRESSION	L	45.00 SqFt	Comments:
52 RAVELING	L	2,221.00 SqFt	Comments:
57 WEATHERING	M	2,221.00 SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWC Name: TAXIWAY C Use: TAXIWAY Area: 227,288.00SqFt

Section: 02 of 4 From: 12+42 To: 25+90 EDGE RW624 Last Const.: 06/01/1970
Surface: PCC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 97,678.00SqFt Length: 1,348.00Ft Width: 75.00Ft
Slabs: 562 Slab Width: 12.00Ft Slab Length: 15.00Ft Joint Length: 13,742.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 28 Surveyed: 7
Conditions: PCI : 53
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 46.00Slabs PCI = 34
Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	2.00 Slabs	Comments:
63 LINEAR CR	M	1.00 Slabs	Comments:
64 DURABIL. CR	L	3.00 Slabs	Comments:
64 DURABIL. CR	M	2.00 Slabs	Comments:
65 JT SEAL DMG	L	2.00 Slabs	Comments:
65 JT SEAL DMG	M	2.00 Slabs	Comments:
65 JT SEAL DMG	H	16.00 Slabs	Comments:
66 SMALL PATCH	M	1.00 Slabs	Comments:
71 FAULTING	L	1.00 Slabs	Comments:
74 JOINT SPALL	M	4.00 Slabs	Comments:
74 JOINT SPALL	H	7.00 Slabs	Comments:
75 CORNER SPALL	M	3.00 Slabs	Comments:
75 CORNER SPALL	H	12.00 Slabs	Comments:
76 ASR	L	1.00 Slabs	Comments:

Sample Number: 02 Type: R Area: 46.00Slabs PCI = 29
Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	2.00 Slabs	Comments:
63 LINEAR CR	M	12.00 Slabs	Comments:
63 LINEAR CR	H	3.00 Slabs	Comments:
64 DURABIL. CR	L	13.00 Slabs	Comments:
64 DURABIL. CR	M	3.00 Slabs	Comments:
64 DURABIL. CR	H	1.00 Slabs	Comments:
65 JT SEAL DMG	H	17.00 Slabs	Comments:
67 LARGE PATCH	L	19.00 Slabs	Comments:

Sample Number: 04 Type: R Area: 47.00Slabs PCI = 68
Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	11.00 Slabs	Comments:
63 LINEAR CR	M	3.00 Slabs	Comments:
65 JT SEAL DMG	L	47.00 Slabs	Comments:
68 POPOUTS	N	11.00 Slabs	Comments:

Sample Number: 08 Type: R Area: 21.00Slabs PCI = 66
Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	L	3.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	H	20.00 Slabs	Comments:
75 CORNER SPALL	L	2.00 Slabs	Comments:
75 CORNER SPALL	M	6.00 Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Sample Number: 12 Type: R Area: 21.00Slabs PCI = 67

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	21.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:
68 POPOUTS	N	8.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
74 JOINT SPALL	M	3.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:

Sample Number: 14 Type: R Area: 21.00Slabs PCI = 61

Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	L	1.00 Slabs	Comments:
65 JT SEAL DMG	H	20.00 Slabs	Comments:
71 FAULTING	M	6.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:

Sample Number: 18 Type: R Area: 20.00Slabs PCI = 82

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	H	20.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWC Name: TAXIWAY C Use: TAXIWAY Area: 227,288.00SqFt

Section: 03 of 4 From: EDGE RW624 To: 6+68 Last Const.: 06/01/1970
Surface: PCC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 47,000.00SqFt Length: 668.00Ft Width: 75.00Ft
Slabs: 278 Slab Width: 12.00Ft Slab Length: 15.00Ft Joint Length: 6,772.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 14 Surveyed: 4
Conditions: PCI : 47
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 41.00Slabs PCI = 29
Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	L	2.00 Slabs	Comments:
62 CORNER BREAK	H	1.00 Slabs	Comments:
63 LINEAR CR	L	4.00 Slabs	Comments:
63 LINEAR CR	M	9.00 Slabs	Comments:
63 LINEAR CR	H	2.00 Slabs	Comments:
64 DURABIL. CR	L	10.00 Slabs	Comments:
64 DURABIL. CR	M	8.00 Slabs	Comments:
64 DURABIL. CR	H	1.00 Slabs	Comments:
65 JT SEAL DMG	L	1.00 Slabs	Comments:
65 JT SEAL DMG	M	2.00 Slabs	Comments:
65 JT SEAL DMG	H	16.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	H	1.00 Slabs	Comments:

Sample Number: 06 Type: R Area: 19.00Slabs PCI = 87
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	19.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:
75 CORNER SPALL	H	2.00 Slabs	Comments:

Sample Number: 09 Type: R Area: 21.00Slabs PCI = 56
Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	H	1.00 Slabs	Comments:
72 SHAT. SLAB	H	1.00 Slabs	Comments:
75 CORNER SPALL	H	1.00 Slabs	Comments:

Sample Number: 11 Type: R Area: 20.00Slabs PCI = 35
Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	M	1.00 Slabs	Comments:
64 DURABIL. CR	H	4.00 Slabs	Comments:
65 JT SEAL DMG	H	21.00 Slabs	Comments:
71 FAULTING	M	3.00 Slabs	Comments:
75 CORNER SPALL	L	2.00 Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWC Name: TAXIWAY C Use: TAXIWAY Area: 227,288.00SqFt

Section: 04 of 4 From: 6+68 To: 10+60 Last Const.: 06/01/1970
Surface: AC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P
Area: 43,000.00SqFt Length: 398.00Ft Width: 120.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 9 Surveyed: 5
Conditions: PCI : 93
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 04 Type: R Area: 4,973.00SqFt PCI = 80
Sample Comments: NFIA_DATA.xlsx

```
52 RAVELING                                    L    1,243.00 SqFt     Comments:
57 WEATHERING                                  L    4,973.00 SqFt     Comments:
```

Sample Number: 05 Type: R Area: 2,553.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx

```
<NO DISTRESSES>
```

Sample Number: 06 Type: R Area: 4,970.00SqFt PCI = 91
Sample Comments: NFIA_DATA.xlsx

```
47 JT REF. CR                                  L       48.00 Ft       Comments:
57 WEATHERING                                  L    4,970.00 SqFt     Comments:
```

Sample Number: 08 Type: R Area: 4,972.00SqFt PCI = 96
Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                    L       15.00 Ft       Comments:
```

Sample Number: 09 Type: R Area: 5,593.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx

```
<NO DISTRESSES>
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWD Name: TAXIWAY D Use: TAXIWAY Area: 395,611.00SqFt

Section: 01 of 5 From: 0+00 To: 19+26.50 Last Const.: 03/01/1999
Surface: APC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 151,129.00SqFt Length: 1,926.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 30 Surveyed: 10
Conditions: PCI : 66
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 5,088.00SqFt PCI = 72
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	30.00 SqFt	Comments:
48 L & T CR	M	130.00 Ft	Comments:
48 L & T CR	H	30.00 Ft	Comments:

Sample Number: 05 Type: R Area: 5,116.00SqFt PCI = 63
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	65.00 SqFt	Comments:
48 L & T CR	L	25.00 Ft	Comments:
48 L & T CR	M	130.00 Ft	Comments:
57 WEATHERING	L	5,116.00 SqFt	Comments:

Sample Number: 09 Type: R Area: 4,187.00SqFt PCI = 77
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	30.00 Ft	Comments:
48 L & T CR	M	60.00 Ft	Comments:
57 WEATHERING	L	4,187.00 SqFt	Comments:

Sample Number: 10 Type: R Area: 3,348.00SqFt PCI = 61
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	80.00 SqFt	Comments:
48 L & T CR	L	120.00 Ft	Comments:
48 L & T CR	M	90.00 Ft	Comments:

Sample Number: 13 Type: A Area: 5,100.00SqFt PCI = 67
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	M	75.00 Ft	Comments:
54 SHOVING	M	153.00 SqFt	Comments:
57 WEATHERING	L	5,100.00 SqFt	Comments:

Sample Number: 14 Type: R Area: 5,100.00SqFt PCI = 62
Sample Comments: NFIA_DATA.xlsx

57 WEATHERING	L	5,100.00 SqFt	Comments:
41 ALLIGATOR CR	L	65.00 SqFt	Comments:
43 BLOCK CR	L	510.00 SqFt	Comments:
48 L & T CR	M	130.00 Ft	Comments:

Sample Number: 18 Type: R Area: 5,120.00SqFt PCI = 65
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	85.00 SqFt	Comments:
48 L & T CR	M	130.00 Ft	Comments:
57 WEATHERING	L	5,120.00 SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Sample Number: 22 Type: R Area: 5,227.00SqFt PCI = 58
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	100.00	SqFt	Comments:
44 CORRUGATION	L	25.00	SqFt	Comments:
44 CORRUGATION	M	70.00	SqFt	Comments:
57 WEATHERING	L	5,227.00	SqFt	Comments:

Sample Number: 26 Type: R Area: 5,696.00SqFt PCI = 55
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	160.00	SqFt	Comments:
48 L & T CR	L	50.00	Ft	Comments:
48 L & T CR	M	60.00	Ft	Comments:
57 WEATHERING	L	5,696.00	SqFt	Comments:

Sample Number: 30 Type: R Area: 4,063.00SqFt PCI = 89
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	50.00	Ft	Comments:
57 WEATHERING	L	4,063.00	SqFt	Comments:

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWD Name: TAXIWAY D Use: TAXIWAY Area: 395,611.00SqFt

---

Section: 01A of 5 From: 0+00 EDGE OF TWH To: 3+31 Last Const.: 03/01/1999

Surface: AAC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P

Area: 33,554.00SqFt Length: 331.00Ft Width: 92.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 7 Surveyed: 3

Conditions: PCI : 73

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 3,107.00SqFt PCI = 50

Sample Comments: NFIA_DATA.xlsx

```
41 ALLIGATOR CR                             L      150.00 SqFt     Comments:
48 L & T CR                                 L      200.00 Ft       Comments:
52 RAVELING                                 L    3,107.00 SqFt     Comments:
```

Sample Number: 06 Type: R Area: 3,240.00SqFt PCI = 75

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                 L      250.00 Ft       Comments:
57 WEATHERING                               L    3,240.00 SqFt     Comments:
```

Sample Number: 09 Type: R Area: 4,625.00SqFt PCI = 86

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                 L      120.00 Ft       Comments:
57 WEATHERING                               L    4,625.00 SqFt     Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWD Name: TAXIWAY D Use: TAXIWAY Area: 395,611.00SqFt

Section: 02 of 5 From: 19+26 To: 23+60 Last Const.: 03/01/1999
Surface: AC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P
Area: 32,545.00SqFt Length: 433.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 7 Surveyed: 2
Conditions: PCI : 61
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 03 Type: R Area: 5,089.00SqFt PCI = 64
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	40.00 Ft	Comments:
48 L & T CR	M	265.00 Ft	Comments:
57 WEATHERING	L	5,089.00 SqFt	Comments:

Sample Number: 07 Type: R Area: 3,606.00SqFt PCI = 58
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	65.00 SqFt	Comments:
48 L & T CR	L	50.00 Ft	Comments:
48 L & T CR	M	200.00 Ft	Comments:
57 WEATHERING	L	3,606.00 SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWD Name: TAXIWAY D Use: TAXIWAY Area: 395,611.00SqFt

Section: 03 of 5 From: 23+60 To: 37+20 Last Const.: 03/01/2002
Surface: APC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 108,876.00SqFt Length: 1,360.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 22 Surveyed: 7
Conditions: PCI : 70
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 4,966.00SqFt PCI = 77
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	215.00 Ft	Comments:
48 L & T CR	M	55.00 Ft	Comments:
57 WEATHERING	L	4,966.00 SqFt	Comments:

Sample Number: 04 Type: R Area: 5,812.00SqFt PCI = 75
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	360.00 Ft	Comments:
57 WEATHERING	M	5,812.00 SqFt	Comments:

Sample Number: 06 Type: A Area: 5,187.00SqFt PCI = 61
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	120.00 Ft	Comments:
48 L & T CR	M	150.00 Ft	Comments:
52 RAVELING	L	519.00 SqFt	Comments:
57 WEATHERING	L	3,112.00 SqFt	Comments:
57 WEATHERING	M	1,556.00 SqFt	Comments:

Sample Number: 08 Type: R Area: 4,965.00SqFt PCI = 74
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	M	175.00 Ft	Comments:
57 WEATHERING	M	4,965.00 SqFt	Comments:

Sample Number: 12 Type: R Area: 4,954.00SqFt PCI = 67
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	80.00 Ft	Comments:
48 L & T CR	M	200.00 Ft	Comments:
57 WEATHERING	M	4,954.00 SqFt	Comments:

Sample Number: 16 Type: R Area: 5,058.00SqFt PCI = 64
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	15.00 Ft	Comments:
48 L & T CR	M	280.00 Ft	Comments:
57 WEATHERING	M	5,058.00 SqFt	Comments:

Sample Number: 20 Type: R Area: 3,999.00SqFt PCI = 62
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	125.00 Ft	Comments:
48 L & T CR	M	150.00 Ft	Comments:
52 RAVELING	L	2,000.00 SqFt	Comments:
57 WEATHERING	M	2,000.00 SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWD Name: TAXIWAY D Use: TAXIWAY Area: 395,611.00SqFt

Section: 04 of 5 From: END OF RW624 To: EDGE TWD Last Const.: 01/01/2012
Surface: AAC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P
Area: 69,507.00SqFt Length: 875.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 14 Surveyed: 11
Conditions: PCI : 100
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 4,349.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 02 Type: R Area: 4,990.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 03 Type: R Area: 4,970.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 04 Type: R Area: 4,983.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 05 Type: R Area: 4,962.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 06 Type: R Area: 5,000.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 08 Type: R Area: 5,000.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 09 Type: R Area: 5,000.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 10 Type: R Area: 5,000.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 11 Type: R Area: 5,000.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 12 Type: R Area: 5,000.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWD1 Name: TAXIWAY D1 Use: TAXIWAY Area: 15,913.00SqFt

Section: 01 of 1 From: 37+20 To: EDGE RW10L Last Const.: 01/01/2012
Surface: APC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 15,913.00SqFt Length: 153.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 3 Surveyed: 3
Conditions: PCI : 100
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: A Area: 6,483.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 02 Type: R Area: 4,701.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 03 Type: A Area: 4,729.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWD2 Name: TAXIWAY D2 Use: TAXIWAY Area: 13,180.00SqFt

Section: 01 of 2 From: 0+00 EDGDE RW624 To: 0+46 Last Const.: 03/01/1997

Surface: AAC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P

Area: 10,280.00SqFt Length: 280.00Ft Width: 40.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 2 Surveyed: 2

Conditions: PCI : 62

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 4,965.00SqFt PCI = 63

Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	80.00	Ft	Comments:
48 L & T CR	M	220.00	Ft	Comments:
52 RAVELING	L	50.00	SqFt	Comments:
57 WEATHERING	M	2,482.00	SqFt	Comments:

Sample Number: 02 Type: R Area: 5,310.00SqFt PCI = 60

Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	80.00	Ft	Comments:
48 L & T CR	M	250.00	Ft	Comments:
52 RAVELING	L	2,656.00	SqFt	Comments:
57 WEATHERING	M	2,656.00	SqFt	Comments:

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWD2 Name: TAXIWAY D2 Use: TAXIWAY Area: 13,180.00SqFt

Section: 02 of 2 From: 0+45 To: 3+25 EDGDE TW D Last Const.: 06/01/1990

Surface: AAC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P

Area: 2,900.00SqFt Length: 45.00Ft Width: 40.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 1 Surveyed: 1

Conditions: PCI : 70

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 2,895.00SqFt PCI = 70

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                  L      110.00 Ft       Comments:
48 L & T CR                                  M       70.00 Ft       Comments:
57 WEATHERING                                M    2,895.00 SqFt     Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWD3 Name: TAXIWAY D3 Use: TAXIWAY Area: 67,431.00SqFt

Section: 01 of 3 From: 0+00 EDGE RW624 To: 1+71 Last Const.: 06/01/1976
Surface: AAC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P
Area: 12,934.00SqFt Length: 171.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 3 Surveyed: 2
Conditions: PCI : 38
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 4,939.00SqFt PCI = 37
Sample Comments: NFIA_DATA.xlsx

42 BLEEDING	N	10.00	SqFt	Comments:
48 L & T CR	M	100.00	Ft	Comments:
52 RAVELING	M	4,939.00	SqFt	Comments:

Sample Number: 03 Type: R Area: 4,943.00SqFt PCI = 38
Sample Comments: NFIA_DATA.xlsx

42 BLEEDING	N	3.00	SqFt	Comments:
48 L & T CR	M	40.00	Ft	Comments:
52 RAVELING	M	4,943.00	SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWD3 Name: TAXIWAY D3 Use: TAXIWAY Area: 67,431.00SqFt

Section: 02 of 3 From: 1+71 To: 2+81 Last Const.: 06/01/2000
Surface: AAC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P
Area: 8,686.00SqFt Length: 110.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 2 Surveyed: 1
Conditions: PCI : 57
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 4,426.00SqFt PCI = 57
Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                  L        80.00 Ft        Comments:
48 L & T CR                                  M       350.00 Ft        Comments:
57 WEATHERING                                L     4,426.00 SqFt      Comments:
```

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWD3 Name: TAXIWAY D3 Use: TAXIWAY Area: 67,431.00SqFt

Section: 03 of 3 From: 0+00 EDGE TWD To: 2+55 Last Const.: 06/01/1976

Surface: AAC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P

Area: 45,811.00SqFt Length: 255.00Ft Width: 150.00Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 9 Surveyed: 3

Conditions: PCI : 46

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 5,002.00SqFt PCI = 60

Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                 L       25.00 Ft       Comments:
48 L & T CR                                 M      350.00 Ft       Comments:
57 WEATHERING                               L    5,002.00 SqFt     Comments:
```

Sample Number: 02 Type: A Area: 4,937.00SqFt PCI = 26

Sample Comments: NFIA_DATA.xlsx

```
52 RAVELING                                 M    1,234.00 SqFt     Comments:
52 RAVELING                                 H    3,703.00 SqFt     Comments:
```

Sample Number: 05 Type: R Area: 4,819.00SqFt PCI = 37

Sample Comments: NFIA_DATA.xlsx

```
43 BLOCK CR                                 M    4,819.00 SqFt     Comments:
52 RAVELING                                 H       80.00 SqFt     Comments:
57 WEATHERING                               M    4,819.00 SqFt     Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWG Name: TAXIWAY G Use: TAXIWAY Area: 29,117.00SqFt

Section: 01 of 1 From: 0+00 EDGE To: 2+50 Last Const.: 06/01/1970
Surface: PCC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 29,117.00SqFt Length: 250.00Ft Width: 95.00Ft
Slabs: 89 Slab Width: 13.00Ft Slab Length: 25.00Ft Joint Length: 2,431.92Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 4 Surveyed: 6
Conditions: PCI : 32
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 7.00Slabs PCI = 25
Sample Comments: NFIA_DATA.xlsx

```
64 DURABIL. CR                                    L        4.00 Slabs    Comments:
64 DURABIL. CR                                    H        1.00 Slabs    Comments:
65 JT SEAL DMG                                    M        3.00 Slabs    Comments:
65 JT SEAL DMG                                    H       14.00 Slabs    Comments:
74 JOINT SPALL                                    L        1.00 Slabs    Comments:
75 CORNER SPALL                                   L        3.00 Slabs    Comments:
75 CORNER SPALL                                   M        4.00 Slabs    Comments:
75 CORNER SPALL                                   H        1.00 Slabs    Comments:
```

Sample Number: 02 Type: R Area: 13.00Slabs PCI = 25
Sample Comments: NFIA_DATA.xlsx

```
63 LINEAR CR                                      L        1.00 Slabs    Comments:
64 DURABIL. CR                                    H        3.00 Slabs    Comments:
65 JT SEAL DMG                                    H       13.00 Slabs    Comments:
70 SCALING                                        L        1.00 Slabs    Comments:
71 FAULTING                                       L        1.00 Slabs    Comments:
71 FAULTING                                       M        2.00 Slabs    Comments:
74 JOINT SPALL                                    M        1.00 Slabs    Comments:
74 JOINT SPALL                                    H        1.00 Slabs    Comments:
75 CORNER SPALL                                   L        5.00 Slabs    Comments:
75 CORNER SPALL                                   M        2.00 Slabs    Comments:
75 CORNER SPALL                                   H        2.00 Slabs    Comments:
```

Sample Number: 03 Type: R Area: 15.00Slabs PCI = 29
Sample Comments: NFIA_DATA.xlsx

```
61 BLOW-UP                                        L        1.00 Slabs    Comments:
63 LINEAR CR                                      L        3.00 Slabs    Comments:
64 DURABIL. CR                                    L        4.00 Slabs    Comments:
64 DURABIL. CR                                    H        1.00 Slabs    Comments:
65 JT SEAL DMG                                    M        1.00 Slabs    Comments:
65 JT SEAL DMG                                    H       13.00 Slabs    Comments:
71 FAULTING                                       L        1.00 Slabs    Comments:
74 JOINT SPALL                                    M        1.00 Slabs    Comments:
74 JOINT SPALL                                    H        1.00 Slabs    Comments:
75 CORNER SPALL                                   L        3.00 Slabs    Comments:
75 CORNER SPALL                                   H        3.00 Slabs    Comments:
```

Sample Number: 04 Type: R Area: 18.00Slabs PCI = 44
Sample Comments: NFIA_DATA.xlsx

```
64 DURABIL. CR                                    L        7.00 Slabs    Comments:
```

64 DURABIL. CR	M	2.00	Slabs	Comments:
65 JT SEAL DMG	M	4.00	Slabs	Comments:
65 JT SEAL DMG	H	15.00	Slabs	Comments:
74 JOINT SPALL	L	1.00	Slabs	Comments:
74 JOINT SPALL	M	2.00	Slabs	Comments:
75 CORNER SPALL	L	7.00	Slabs	Comments:
75 CORNER SPALL	M	2.00	Slabs	Comments:
76 ASR	L	1.00	Slabs	Comments:

Sample Number: 05 Type: R Area: 18.00Slabs PCI = 26

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	1.00	Slabs	Comments:
64 DURABIL. CR	L	5.00	Slabs	Comments:
64 DURABIL. CR	M	4.00	Slabs	Comments:
64 DURABIL. CR	H	2.00	Slabs	Comments:
65 JT SEAL DMG	M	1.00	Slabs	Comments:
65 JT SEAL DMG	H	18.00	Slabs	Comments:
75 CORNER SPALL	L	3.00	Slabs	Comments:
75 CORNER SPALL	M	3.00	Slabs	Comments:
75 CORNER SPALL	H	4.00	Slabs	Comments:

Sample Number: 06 Type: R Area: 18.00Slabs PCI = 35

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	2.00	Slabs	Comments:
64 DURABIL. CR	L	4.00	Slabs	Comments:
64 DURABIL. CR	M	2.00	Slabs	Comments:
65 JT SEAL DMG	L	1.00	Slabs	Comments:
65 JT SEAL DMG	M	5.00	Slabs	Comments:
65 JT SEAL DMG	H	14.00	Slabs	Comments:
66 SMALL PATCH	L	4.00	Slabs	Comments:
67 LARGE PATCH	L	6.00	Slabs	Comments:
74 JOINT SPALL	M	1.00	Slabs	Comments:
75 CORNER SPALL	L	3.00	Slabs	Comments:
75 CORNER SPALL	M	3.00	Slabs	Comments:
75 CORNER SPALL	H	6.00	Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWH Name: TAXIWAY H Use: TAXIWAY Area: 41,366.00SqFt

Section: 01 of 1 From: 0+00 EDGE OF TWC To: 3+50 EDGE TERMINAL APRON Last Const.: 06/01/1970
Surface: PCC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 41,366.00SqFt Length: 350.00Ft Width: 75.00Ft
Slabs: 81 Slab Width: 13.00Ft Slab Length: 25.00Ft Joint Length: 2,644.23Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 4 Surveyed: 3
Conditions: PCI : 66
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 02 Type: R Area: 21.00Slabs PCI = 42
Sample Comments: NFIA_DATA.xlsx

75 CORNER SPALL	M	1.00 Slabs	Comments:
63 LINEAR CR	L	2.00 Slabs	Comments:
65 JT SEAL DMG	L	8.00 Slabs	Comments:
65 JT SEAL DMG	M	7.00 Slabs	Comments:
65 JT SEAL DMG	H	1.00 Slabs	Comments:
66 SMALL PATCH	L	6.00 Slabs	Comments:
66 SMALL PATCH	M	1.00 Slabs	Comments:
66 SMALL PATCH	H	1.00 Slabs	Comments:
67 LARGE PATCH	L	4.00 Slabs	Comments:
67 LARGE PATCH	M	1.00 Slabs	Comments:
74 JOINT SPALL	L	2.00 Slabs	Comments:
74 JOINT SPALL	M	3.00 Slabs	Comments:
74 JOINT SPALL	H	2.00 Slabs	Comments:

Sample Number: 03 Type: R Area: 19.00Slabs PCI = 92
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	M	4.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:

Sample Number: 04 Type: R Area: 20.00Slabs PCI = 67
Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	1.00 Slabs	Comments:
65 JT SEAL DMG	L	1.00 Slabs	Comments:
65 JT SEAL DMG	M	7.00 Slabs	Comments:
65 JT SEAL DMG	H	2.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:
66 SMALL PATCH	M	1.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
74 JOINT SPALL	M	1.00 Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWJ Name: TAXIWAY J Use: TAXIWAY Area: 70,969.00SqFt

Section: 01 of 2 From: 0+00 AT TWC To: 3+50 EDGE RW624 Last Const.: 06/01/1989
Surface: AAC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P
Area: 16,152.00SqFt Length: 350.00Ft Width: 40.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 3 Surveyed: 4
Conditions: PCI : 72
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 4,724.00SqFt PCI = 58
Sample Comments: NFIA_DATA.xlsx

```
45 DEPRESSION                              L       90.00 SqFt     Comments:
48 L & T CR                                M      160.00 Ft       Comments:
48 L & T CR                                H       90.00 Ft       Comments:
57 WEATHERING                              L    4,724.00 SqFt     Comments:
```

Sample Number: 02 Type: R Area: 3,421.00SqFt PCI = 81
Sample Comments: NFIA_DATA.xlsx

```
48 L & T CR                                L       30.00 Ft       Comments:
48 L & T CR                                M       20.00 Ft       Comments:
57 WEATHERING                              L    3,421.00 SqFt     Comments:
```

Sample Number: 03 Type: R Area: 3,206.00SqFt PCI = 80
Sample Comments: NFIA_DATA.xlsx

```
57 WEATHERING                              M    3,206.00 SqFt     Comments:
```

Sample Number: 04 Type: R Area: 4,800.00SqFt PCI = 74
Sample Comments: NFIA_DATA.xlsx

```
45 DEPRESSION                              L       12.00 SqFt     Comments:
48 L & T CR                                L       40.00 Ft       Comments:
57 WEATHERING                              M    4,800.00 SqFt     Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWJ Name: TAXIWAY J Use: TAXIWAY Area: 70,969.00SqFt

Section: 02 of 2 From: 0+00 EDGE RW624 To: 4+85 EDGE OF TERMINAL APR Last Const.: 06/01/1970
Surface: AAC Family: NFIA_2013 Taxiway AC Pavements Zone: Category: Rank: P
Area: 54,817.00SqFt Length: 485.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 11 Surveyed: 5
Conditions: PCI : 49
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 5,091.00SqFt PCI = 54
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	M	40.00 SqFt	Comments:
43 BLOCK CR	L	509.00 SqFt	Comments:
48 L & T CR	L	30.00 Ft	Comments:
48 L & T CR	M	20.00 Ft	Comments:
57 WEATHERING	L	5,091.00 SqFt	Comments:

Sample Number: 02 Type: R Area: 4,997.00SqFt PCI = 44
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	L	100.00 SqFt	Comments:
41 ALLIGATOR CR	M	60.00 SqFt	Comments:
48 L & T CR	L	100.00 Ft	Comments:
48 L & T CR	M	160.00 Ft	Comments:
57 WEATHERING	M	4,997.00 SqFt	Comments:

Sample Number: 03 Type: R Area: 5,712.00SqFt PCI = 56
Sample Comments: NFIA_DATA.xlsx

41 ALLIGATOR CR	M	90.00 SqFt	Comments:
48 L & T CR	M	200.00 Ft	Comments:
52 RAVELING	H	20.00 SqFt	Comments:

Sample Number: 07 Type: R Area: 5,557.00SqFt PCI = 68
Sample Comments: NFIA_DATA.xlsx

48 L & T CR	L	330.00 Ft	Comments:
48 L & T CR	M	140.00 Ft	Comments:
57 WEATHERING	M	5,557.00 SqFt	Comments:

Sample Number: 09 Type: R Area: 5,223.00SqFt PCI = 22
Sample Comments: NFIA_DATA.xlsx

45 DEPRESSION	L	140.00 SqFt	Comments:
45 DEPRESSION	M	100.00 SqFt	Comments:
48 L & T CR	L	200.00 Ft	Comments:
48 L & T CR	M	163.00 Ft	Comments:
48 L & T CR	H	130.00 Ft	Comments:
50 PATCHING	M	150.00 SqFt	Comments:
57 WEATHERING	H	5,223.00 SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWK Name: TAXIWAY K Use: TAXIWAY Area: 292,432.00SqFt

Section: 01 of 4 From: 1+00 To: 8+00 Last Const.: 06/01/1970
Surface: PCC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 51,718.00SqFt Length: 700.00Ft Width: 75.00Ft
Slabs: 84 Slab Width: 25.00Ft Slab Length: 25.00Ft Joint Length: 3,425.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 4 Surveyed: 2
Conditions: PCI : 43
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 05 Type: R Area: 12.00Slabs PCI = 48
Sample Comments: NFIA_DATA.xlsx

```
63 LINEAR CR                                  L        3.00 Slabs    Comments:
65 JT SEAL DMG                                L        6.00 Slabs    Comments:
65 JT SEAL DMG                                M       15.00 Slabs    Comments:
74 JOINT SPALL                                L        4.00 Slabs    Comments:
74 JOINT SPALL                                M        2.00 Slabs    Comments:
75 CORNER SPALL                               L        1.00 Slabs    Comments:
75 CORNER SPALL                               M        1.00 Slabs    Comments:
76 ASR                                        M        1.00 Slabs    Comments:
```

Sample Number: 07 Type: A Area: 12.00Slabs PCI = 11
Sample Comments: NFIA_DATA.xlsx

```
62 CORNER BREAK                               L        3.00 Slabs    Comments:
63 LINEAR CR                                  L        1.00 Slabs    Comments:
63 LINEAR CR                                  M        6.00 Slabs    Comments:
63 LINEAR CR                                  H        1.00 Slabs    Comments:
64 DURABIL. CR                                L        5.00 Slabs    Comments:
64 DURABIL. CR                                M        2.00 Slabs    Comments:
64 DURABIL. CR                                H        1.00 Slabs    Comments:
65 JT SEAL DMG                                H       17.00 Slabs    Comments:
66 SMALL PATCH                                L        1.00 Slabs    Comments:
74 JOINT SPALL                                L        1.00 Slabs    Comments:
75 CORNER SPALL                               L        1.00 Slabs    Comments:
75 CORNER SPALL                               M        1.00 Slabs    Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWK Name: TAXIWAY K Use: TAXIWAY Area: 292,432.00SqFt

Section: 01A of 4 From: 0+00 EDGE RW10L To: 1+00 Last Const.: 01/01/2012
Surface: APC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 19,378.00SqFt Length: 100.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 4 Surveyed: 3
Conditions: PCI : 100
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: A Area: 6,136.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 02 Type: R Area: 5,829.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Sample Number: 04 Type: R Area: 7,377.00SqFt PCI = 100
Sample Comments: NFIA_DATA.xlsx
<NO DISTRESSES>

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWK Name: TAXIWAY K Use: TAXIWAY Area: 292,432.00SqFt

Section: 02 of 4 From: 8+00 To: 24+34 EDGE TWC Last Const.: 06/01/1970

Surface: PCC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P

Area: 129,561.00SqFt Length: 1,634.00Ft Width: 75.00Ft

Slabs: 681 Slab Width: 12.00Ft Slab Length: 15.00Ft Joint Length: 16,673.50Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 34 Surveyed: 9

Conditions: PCI : 56

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 29.00Slabs PCI = 60

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	2.00 Slabs	Comments:
65 JT SEAL DMG	L	10.00 Slabs	Comments:
65 JT SEAL DMG	M	11.00 Slabs	Comments:
71 FAULTING	L	2.00 Slabs	Comments:
74 JOINT SPALL	M	2.00 Slabs	Comments:
74 JOINT SPALL	H	2.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:

Sample Number: 05 Type: R Area: 20.00Slabs PCI = 67

Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	L	1.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	M	2.00 Slabs	Comments:
65 JT SEAL DMG	H	18.00 Slabs	Comments:
66 SMALL PATCH	L	2.00 Slabs	Comments:
67 LARGE PATCH	L	5.00 Slabs	Comments:

Sample Number: 09 Type: R Area: 20.00Slabs PCI = 34

Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	L	1.00 Slabs	Comments:
64 DURABIL. CR	L	2.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
64 DURABIL. CR	H	3.00 Slabs	Comments:
65 JT SEAL DMG	H	18.00 Slabs	Comments:
66 SMALL PATCH	L	4.00 Slabs	Comments:
67 LARGE PATCH	L	2.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:

Sample Number: 13 Type: R Area: 21.00Slabs PCI = 46

Sample Comments: NFIA_DATA.xlsx

74 JOINT SPALL	H	2.00 Slabs	Comments:
75 CORNER SPALL	L	2.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	H	1.00 Slabs	Comments:
65 JT SEAL DMG	L	1.00 Slabs	Comments:
65 JT SEAL DMG	M	15.00 Slabs	Comments:
65 JT SEAL DMG	H	4.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:
66 SMALL PATCH	H	1.00 Slabs	Comments:
67 LARGE PATCH	L	1.00 Slabs	Comments:

74 JOINT SPALL	L	1.00	Slabs	Comments:
74 JOINT SPALL	M	4.00	Slabs	Comments:

Sample Number: 17 Type: R Area: 49.00Slabs PCI = 62

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	6.00	Slabs	Comments:
63 LINEAR CR	M	1.00	Slabs	Comments:
65 JT SEAL DMG	M	9.00	Slabs	Comments:
65 JT SEAL DMG	H	3.00	Slabs	Comments:
71 FAULTING	M	1.00	Slabs	Comments:
72 SHAT. SLAB	M	1.00	Slabs	Comments:
75 CORNER SPALL	H	1.00	Slabs	Comments:

Sample Number: 22 Type: R Area: 18.00Slabs PCI = 67

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	3.00	Slabs	Comments:
65 JT SEAL DMG	M	2.00	Slabs	Comments:
65 JT SEAL DMG	H	7.00	Slabs	Comments:
67 LARGE PATCH	L	2.00	Slabs	Comments:
71 FAULTING	L	1.00	Slabs	Comments:
74 JOINT SPALL	M	1.00	Slabs	Comments:

Sample Number: 27 Type: R Area: 41.00Slabs PCI = 60

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	13.00	Slabs	Comments:
65 JT SEAL DMG	L	1.00	Slabs	Comments:
65 JT SEAL DMG	M	19.00	Slabs	Comments:
74 JOINT SPALL	L	8.00	Slabs	Comments:
74 JOINT SPALL	M	2.00	Slabs	Comments:
75 CORNER SPALL	L	5.00	Slabs	Comments:
75 CORNER SPALL	H	1.00	Slabs	Comments:

Sample Number: 28 Type: A Area: 41.00Slabs PCI = 37

Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	M	1.00	Slabs	Comments:
63 LINEAR CR	H	5.00	Slabs	Comments:
64 DURABIL. CR	M	2.00	Slabs	Comments:
65 JT SEAL DMG	M	1.00	Slabs	Comments:
65 JT SEAL DMG	H	14.00	Slabs	Comments:
66 SMALL PATCH	L	3.00	Slabs	Comments:
67 LARGE PATCH	M	3.00	Slabs	Comments:
74 JOINT SPALL	M	4.00	Slabs	Comments:
74 JOINT SPALL	H	1.00	Slabs	Comments:
75 CORNER SPALL	H	1.00	Slabs	Comments:

Sample Number: 29 Type: R Area: 40.00Slabs PCI = 54

Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	L	3.00	Slabs	Comments:
63 LINEAR CR	M	1.00	Slabs	Comments:
63 LINEAR CR	H	2.00	Slabs	Comments:
65 JT SEAL DMG	H	18.00	Slabs	Comments:
66 SMALL PATCH	L	6.00	Slabs	Comments:
67 LARGE PATCH	L	1.00	Slabs	Comments:
74 JOINT SPALL	L	2.00	Slabs	Comments:
74 JOINT SPALL	M	3.00	Slabs	Comments:
74 JOINT SPALL	H	1.00	Slabs	Comments:
75 CORNER SPALL	L	2.00	Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWK Name: TAXIWAY K Use: TAXIWAY Area: 292,432.00SqFt

Section: 03 of 4 From: 0+00 EDGE TW K To: 12+42 Last Const.: 06/01/1970
Surface: PCC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 91,775.00SqFt Length: 1,242.00Ft Width: 75.00Ft
Slabs: 517 Slab Width: 12.00Ft Slab Length: 15.00Ft Joint Length: 12,655.50Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 26 Surveyed: 9
Conditions: PCI : 62
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 21.00Slabs PCI = 48
Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	1.00 Slabs	Comments:
64 DURABIL. CR	L	1.00 Slabs	Comments:
64 DURABIL. CR	M	2.00 Slabs	Comments:
65 JT SEAL DMG	M	2.00 Slabs	Comments:
65 JT SEAL DMG	H	24.00 Slabs	Comments:
74 JOINT SPALL	L	1.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:
75 CORNER SPALL	L	5.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	H	1.00 Slabs	Comments:

Sample Number: 05 Type: R Area: 23.00Slabs PCI = 92
Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	M	1.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:

Sample Number: 07 Type: R Area: 29.00Slabs PCI = 33
Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	H	1.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
64 DURABIL. CR	H	5.00 Slabs	Comments:
65 JT SEAL DMG	H	20.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	H	3.00 Slabs	Comments:
62 CORNER BREAK	M	1.00 Slabs	Comments:

Sample Number: 12 Type: R Area: 23.00Slabs PCI = 77
Sample Comments: NFIA_DATA.xlsx

66 SMALL PATCH	L	2.00 Slabs	Comments:
74 JOINT SPALL	L	2.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:
65 JT SEAL DMG	M	2.00 Slabs	Comments:
65 JT SEAL DMG	H	1.00 Slabs	Comments:

Sample Number: 15 Type: R Area: 17.00Slabs PCI = 51
Sample Comments: NFIA_DATA.xlsx

64 DURABIL. CR	L	1.00 Slabs	Comments:
64 DURABIL. CR	M	2.00 Slabs	Comments:
65 JT SEAL DMG	L	3.00 Slabs	Comments:
65 JT SEAL DMG	M	5.00 Slabs	Comments:

65 JT SEAL DMG	H	9.00	Slabs	Comments:
74 JOINT SPALL	M	2.00	Slabs	Comments:
75 CORNER SPALL	L	2.00	Slabs	Comments:
75 CORNER SPALL	M	1.00	Slabs	Comments:

Sample Number: 18 Type: R Area: 21.00Slabs PCI = 24

Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	M	1.00	Slabs	Comments:
62 CORNER BREAK	H	1.00	Slabs	Comments:
64 DURABIL. CR	M	2.00	Slabs	Comments:
64 DURABIL. CR	H	1.00	Slabs	Comments:
65 JT SEAL DMG	H	20.00	Slabs	Comments:
74 JOINT SPALL	H	5.00	Slabs	Comments:
75 CORNER SPALL	H	9.00	Slabs	Comments:

Sample Number: 19 Type: R Area: 21.00Slabs PCI = 98

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	L	1.00	Slabs	Comments:

Sample Number: 20 Type: R Area: 24.00Slabs PCI = 77

Sample Comments: NFIA_DATA.xlsx

65 JT SEAL DMG	M	2.00	Slabs	Comments:
65 JT SEAL DMG	H	3.00	Slabs	Comments:
66 SMALL PATCH	L	1.00	Slabs	Comments:
66 SMALL PATCH	M	1.00	Slabs	Comments:
67 LARGE PATCH	L	1.00	Slabs	Comments:

Sample Number: 21 Type: A Area: 28.00Slabs PCI = 66

Sample Comments: NFIA_DATA.xlsx

75 CORNER SPALL	H	1.00	Slabs	Comments:
64 DURABIL. CR	H	1.00	Slabs	Comments:
65 JT SEAL DMG	M	4.00	Slabs	Comments:
65 JT SEAL DMG	H	13.00	Slabs	Comments:
66 SMALL PATCH	L	4.00	Slabs	Comments:
75 CORNER SPALL	M	2.00	Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWL Name: TAXIWAY L Use: TAXIWAY Area: 70,944.00SqFt

Section: 01 of 4 From: 0+00 EDGE RW10R To: 2+85 Last Const.: 06/01/1970
Surface: PCC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 22,750.00SqFt Length: 285.00Ft Width: 85.00Ft
Slabs: 71 Slab Width: 17.00Ft Slab Length: 20.00Ft Joint Length: 2,266.25Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 5 Surveyed: 5
Conditions: PCI : 22
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 11.00Slabs PCI = 27
Sample Comments: NFIA_DATA.xlsx

75 CORNER SPALL	M	3.00 Slabs	Comments:
63 LINEAR CR	L	3.00 Slabs	Comments:
63 LINEAR CR	M	5.00 Slabs	Comments:
65 JT SEAL DMG	L	11.00 Slabs	Comments:
66 SMALL PATCH	L	1.00 Slabs	Comments:
74 JOINT SPALL	H	2.00 Slabs	Comments:

Sample Number: 02 Type: R Area: 13.00Slabs PCI = 18
Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	L	2.00 Slabs	Comments:
63 LINEAR CR	H	1.00 Slabs	Comments:
65 JT SEAL DMG	M	4.00 Slabs	Comments:
65 JT SEAL DMG	H	5.00 Slabs	Comments:
66 SMALL PATCH	H	2.00 Slabs	Comments:
68 POPOUTS	N	10.00 Slabs	Comments:
74 JOINT SPALL	H	3.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	H	5.00 Slabs	Comments:

Sample Number: 03 Type: R Area: 14.00Slabs PCI = 24
Sample Comments: NFIA_DATA.xlsx

63 LINEAR CR	M	1.00 Slabs	Comments:
63 LINEAR CR	H	2.00 Slabs	Comments:
64 DURABIL. CR	M	1.00 Slabs	Comments:
65 JT SEAL DMG	M	10.00 Slabs	Comments:
65 JT SEAL DMG	H	5.00 Slabs	Comments:
68 POPOUTS	N	10.00 Slabs	Comments:
71 FAULTING	L	2.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:
75 CORNER SPALL	L	1.00 Slabs	Comments:
75 CORNER SPALL	M	1.00 Slabs	Comments:
75 CORNER SPALL	H	2.00 Slabs	Comments:

Sample Number: 04 Type: R Area: 14.00Slabs PCI = 7
Sample Comments: NFIA_DATA.xlsx

62 CORNER BREAK	L	1.00 Slabs	Comments:
63 LINEAR CR	L	1.00 Slabs	Comments:
63 LINEAR CR	M	2.00 Slabs	Comments:
63 LINEAR CR	H	2.00 Slabs	Comments:
64 DURABIL. CR	L	1.00 Slabs	Comments:

64 DURABIL. CR	M	2.00 Slabs	Comments:
65 JT SEAL DMG	M	1.00 Slabs	Comments:
65 JT SEAL DMG	H	13.00 Slabs	Comments:
66 SMALL PATCH	M	1.00 Slabs	Comments:
66 SMALL PATCH	H	1.00 Slabs	Comments:
67 LARGE PATCH	M	1.00 Slabs	Comments:
67 LARGE PATCH	H	1.00 Slabs	Comments:
68 POPOUTS	N	1.00 Slabs	Comments:
71 FAULTING	L	2.00 Slabs	Comments:
72 SHAT. SLAB	H	1.00 Slabs	Comments:
74 JOINT SPALL	M	1.00 Slabs	Comments:
74 JOINT SPALL	H	1.00 Slabs	Comments:
75 CORNER SPALL	H	5.00 Slabs	Comments:

Sample Number: 05 Type: R Area: 14.00Slabs PCI = 35

Sample Comments:

75 CORNER SPALLING	M	1.00 Slabs	Comments:
75 CORNER SPALLING	H	1.00 Slabs	Comments:
62 CORNER BREAK	L	3.00 Slabs	Comments:
63 LINEAR CRACKING	M	4.00 Slabs	Comments:
64 DURABILITY CRACKING	L	4.00 Slabs	Comments:
65 JOINT SEAL DAMAGE	H	14.00 Slabs	Comments:
74 JOINT SPALLING	M	2.00 Slabs	Comments:
75 CORNER SPALLING	L	2.00 Slabs	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWL Name: TAXIWAY L Use: TAXIWAY Area: 70,944.00SqFt

Section: 02 of 4 From: 2+85 To: 4+00 Last Const.: 06/01/1970
Surface: APC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 8,752.00SqFt Length: 113.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 2 Surveyed: 2
Conditions: PCI : 27
Inspection Comments:

Sample Number: 01 Type: R Area: 4,386.00SqFt PCI = 24
Sample Comments:

43 BLOCK CRACKING	M	600.00 SqFt	Comments:
47 JOINT REFLECTION CRACKING	M	350.00 Ft	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	M	75.00 Ft	Comments:
52 RAVELING	M	2,193.00 SqFt	Comments:
57 WEATHERING	M	2,193.00 SqFt	Comments:
53 RUTTING	M	150.00 SqFt	Comments:

Sample Number: 02 Type: R Area: 4,365.00SqFt PCI = 30
Sample Comments:

47 JOINT REFLECTION CRACKING	M	350.00 Ft	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	L	50.00 Ft	Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING	M	250.00 Ft	Comments:
52 RAVELING	M	2,183.00 SqFt	Comments:
57 WEATHERING	M	2,182.00 SqFt	Comments:

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWL Name: TAXIWAY L Use: TAXIWAY Area: 70,944.00SqFt

Section: 03 of 4 From: 4+00 To: 6+25 Last Const.: 06/01/1970
Surface: APC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: S
Area: 23,463.00SqFt Length: 225.00Ft Width: 75.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 5 Surveyed: 3
Conditions: PCI : 47
Inspection Comments:

Sample Number: 01 Type: R Area: 3,981.00SqFt PCI = 43
Sample Comments:

```
47 JOINT REFLECTION CRACKING             M      135.00 Ft       Comments:
52 RAVELING                              M    1,991.00 SqFt     Comments:
57 WEATHERING                            M    1,990.00 SqFt     Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING      M       65.00 Ft       Comments:
```

Sample Number: 02 Type: R Area: 4,137.00SqFt PCI = 48
Sample Comments:

```
52 RAVELING                              M    2,069.00 SqFt     Comments:
57 WEATHERING                            M    2,068.00 SqFt     Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING      M      130.00 Ft       Comments:
```

Sample Number: 03 Type: R Area: 5,510.00SqFt PCI = 50
Sample Comments:

```
47 JOINT REFLECTION CRACKING             M       60.00 Ft       Comments:
48 LONGITUDINAL/TRANSVERSE CRACKING      M      280.00 Ft       Comments:
52 RAVELING                              M    1,377.00 SqFt     Comments:
57 WEATHERING                            M    4,133.00 SqFt     Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWL Name: TAXIWAY L Use: TAXIWAY Area: 70,944.00SqFt

Section: 04 of 4 From: 6+25 To: 8+15 Last Const.: 06/01/1970
Surface: PCC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: S
Area: 15,979.00SqFt Length: 190.00Ft Width: 75.00Ft
Slabs: 59 Slab Width: 20.00Ft Slab Length: 12.00Ft Joint Length: 1,635.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/12/2012 Total Samples: 2 Surveyed: 2
Conditions: PCI : 56
Inspection Comments:

Sample Number: 01 Type: R Area: 25.00Slabs PCI = 63
Sample Comments:

```
64 DURABILITY CRACKING                       L       2.00 Slabs    Comments:
64 DURABILITY CRACKING                       M       3.00 Slabs    Comments:
65 JOINT SEAL DAMAGE                         H      25.00 Slabs    Comments:
75 CORNER SPALLING                           L       5.00 Slabs    Comments:
75 CORNER SPALLING                           M       1.00 Slabs    Comments:
```

Sample Number: 02 Type: R Area: 24.00Slabs PCI = 49
Sample Comments:

```
62 CORNER BREAK                              M       2.00 Slabs    Comments:
63 LINEAR CRACKING                           L       9.00 Slabs    Comments:
64 DURABILITY CRACKING                       L       3.00 Slabs    Comments:
65 JOINT SEAL DAMAGE                         H      24.00 Slabs    Comments:
74 JOINT SPALLING                            H       1.00 Slabs    Comments:
75 CORNER SPALLING                           L       2.00 Slabs    Comments:
75 CORNER SPALLING                           M       1.00 Slabs    Comments:
75 CORNER SPALLING                           H       2.00 Slabs    Comments:
```

Re-inspection Report

NFIA2012

Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWM Name: TAXIWAY M Use: TAXIWAY Area: 30,901.00SqFt

Section: 01 of 2 From: 0+00 EDGE RW10R To: 2+54 Last Const.: 06/01/1970

Surface: PCC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P

Area: 21,377.00SqFt Length: 254.00Ft Width: 85.00Ft

Slabs: 90 Slab Width: 12.00Ft Slab Length: 20.00Ft Joint Length: 2,539.67Ft

Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 4 Surveyed: 4

Conditions: PCI : 67

Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 21.00Slabs PCI = 72

Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              H         7.00 Slabs    Comments:
68 POPOUTS                                  N         4.00 Slabs    Comments:
75 CORNER SPALL                             M         1.00 Slabs    Comments:
65 JT SEAL DMG                              L         1.00 Slabs    Comments:
65 JT SEAL DMG                              M         6.00 Slabs    Comments:
```

Sample Number: 02 Type: R Area: 21.00Slabs PCI = 80

Sample Comments: NFIA_DATA.xlsx

```
65 JT SEAL DMG                              H         8.00 Slabs    Comments:
74 JOINT SPALL                              M         1.00 Slabs    Comments:
75 CORNER SPALL                             M         1.00 Slabs    Comments:
```

Sample Number: 03 Type: R Area: 21.00Slabs PCI = 57

Sample Comments: NFIA_DATA.xlsx

```
63 LINEAR CR                                M         2.00 Slabs    Comments:
63 LINEAR CR                                H         1.00 Slabs    Comments:
65 JT SEAL DMG                              M         6.00 Slabs    Comments:
65 JT SEAL DMG                              H         6.00 Slabs    Comments:
74 JOINT SPALL                              H         1.00 Slabs    Comments:
```

Sample Number: 04 Type: R Area: 25.00Slabs PCI = 59

Sample Comments: NFIA_DATA.xlsx

```
63 LINEAR CR                                L         2.00 Slabs    Comments:
63 LINEAR CR                                M         2.00 Slabs    Comments:
65 JT SEAL DMG                              L        25.00 Slabs    Comments:
67 LARGE PATCH                              M         1.00 Slabs    Comments:
72 SHAT. SLAB                               L         1.00 Slabs    Comments:
74 JOINT SPALL                              M         3.00 Slabs    Comments:
75 CORNER SPALL                             M         1.00 Slabs    Comments:
```

Re-inspection Report

NFIA2012
Report Generated Date: December 22, 2013

Network: NFIA Name: Niagara Falls International Airport

Branch: TWM Name: TAXIWAY M Use: TAXIWAY Area: 30,901.00SqFt

Section: 02 of 2 From: 2+54 To: EDGE OF TWD Last Const.: 01/01/2000
Surface: APC Family: NFIA_2013 Taxiway PCC and APC Zone: Category: Rank: P
Area: 9,524.00SqFt Length: 100.00Ft Width: 85.00Ft
Shoulder: Street Type: Grade: 0.00 Lanes: 0

Section Comments:

Last Insp. Date: 10/22/2012 Total Samples: 2 Surveyed: 1
Conditions: PCI : 71
Inspection Comments: NFIA_DATA.xlsx

Sample Number: 01 Type: R Area: 4,787.00SqFt PCI = 71
Sample Comments: NFIA_DATA.xlsx

```
47 JT REF. CR                                  L        95.00 Ft       Comments:
47 JT REF. CR                                  M       120.00 Ft       Comments:
57 WEATHERING                                  L     4,787.00 SqFt     Comments:
```

APPENDIX B

NDT FIELD DATA AND ISM PLOTS

Niagara Falls International Airport

NDT Field Data

Runway 10L-28R

Air Temp. 40.42 F

NDT No.	Lane No.	Station (ft)	Offset	Force (kip)	Displacement Sensors (mils)							Pvmnt Temp (F)	ISM kip/in	Remarks
					d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")			
0+00 @ RW10L														
229	4	31	65' R	35	4.86	4.64	4.48	4.15	3.77	3.29	2.91	61.6	7208	PCC TWA
1	1	173	65' L	35	4.18	3.92	3.79	3.48	3.14	2.74	2.35	62.3	8372	PCC TWA
230	4	225	65' R	35	19.81	14.50	12.41	9.93	7.53	5.53	4.38	62.0	1766	AC
2	1	379	65' L	35	21.74	18.39	16.10	11.24	8.20	6.11	4.69	62.3	1610	AC
231	4	426	65' R	35	28.06	24.37	21.02	14.39	9.73	6.47	4.71	63.0	1247	AC
3	1	576	65' L	35	27.55	23.46	20.45	13.53	8.95	5.96	4.33	62.0	1270	AC
232	4	628	65' R	35	31.72	27.44	23.88	15.29	9.04	5.12	3.12	61.6	1103	AC
4	1	775	65' L	35	18.18	15.97	14.22	10.18	7.14	4.97	3.52	62.3	1925	AC
233	4	824	65' R	35	21.44	19.96	17.80	12.99	9.08	6.11	4.16	63.3	1632	AC
5	1	975	65' L	35	16.43	14.37	12.77	9.13	6.47	4.38	3.13	62.3	2130	AC
234	4	1032	65' R	35	23.62	21.45	19.25	13.90	9.25	5.88	3.78	62.0	1482	AC
235	4	1227	65' R	35	19.25	16.39	13.99	8.15	4.36	1.95	0.80	62.0	1818	AC
6	1	1374	65' L	35	15.19	12.88	11.20	7.33	4.63	2.79	1.76	63.0	2304	AC
236	4	1425	65' R	35	16.54	14.20	12.41	8.08	4.80	2.56	1.30	62.6	2116	AC
7	1	1584	65' L	35	20.13	17.87	15.85	10.83	6.98	4.16	2.45	62.3	1739	AC TWA1
237	4	1627	65' R	35	13.69	11.22	9.39	5.48	3.01	1.65	0.91	63.3	2557	AC
8	1	1776	65' L	35	20.68	17.81	15.38	9.58	5.49	3.04	1.67	62.6	1692	AC
238	4	1829	65' R	35	21.30	18.53	16.09	10.82	6.89	4.23	2.60	61.6	1643	AC
9	1	1980	65' L	35	23.92	20.95	18.63	13.09	8.88	5.95	4.05	62.6	1463	AC
239	4	2027	65' R	35	25.34	21.30	18.81	12.54	8.29	5.44	3.64	62.0	1381	AC
10	1	2179	65' L	35	24.25	21.01	18.62	12.98	8.91	5.97	4.13	62.0	1443	AC
240	4	2239	65' R	35	26.78	24.16	21.26	14.45	9.35	5.82	3.64	63.6	1307	AC
11	1	2377	65' L	35	22.87	19.80	17.51	12.30	8.66	6.04	4.26	61.6	1530	AC
241	4	2428	65' R	35	26.19	23.12	20.31	13.54	8.75	5.52	3.49	63.0	1336	AC
12	1	2575	65' L	35	33.34	28.81	25.12	16.91	11.28	7.38	5.19	61.0	1050	AC
242	4	2627	65' R	35	28.67	25.99	22.93	16.01	10.43	6.57	4.29	63.3	1221	AC
13	1	2785	65' L	35	29.91	25.10	21.56	13.88	8.91	5.82	3.99	63.0	1170	AC
243	4	2832	65' R	35	27.51	24.57	21.62	14.55	9.11	5.58	3.51	63.0	1272	AC TWK
14	1	2993	65' L	35	24.63	21.65	19.16	13.20	9.00	5.96	4.00	62.6	1421	AC
244	4	3026	65' R	35	27.19	23.95	20.90	14.18	9.31	6.01	4.00	62.6	1287	AC
15	1	3180	65' L	35	28.74	24.62	21.50	14.33	9.37	6.02	4.00	62.3	1218	AC
245	4	3230	65' R	35	25.22	22.22	19.54	13.42	8.50	5.14	3.06	62.3	1388	AC
16	1	3374	65' L	35	18.45	14.80	12.47	7.22	3.99	2.15	1.19	62.6	1897	AC
246	4	3427	65' R	35	20.36	17.40	14.95	9.16	5.07	2.60	1.28	62.3	1719	AC
17	1	3577	65' L	35	15.89	12.72	10.91	6.64	3.98	2.32	1.48	62.0	2202	AC
247	4	3626	65' R	35	13.38	11.42	10.06	6.75	4.21	2.58	1.59	63.6	2616	AC TWA2
18	1	3773	65' L	35	20.36	17.30	15.11	9.49	5.52	3.04	1.81	62.6	1719	AC TWA2
248	4	3825	65' R	35	13.87	11.85	10.44	7.30	4.69	2.96	1.92	62.0	2523	AC
19	1	3977	65' L	35	15.40	12.17	10.52	6.80	4.27	2.55	1.50	62.3	2273	AC
249	4	4029	65' R	35	15.32	13.43	12.07	8.85	6.23	4.21	2.87	63.0	2284	AC
20	1	4180	65' L	35	9.96	8.41	7.58	5.60	4.13	2.92	2.12	63.0	3512	AC
250	4	4226	65' R	35	10.73	8.83	7.79	5.49	3.67	2.39	1.66	62.0	3263	AC
21	1	4381	65' L	35	9.65	8.12	7.25	5.04	3.43	2.24	1.46	61.6	3626	AC
251	4	4424	65' R	35	9.64	7.72	6.62	4.46	3.03	2.13	1.51	62.0	3632	AC
22	1	4575	65' L	35	10.79	9.04	8.17	6.27	4.75	3.50	0.75	61.3	3244	AC
252	4	4625	65' R	35	16.58	15.13	13.82	10.99	8.32	5.87	4.11	62.0	2111	AC
23	1	4777	65' L	35	11.16	9.33	8.38	6.05	4.29	2.96	2.06	62.0	3137	AC
253	4	4845	65' R	35	15.84	13.62	12.18	9.20	6.61	4.36	1.92	62.0	2210	AC
24	1	4976	65' L	35	11.73	10.22	9.42	7.47	5.76	4.26	3.16	62.3	2983	AC
254	4	5025	65' R	35	13.63	12.28	11.30	8.97	6.83	4.91	3.68	61.6	2567	AC
25	1	5176	65' L	35	11.01	9.69	8.86	7.08	5.64	4.43	3.54	62.3	3178	AC

Niagara Falls International Airport

NDT Field Data

Runway 10L-28R

Air Temp. 40.42 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 @ RW10L														
255	4	5229	65' R	35	14.67	13.47	12.49	10.30	8.13	6.04	4.50	63.0	2385	AC
26	1	5375	65' L	35	14.02	12.66	11.70	9.46	7.38	5.55	4.15	61.6	2496	AC
256	4	5424	65' R	35	17.82	16.23	14.85	11.59	8.65	6.20	4.42	63.0	1964	AC
27	1	5575	65' L	35	13.94	12.54	11.56	9.19	7.09	5.22	3.81	62.6	2511	AC
257	4	5624	65' R	35	12.81	10.78	9.65	7.40	5.60	4.18	1.68	62.0	2733	AC
28	1	5826	65' L	35	12.95	11.65	10.55	8.05	5.57	3.63	0.83	61.3	2703	AC
258	4	5827	65' R	35	10.10	8.52	7.66	5.77	4.07	2.78	1.97	63.0	3467	AC
29	1	5977	65' L	35	10.72	9.09	8.23	6.19	4.57	3.36	2.45	62.0	3266	AC
259	4	6026	65' R	35	11.97	9.36	8.28	5.92	3.92	2.43	1.71	62.6	2923	AC
30	1	6177	65' L	35	12.20	10.80	9.95	8.14	6.36	4.87	3.68	63.0	2868	AC
260	4	6226	65' R	35	13.06	11.66	10.64	8.48	6.42	4.70	3.47	63.3	2679	AC
31	1	6375	65' L	35	14.86	13.38	12.20	9.40	7.12	5.09	3.58	61.6	2356	AC
261	4	6429	65' R	35	14.28	12.86	11.68	9.01	6.47	4.40	3.04	62.6	2450	AC
32	1	6577	65' L	35	9.96	8.70	7.96	6.30	4.97	3.80	2.89	63.3	3513	AC
262	4	6627	65' R	35	14.31	13.05	11.95	9.55	7.48	5.60	4.18	63.0	2446	AC
33	1	6777	65' L	35	6.55	5.56	5.21	4.63	3.98	3.25	2.74	62.6	5343	AC
263	4	6825	65' R	35	14.84	13.60	12.65	10.55	8.62	6.75	5.28	63.3	2358	AC
34	1	6980	65' L	35	5.29	4.33	4.04	3.58	3.17	2.68	2.25	61.3	6614	AC
264	4	7026	65' R	35	14.10	12.85	11.75	9.41	7.19	5.22	3.88	62.3	2482	AC
35	1	7176	65' L	35	7.08	6.20	5.83	5.11	4.36	3.59	2.92	63.0	4941	AC
265	4	7225	65' R	35	23.11	21.04	18.86	13.83	9.86	6.74	4.70	62.3	1514	AC
36	1	7376	65' L	35	7.72	6.57	6.08	5.05	4.12	3.23	2.58	62.3	4532	AC
266	4	7430	65' R	35	18.95	17.03	15.54	11.67	8.48	5.86	4.04	62.0	1847	AC
37	1	7576	65' L	35	7.48	6.31	5.76	4.67	3.77	2.91	2.31	62.0	4682	AC
267	4	7625	65' R	35	12.58	11.19	10.27	8.22	6.29	4.49	3.38	63.6	2783	AC
38	1	7777	65' L	35	10.97	9.49	8.72	6.99	5.53	4.21	3.21	62.3	3191	AC
268	4	7825	65' R	35	11.55	10.40	9.50	7.65	5.73	4.19	2.90	62.6	3030	AC
39	1	7977	65' L	35	11.63	10.26	9.48	7.72	6.10	4.58	3.33	61.6	3010	AC
269	4	8034	65' R	35	20.14	18.28	16.58	12.72	9.12	6.28	4.27	62.6	1738	AC
40	1	8179	65' L	35	18.97	17.10	15.66	12.10	8.72	6.11	4.26	62.0	1845	AC
270	4	8225	65' R	35	14.69	13.43	12.36	10.06	7.74	5.73	4.22	62.3	2383	AC
41	1	8379	65' L	35	16.03	14.26	13.00	10.10	7.71	5.78	4.34	61.6	2183	AC
271	4	8425	65' R	35	11.74	10.52	9.67	8.13	6.43	4.93	3.77	61.6	2981	AC
42	1	8575	65' L	35	18.38	16.70	15.32	12.19	9.24	6.71	4.92	62.0	1904	ACTWA3
272	4	8626	65' R	35	9.80	8.81	8.17	6.98	5.73	4.53	3.65	63.6	3571	ACTWA3
43	1	8773	65' L	35	14.85	13.22	12.01	9.22	7.02	5.14	3.84	61.3	2357	ACTWA3
273	4	8829	65' R	35	11.51	10.40	9.59	8.01	6.54	5.17	4.12	61.6	3041	INT. RW6-24
44	1	8979	65' L	35	18.68	16.70	15.13	11.49	8.59	6.26	4.72	61.6	1873	INT. RW6-24
274	4	9025	65' R	35	16.64	15.26	14.03	11.28	8.44	6.17	4.63	62.3	2103	AC
45	1	9174	65' L	35	14.76	13.24	12.14	9.63	7.48	5.59	4.30	61.3	2372	AC
137	3	72	10' R	35	4.20	4.07	3.93	3.85	3.40	3.08	2.93	60.6	8330	PCC TWA
138	3	154	10' R	35	4.41	4.26	4.07	4.06	3.42	3.01	2.59	61.3	7928	PCC
46	2	204	10' L	35	17.87	16.19	14.76	11.25	8.01	5.50	4.02	61.6	1958	AC
139	3	253	10' R	35	33.68	29.78	26.15	18.16	12.10	7.70	5.42	61.6	1039	AC
47	2	307	10' L	35	25.55	22.52	19.95	14.10	9.98	6.95	5.02	62.6	1370	AC
140	3	349	10' R	35	28.19	25.51	22.74	17.07	11.00	7.38	5.29	61.0	1241	AC
48	2	401	10' L	35	21.14	18.67	16.74	12.34	9.05	6.40	4.59	63.0	1656	AC
141	3	453	10' R	35	22.19	20.29	18.27	14.01	9.68	6.84	5.01	62.3	1578	AC
49	2	501	10' L	35	23.29	20.84	18.78	14.15	10.49	7.46	5.18	61.6	1503	AC
142	3	554	10' R	35	27.92	24.95	22.06	16.01	10.39	6.74	4.58	61.0	1254	AC
50	2	600	10' L	35	26.39	23.01	20.33	14.05	9.41	6.21	4.35	62.6	1326	AC

Niagara Falls International Airport

NDT Field Data

Runway 10L-28R

Air Temp. 40.42 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 @ RW10L														
143	3	652	10' R	35	25.53	23.16	20.55	14.50	9.61	6.16	4.13	62.6	1371	AC
51	2	705	10' L	35	24.54	21.70	19.12	13.50	9.02	5.85	3.78	63.3	1426	AC
144	3	760	10' R	35	24.85	23.02	20.64	14.96	10.07	6.26	1.98	61.6	1409	AC
52	2	808	10' L	35	21.96	18.85	16.62	11.63	8.06	5.40	3.65	63.0	1594	AC
145	3	872	10' R	35	19.67	15.30	12.71	9.54	6.83	4.66	3.14	63.0	1780	AC
53	2	906	10' L	35	27.10	22.98	19.99	13.14	8.27	5.02	3.19	61.3	1292	AC
146	3	952	10' R	35	24.68	21.74	19.18	13.72	9.36	6.13	4.06	61.6	1418	AC
54	2	1004	10' L	35	24.92	21.38	18.90	13.11	8.73	5.53	3.45	62.6	1404	AC
147	3	1056	10' R	35	24.53	21.83	19.23	13.22	8.67	5.30	3.18	61.3	1427	AC
55	2	1102	10' L	35	25.63	21.90	19.34	13.11	8.41	5.06	3.16	62.0	1366	AC
148	3	1153	10' R	35	20.44	17.81	15.72	10.83	7.12	4.41	2.67	62.0	1712	AC
56	2	1246	10' L	35	17.99	15.39	13.67	9.25	5.92	3.57	2.08	61.6	1946	AC
149	3	1250	10' R	35	21.93	19.04	16.73	11.11	6.72	3.76	2.03	60.3	1596	AC
57	2	1319	10' L	35	21.33	18.79	16.71	11.61	7.60	4.54	2.74	59.3	1641	AC
150	3	1352	10' R	35	6.78	6.33	5.94	4.49	2.80	1.62	1.03	60.6	5161	AC
58	2	1403	10' L	35	17.65	14.40	12.41	7.82	4.49	2.48	1.32	59.7	1983	AC
151	3	1454	10' R	35	17.03	14.42	12.75	8.39	5.17	2.96	1.87	61.6	2055	AC
59	2	1500	10' L	35	10.62	8.24	6.99	4.36	2.57	1.43	0.86	60.6	3296	AC
152	3	1553	10' R	35	15.00	12.55	10.76	6.70	3.87	1.92	1.02	62.6	2334	AC TWA1
60	2	1603	10' L	35	18.84	15.39	13.35	8.64	5.34	2.99	1.61	59.7	1858	AC TWA1
153	3	1650	10' R	35	17.30	13.51	11.35	6.60	3.73	1.92	1.10	62.3	2024	AC
61	2	1702	10' L	35	18.93	15.46	13.42	8.27	4.71	2.34	1.10	60.0	1848	AC
154	3	1747	10' R	35	18.00	14.90	12.77	7.75	4.14	2.11	1.11	63.3	1944	AC
62	2	1803	10' L	35	18.84	15.51	13.40	8.54	5.18	3.00	1.82	60.0	1858	AC
155	3	1849	10' R	35	21.13	18.71	16.46	11.52	7.69	5.05	3.34	61.3	1656	AC
63	2	1902	10' L	35	22.62	19.52	17.33	12.06	8.29	5.46	3.47	60.3	1548	AC
156	3	1951	10' R	35	24.28	21.73	19.15	13.19	8.56	5.24	3.29	60.6	1441	AC
64	2	2002	10' L	35	26.81	23.00	20.09	13.69	9.19	6.02	4.13	61.0	1305	AC
157	3	2051	10' R	35	26.30	23.44	20.89	14.50	9.48	5.89	3.69	61.0	1331	AC
65	2	2103	10' L	35	26.49	23.34	20.74	14.51	9.75	6.08	3.97	60.6	1321	AC
158	3	2150	10' R	35	25.88	23.48	21.03	15.25	10.40	6.69	4.31	62.0	1353	AC
66	2	2202	10' L	35	23.97	21.22	18.98	13.77	9.67	6.40	4.46	61.0	1460	AC
159	3	2257	10' R	35	31.30	28.12	24.67	17.34	11.67	7.44	4.86	62.3	1118	AC
67	2	2305	10' L	35	25.95	22.69	20.10	14.19	9.84	6.73	4.57	61.0	1349	AC
160	3	2354	10' R	35	24.54	22.34	19.90	14.48	9.96	6.46	4.41	61.6	1426	AC
68	2	2401	10' L	35	28.35	24.79	21.98	15.60	10.84	7.30	5.01	60.3	1235	AC
161	3	2449	10' R	35	26.95	24.04	21.39	15.60	10.97	7.45	5.13	62.6	1299	AC
69	2	2503	10' L	35	27.33	23.89	21.23	15.06	10.53	7.13	4.77	60.3	1281	AC
162	3	2549	10' R	35	29.20	26.24	23.36	16.36	11.01	7.19	4.93	61.0	1199	AC
70	2	2601	10' L	35	26.40	23.16	20.60	15.01	10.81	7.55	5.26	62.0	1326	AC
163	3	2658	10' R	35	24.92	22.21	19.40	12.95	8.23	5.14	3.53	61.0	1404	AC
71	2	2702	10' L	35	29.44	25.66	22.69	16.00	10.88	7.22	4.86	60.6	1189	AC
164	3	2751	10' R	35	30.28	27.29	24.33	17.49	11.94	7.59	4.99	60.6	1156	AC
72	2	2803	10' L	35	23.85	20.94	18.68	13.39	9.14	6.08	4.02	62.0	1467	AC
165	3	2852	10' R	35	22.92	20.85	18.66	13.90	9.57	6.43	4.36	60.6	1527	AC TWK
73	2	2901	10' L	35	16.40	14.94	13.83	11.13	8.59	6.24	4.55	62.3	2135	AC
166	3	2954	10' R	35	31.65	27.87	24.48	16.77	11.02	6.96	4.39	63.6	1106	AC
74	2	3000	10' L	35	37.97	32.66	28.57	19.17	12.07	7.30	4.73	60.3	922	AC
167	3	3051	10' R	35	31.13	28.15	24.97	17.64	11.66	7.39	4.82	62.6	1124	AC
75	2	3102	10' L	35	32.28	27.99	24.79	17.04	11.36	7.31	4.79	61.0	1084	AC
168	3	3149	10' R	35	34.61	30.83	26.94	18.53	11.92	7.46	2.52	62.0	1011	AC

Niagara Falls International Airport

NDT Field Data

Runway 10L-28R

Air Temp. 40.42 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 @ RW10L														
76	2	3200	10' L	35	32.90	28.42	24.99	17.15	11.27	7.10	4.51	61.6	1064	AC
169	3	3252	10' R	35	23.52	14.99	10.03	6.16	3.69	1.89	1.02	62.3	1488	AC
77	2	3301	10' L	35	29.23	25.74	22.87	15.59	10.00	6.04	3.65	61.0	1198	AC
170	3	3349	10' R	35	13.19	10.74	9.23	5.95	3.63	2.18	1.38	61.0	2653	AC
78	2	3402	10' L	35	17.72	14.80	12.84	7.99	4.65	2.49	1.36	61.0	1975	AC
171	3	3449	10' R	35	12.99	10.61	9.00	5.57	3.29	1.92	1.19	62.0	2694	AC
79	2	3500	10' L	35	3.50	2.33	2.18	1.84	1.47	1.11	0.83	61.3	9997	AC
172	3	3552	10' R	35	12.20	9.91	8.46	5.57	3.43	2.15	1.44	62.3	2869	AC
80	2	3603	10' L	35	13.03	10.51	9.04	5.84	3.67	2.19	1.44	61.0	2686	AC
173	3	3651	10' R	35	13.64	11.04	9.51	6.39	4.11	2.58	1.70	61.6	2567	AC TWA2
81	2	3703	10' L	35	12.98	10.79	9.53	6.69	4.66	3.06	2.10	61.0	2696	AC TWA2
174	3	3751	10' R	35	13.59	11.16	9.62	6.21	3.80	2.28	1.35	62.0	2576	AC TWA2
82	2	3802	10' L	35	17.33	14.48	12.85	8.95	5.83	3.50	2.14	60.6	2020	AC TWA2
175	3	3851	10' R	35	14.43	12.57	11.04	7.61	4.77	2.87	1.77	63.6	2426	AC
83	2	3901	10' L	35	13.43	11.35	10.05	7.01	4.73	3.07	2.04	61.6	2606	AC
176	3	3955	10' R	35	14.68	12.44	10.84	7.18	4.42	2.64	1.65	62.0	2384	AC
84	2	4003	10' L	35	13.00	10.91	9.71	6.84	4.63	3.02	1.98	62.3	2692	AC
177	3	4049	10' R	35	9.80	8.21	7.29	5.23	3.39	2.18	1.46	62.3	3571	AC
85	2	4105	10' L	35	12.87	11.03	9.98	7.62	5.62	3.99	2.85	61.6	2719	AC
178	3	4149	10' R	35	12.96	10.95	9.78	7.11	4.88	3.28	2.20	63.0	2700	AC
86	2	4200	10' L	35	10.82	8.94	8.04	5.81	4.05	2.77	1.93	61.6	3234	AC
179	3	4251	10' R	35	10.43	8.80	7.91	5.61	3.80	2.49	1.65	61.0	3357	AC
87	2	4302	10' L	35	8.24	6.77	6.06	4.61	3.55	2.61	1.98	62.0	4246	AC
180	3	4351	10' R	35	10.83	9.49	8.55	6.48	4.71	3.26	2.27	62.0	3233	AC
88	2	4401	10' L	35	7.25	5.43	4.71	3.20	2.22	1.51	1.02	61.6	4831	AC
181	3	4449	10' R	35	11.35	9.51	8.42	6.02	4.11	2.77	1.87	61.3	3083	AC
89	2	4501	10' L	35	9.42	8.00	7.22	5.49	3.98	2.82	2.02	62.3	3714	AC
182	3	4552	10' R	35	10.19	8.29	7.29	5.02	3.31	2.08	1.30	61.6	3434	AC
90	2	4601	10' L	35	11.96	10.45	9.47	7.27	5.39	3.85	2.77	61.3	2927	AC
183	3	4653	10' R	35	16.08	14.54	13.34	10.75	7.90	5.57	3.90	62.0	2177	AC
91	2	4704	10' L	35	14.65	12.77	11.61	8.98	6.69	4.80	3.45	61.6	2390	AC
184	3	4752	10' R	35	12.78	11.10	9.89	7.39	4.84	3.08	2.07	61.3	2738	AC
92	2	4800	10' L	35	12.08	10.61	9.73	7.36	5.42	3.86	0.91	61.0	2897	AC
185	3	4851	10' R	35	13.04	11.36	10.35	7.76	5.51	3.69	1.58	62.0	2684	AC
93	2	4902	10' L	35	12.15	10.35	9.31	6.78	4.72	3.13	2.17	61.0	2881	AC
186	3	4951	10' R	35	13.75	12.10	11.05	8.73	6.46	4.61	3.41	61.6	2546	AC
94	2	5000	10' L	35	14.93	13.49	12.43	9.83	7.47	5.40	3.88	61.3	2344	AC
187	3	5051	10' R	35	14.42	12.94	11.94	9.67	7.50	5.49	4.25	61.6	2428	AC
95	2	5100	10' L	35	13.22	11.92	11.03	8.99	7.13	5.47	4.19	61.0	2647	AC
188	3	5156	10' R	35	12.76	11.51	10.53	8.96	6.90	5.24	4.07	61.0	2742	AC
96	2	5203	10' L	35	11.10	9.53	8.81	7.29	5.98	4.66	3.70	62.0	3152	AC
189	3	5251	10' R	35	13.05	11.83	10.87	8.81	6.80	5.07	3.86	62.0	2683	AC
97	2	5301	10' L	35	11.28	10.01	9.23	7.48	6.06	4.66	3.56	62.0	3104	AC
190	3	5352	10' R	35	16.56	15.17	13.93	11.14	8.17	5.82	4.27	61.0	2114	AC
98	2	5400	10' L	35	16.03	14.50	13.33	10.49	7.89	5.68	4.13	61.3	2184	AC
191	3	5455	10' R	35	15.48	14.10	12.90	10.28	7.65	5.50	3.05	62.0	2261	AC
99	2	5500	10' L	35	14.15	12.74	11.71	9.34	7.28	5.47	4.08	61.6	2474	AC
192	3	5552	10' R	35	15.63	13.78	12.63	9.85	7.27	5.14	3.61	61.3	2240	AC
100	2	5602	10' L	35	15.85	13.90	12.72	9.88	7.30	5.21	3.68	61.3	2208	AC
193	3	5651	10' R	35	13.09	11.42	10.43	8.18	6.09	4.29	1.98	61.0	2674	AC
101	2	5746	10' L	35	10.90	9.53	8.74	6.94	5.25	3.63	2.73	59.0	3212	AC

Niagara Falls International Airport

NDT Field Data

Runway 10L-28R

Air Temp. 40.42 F

NDT No.	Lane No.	Station (ft)	Offset	Force (kip)	Displacement Sensors (mils) d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM kip/in	Remarks
0+00 @ RW10L														
194	3	5752	10' R	35	13.47	11.65	10.65	8.06	5.80	3.91	2.54	62.3	2598	AC
102	2	5804	10' L	35	13.67	12.19	11.18	8.61	6.31	4.36	2.96	62.0	2561	AC
195	3	5850	10' R	35	11.02	9.46	8.56	6.44	4.61	3.16	2.18	60.0	3176	AC
103	2	5899	10' L	35	11.17	9.58	8.69	6.50	4.64	3.18	0.77	61.6	3132	AC
196	3	5951	10' R	35	9.58	8.07	7.24	5.47	3.93	2.67	1.81	62.0	3653	AC
104	2	6002	10' L	35	8.17	6.73	6.06	4.54	3.30	2.31	1.67	60.0	4283	AC
197	3	6057	10' R	35	11.46	10.10	9.18	7.24	5.33	3.72	2.62	62.0	3054	AC
105	2	6101	10' L	35	10.70	9.13	8.35	6.27	4.54	3.12	1.13	61.0	3270	AC
198	3	6158	10' R	35	12.11	10.50	9.49	7.60	5.54	3.96	2.88	63.6	2889	AC
106	2	6200	10' L	35	10.20	8.83	8.13	6.44	4.98	3.72	2.78	60.3	3433	AC
199	3	6253	10' R	35	9.66	8.32	7.50	6.17	4.68	3.47	2.53	63.3	3622	AC
107	2	6300	10' L	35	12.34	10.96	10.16	8.25	6.59	4.92	3.69	61.6	2837	AC
200	3	6351	10' R	35	10.76	9.16	8.30	6.64	5.07	3.85	2.92	62.6	3254	AC
108	2	6402	10' L	35	11.91	10.63	9.81	7.94	6.23	4.67	3.50	61.6	2938	AC
201	3	6449	10' R	35	12.58	11.38	10.44	8.46	6.43	4.73	3.49	63.0	2783	AC
109	2	6505	10' L	35	10.32	9.05	8.35	6.81	5.43	4.16	3.15	61.6	3393	AC
202	3	6551	10' R	35	9.26	7.88	7.15	5.82	4.79	3.79	3.02	62.0	3779	AC
110	2	6600	10' L	35	8.97	7.66	7.01	5.79	4.82	3.84	3.08	62.0	3903	AC
203	3	6650	10' R	35	9.31	8.02	7.32	5.86	4.56	3.41	2.53	63.0	3759	AC
111	2	6704	10' L	35	7.95	6.97	6.49	5.66	4.83	3.94	3.23	62.0	4400	AC
204	3	6751	10' R	35	8.88	8.01	7.46	6.77	5.61	4.57	2.64	62.6	3943	AC
112	2	6803	10' L	35	6.48	5.55	5.20	4.62	3.97	3.29	2.78	60.3	5399	AC
205	3	6851	10' R	35	8.48	7.21	6.65	5.60	4.40	3.41	2.61	62.3	4128	AC
113	2	6900	10' L	35	6.12	5.16	4.82	4.21	3.59	2.96	2.42	61.6	5723	AC
206	3	6950	10' R	35	7.28	6.28	5.80	4.91	4.03	3.23	2.55	62.0	4810	AC
114	2	7000	10' L	35	5.02	3.98	3.68	3.23	2.81	2.38	2.02	60.6	6970	AC
207	3	7052	10' R	35	8.08	7.11	6.52	5.50	4.51	3.58	2.82	62.6	4333	AC
115	2	7103	10' L	35	6.59	5.66	5.27	4.46	3.70	2.99	2.41	61.3	5309	AC
208	3	7153	10' R	35	12.02	10.68	9.86	8.06	6.20	4.53	3.54	62.6	2911	AC
116	2	7203	10' L	35	10.65	9.28	8.48	6.88	5.49	4.22	3.29	62.0	3287	AC
209	3	7254	10' R	35	14.75	13.04	12.02	9.60	7.04	5.14	3.73	63.6	2372	AC
117	2	7300	10' L	35	11.13	9.86	8.99	7.34	5.79	4.55	3.54	62.0	3144	AC
210	3	7352	10' R	35	11.51	10.08	9.29	7.40	5.56	3.95	2.69	63.0	3041	AC
118	2	7409	10' L	35	10.29	9.12	8.22	6.79	5.24	3.97	3.07	61.6	3401	AC
211	3	7451	10' R	35	12.74	11.24	10.27	8.18	6.23	4.61	3.41	62.0	2748	AC
119	2	7502	10' L	35	10.35	9.07	8.34	6.77	5.34	3.91	2.84	61.6	3381	AC
212	3	7550	10' R	35	14.13	12.43	11.37	9.05	6.83	4.90	3.53	63.3	2477	AC
120	2	7600	10' L	35	9.28	7.80	7.13	5.66	4.31	3.14	2.35	61.6	3773	AC
213	3	7650	10' R	35	11.49	9.68	8.77	6.90	5.15	3.69	2.63	63.3	3046	AC
121	2	7701	10' L	35	7.26	6.10	5.60	4.51	3.48	2.56	2.06	62.3	4820	AC
214	3	7750	10' R	35	9.04	7.57	6.82	5.36	4.08	2.91	2.25	63.3	3870	AC
122	2	7801	10' L	35	10.32	8.95	8.29	6.71	5.12	3.66	2.67	62.3	3391	AC
215	3	7850	10' R	35	10.17	9.09	8.40	7.09	5.79	4.58	3.56	62.6	3440	AC
123	2	7901	10' L	35	13.17	11.67	10.65	8.39	6.04	4.03	1.96	61.0	2658	AC
216	3	7954	10' R	35	14.82	13.51	12.47	10.22	7.75	5.62	3.91	62.6	2362	AC
124	2	8001	10' L	35	14.61	13.47	12.47	10.08	7.58	5.31	3.39	61.6	2396	AC
217	3	8059	10' R	35	18.93	16.77	15.35	12.08	9.08	6.53	4.56	62.6	1849	AC
125	2	8102	10' L	35	15.48	13.91	12.76	9.95	7.43	5.27	3.61	62.6	2261	AC
218	3	8148	10' R	35	17.96	16.32	14.92	11.90	8.95	6.34	4.51	63.6	1949	AC
126	2	8201	10' L	35	12.63	11.52	10.58	8.57	6.54	4.68	3.36	62.3	2771	AC
219	3	8250	10' R	35	14.44	13.19	12.12	9.80	7.49	5.61	4.12	62.6	2424	AC

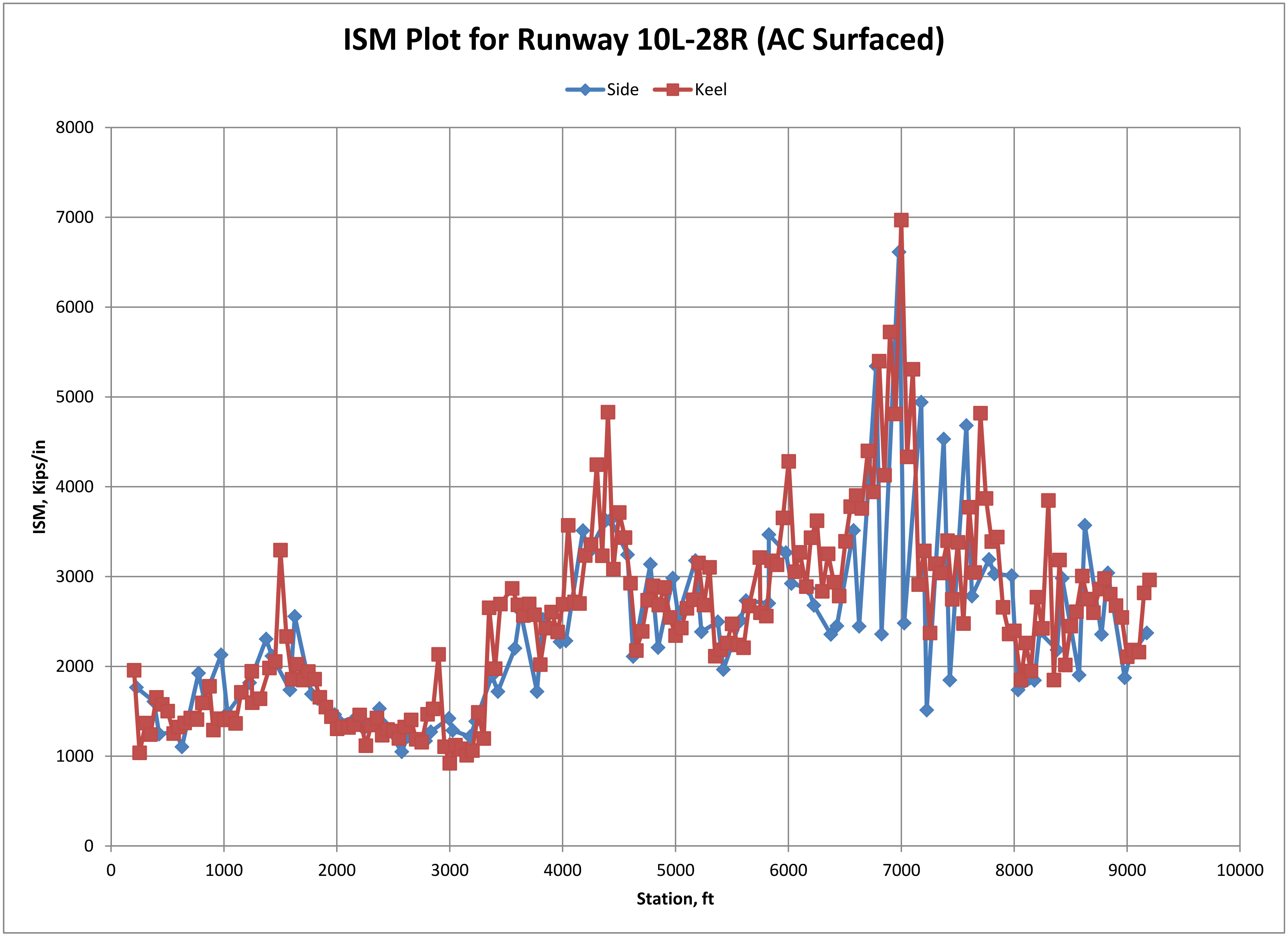
Niagara Falls International Airport

NDT Field Data

Runway 10L-28R

Air Temp. 40.42 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 @ RW10L														
127	2	8303	10' L	35	9.09	7.94	7.26	5.99	4.86	3.81	2.93	61.6	3849	AC
220	3	8351	10' R	35	18.94	17.30	15.85	12.48	9.31	6.65	4.75	61.3	1848	AC
128	2	8401	10' L	35	10.99	9.77	8.89	7.33	5.87	4.59	3.69	62.0	3185	AC
221	3	8452	10' R	35	17.36	15.69	14.40	11.49	8.55	6.04	4.32	62.3	2016	AC
129	2	8501	10' L	35	14.29	12.98	11.86	9.26	6.84	4.98	3.73	62.6	2449	AC
222	3	8551	10' R	35	13.41	11.95	10.84	8.61	6.48	4.78	3.63	63.0	2609	AC
130	2	8603	10' L	35	11.64	10.44	9.59	7.75	6.13	4.82	3.77	62.0	3007	AC
223	3	8652	10' R	35	12.73	11.32	10.39	8.41	6.62	5.03	3.96	63.3	2749	AC TWA3
131	2	8702	10' L	35	13.47	12.36	11.37	9.27	7.22	5.50	4.23	61.3	2598	AC TWA3
224	3	8756	10' R	35	12.23	11.10	10.23	8.51	6.80	5.28	4.08	63.9	2861	AC
132	2	8799	10' L	35	11.75	10.60	9.75	8.02	6.38	4.91	3.78	62.3	2979	AC
225	3	8850	10' R	35	12.48	11.33	10.38	8.48	6.58	4.91	3.86	64.3	2805	INT. RW6-24
133	2	8901	10' L	35	13.07	12.24	11.35	9.44	7.56	5.83	4.54	62.0	2677	INT. RW6-24
226	3	8953	10' R	35	13.75	12.51	11.46	9.45	7.31	5.64	4.31	63.0	2546	INT. RW6-24
134	2	9001	10' L	35	16.61	15.43	14.25	11.53	8.78	6.39	4.81	61.3	2108	INT. RW6-24
227	3	9054	10' R	35	16.03	14.96	13.86	11.51	9.12	6.93	5.24	62.6	2184	AC
135	2	9105	10' L	35	16.21	14.72	13.41	10.72	8.16	5.93	4.42	62.3	2159	AC TWD1
228	3	9150	10' R	35	12.42	11.39	10.43	8.61	6.77	5.18	4.22	63.3	2819	AC
136	2	9198	10' L	35	11.81	10.48	9.58	7.64	6.01	4.70	3.72	62.6	2962	AC


ISM Plot for Runway 10L-28R (AC Surfaced)
Side
Keel
8000
7000
6000
5000
4000
3000
2000
1000
0
ISM, Kips/in
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
Station, ft

Niagara Falls International Airport

NDT Field Data

PCC Pavement at RW 10L

NDT	Lane	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)	(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
Overrun Area													
1	1	10	30	2.81	2.65	2.57	2.46	2.24	1.93	1.74	62.0	10667	
31	4	31	30	4.21	4.06	3.99	3.76	3.28	2.85	2.40	62.6	7132	
2	1	170	30	3.63	3.56	3.42	3.38	3.17	3.02	3.02	61.0	8272	
32	4	231	30	4.19	4.05	3.87	3.62	3.36	3.04	2.74	64.3	7165	
3	1	373	30	3.67	3.59	3.49	3.45	3.34	3.22	3.13	62.3	8163	
33	4	433	30	4.02	3.90	3.72	3.47	3.23	2.98	2.75	63.3	7465	
4	1	593	30	3.48	3.33	3.23	3.08	2.93	2.75	2.67	63.3	8628	
34	4	634	30	3.86	3.72	3.60	3.44	3.14	2.82	2.66	62.6	7767	
5	1	776	30	3.73	3.57	3.41	3.16	2.89	2.59	2.40	63.3	8053	
35	4	835	30	4.31	4.15	3.99	3.78	3.37	3.01	2.75	62.6	6965	
37	4	974	30	4.01	3.91	3.75	3.49	3.22	2.92	2.61	62.3	7473	
7	1	976	30	3.61	3.47	3.37	3.24	3.10	2.95	2.83	63.6	8302	
19	3	52	30	3.51	3.35	3.21	2.98	2.71	2.38	2.12	62.3	8559	
8	2	110	30	3.83	3.68	3.50	3.27	2.95	2.64	2.38	62.3	7838	
20	3	153	30	3.73	3.66	3.55	3.66	3.55	3.39	3.53	62.6	8037	
9	2	211	30	3.86	3.70	3.59	3.43	3.18	2.92	2.81	63.0	7775	
21	3	253	30	4.11	4.00	3.86	3.73	3.64	3.49	3.44	63.3	7306	
10	2	312	30	3.87	3.70	3.55	3.32	3.07	2.80	2.62	63.3	7746	
22	3	355	30	3.93	3.77	3.61	3.38	3.11	2.78	2.60	63.3	7626	
11	2	413	30	3.75	3.57	3.43	3.27	3.01	2.82	2.62	63.3	7989	
24	3	456	30	3.65	3.57	3.43	3.27	3.04	2.86	2.67	63.6	8214	
12	2	513	30	3.70	3.51	3.39	3.13	2.88	2.63	2.43	63.6	8102	
25	3	559	30	3.75	3.68	3.56	3.50	3.40	3.31	3.25	62.0	8005	
14	2	615	30	3.69	3.55	3.44	3.36	3.17	2.99	2.96	62.3	8122	
26	3	657	30	3.74	3.57	3.45	3.28	3.00	2.66	2.55	62.3	8019	
15	2	716	30	3.90	3.86	3.72	3.63	3.51	3.40	3.35	63.6	7692	
27	3	759	30	3.78	3.69	3.57	3.45	3.29	3.03	3.03	63.6	7927	
16	2	817	30	3.58	3.46	3.36	3.21	3.08	2.96	2.89	63.0	8374	
29	3	859	30	3.42	3.24	3.08	2.85	2.63	2.38	2.24	62.3	8777	
17	2	916	30	3.70	3.53	3.41	3.23	3.00	2.75	2.61	63.6	8115	
30	3	960	30	3.63	3.51	3.41	3.30	3.06	2.78	2.69	63.0	8256	
18	2	994	30	3.69	3.47	3.33	3.12	2.90	2.61	2.51	63.0	8139	
Joint Tests												**d3/d1**	
6	1	784	30	10.26	4.44	4.15	3.45	2.84	2.25	1.88	63.3	0.40	
36	4	843	30	11.98	2.59	2.49	2.29	2.02	1.28	1.19	62.3	0.21	
23	3	364	30	13.49	5.67	5.21	4.11	3.30	2.67	2.14	62.6	0.39	
13	2	523	30	13.21	3.74	3.44	2.92	2.42	1.94	1.48	62.0	0.26	
28	3	767	30	15.96	3.16	2.89	2.35	2.25	1.60	1.34	62.6	0.18	

Niagara Falls International Airport

NDT Field Data

PCC Pavement at RW 10L

NDT	Lane	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)	(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
Turn-around Area													
1	1	11	30	3.22	2.99	2.86	2.73	2.35	2.08	1.86	63.3	9306	
2	1	52	30	3.43	3.18	3.09	2.89	2.64	2.39	2.18	63.6	8747	
3	1	111	30	3.61	3.43	3.31	3.09	2.78	2.44	2.21	63.3	8312	
4	1	154	30	3.62	3.53	3.42	3.31	3.13	2.97	2.87	62.6	8289	
5	1	213	30	3.99	3.76	3.59	3.31	2.96	2.50	2.13	63.0	7523	
6	2	22	30	3.56	3.45	3.32	3.09	2.89	2.62	2.10	63.3	8425	
7	2	81	30	4.01	3.83	3.67	3.36	3.08	2.72	2.40	63.3	7472	
9	2	142	30	3.56	3.40	3.25	3.08	2.84	2.60	2.39	62.6	8427	
10	2	184	30	3.70	3.59	3.44	3.32	3.20	3.08	2.18	62.3	8117	
11	2	243	30	3.87	3.68	3.54	3.34	3.08	2.84	2.67	62.3	7760	
12	2	283	30	3.49	3.28	3.17	3.05	2.87	2.68	1.72	63.9	8608	
13	3	9	30	3.45	3.26	3.15	2.92	2.68	2.33	2.03	62.6	8703	
14	3	51	30	3.57	3.43	3.31	3.24	3.14	3.03	2.97	62.6	8410	
15	3	109	30	3.72	3.59	3.43	3.17	2.89	2.59	2.33	63.0	8057	
16	3	151	30	3.70	3.59	3.44	3.26	3.07	2.88	2.73	62.6	8101	
18	3	212	30	3.84	3.72	3.61	3.56	3.45	3.36	3.28	63.0	7822	
19	3	251	30	3.86	3.70	3.56	3.36	3.15	2.89	2.65	62.0	7764	
20	3	314	30	3.88	3.86	3.68	3.51	3.35	3.22	3.04	63.6	7734	
21	3	354	30	3.81	3.66	3.52	3.39	3.12	2.87	2.61	63.0	7884	
Joint Tests												**d3/d1**	
8	2	91	30	11.37	2.47	2.33	1.99	1.75	1.53	1.29	62.0	0.20	
17	3	160	30	12.66	3.98	3.65	3.15	2.56	2.10	1.76	61.3	0.29	

Niagara Falls International Airport

NDT Field Data

Runway 10R-28L

Air Temp. 32.76 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 @ RW10R														
1	1	178	27' L	20	23.87	22.05	19.77	12.95	7.43	4.01	2.30	65.6	838	AC
102	4	256	27' R	20	30.54	25.87	22.18	14.08	8.30	4.64	2.97	79.4	655	AC
2	1	392	27' L	20	23.40	19.13	16.66	11.17	7.06	4.32	2.80	69.9	855	AC
103	4	430	27' R	20	22.21	19.27	16.92	11.63	7.63	4.80	3.14	81.4	901	AC
3	1	630	27' L	20	18.87	16.26	14.40	10.04	6.88	4.52	2.99	69.5	1060	AC
104	4	649	27' R	20	22.23	19.77	17.24	11.54	7.33	4.58	2.87	83.1	900	AC
105	4	852	27' R	20	20.30	17.98	15.66	11.11	7.34	4.65	3.01	82.4	985	AC
4	1	977	27' L	20	21.77	19.30	17.23	11.90	7.83	4.83	3.12	68.6	919	AC
5	1	984	27' L	20	22.11	18.85	16.61	11.52	7.53	4.64	3.01	68.9	904	AC
106	4	1026	27' R	20	19.98	16.61	14.79	10.15	6.82	4.39	2.82	82.7	1001	AC
6	1	1176	27' L	20	22.30	18.69	16.23	11.06	7.36	4.68	3.12	69.2	897	AC
107	4	1224	27' R	20	20.30	17.63	15.80	11.38	7.48	4.69	2.97	83.1	985	AC
108	4	1424	27' R	20	19.70	16.70	14.86	10.61	7.16	4.72	3.20	82.7	1015	AC
7	1	1575	27' L	20	25.00	21.30	18.71	12.86	8.56	5.53	3.83	69.9	800	AC
8	1	1575	27' L	20	20.27	18.44	16.42	11.54	7.96	5.29	3.66	68.9	987	AC
110	4	1626	27' R	20	19.77	17.82	16.10	11.71	7.96	5.14	3.64	82.1	1012	AC
9	1	1783	27' L	20	21.47	19.48	17.68	12.57	8.64	5.68	3.81	71.2	932	AC
111	4	1825	27' R	20	14.40	13.43	12.36	9.64	7.11	4.96	3.41	82.1	1389	AC
10	1	1977	27' L	20	24.95	21.20	18.87	13.22	8.85	5.61	4.04	70.5	802	AC
112	4	2028	27' R	20	30.62	25.53	21.73	13.39	8.01	5.05	3.99	82.1	653	AC
11	1	2175	27' L	20	25.60	21.16	17.82	10.83	6.66	4.43	3.40	71.9	781	AC
113	4	2227	27' R	20	26.97	21.58	18.05	10.96	6.83	4.44	3.32	82.1	741	AC
12	1	2291	27' L	20	20.39	17.09	14.69	9.55	6.17	4.13	3.08	71.9	981	AC
114	4	2406	27' R	20	39.53	32.63	27.75	15.92	8.50	4.84	4.13	83.7	506	AC
13	1	2580	27' L	20	34.08	29.63	25.32	15.25	8.66	5.22	3.47	71.2	587	AC
14	1	2580	27' L	20	38.89	30.98	26.01	14.95	8.35	5.11	3.39	71.2	514	AC
115	4	2631	27' R	20	46.18	38.66	32.01	16.82	8.43	4.64	3.37	83.7	433	AC
15	1	2777	27' L	20	18.96	16.62	14.65	10.14	6.93	4.67	3.32	71.2	1055	INT. RW6-24
116	4	2825	27' R	20	16.70	14.41	12.74	9.19	6.31	4.33	3.01	82.7	1198	INT. RW6-24
16	1	2978	27' L	20	28.96	25.77	22.39	14.53	8.85	5.44	4.02	71.5	691	AC
117	4	3027	27' R	20	46.57	43.46	34.80	14.18	7.70	4.43	3.37	83.1	429	AC
118	4	3225	27' R	20	24.85	21.61	19.01	13.02	8.48	5.36	3.64	83.1	805	AC
17	1	3376	27' L	20	11.25	10.07	9.13	6.97	5.28	3.85	2.80	71.2	1777	AC
18	1	3376	27' L	20	15.88	14.34	13.05	9.63	6.79	4.58	3.14	71.9	1259	AC
119	4	3430	27' R	20	8.35	7.55	7.01	5.66	4.41	3.33	2.44	81.7	2395	AC TWD
19	1	3574	27' L	20	23.15	20.98	18.65	13.09	8.47	5.27	3.48	71.9	864	AC
120	4	3626	27' R	20	20.51	18.41	16.39	11.83	7.89	5.18	3.47	83.1	975	AC
20	1	3775	27' L	20	30.25	26.96	23.17	14.57	8.63	5.26	3.41	71.5	661	AC
121	4	3803	27' R	20	35.65	29.85	25.25	14.87	8.05	4.88	4.07	84.7	561	AC
21	1	3959	27' L	20	5.74	5.53	5.24	4.55	3.83	3.06	2.35	73.2	3484	PCC TW M/L
62	3	51	6' R	20	21.93	19.31	17.81	13.35	9.01	6.29	4.70	74.2	912	AC TWC
22	2	101	6' L	20	14.83	13.34	12.11	9.16	6.81	4.60	3.26	71.5	1349	AC
63	3	161	6' R	20	24.47	20.43	17.80	11.73	7.14	4.20	2.69	77.1	817	AC
23	2	203	6' L	20	30.21	25.37	21.87	13.77	8.20	4.66	3.10	72.5	662	AC
64	3	262	6' R	20	30.76	27.53	23.84	15.20	8.36	4.41	2.39	77.8	650	AC
24	2	312	6' L	20	32.85	27.99	23.90	15.01	9.02	5.28	3.14	74.5	609	AC
65	3	360	6' R	20	22.80	19.89	17.43	11.63	7.48	4.73	3.11	77.1	877	AC
25	2	403	6' L	20	15.72	13.86	12.43	9.42	6.50	4.38	2.89	73.8	1273	AC
66	3	463	6' R	20	17.93	15.65	13.88	10.07	6.98	4.52	2.95	79.4	1115	AC
26	2	502	6' L	20	15.68	14.31	13.07	10.08	7.06	4.72	2.97	75.1	1275	AC
67	3	565	6' R	20	16.40	13.95	12.47	9.23	6.47	4.36	2.91	80.7	1220	AC

Niagara Falls International Airport

NDT Field Data

Runway 10R-28L

Air Temp. 32.76 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 @ RW10R														
27	2	600	6' L	20	18.99	16.88	15.13	10.78	7.30	4.69	3.01	73.8	1053	AC
68	3	681	6' R	20	15.17	13.46	12.22	9.13	6.24	4.19	2.67	82.1	1319	AC
28	2	709	6' L	20	15.45	13.68	12.46	9.28	6.42	4.11	2.65	75.1	1295	AC
69	3	750	6' R	20	10.30	9.57	8.75	6.90	5.06	3.50	2.34	81.4	1941	AC
29	2	802	6' L	20	18.02	15.16	13.38	9.55	6.59	4.28	2.77	74.2	1110	AC
70	3	852	6' R	20	15.50	13.86	12.44	9.57	6.53	4.39	2.91	81.1	1290	AC
30	2	902	6' L	20	16.77	14.21	12.62	9.08	6.29	4.17	2.68	75.5	1192	AC
71	3	983	6' R	20	19.47	16.18	14.19	9.97	6.67	4.23	2.68	82.7	1027	AC
31	2	1003	6' L	20	21.56	18.08	15.90	11.20	7.74	5.22	3.45	75.5	928	AC
72	3	1049	6' R	20	16.35	14.18	12.69	9.31	6.44	4.31	2.87	82.4	1223	AC
32	2	1103	6' L	20	22.48	18.34	16.20	11.23	7.51	4.81	3.10	75.1	890	AC
73	3	1152	6' R	20	20.24	17.48	15.38	10.80	7.14	4.59	2.97	83.4	988	AC
33	2	1204	6' L	20	16.19	14.02	12.55	9.41	6.86	4.69	3.11	75.8	1235	AC
74	3	1252	6' R	20	13.97	12.26	11.10	8.45	6.17	4.27	2.91	82.4	1432	AC
34	2	1304	6' L	20	16.93	15.13	13.58	10.23	7.21	4.90	3.26	74.5	1181	AC
75	3	1352	6' R	20	18.14	15.26	13.33	9.48	6.36	4.24	2.85	81.7	1103	AC
35	2	1405	6' L	20	18.15	16.83	15.35	11.09	7.67	5.06	3.37	76.1	1102	AC
76	3	1452	6' R	20	19.19	16.96	15.23	11.04	7.64	5.12	3.51	82.1	1042	AC
36	2	1502	6' L	20	15.26	13.46	12.26	9.41	6.86	4.83	3.33	75.5	1311	AC
77	3	1550	6' R	20	12.50	11.82	10.92	8.77	6.55	4.78	3.40	81.4	1600	AC
37	2	1601	6' L	20	13.97	13.21	12.21	9.44	7.07	5.14	3.94	75.1	1432	AC
78	3	1652	6' R	20	18.52	16.31	14.43	10.56	7.45	5.10	3.57	82.1	1080	AC
38	2	1700	6' L	20	13.60	12.22	11.29	8.88	6.68	4.76	3.33	74.8	1470	AC
79	3	1754	6' R	20	15.89	14.51	13.22	9.97	7.12	4.73	3.37	81.7	1258	AC
39	2	1802	6' L	20	21.20	18.76	16.89	12.34	8.44	5.51	3.66	75.5	943	AC
80	3	1854	6' R	20	12.37	11.57	10.77	8.75	6.67	4.77	3.29	81.1	1617	AC
40	2	1901	6' L	20	23.49	19.99	17.62	12.60	8.84	6.00	4.10	76.5	852	AC
81	3	1952	6' R	20	22.87	20.16	18.00	12.75	8.57	5.54	3.72	81.7	874	AC
41	2	2000	6' L	20	39.60	29.87	24.28	12.99	7.36	4.71	3.63	75.5	505	AC
82	3	2053	6' R	20	39.59	31.35	25.99	14.69	8.28	5.45	3.93	82.4	505	AC
42	2	2104	6' L	20	25.72	22.38	19.71	12.94	8.16	5.24	3.63	75.8	778	AC
83	3	2163	6' R	20	41.42	32.65	27.09	15.22	8.41	5.29	4.30	81.7	483	AC
43	2	2201	6' L	20	20.03	17.16	14.66	9.56	6.05	4.06	3.01	76.8	999	AC
84	3	2250	6' R	20	22.82	19.20	16.33	10.16	6.36	4.20	3.18	82.1	876	AC
44	2	2302	6' L	20	21.87	17.88	15.28	9.85	6.12	4.02	3.04	75.8	914	AC
85	3	2350	6' R	20	25.01	20.76	17.35	10.71	6.54	4.24	3.01	81.4	800	AC
45	2	2403	6' L	20	38.01	30.80	25.63	15.41	9.09	5.40	3.69	75.8	526	AC
86	3	2451	6' R	20	42.69	36.10	30.30	17.57	9.17	5.15	3.66	82.4	468	AC
46	2	2503	6' L	20	33.59	26.79	22.41	12.93	7.63	4.79	3.66	78.1	595	AC
87	3	2552	6' R	20	34.51	27.89	23.17	13.59	7.86	4.92	3.84	81.7	580	AC
47	2	2605	6' L	20	36.71	30.10	25.03	13.85	7.72	4.80	3.81	77.1	545	AC
88	3	2655	6' R	20	30.18	25.64	21.95	13.47	7.76	4.75	3.18	83.4	663	AC
49	2	2700	6' L	20	38.46	33.33	28.99	17.96	10.16	4.95	3.91	77.1	520	AC
89	3	2753	6' R	20	20.93	18.18	15.93	10.98	7.38	4.81	3.29	81.7	956	NT. RW6-24
50	2	2802	6' L	20	9.23	8.34	7.48	5.78	4.42	3.32	2.47	76.5	2167	NT. RW6-24
90	3	2850	6' R	20	24.03	20.12	17.38	11.71	7.81	5.12	3.48	81.1	832	NT. RW6-24
51	2	2905	6' L	20	13.70	12.03	10.79	8.19	5.76	4.06	2.92	76.8	1460	NT. RW6-24
91	3	2951	6' R	20	25.49	22.54	19.75	13.33	8.49	5.26	3.74	81.7	785	AC
52	2	3002	6' L	20	29.54	25.36	21.95	13.45	7.36	3.86	2.42	77.5	677	AC
92	3	3053	6' R	20	54.00	44.66	36.62	19.05	8.91	4.47	3.47	81.4	370	AC
53	2	3101	6' L	20	35.35	29.03	24.36	14.19	7.81	4.74	3.11	77.1	566	AC

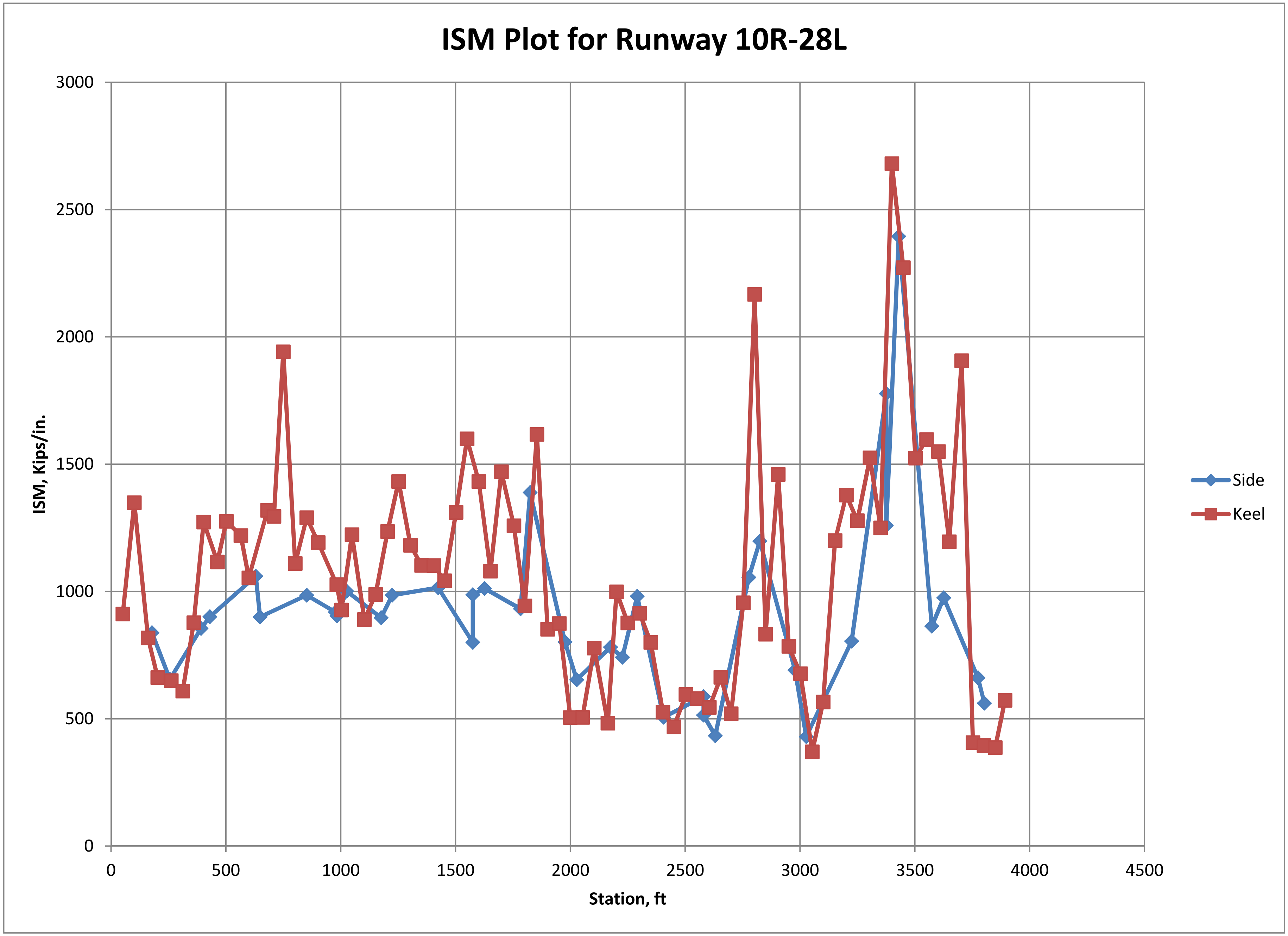
Niagara Falls International Airport

NDT Field Data

Runway 10R-28L

Air Temp. 32.76 F

NDT	Lane	Station	Offset	Force				Displacement Sensors (mils)				Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 @ RW10R														
93	3	3153	6' R	20	16.66	13.38	11.62	8.07	5.72	4.02	2.86	79.4	1200	AC
54	2	3202	6' L	20	14.51	12.98	11.87	9.15	6.64	4.72	3.22	77.8	1379	AC
94	3	3250	6' R	20	15.65	13.85	12.54	9.33	6.67	4.58	3.11	81.4	1278	AC
55	2	3305	6' L	20	13.12	12.14	11.15	8.68	6.21	4.33	2.94	77.5	1525	AC
95	3	3351	6' R	20	16.01	14.55	13.13	9.92	7.23	5.14	3.61	80.7	1250	AC
56	2	3400	6' L	20	7.46	6.96	6.51	5.41	4.35	3.34	2.38	77.8	2681	AC TWD
96	3	3450	6' R	20	8.80	8.00	7.38	6.00	4.58	3.40	2.46	81.1	2272	AC TWD
57	2	3503	6' L	20	13.12	12.30	11.37	9.03	6.78	4.85	3.38	78.4	1524	AC TWD
97	3	3551	6' R	20	12.52	11.15	10.15	7.84	5.86	4.24	2.99	81.4	1597	AC
58	2	3603	6' L	20	12.91	11.97	10.99	8.66	6.56	4.74	3.33	77.5	1550	AC
98	3	3650	6' R	20	16.73	14.58	13.06	9.88	7.10	4.96	3.47	83.4	1195	AC
59	2	3704	6' L	20	10.49	9.83	9.13	7.38	5.81	4.31	3.11	78.4	1907	AC
99	3	3753	6' R	20	49.21	38.80	31.96	16.73	8.04	4.83	4.24	82.1	406	AC
60	2	3801	6' L	20	50.67	41.35	33.85	17.40	8.27	4.37	3.47	77.1	395	AC
100	3	3850	6' R	20	51.70	41.32	34.17	18.62	9.49	5.55	3.48	81.4	387	AC
61	2	3893	6' L	20	34.93	30.13	25.63	15.64	8.93	5.18	3.30	79.1	573	AC
101	3	3960	6' R	20	5.11	4.85	4.61	4.10	3.55	2.95	2.34	81.7	3911	PCC TW M/L


ISM Plot for Runway 10R-28L
ISM, Kips/in.
3000
2500
2000
1500
1000
500
0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
Station, ft
Side
Keel

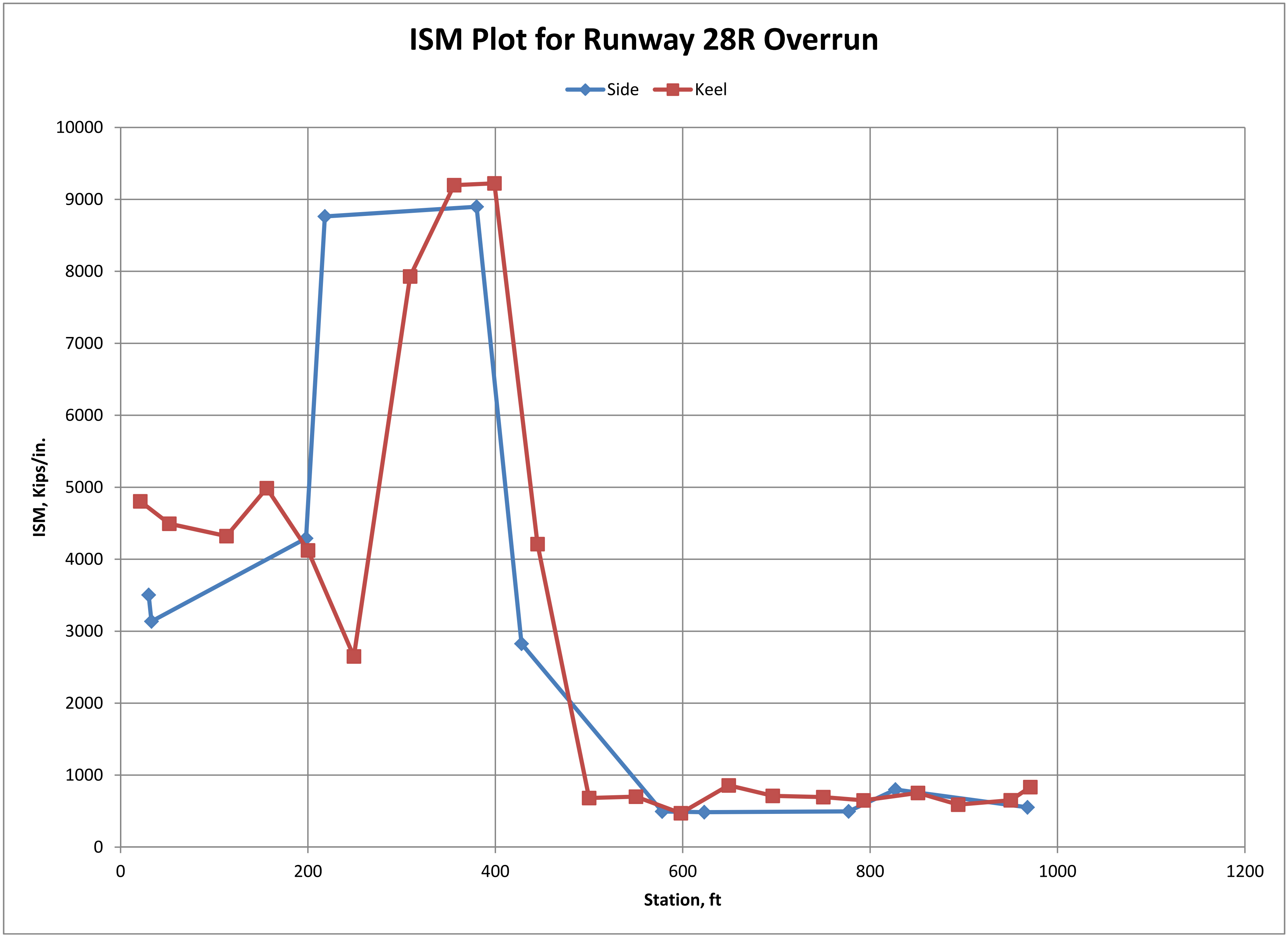
Niagara Falls International Airport

NDT Field Data

Runway 28R Overrun

Air Temp. 43.07F

NDT	Lane	Station	Offfset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at RW 28R														
1	1	30	55' L	30	8.56	7.70	7.27	6.68	5.78	4.81	3.89	63.6	3504	PCC
29	4	33	55' R	30	9.57	8.76	8.39	7.52	6.20	4.79	3.59	62.6	3136	APC
2	1	198	55' L	30	6.99	6.21	5.88	5.22	4.50	3.73	3.03	61.3	4291	APC
30	4	218	55' R	30	3.42	3.15	3.11	2.92	2.55	2.19	1.88	63	8764	PCC
3	1	380	55' L	30	3.37	3.13	3.06	2.89	2.63	2.31	2.02	63.6	8898	PCC
31	4	428	55' R	30	10.62	10.22	9.71	8.27	6.62	5.05	4.14	63.3	2826	PCC
4	1	578	55' L	30	60.59	48.97	39.19	21.42	11.43	6.20	4.43	62.6	495	AC
32	4	623	55' R	30	61.88	47.75	37.56	20.64	11.08	6.14	4.43	63.3	485	AC
5	1	777	55' L	30	60.55	47.96	37.08	18.77	10.13	5.97	4.26	62.3	495	AC
33	4	827	55' R	30	37.54	28.89	23.38	13.33	8.16	5.44	4.13	63.3	799	AC
6	1	968	55' L	30	54.23	40.26	31.26	16.47	9.96	6.73	5.12	63	553	AC
7	2	21	7' R	30	6.24	5.30	4.99	4.53	4.02	3.46	2.88	62.3	4806	APC
19	3	52	7' R	30	6.68	5.94	5.65	5.09	4.48	3.73	3.11	62	4493	APC
8	2	113	7' R	30	6.94	6.33	6.10	5.64	5.12	4.42	3.79	62.6	4322	AC
20	3	156	7' R	30	6.01	5.31	5.05	4.58	4.02	3.30	2.82	62.6	4988	AC
10	2	200	7' R	30	7.28	6.56	6.26	5.48	4.52	3.45	2.42	62.3	4123	AC
21	3	249	7' R	30	11.32	9.58	8.99	7.78	6.41	5.28	4.27	63.6	2650	AC
11	2	309	7' R	30	3.78	3.50	3.41	3.29	2.80	2.39	2.02	63.3	7930	PCC TWD
22	3	356	7' R	30	3.26	3.07	2.95	2.92	2.50	2.19	1.90	62	9198	PCC TWD
12	2	399	7' R	30	3.25	2.93	2.86	2.71	2.34	2.00	1.72	63.6	9222	PCC TWD
23	3	445	7' R	30	7.12	6.89	6.57	5.87	5.31	4.80	4.59	61.6	4211	PCC
13	2	500	7' R	30	43.93	34.85	27.61	14.11	7.65	4.67	4.01	62.3	683	AC
24	3	550	7' R	30	42.77	34.04	27.70	15.49	8.72	5.33	3.94	62.6	701	AC
14	2	598	7' R	30	63.60	48.20	37.75	19.63	10.57	5.99	4.62	60.6	472	AC
25	3	649	7' R	30	35.00	29.44	24.10	13.86	8.06	4.96	3.60	63	857	AC
15	2	696	7' R	30	42.11	35.29	28.85	16.22	8.90	5.31	3.77	62.3	712	AC
26	3	750	7' R	30	43.22	34.66	27.89	15.29	8.35	5.22	3.88	63	694	AC
16	2	793	7' R	30	46.17	37.28	29.75	16.06	8.93	5.46	4.10	62.3	650	AC
27	3	851	7' R	30	39.83	31.85	25.55	13.75	7.97	5.13	4.02	62.6	753	AC
17	2	894	7' R	30	50.83	38.10	29.25	14.82	8.22	5.25	3.93	62.3	590	AC
28	3	950	7' R	30	46.06	37.02	30.60	18.36	11.27	7.31	5.16	63.6	651	AC
18	2	971	7' R	30	35.98	31.45	26.75	16.62	10.07	6.37	4.59	62.6	834	AC


ISM Plot for Runway 28R Overrun
Side
Keel
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
ISM, Kips/in.
0
200
400
600
800
1000
1200
Station, ft

Niagara Falls International Airport

NDT Field Data

Runway 6-24

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
AC at Runway 6, 0=00 at south end of AC														
14	4	27	60' R	30	22.34	18.62	16.38	12.20	8.92	6.27	4.54	84.0	1343	
15	4	126	60' R	30	14.32	12.35	10.86	8.58	6.61	5.05	3.87	86.0	2095	
1	1	174	60' L	30	10.71	8.15	7.34	5.98	4.92	3.97	3.20	82.7	2800	
16	4	223	60' R	30	12.79	10.70	9.67	7.94	6.27	4.81	3.74	87.7	2345	
2	1	278	60' L	30	9.60	8.26	7.53	6.21	5.07	4.04	3.20	84.0	3125	
17	4	326	60' R	30	15.16	11.79	10.23	7.98	6.14	4.63	3.62	88.3	1978	
9	3	50	10' R	30	17.80	15.76	13.92	10.42	7.66	5.57	4.06	87.0	1685	
5	2	101	10' L	30	12.12	10.13	8.95	6.90	5.59	4.33	3.40	85.7	2475	
10	3	152	10' R	30	12.37	11.21	10.18	8.71	6.37	4.81	3.72	90.0	2426	
6	2	201	10' L	30	9.11	7.72	6.81	5.65	4.44	3.56	2.89	86.0	3293	
11	3	250	10' R	30	8.47	7.04	6.32	5.27	4.36	3.50	2.85	88.3	3540	
7	2	299	10' L	30	10.91	8.84	7.78	6.25	5.02	3.97	3.20	86.0	2750	
12	3	337	10' R	30	11.67	9.49	8.32	6.56	5.29	4.16	3.30	89.6	2570	
PCC at Runway 6, 0+00 at south end of PCC														
3	1	27	60' L	30	6.40	6.17	6.04	5.62	4.84	4.10	3.48	87.0	4685	
4	1	87	60' L	30	5.26	4.90	4.74	4.57	3.78	3.25	2.83	87.0	5702	
18	4	86	60' R	30	5.10	4.84	4.73	4.40	3.66	3.09	2.63	90.0	5880	
1	1	117	57' L	30	5.78	5.56	5.38	4.88	4.27	3.60	2.95	93.6	5187	
100	4	130	57' R	30	10.25	9.89	9.50	8.37	7.13	5.71	4.36	87.0	2928	
2	1	283	57' L	30	6.33	6.00	5.77	5.19	4.51	3.81	3.24	92.9	4738	
8	2	57	10' L	30	5.67	5.36	5.18	4.73	4.01	3.35	2.82	88.7	5288	
13	3	100	10' R	30	6.04	5.78	5.60	5.03	4.30	3.64	2.92	88.0	4966	
60	3	163	6' R	30	6.19	5.92	5.69	5.18	4.32	3.63	2.99	84.4	4848	
21	2	207	6' L	30	5.74	5.36	5.12	4.52	3.88	3.12	2.49	87.3	5224	
61	3	267	6' R	30	6.51	6.26	6.07	5.76	4.59	3.79	3.06	85.7	4610	
22	2	296	6' L	30	5.35	5.08	4.89	4.36	3.78	3.15	2.59	88.3	5611	
Runway 6-24 Mainline, 0+00 at interface of AC/PCC														
101	4	35	50' R	30	16.88	13.40	11.66	8.59	6.46	4.82	3.60	88.3	1777	
3	1	184	50' L	30	12.84	10.07	8.86	7.01	5.66	4.43	3.42	90.3	2336	
103	4	232	50' R	30	27.14	22.04	19.43	13.68	9.63	6.72	4.88	91.0	1105	
4	1	385	50' L	30	15.36	12.77	11.39	8.89	6.82	5.13	3.93	92.6	1954	
104	4	430	50' R	30	29.69	24.78	21.74	15.43	10.68	7.13	4.86	92.9	1010	
5	1	584	50' L	30	14.01	11.81	10.67	8.30	6.54	5.01	3.88	92.9	2141	
105	4	633	50' R	30	28.34	24.25	21.47	15.52	10.68	7.07	4.91	93.6	1059	
6	1	784	50' L	30	16.66	14.00	12.54	9.44	7.20	5.36	4.00	92.0	1800	
106	4	835	50' R	30	38.26	31.42	27.04	17.69	11.70	7.53	5.26	96.9	784	
7	1	991	50' L	30	22.70	18.50	16.24	12.03	8.84	6.31	4.57	92.0	1321	
107	4	1032	50' R	30	34.53	26.59	22.56	14.90	9.69	6.21	4.19	96.2	869	
8	1	1182	50' L	30	37.81	32.82	28.40	19.32	12.80	8.10	5.37	93.6	794	INT. RW10R-28L
108	4	1235	50' R	30	37.89	30.33	25.48	16.35	10.12	6.28	4.24	96.6	792	
9	1	1386	50' L	30	27.84	22.61	19.36	13.05	8.98	6.10	4.33	94.6	1078	
109	4	1433	50' R	30	33.91	28.09	24.37	16.18	10.71	6.94	4.65	96.9	885	
10	1	1582	50' L	30	44.14	37.58	32.11	20.11	12.99	8.03	5.00	92.6	680	
110	4	1636	50' R	30	18.07	16.35	15.05	11.58	8.45	5.82	3.99	97.2	1660	
11	1	1783	50' L	30	34.28	28.72	25.02	17.23	11.52	7.42	4.93	92.0	875	
111	4	1834	50' R	30	24.39	22.42	20.45	15.32	10.68	6.97	4.48	97.6	1230	
12	1	1987	50' L	30	14.65	11.63	10.24	7.85	6.06	4.59	3.44	93.6	2047	
112	4	2032	50' R	30	16.01	13.62	12.21	9.07	6.76	4.99	3.62	96.2	1874	
13	1	2184	50' L	30	17.22	14.26	12.71	9.64	7.34	5.37	3.92	93.3	1742	
113	4	2236	50' R	30	18.94	16.15	14.38	10.89	8.35	6.26	4.69	97.2	1584	
14	1	2384	50' L	30	17.73	15.63	14.22	11.14	8.67	6.40	4.64	93.9	1692	

Niagara Falls International Airport

NDT Field Data

Runway 6-24

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
114	4	2436	50' R	30	16.60	14.42	12.83	9.98	7.74	5.99	4.60	97.2	1808	
15	1	2585	50' L	30	11.73	9.62	8.72	6.99	5.62	4.40	3.43	93.6	2558	
115	4	2633	50' R	30	14.72	12.22	11.09	9.15	7.56	6.08	4.73	97.2	2038	
16	1	2781	50' L	30	17.06	14.17	12.65	9.76	7.47	5.62	4.13	92.3	1759	
116	4	2832	50' R	30	14.63	11.87	10.65	8.62	7.00	5.45	4.21	99.2	2050	
17	1	2981	50' L	30	16.07	14.73	13.54	10.72	8.23	5.98	4.26	90.6	1866	
117	4	3034	50' R	30	13.31	11.41	10.38	8.97	7.77	6.51	5.35	100.5	2253	
18	1	3184	50' L	30	15.97	13.49	12.11	9.33	7.17	5.30	3.85	91.0	1879	
118	4	3233	50' R	30	21.79	17.24	15.04	10.75	7.86	5.53	3.99	99.9	1377	
19	1	3385	50' L	30	12.24	10.26	9.45	8.04	6.54	5.22	4.10	91.3	2452	
119	4	3431	50' R	30	10.47	9.42	8.77	7.88	7.02	5.99	5.08	97.9	2866	
20	1	3581	50' L	30	11.24	9.79	9.00	7.48	6.29	5.19	4.28	92.3	2669	
120	4	3634	50' R	30	7.92	6.77	6.27	5.35	4.18	3.27	2.53	97.2	3788	
153	1	3725	50' L	30	10.98	9.68	8.86	7.44	6.10	4.85	3.69	94.3	2731	
121	4	3833	50' R	30	10.44	8.41	7.54	6.02	4.81	3.73	2.92	100.5	2874	
154	1	3995	50' L	30	6.26	4.94	4.68	4.44	4.06	3.53	3.02	88.0	4791	
122	4	4033	50' R	30	11.52	10.13	9.36	7.78	6.34	4.96	3.75	100.9	2603	
155	1	4182	50' L	30	10.72	9.79	9.21	7.65	5.92	4.71	3.69	87.3	2799	INT. RW10L-28R
123	4	4235	50' R	30	14.45	13.25	12.25	9.80	7.67	5.78	4.31	100.5	2076	INT. RW10L-28R
156	1	4381	50' L	30	6.69	5.74	5.34	4.86	4.02	3.33	2.62	87.0	4484	
124	4	4433	50' R	30	9.40	7.78	7.10	5.97	4.92	3.96	3.07	99.5	3191	
157	1	4584	50' L	30	5.98	4.81	4.47	3.92	3.39	2.79	2.29	88.7	5015	
125	4	4632	50' R	30	5.56	4.32	4.03	3.54	3.05	2.52	2.07	96.9	5398	
158	1	4784	50' L	30	6.55	4.77	4.16	3.05	2.16	1.52	1.09	87.0	4580	
126	4	4832	50' R	30	6.28	4.86	4.44	3.59	2.81	2.15	1.64	95.9	4778	
159	1	4980	50' L	30	8.11	6.35	5.79	4.50	3.43	2.54	1.93	86.0	3700	TW D
62	3	58	10' R	30	13.02	9.04	7.91	6.37	5.21	4.23	3.41	85.4	2304	
23	2	109	10' L	30	8.44	6.56	5.79	4.76	4.08	3.44	2.83	88.7	3556	
63	3	160	10' R	30	11.92	9.69	8.71	6.99	5.64	4.40	3.46	88.7	2517	
24	2	211	10' L	30	12.24	9.42	8.47	6.90	5.60	4.44	3.49	88.7	2452	
64	3	258	10' R	30	14.61	12.57	11.39	8.87	6.83	5.16	3.89	89.3	2053	
25	2	308	10' L	30	10.75	9.16	8.32	6.78	5.52	4.35	3.39	89.6	2792	
65	3	357	10' R	30	12.16	10.45	9.44	7.66	6.11	4.74	3.71	88.0	2467	
26	2	409	10' L	30	12.12	9.39	8.56	6.96	5.62	4.43	3.43	89.0	2475	
66	3	457	10' R	30	13.20	11.61	10.59	8.58	6.67	5.03	3.82	88.7	2272	
27	2	510	10' L	30	10.76	8.83	8.07	6.68	5.51	4.37	3.44	89.0	2787	
67	3	558	10' R	30	14.53	12.33	11.05	8.43	6.41	4.80	3.60	89.3	2065	
28	2	607	10' L	30	12.00	9.80	8.82	7.01	5.68	4.43	3.46	90.0	2501	
68	3	657	10' R	30	15.24	12.63	11.42	9.01	6.96	5.21	3.86	88.7	1969	
29	2	708	10' L	30	11.31	9.01	8.27	6.74	5.54	4.41	3.42	90.3	2652	
69	3	758	10' R	30	13.72	12.03	11.01	8.81	6.96	5.28	3.98	87.7	2187	
30	2	810	10' L	30	12.11	10.03	9.03	7.23	5.73	4.45	3.39	88.3	2478	
70	3	861	10' R	30	17.84	15.32	13.86	10.74	8.18	6.10	4.46	89.6	1681	
31	2	910	10' L	30	14.64	12.26	10.98	8.47	6.56	5.00	3.75	90.0	2049	TWD3
71	3	959	10' R	30	18.12	16.71	15.65	13.28	6.68	4.90	3.52	90.0	1656	
32	2	1008	10' L	30	10.28	8.45	7.69	6.42	5.24	4.18	3.28	89.3	2919	
72	3	1059	10' R	30	15.31	12.67	11.28	8.53	6.49	4.84	3.58	90.6	1959	
33	2	1110	10' L	30	13.62	10.96	9.74	7.57	5.89	4.48	3.38	88.7	2203	
73	3	1161	10' R	30	18.31	16.01	14.40	10.79	7.93	5.58	3.92	91.3	1638	
34	2	1213	10' L	30	14.28	12.26	11.16	8.81	6.83	5.10	3.81	89.3	2101	INT. RW10R-28L
74	3	1258	10' R	30	20.89	18.05	16.21	11.90	8.62	5.99	4.15	91.0	1436	INT. RW10R-28L
35	2	1307	10' L	30	14.93	12.40	11.17	8.62	6.66	4.94	3.61	89.3	2009	INT. RW10R-28L
75	3	1360	10' R	30	15.46	12.92	11.67	9.01	6.90	5.10	3.77	89.0	1940	

Niagara Falls International Airport

NDT Field Data

Runway 6-24

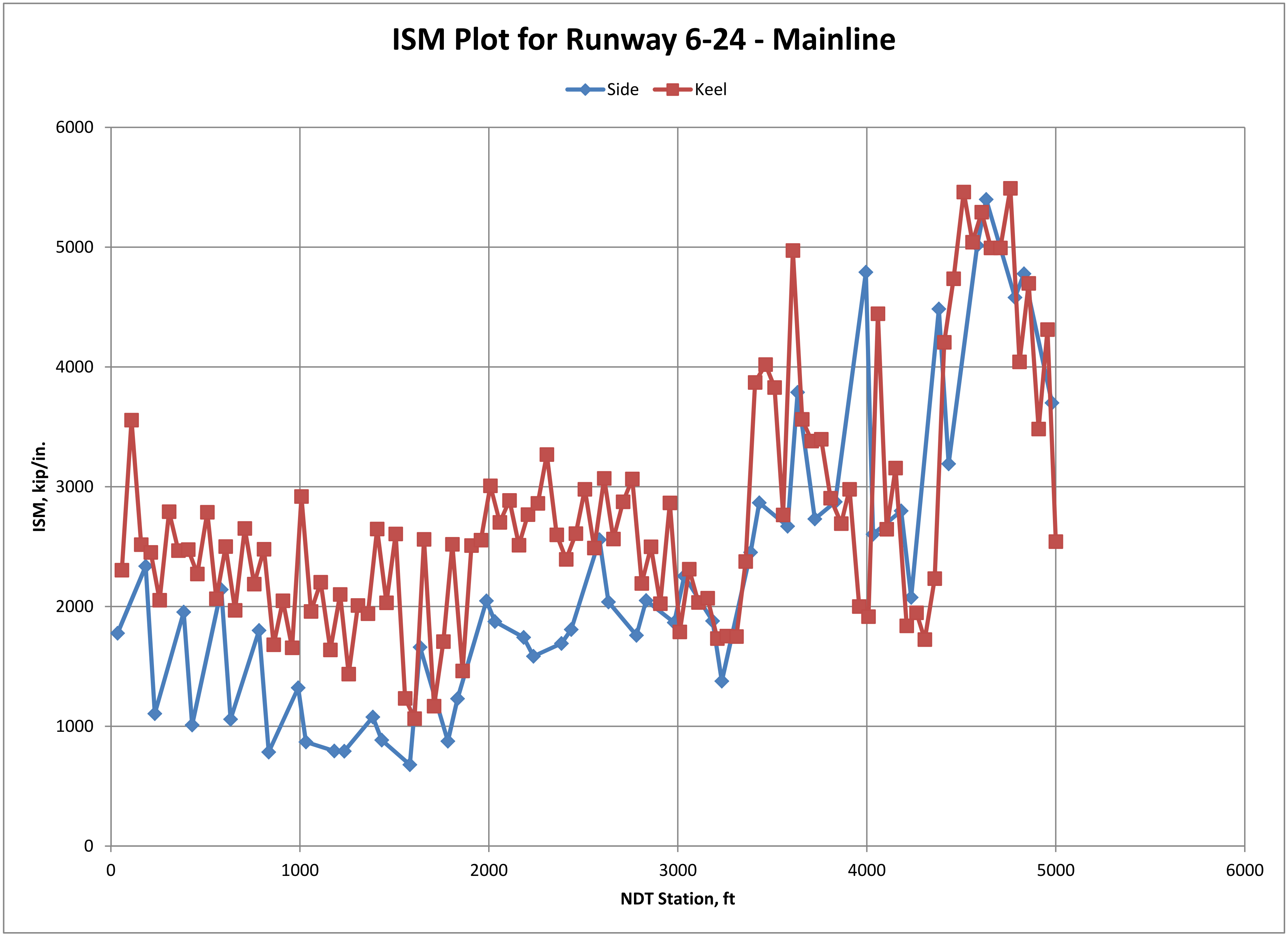
NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
36	2	1409	10' L	30	11.33	9.19	8.29	6.68	5.38	4.20	3.26	90.0	2647	
76	3	1458	10' R	30	14.77	13.09	11.95	9.40	7.16	5.31	3.86	88.7	2032	
37	2	1507	10' L	30	11.51	9.40	8.49	6.96	5.71	4.62	3.65	88.7	2606	
77	3	1557	10' R	30	24.32	21.31	19.15	14.26	10.37	7.18	4.97	90.3	1233	
38	2	1607	10' L	30	28.19	23.51	20.95	14.24	9.36	6.21	4.19	89.6	1064	
78	3	1657	10' R	30	11.72	10.15	9.23	7.25	5.57	4.14	3.07	91.3	2560	
39	2	1710	10' L	30	25.68	22.46	19.91	13.52	8.80	5.54	3.55	88.7	1168	
79	3	1759	10' R	30	17.57	15.11	13.68	10.12	7.44	5.28	3.69	90.0	1708	
40	2	1807	10' L	30	11.91	10.48	9.68	7.84	6.19	4.68	3.45	87.0	2520	
80	3	1861	10' R	30	20.52	17.25	15.41	11.36	8.27	5.82	4.02	91.0	1462	
41	2	1908	10' L	30	11.96	10.08	9.12	7.33	5.84	4.49	3.37	87.0	2509	
81	3	1958	10' R	30	11.74	9.81	8.95	7.12	5.62	4.24	3.12	89.6	2554	
42	2	2008	10' L	30	9.97	7.96	7.19	5.79	4.67	3.68	2.83	88.0	3008	
82	3	2058	10' R	30	11.10	9.08	8.08	6.60	5.36	4.07	3.16	90.6	2702	
43	2	2109	10' L	30	10.40	8.06	7.37	5.62	4.56	3.59	2.82	87.3	2886	
83	3	2159	10' R	30	11.94	9.34	8.18	6.44	4.97	3.86	2.95	90.3	2512	
44	2	2207	10' L	30	10.84	8.75	7.92	6.31	5.08	4.03	3.15	88.0	2768	
84	3	2259	10' R	30	10.49	8.87	8.08	6.73	5.81	4.97	4.18	89.3	2861	
45	2	2307	10' L	30	9.18	7.02	6.23	4.89	3.94	3.23	2.64	89.3	3269	
85	3	2359	10' R	30	11.54	9.86	9.03	7.49	6.13	4.85	3.82	90.0	2599	
46	2	2409	10' L	30	12.53	9.76	8.71	6.98	5.60	4.45	3.45	88.7	2394	
86	3	2460	10' R	30	11.50	8.93	7.89	6.37	5.23	4.18	3.31	90.3	2609	
47	2	2508	10' L	30	10.07	8.53	7.86	6.78	5.85	4.94	4.10	89.6	2979	
87	3	2558	10' R	30	12.06	10.45	9.36	7.81	6.55	5.36	4.40	88.3	2488	
48	2	2610	10' L	30	9.77	8.22	7.49	6.44	5.63	4.67	3.84	89.0	3070	
88	3	2659	10' R	30	11.70	10.18	9.16	7.09	5.51	4.25	3.23	89.6	2564	
49	2	2710	10' L	30	10.44	8.45	7.51	5.92	4.80	3.77	2.95	88.0	2875	
89	3	2759	10' R	30	9.79	7.77	7.01	5.89	4.91	3.99	3.21	90.6	3065	
50	2	2809	10' L	30	13.68	10.85	9.77	7.64	6.11	4.72	3.56	86.7	2193	
90	3	2858	10' R	30	12.00	9.81	8.82	7.36	6.11	4.99	3.86	89.3	2499	
51	2	2907	10' L	30	14.82	11.32	10.08	7.99	6.23	4.73	3.52	86.7	2024	
92	3	2958	10' R	30	10.47	8.54	7.69	6.29	5.07	4.02	3.09	89.6	2865	
52	2	3010	10' L	30	16.78	12.73	11.20	8.48	6.47	4.83	3.52	88.7	1788	
93	3	3060	10' R	30	12.98	10.30	9.10	7.25	5.54	4.12	3.10	90.3	2312	
53	2	3109	10' L	30	14.75	11.44	10.24	8.11	6.30	4.79	3.57	90.3	2034	TW D2
94	3	3158	10' R	30	14.49	12.21	10.97	8.45	6.45	4.71	3.47	90.6	2070	
54	2	3209	10' L	30	17.31	14.10	12.38	9.13	6.79	4.94	3.59	91.3	1733	
95	3	3259	10' R	30	17.11	13.94	12.34	9.12	6.79	4.90	3.55	90.0	1753	
55	2	3310	10' L	30	17.15	13.49	12.01	9.01	6.73	4.93	3.57	91.3	1750	
96	3	3359	10' R	30	12.62	10.73	9.63	7.60	6.11	4.91	3.92	91.0	2376	
56	2	3409	10' L	30	7.75	6.05	5.45	4.80	4.13	3.41	2.80	92.9	3870	
97	3	3464	10' R	30	7.46	6.09	5.62	4.96	4.20	3.40	2.74	89.6	4020	
57	2	3512	10' L	30	7.84	6.60	6.06	5.14	4.40	3.60	2.91	92.6	3828	
98	3	3557	10' R	30	10.85	9.58	8.95	7.78	6.34	5.08	4.04	92.9	2765	
58	2	3609	10' L	30	6.03	4.73	4.39	4.05	3.64	3.08	2.55	92.3	4972	
99	3	3658	10' R	30	8.42	7.27	6.83	5.79	4.84	3.90	3.14	92.6	3562	
59	2	3708	10' L	30	8.87	7.40	6.72	5.61	4.76	3.91	3.14	93.3	3382	
127	3	3759	10' R	30	8.83	7.70	7.12	6.02	4.98	3.93	3.10	91.6	3397	
140	2	3808	10' L	30	10.33	8.67	7.85	6.54	5.57	4.52	3.61	91.6	2905	
128	3	3865	10' R	30	11.14	9.41	8.58	7.24	5.92	4.67	3.64	92.0	2692	
141	2	3909	10' L	30	10.07	8.50	7.73	6.38	5.29	4.23	3.30	94.3	2979	
129	3	3960	10' R	30	15.00	12.73	11.53	9.13	7.16	5.43	4.08	93.6	2000	
142	2	4009	10' L	30	15.66	13.03	11.80	9.42	7.35	5.56	4.12	93.9	1916	

Niagara Falls International Airport

NDT Field Data

Runway 6-24

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
130	3	4059	10' R	30	6.75	5.39	5.15	4.80	4.27	3.67	3.16	94.6	4444	
143	2	4105	10' L	30	11.34	10.15	9.41	7.75	6.11	4.67	3.61	94.6	2645	
131	3	4152	10' R	30	9.50	8.43	7.75	6.52	5.25	4.14	3.23	95.6	3157	INT. RW10L-28R
144	2	4211	10' L	30	16.32	14.30	13.25	10.64	8.16	5.88	4.20	94.9	1839	INT. RW10L-28R
132	3	4263	10' R	30	15.40	13.46	12.31	9.37	6.89	5.07	3.76	96.9	1948	INT. RW10L-28R
145	2	4307	10' L	30	17.39	15.49	14.07	10.89	8.05	5.81	4.25	96.2	1725	INT. RW10L-28R
133	3	4359	10' R	30	13.43	11.14	10.26	8.52	6.81	5.24	3.94	96.6	2233	
146	2	4410	10' L	30	7.13	5.70	5.31	4.75	4.02	3.30	2.66	98.2	4206	
134	3	4459	10' R	30	6.33	5.12	4.77	4.25	3.67	3.07	2.54	97.6	4737	
147	2	4513	10' L	30	5.49	4.51	4.23	3.70	3.17	2.60	2.15	97.2	5461	
135	3	4559	10' R	30	5.95	4.89	4.56	3.99	3.38	2.81	2.26	97.2	5042	
148	2	4608	10' L	30	5.67	4.59	4.26	3.65	3.11	2.51	2.06	96.9	5292	
136	3	4657	10' R	30	6.01	4.72	4.37	3.75	3.06	2.47	1.98	98.5	4993	
149	2	4707	10' L	30	6.01	4.77	4.39	3.64	2.93	2.30	1.79	96.6	4993	
137	3	4760	10' R	30	5.46	4.48	4.10	3.38	2.80	2.13	1.66	98.2	5491	
150	2	4808	10' L	30	7.42	5.80	5.16	3.88	2.90	2.11	1.56	97.2	4043	
138	3	4857	10' R	30	6.39	4.92	4.42	3.38	2.56	1.88	1.40	98.5	4698	
151	2	4909	10' L	30	8.62	6.27	5.51	4.26	2.87	1.95	1.37	98.5	3482	
139	3	4956	10' R	30	6.96	5.32	4.77	3.65	2.70	2.01	1.56	98.9	4312	TW D
152	2	5000	10' L	30	11.80	8.52	7.43	5.49	4.02	2.94	2.21	98.2	2542	TW D


ISM Plot for Runway 6-24 - Mainline
Side
Keel
ISM, kip/in.
6000
5000
4000
3000
2000
1000
0
0
1000
2000
3000
4000
5000
6000
NDT Station, ft

Niagara Falls International Airport
NDT Field Data
West Ramp-1

Air Temp. 44.54 F

NDT	Lane	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)	(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
1	1	21	30	22.65	20.83	19.55	16.98	14.82	12.85	11.39	71.2	1,325	GAA-03
2	1	98	30	15.37	14.92	14.27	12.85	10.61	8.33	6.23	70.2	1,951	GAA-03
3	1	205	30	15.02	14.28	13.51	11.34	8.98	6.69	4.76	70.2	1,997	GAA-03
4	1	309	30	13.39	12.88	12.25	10.64	8.67	6.66	5.00	69.2	2,241	GAA-03
5	1	385	30	14.86	14.36	13.65	11.69	9.27	6.92	4.92	70.5	2,019	GAA-03
6	1	492	30	15.70	14.85	13.87	11.40	8.17	5.60	3.64	70.2	1,911	GAA-03
7	1	594	30	8.23	7.84	7.53	6.68	5.68	4.74	3.98	70.2	3,646	GAA-03
9	2	8	30	19.47	18.76	17.70	15.03	11.45	8.29	5.65	73.5	1,541	GAA-03
10	2	57	30	17.01	16.67	15.87	13.91	11.40	8.72	6.30	73.8	1,764	GAA-03
11	2	144	30	22.01	21.30	20.03	16.37	12.46	8.84	6.05	72.8	1,363	GAA-03
12	2	249	30	20.96	19.71	18.18	14.42	10.69	7.58	5.21	72.5	1,432	GAA-03
14	2	354	30	28.33	27.09	25.35	19.05	13.31	8.96	6.30	72.2	1,059	GAA-03
15	2	448	30	27.67	25.99	24.00	18.28	12.84	8.13	4.92	71.5	1,084	GAA-03
16	2	556	30	5.78	5.45	5.27	4.93	3.94	3.03	2.44	70.9	5,189	GAA-03
17	2	632	30	5.62	5.42	5.20	4.82	4.13	3.45	2.83	71.5	5,341	GAA-03
18	3	8	30	16.69	16.05	15.12	12.78	10.04	7.37	5.15	72.5	1,797	GAA-03
19	3	99	30	19.62	18.58	17.31	13.98	10.64	7.72	5.33	73.8	1,529	GAA-03
21	3	204	30	19.60	18.76	17.59	14.62	11.51	8.44	5.92	75.5	1,531	GAA-03
22	3	309	30	23.27	22.10	20.54	16.41	12.36	8.74	5.99	75.5	1,289	GAA-03
23	3	401	30	23.76	22.84	21.44	17.64	13.42	9.50	4.67	74.5	1,262	GAA-03
24	3	493	30	25.02	23.26	21.30	15.72	10.55	6.47	3.56	73.5	1,199	GAA-03
25	3	607	30	5.77	5.55	5.29	4.88	4.10	3.30	2.65	73.5	5,198	GAA-03
26	4	8	30	18.82	17.71	16.60	13.19	10.01	7.26	5.43	75.5	1,594	GAA-02
27	4	57	30	17.22	16.26	15.18	12.09	9.04	6.28	4.34	74.2	1,742	GAA-02
28	4	159	30	24.48	22.71	20.90	15.89	11.60	8.03	5.59	75.5	1,225	GAA-02
29	4	252	30	24.92	23.55	21.78	16.85	12.12	8.06	5.52	75.5	1,204	GAA-02
31	4	341	30	26.07	24.14	22.30	16.87	12.21	8.54	5.82	75.8	1,151	GAA-02
32	4	446	30	22.16	21.34	20.03	16.74	13.15	9.65	6.69	74.8	1,354	GAA-02
33	4	557	30	6.23	5.98	5.69	5.17	4.38	3.60	2.90	75.1	4,816	GAA-02
34	5	5	30	23.87	23.64	22.67	19.96	16.70	13.00	9.52	77.1	1,257	GAA-02
35	5	97	30	26.74	25.88	24.64	21.01	17.15	13.20	9.79	75.5	1,122	GAA-02
36	5	205	30	18.78	18.36	17.49	15.01	12.35	9.50	6.96	76.5	1,597	GAA-02
37	5	310	30	25.72	24.88	23.67	20.35	16.78	13.05	9.67	75.5	1,166	GAA-02
38	5	401	30	23.50	22.14	20.51	16.05	12.12	8.53	5.87	74.8	1,277	GAA-02
40	5	505	30	19.87	18.91	17.63	14.00	10.56	7.67	5.40	75.5	1,510	GAA-02
41	6	55	30	16.66	15.88	14.95	12.44	9.77	7.32	5.15	76.5	1,801	GAA-02
42	6	99	30	13.79	13.32	12.59	10.50	8.37	6.32	4.77	75.5	2,175	GAA-02
43	6	206	30	15.33	14.53	13.82	11.86	9.35	7.00	4.96	74.8	1,957	GAA-02
44	6	310	30	16.97	16.03	15.15	12.41	9.61	7.08	5.25	74.8	1,768	GAA-02
45	6	400	30	19.35	18.26	17.06	13.79	10.62	7.81	5.74	76.1	1,551	GAA-02
46	6	491	30	19.97	18.94	17.84	14.92	11.46	8.42	6.13	75.8	1,502	GAA-02
Joint Tests												**d3/d1**	
8	1	602	30	11.84	10.50	9.69	7.76	6.11	4.57	3.34	71.5	0.82	
13	2	257	30	33.87	23.96	21.17	14.50	9.87	6.71	4.57	72.2	0.63	
20	3	106	30	23.78	22.80	20.14	14.40	10.07	7.05	4.95	76.1	0.85	
30	4	258	30	44.09	26.11	23.10	15.93	10.32	6.61	4.50	75.8	0.52	
39	5	408	30	44.79	16.51	15.14	11.47	8.00	5.81	4.26	75.1	0.34	
47	6	500	30	26.83	23.13	20.57	14.96	10.61	7.43	5.18	76.1	0.77	
											Average	**0.65**	

Niagara Falls International Airport

NDT Field Data

West Ramp-3

Air Temp. 41.01F

NDT No.	Lane No.	Station (ft)	Force (kip)	Displacement Sensors (mils) d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM kip/in	Remarks
0+00 at west end of this area													
1	1	38	30	6.45	6.16	5.91	5.36	4.69	3.90	3.29	64.6	4652	GAA-01
2	1	114	30	7.25	7.02	6.77	6.20	5.42	4.53	3.78	64.6	4135	GAA-01
3	1	221	30	6.72	6.49	6.22	5.60	4.96	4.21	3.66	65.9	4466	GAA-01
4	1	312	30	6.34	6.17	5.98	5.65	5.24	4.84	4.49	66.2	4735	GAA-01
5	1	402	30	5.75	5.60	5.42	4.96	4.43	3.77	3.16	63.9	5217	GAA-01
6	1	507	30	5.66	5.54	5.29	4.83	4.25	3.59	3.11	62.6	5298	GAA-01
8	1	615	30	7.15	6.97	6.75	6.29	5.84	5.38	5.14	64.9	4194	GAA-01
9	1	705	30	6.44	6.15	5.88	5.36	4.78	4.08	3.45	64.9	4658	GAA-01
10	1	810	30	7.83	7.52	7.21	6.46	5.69	4.73	3.91	66.2	3832	GAA-01
11	1	915	30	7.03	6.74	6.46	5.78	4.99	4.18	3.39	65.9	4265	GAA-01
12	2	54	30	6.26	6.09	5.88	5.39	4.82	4.21	3.72	64.9	4792	GAA-01
13	2	158	30	7.40	7.27	7.00	6.32	5.53	4.63	3.85	64.3	4053	GAA-01
14	2	250	30	6.51	6.28	6.02	5.49	4.77	4.00	3.28	64.3	4606	GAA-01
16	2	356	30	8.85	8.67	8.33	7.75	6.85	5.73	4.76	62.6	3389	GAA-01
17	2	447	30	6.38	6.23	5.97	5.45	4.77	4.05	3.52	63.3	4699	GAA-01
18	2	552	30	6.00	5.95	5.72	5.40	4.64	3.85	3.11	65.6	5000	GAA-01
19	2	656	30	5.81	5.70	5.48	5.01	4.41	3.69	2.94	65.9	5161	GAA-01
20	2	764	30	7.47	7.29	6.99	6.27	5.45	4.28	3.26	65.6	4015	GAA-01
22	2	855	30	8.42	7.97	7.62	6.74	5.53	4.35	3.30	67.6	3562	GAA-01
23	2	930	30	8.47	8.08	7.74	6.77	5.68	4.43	3.26	66.6	3544	GAA-01
Joint Tests												**d3/d1**	
7	1	516	30	11.61	8.31	7.67	6.21	4.78	3.74	2.96	64.9	0.66	
15	2	259	30	14.24	7.81	7.21	5.69	4.45	3.31	2.52	64.3	0.51	
21	2	787	30	17.59	5.60	5.26	4.35	3.42	2.57	1.94	67.9	0.30	
											Average	**0.49**	

Niagara Falls International Airport

NDT Field Data

West Ramp Area 2

Air Temp. 45.72 F

NDT	Lane	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	**No.**	**(ft)**	**(kip)**	**d1 (0)**	**d2 (8")**	**d3 (12")**	**d4 (24")**	**d5 (36")**	**d6 (48")**	**d7 (60")**	**Temp (F)**	**kip/in**	**Remarks**
0+00 at west end of this area													
1	1	8	30	19.75	18.68	17.51	14.08	10.60	7.51	5.30	77.8	1,519	GAA-02A
2	1	53	30	20.37	19.42	18.06	14.49	10.95	7.84	5.49	77.8	1,472	GAA-02A
4	1	114	30	24.06	23.31	21.96	18.35	14.52	10.52	7.27	77.1	1,247	GAA-02A
5	1	174	30	16.95	16.02	14.97	12.57	9.68	7.17	5.17	77.8	1,770	GAA-02A
6	1	219	30	18.44	17.66	16.66	14.15	10.75	7.87	5.58	78.8	1,627	GAA-02A
7	2	8	30	19.58	18.53	17.22	13.37	10.12	7.29	5.30	83.1	1,532	GAA-02A
8	2	55	30	19.32	18.12	16.85	13.33	10.06	7.13	5.12	82.7	1,553	GAA-02A
9	2	101	30	17.17	16.34	15.28	12.29	9.42	6.84	4.98	82.7	1,747	GAA-02A
10	2	161	30	18.53	17.47	16.35	13.52	10.24	7.37	5.27	80.7	1,619	GAA-02A
12	2	206	30	19.72	18.63	17.38	13.82	10.18	7.31	5.29	80.1	1,522	GAA-02A
Joint Tests												**d3/d1**	
3	1	61	30	27.17	21.50	19.39	14.24	9.73	6.54	4.64	77.5	0.71	
11	2	168	30	25.77	18.62	16.38	11.34	7.89	5.52	4.21	80.1	0.64	
											Average	**0.67**	

Niagara Falls International Airport

NDT Field Data

Cargo Area

Air Temp. 44.84 F

NDT	Lane	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)	(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at TW D													
1	1	28	30	15.05	13.14	11.72	8.61	6.05	4.16	1.59	85.4	1994	
2	1	109	30	12.65	11.16	10.27	8.18	6.57	5.05	3.81	85.4	2372	
3	1	200	30	11.03	9.75	9.12	7.67	6.34	5.07	3.99	84.7	2720	
4	1	297	30	3.66	3.47	3.39	3.23	3.00	2.63	2.35	83.7	8199	PCC Repair
6	1	410	30	18.58	16.22	15.01	12.57	10.25	7.98	6.04	85.4	1615	
7	1	503	30	17.54	16.49	15.54	13.48	11.36	9.12	7.13	85.7	1711	
8	1	601	30	13.51	13.16	12.58	11.41	9.84	8.17	6.51	84.4	2221	
9	2	51	30	6.63	5.60	5.21	4.70	4.05	3.26	2.56	84.4	4524	
10	2	151	30	20.58	18.13	16.49	12.73	9.39	6.82	4.93	84.0	1458	
11	2	246	30	3.30	3.11	3.09	2.90	2.64	2.33	2.10	81.7	9089	PCC Repair
12	2	354	30	3.83	3.57	3.48	3.31	3.03	2.75	2.52	80.4	7839	PCC Repair
13	2	449	30	21.61	19.40	18.03	14.62	11.21	7.86	3.44	80.4	1388	
14	2	452	30	36.57	31.47	28.73	18.97	14.04	9.82	5.27	81.1	820	
15	2	534	30	17.63	16.34	15.26	12.91	10.42	7.97	5.64	80.1	1701	
16	2	665	30	27.39	23.81	21.70	16.47	11.55	7.00	3.90	81.1	1095	

Niagara Falls International Airport

NDT Field Data

GA Ramp

Air Temp. 47.49 F

NDT	Lane	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)	(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at south side of this area													
1	1	0	20	40.56	34.11	28.50	16.36	9.00	4.85	3.26	101.8	493	TERMA-03
2	1	51	20	45.97	36.37	29.63	15.29	7.35	3.88	3.03	100.2	435	TERMA-03
3	1	96	20	54.59	45.57	37.54	19.69	8.54	2.72	2.22	101.5	366	TERMA-03
4	1	152	20	49.15	39.00	31.71	15.77	6.89	3.43	3.08	103.2	407	TERMA-03
5	1	201	20	60.59	49.73	40.04	19.27	7.47	3.01	2.95	103.2	330	TERMA-03
6	2	20	20	64.51	42.40	35.19	20.11	10.39	4.89	3.01	95.3	310	TERMA-03
7	2	51	20	30.86	27.42	23.78	15.26	9.09	5.04	3.20	95.3	648	TERMA-03
8	2	101	20	28.18	24.17	20.96	13.26	7.69	4.09	2.81	96.6	710	TERMA-03
9	2	152	20	39.30	31.21	25.83	15.16	8.47	4.75	3.16	96.2	509	TERMA-03
10	2	202	20	28.36	24.34	21.06	13.26	7.86	4.63	2.96	97.2	705	TERMA-03
11	2	250	20	23.26	21.49	18.69	12.64	8.05	4.97	3.40	96.6	860	TERMA-03
12	3	13	20	38.40	32.62	27.39	15.92	8.71	4.73	3.16	99.2	521	TERMA-03
13	3	52	20	47.14	39.47	32.91	18.11	8.57	3.84	2.99	100.2	424	TERMA-03
14	3	103	20	28.55	24.49	21.20	13.30	7.70	4.49	3.31	100.2	700	TERMA-03
15	3	152	20	33.02	29.25	26.16	11.91	6.76	4.14	2.78	100.9	606	TERMA-03
16	3	201	20	27.66	23.54	20.20	12.40	7.00	4.05	3.17	100.2	723	TERMA-03
17	3	250	20	27.80	23.81	20.46	12.71	7.34	4.38	3.29	100.9	720	TERMA-03
18	4	11	20	48.78	40.76	33.76	17.97	8.30	4.01	3.10	102.2	410	TERMA-03
19	4	51	20	33.49	28.65	24.46	14.58	7.99	4.28	2.95	101.8	597	TERMA-03
20	4	101	20	35.89	29.60	25.22	13.44	6.52	4.31	3.62	102.5	557	TERMA-03
21	4	150	20	50.95	34.74	28.07	13.98	7.01	3.95	3.29	101.8	393	TERMA-03
22	4	201	20	36.78	31.35	26.63	15.74	8.31	4.44	3.14	102.2	544	TERMA-03
23	4	251	20	37.63	31.38	26.36	15.15	8.11	4.48	3.00	103.5	531	TERMA-03
24	5	13	20	37.95	30.45	25.12	13.96	7.51	4.32	3.16	102.8	527	TERMA-03
25	5	51	20	32.64	27.06	22.87	13.21	7.09	4.33	3.70	103.2	613	TERMA-03
26	5	103	20	38.79	32.06	26.96	15.32	8.08	4.33	3.12	104.5	516	TERMA-03
27	5	151	20	34.21	28.95	24.52	14.48	7.80	4.03	2.83	103.8	585	TERMA-03
28	5	203	20	18.68	16.32	14.42	10.04	6.62	4.25	3.04	104.5	1071	TERMA-03
29	5	250	20	28.34	23.73	20.49	13.54	8.44	5.25	3.68	104.8	706	TERMA-03
30	6	11	20	30.00	25.54	21.91	13.57	7.83	4.65	3.28	104.2	667	TERMA-03
31	6	49	20	32.15	27.00	23.01	14.02	8.02	4.68	3.26	104.5	622	TERMA-03
32	6	103	20	38.87	32.30	27.11	15.60	8.47	4.76	3.28	104.2	515	TERMA-03
33	6	150	20	19.49	16.50	14.26	9.44	6.19	4.03	2.84	104.5	1026	TERMA-03

Niagara Falls International Airport

NDT Field Data

NY ARNG Area

Air Temp. 41.60 F

NDT	Lane	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)	(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at west end of this area													
1	1	33	30	8.47	7.49	7.34	6.98	6.24	5.43	4.73	66.9	3544	HELIA-01
2	1	110	30	12.68	11.83	11.36	10.35	8.77	7.11	5.66	66.9	2365	HELIA-01
3	1	224	30	16.20	13.24	12.09	10.00	7.85	6.02	4.41	69.2	1852	HELIA-01
4	1	312	30	21.21	17.39	15.15	11.88	9.66	5.33	4.17	68.9	1414	HELIA-01
5	1	412	30	16.52	15.44	14.86	13.63	11.40	9.35	7.25	68.2	1816	HELIA-01
6	1	495	30	14.13	12.91	12.15	11.17	9.77	8.22	6.63	68.2	2123	HELIA-01
7	2	14	30	5.88	4.84	4.65	4.30	3.73	3.18	2.64	68.9	5099	HELIA-01
8	2	62	30	7.77	6.81	6.51	6.09	5.21	4.35	3.59	66.6	3859	HELIA-01
9	2	153	30	14.41	12.38	11.98	10.86	8.65	6.55	4.58	68.2	2081	HELIA-01
11	2	271	30	14.90	12.49	11.92	10.38	8.44	6.49	4.92	66.9	2013	HELIA-01
12	2	353	30	29.60	23.53	21.53	16.79	12.57	8.75	5.60	66.9	1013	HELIA-01
13	2	446	30	34.48	31.12	28.96	23.49	18.29	13.40	9.25	68.2	870	HELIA-01
14	2	576	30	11.34	10.32	9.68	8.48	6.56	4.83	3.27	68.6	2645	HELIA-01
15	2	632	30	13.87	13.07	12.41	11.07	8.77	6.58	4.65	68.2	2162	HELIA-01
16	3	17	30	6.04	4.97	4.82	4.65	3.95	3.37	2.84	72.2	4968	HELIA-01
17	3	112	30	5.69	5.33	5.15	5.04	4.17	3.56	2.97	71.2	5272	HELIA-01
18	3	203	30	21.86	18.29	16.77	13.43	10.01	6.99	4.72	72.5	1372	HELIA-01
19	3	301	30	57.74	47.99	41.58	25.79	14.05	6.24	4.06	73.8	520	HELIA-01
20	3	409	30	40.34	38.11	36.05	23.93	13.42	7.33	4.88	73.5	744	HELIA-01
21	3	514	30	73.45	72.05	60.67	34.50	16.21	6.62	4.92	73.2	408	HELIA-01
23	3	591	30	88.13	76.80	67.04	40.44	20.39	8.28	5.46	73.5	340	HELIA-01
24	4	16	30	5.88	4.85	4.69	4.33	3.87	3.18	2.67	76.1	5105	HELIA-01
25	4	61	30	7.82	6.68	6.37	5.79	4.88	4.03	3.26	76.1	3837	HELIA-01
26	4	137	30	6.74	5.57	5.36	4.82	4.34	3.63	3.08	75.8	4449	HELIA-01
27	4	235	30	37.02	33.03	29.24	17.20	8.98	5.47	3.80	74.5	810	HELIA-01
28	4	317	30	103.91	73.97	62.29	30.91	14.49	7.31	5.94	75.8	289	HELIA-01
29	4	389	30	75.88	66.68	55.00	28.13	13.28	7.40	5.53	75.8	395	HELIA-01
30	4	450	30	79.99	74.79	61.44	27.86	14.72	8.08	5.42	75.1	375	HELIA-01
31	4	550	30	99.26	81.89	68.34	40.07	22.33	14.37	8.54	75.5	302	HELIA-01

Niagara Falls International Airport

NDT Field Data

Main Terminal Area-2 ,Original Apron

Air Temp. 46.31 F

NDT	Lane	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)	(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at the edge of east AC													
1	1	8	30	11.63	10.52	9.73	7.97	6.28	4.84	3.65	92.6	2578	AC
2	1	49	30	10.24	9.33	8.69	7.21	5.83	4.52	3.47	92.0	2929	AC
3	1	101	30	17.65	15.17	13.13	8.84	5.99	4.15	3.06	90.3	1700	AC
4	1	150	30	23.45	21.74	19.26	13.83	8.84	5.72	3.95	91.6	1279	AC
5	1	201	30	24.09	21.59	19.09	12.49	8.21	5.40	3.69	90.3	1245	AC
6	1	250	30	26.21	23.59	20.34	13.81	9.11	6.07	4.28	89.6	1144	AC
7	1	302	30	23.87	20.84	18.35	12.83	8.79	6.03	4.25	89.3	1257	AC
8	1	353	30	19.71	17.19	15.23	10.80	7.55	5.18	3.86	89.6	1522	AC
9	1	405	30	17.36	14.32	12.64	9.32	6.74	4.87	3.55	89.3	1729	AC
10	1	451	30	17.17	15.48	13.83	10.31	7.48	5.32	3.93	88.7	1747	AC
11	1	500	30	22.44	19.96	17.81	12.80	8.78	5.90	4.23	91.0	1337	AC
12	1	551	30	28.17	24.57	21.76	15.01	9.69	6.47	4.54	92.0	1065	AC
13	2	55	30	7.25	6.98	6.70	6.05	5.28	4.40	3.61	92.6	4135	PCC
14	2	109	30	7.84	7.55	7.22	6.55	5.63	4.68	3.77	95.6	3826	PCC
15	2	159	30	8.45	8.15	7.87	7.24	6.21	5.16	4.14	95.6	3551	PCC
16	2	209	30	7.67	7.44	7.09	6.44	5.60	4.66	3.80	95.6	3911	PCC
18	2	260	30	7.39	7.12	6.82	6.31	5.46	4.58	3.64	94.9	4057	PCC
19	2	310	30	7.66	7.47	7.13	6.52	5.69	4.75	3.82	94.6	3917	PCC
20	2	361	30	8.44	8.08	7.75	6.92	5.97	4.90	3.93	92.6	3553	PCC
21	2	411	30	7.73	7.39	7.14	6.54	5.67	4.73	3.81	93.3	3880	PCC
22	2	461	30	7.85	7.64	7.42	7.01	6.18	5.18	4.18	95.6	3820	PCC
23	2	538	30	7.14	6.90	6.66	6.08	5.31	4.43	3.55	101.2	4204	PCC
24	2	538	30	8.62	8.38	8.02	7.31	6.45	5.30	4.18	100.5	3481	PCC
25	3	13	30	8.27	7.95	7.64	6.90	6.02	5.01	4.04	100.5	3628	PCC
26	3	64	30	7.73	7.27	6.93	6.19	5.37	4.45	3.53	101.5	3882	PCC
27	3	116	30	10.10	9.92	9.69	9.15	8.25	6.97	5.83	101.2	2969	PCC
28	3	165	30	10.22	9.63	9.13	8.03	6.96	5.71	4.51	102.5	2936	PCC
29	3	215	30	9.88	9.24	8.74	7.65	6.49	5.33	4.21	102.5	3037	PCC
30	3	265	30	8.92	8.65	8.25	7.42	6.43	5.34	4.30	103.8	3363	PCC
31	3	315	30	8.87	8.62	8.34	7.64	6.61	5.48	4.44	102.8	3380	PCC
32	3	364	30	8.05	7.80	7.50	6.76	5.91	4.99	4.06	102.2	3729	PCC
33	3	415	30	12.38	11.98	11.42	10.26	8.97	7.59	6.17	102.2	2424	PCC
34	3	465	30	6.55	6.46	6.18	5.77	5.22	4.50	3.77	102.5	4583	PCC
36	3	518	30	6.34	6.24	5.95	5.76	4.91	4.16	3.41	103.5	4730	PCC
37	4	14	30	8.21	7.94	7.62	6.95	6.00	4.98	3.99	100.9	3655	PCC
38	4	64	30	7.13	6.90	6.59	5.97	5.24	4.43	3.64	101.8	4209	PCC
39	4	117	30	7.64	7.40	7.12	6.48	5.71	4.72	3.78	103.5	3928	PCC
40	4	165	30	8.77	8.56	8.23	7.32	6.32	5.29	4.18	104.5	3423	PCC
41	4	217	30	8.90	8.66	8.32	7.62	6.49	5.33	4.21	104.2	3372	PCC
42	4	266	30	8.41	8.17	7.79	6.93	6.04	4.99	3.96	103.5	3566	PCC
43	4	317	30	8.56	8.40	8.07	7.30	6.39	5.28	4.20	104.2	3504	PCC
45	4	368	30	7.43	7.21	6.99	6.44	5.56	4.53	3.66	104.8	4036	PCC
46	4	419	30	8.63	8.33	8.07	7.13	6.09	4.97	3.94	104.8	3477	PCC
47	4	468	30	8.39	7.95	7.80	7.10	6.20	5.17	4.09	105.5	3574	PCC
48	4	520	30	8.16	7.94	7.64	6.97	6.05	4.97	3.91	104.5	3676	PCC
49	4	569	30	7.29	7.03	6.76	6.08	5.28	4.35	3.51	104.8	4113	PCC
50	5	18	30	8.40	8.20	7.94	7.33	6.28	5.21	4.12	103.2	3573	PCC
51	5	64	30	8.08	7.79	7.50	6.74	5.82	4.81	3.85	104.5	3714	PCC
52	5	116	30	7.68	7.48	7.21	6.47	5.64	4.72	3.82	103.8	3907	PCC
53	5	168	30	8.35	8.09	7.85	7.13	6.15	4.99	3.99	103.8	3592	PCC
54	5	216	30	7.87	7.63	7.33	6.64	5.78	4.84	3.98	105.5	3812	PCC

Niagara Falls International Airport

NDT Field Data

Main Terminal Area-2 ,Original Apron

Air Temp. 46.31 F

NDT	Lane	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)	(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at the edge of east AC													
55	5	269	30	8.42	8.19	7.89	7.30	6.52	5.24	4.19	104.5	3563	PCC
56	5	319	30	8.26	7.96	7.71	6.97	6.04	5.08	4.06	105.5	3631	PCC
57	5	366	30	8.59	8.18	7.86	7.34	6.40	5.36	4.44	104.8	3493	PCC
58	5	418	30	9.97	9.75	9.36	8.41	7.35	6.12	4.85	106.1	3008	PCC
59	5	471	30	8.38	8.19	7.90	7.27	6.38	5.37	4.33	105.1	3582	PCC
60	5	519	30	8.55	8.32	8.06	7.47	6.60	5.65	4.64	105.5	3509	PCC
61	5	548	30	7.35	7.13	6.82	6.31	5.45	4.54	3.63	106.1	4083	PCC
Joint Tests												**d3/d1**	
17	2	220	30	11.41	10.16	9.28	7.61	6.14	4.70	3.58	95.3	0.91	
35	3	478	30	11.71	9.21	8.49	6.85	5.61	4.30	3.33	102.5	0.92	
44	4	326	30	20.42	7.51	6.98	6.13	4.88	3.81	2.95	105.5	0.93	
											Average	**0.92**	

Niagara Falls International Airport

NDT Field Data

Main Terminal

Air Temp. 44.25 F

NDT	Lane	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)	(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
1	1	5	30	3.41	3.18	3.11	3.09	2.50	2.18	1.88	82.1	8795	
2	1	49	30	3.49	3.26	3.25	2.99	2.60	2.21	1.94	80.7	8584	
3	1	110	30	3.23	3.03	2.96	2.74	2.49	2.12	1.84	80.4	9297	
4	1	172	30	3.58	3.40	3.26	3.17	2.74	2.32	2.05	82.1	8378	
5	1	218	30	4.23	3.89	3.78	3.53	3.09	2.69	2.32	83.4	7089	
7	1	264	30	3.58	3.35	3.23	3.11	2.80	2.44	2.19	85.4	8380	
8	1	312	30	4.21	4.01	3.89	3.79	3.23	2.71	2.32	84.7	7124	
9	1	355	30	3.64	3.47	3.36	3.17	2.81	2.35	2.03	85.7	8245	
10	1	399	30	3.97	3.71	3.65	3.37	2.97	2.56	2.14	87.3	7565	
11	1	456	30	4.28	4.10	3.99	3.85	3.57	3.23	2.92	87.7	7009	
12	2	23	30	3.59	3.37	3.23	2.95	2.66	2.30	1.94	88.7	8360	
13	2	83	30	3.65	3.39	3.25	2.98	2.72	2.33	1.97	90.0	8215	
14	2	129	30	3.86	3.63	3.50	3.41	2.86	2.41	2.00	90.0	7776	
16	2	177	30	3.54	3.30	3.19	3.10	2.79	2.52	2.21	89.3	8469	
17	2	231	30	4.03	3.70	3.60	3.38	3.06	2.67	2.28	90.0	7452	
18	2	275	30	4.20	3.98	3.93	3.82	3.35	2.86	2.44	89.6	7136	
19	2	320	30	4.13	3.88	3.76	3.52	3.20	2.80	2.42	92.0	7263	
20	2	382	30	4.18	3.92	3.82	3.62	3.25	2.67	2.32	90.6	7185	
21	2	425	30	4.14	3.80	3.69	3.43	3.09	2.68	2.20	91.6	7241	
22	2	469	30	3.93	3.73	3.65	3.43	3.29	2.98	2.76	91.3	7627	
23	2	498	30	3.57	3.28	3.19	2.96	2.75	2.41	2.04	91.3	8402	
24	3	10	30	3.86	3.55	3.43	3.25	2.88	2.49	2.16	90.3	7774	
25	3	53	30	3.70	3.40	3.27	2.99	2.67	2.29	1.89	91.0	8102	
26	3	99	30	3.67	3.41	3.28	3.02	2.72	2.34	1.96	91.0	8171	
28	3	160	30	4.05	3.80	3.64	3.37	3.01	2.57	2.14	91.0	7403	
29	3	205	30	3.59	3.37	3.20	3.00	2.66	2.31	1.92	92.0	8346	
30	3	251	30	3.50	3.26	3.17	3.00	2.71	2.38	1.98	91.3	8563	
31	3	303	30	3.71	3.58	3.46	3.34	3.06	2.64	2.37	92.3	8089	
32	3	365	30	4.21	3.97	3.85	3.75	3.24	2.73	2.28	92.3	7126	
33	3	408	30	4.29	4.14	3.98	3.73	3.33	2.89	2.40	93.9	6993	
34	3	464	30	3.87	3.68	3.51	3.33	2.99	2.61	2.19	94.3	7756	
35	3	526	30	15.08	12.47	11.46	9.25	7.15	5.13	3.47	94.6	1990	TWG
36	4	23	30	4.17	3.88	3.72	3.43	3.02	2.58	2.13	91.6	7194	
37	4	82	30	4.01	3.72	3.58	3.32	2.95	2.56	2.08	92.0	7490	
38	4	131	30	3.90	3.67	3.54	3.34	3.04	2.70	2.22	92.3	7700	
39	4	174	30	4.12	3.93	3.75	3.51	3.11	2.64	2.25	92.3	7289	
40	4	220	30	4.27	4.07	3.89	3.63	3.17	2.70	2.28	92.6	7023	
41	4	280	30	4.12	3.83	3.71	3.48	3.11	2.61	2.24	94.3	7287	
43	4	325	30	3.93	3.72	3.66	3.36	3.04	2.65	2.18	94.6	7629	
44	4	378	30	3.78	3.65	3.58	3.52	3.29	2.97	2.70	95.3	7942	
45	4	443	30	8.36	7.95	7.55	6.76	5.84	4.82	3.77	94.9	3590	TWG
46	4	516	30	8.39	8.09	7.75	6.96	6.05	4.96	3.96	93.9	3575	TWG
47	5	8	30	3.06	2.70	2.61	2.56	2.33	2.01	1.72	96.2	9791	
48	5	53	30	3.09	2.83	2.73	2.67	2.39	2.15	1.89	96.2	9716	
49	5	99	30	3.07	2.76	2.69	2.58	2.37	2.09	1.83	95.9	9782	
50	5	160	30	3.53	3.30	3.17	3.01	2.81	2.45	2.28	95.6	8499	
51	5	205	30	3.28	3.05	2.95	2.76	2.52	2.20	1.97	94.9	9152	
52	5	250	30	3.26	3.04	2.94	2.82	2.62	2.36	2.05	97.2	9207	
53	5	311	30	2.85	2.66	2.58	2.46	2.26	2.03	1.77	98.2	10523	
55	5	358	30	2.78	2.63	2.52	2.39	2.19	1.95	1.72	97.9	10805	
56	5	409	30	10.38	10.07	9.71	9.13	8.33	7.45	6.46	99.2	2891	TWG
57	5	467	30	8.44	8.14	7.77	7.12	6.12	5.07	4.04	98.9	3555	TWG
Joint Tests												**d3/d1**	
6	1	227	30	6.48	5.47	5.32	4.49	3.67	3.00	2.47	84.4	0.82	
15	2	136	30	5.41	4.81	4.65	4.25	3.38	2.70	2.15	89.0	0.86	
27	3	106	30	4.93	4.35	4.16	3.68	3.16	2.64	2.10	92.0	0.84	
42	4	288	30	6.37	5.29	5.03	4.43	3.71	2.99	2.41	94.6	0.79	
54	5	319	30	5.46	4.12	3.94	3.50	3.07	2.62	2.25	97.9	0.72	
											Average	**0.81**	

Niagara Falls International Airport

NDT Field Data

Taxiway C

Air Temp. 45.72 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at RW 10R														
1	1	12	6' L	20	25.71	22.09	19.28	13.78	9.85	7.17	5.24	74.5	778	AC
2	1	103	6' L	20	22.09	20.48	18.50	14.41	10.77	7.89	5.70	74.5	905	AC
3	1	202	6' L	20	22.35	19.31	17.00	11.63	7.64	4.65	2.94	74.2	895	AC
4	1	313	6' L	20	18.55	16.82	15.15	10.95	7.25	4.61	2.98	79.8	1078	AC
5	1	402	6' L	20	17.78	16.39	14.67	10.98	7.42	4.91	3.17	80.1	1125	AC
6	1	500	6' L	20	12.02	11.06	10.14	8.07	6.19	4.41	3.13	78.8	1664	AC
7	1	611	6' L	20	26.73	23.41	20.17	13.15	8.07	4.83	2.99	78.8	748	AC
8	1	701	6' L	20	39.05	32.81	27.27	16.09	8.59	4.25	2.36	80.1	512	AC
9	1	804	6' L	20	25.64	22.69	19.77	12.41	7.55	4.61	3.09	80.1	780	AC
10	1	903	6' L	20	41.82	31.71	25.47	13.63	7.20	4.14	2.97	79.4	478	AC
11	1	1006	6' L	20	4.44	4.32	4.18	3.96	3.44	2.82	2.30	82.1	4507	PCC
13	1	1113	6' L	20	4.65	4.48	4.26	3.86	3.37	2.77	2.20	84.7	4305	PCC
14	1	1204	6' L	20	4.48	4.36	4.18	4.10	3.28	2.70	2.19	83.4	4468	PCC
15	1	1308	6' L	20	5.02	4.93	4.68	4.28	3.80	3.19	2.62	84.0	3986	PCC
16	1	1401	6' L	20	6.02	5.80	5.52	5.09	4.23	3.40	2.61	85.0	3325	PCC
17	1	1505	6' L	20	5.38	5.22	5.00	4.62	4.07	3.53	3.04	83.7	3720	PCC/TW J
19	1	1611	6' L	20	5.47	5.32	5.10	4.66	4.08	3.44	2.78	85.0	3656	PCC
20	1	1702	6' L	20	5.29	5.13	4.90	4.55	3.95	3.21	2.61	85.4	3777	PCC
21	1	1809	6' L	20	5.70	5.51	5.21	4.65	4.04	3.38	2.74	85.7	3509	PCC
22	1	1913	6' L	20	5.04	4.88	4.66	4.30	3.74	3.14	2.53	85.0	3971	PCC
23	1	2004	6' L	20	4.89	4.75	4.56	4.21	3.70	3.13	2.58	86.0	4093	PCC
25	1	2095	6' L	20	5.57	5.44	5.26	4.89	4.34	3.73	3.12	85.4	3588	PCC
26	1	2407	6' L	20	4.30	4.18	4.00	3.71	3.33	2.97	2.63	83.7	4654	PCC
27	1	2497	6' L	20	4.35	4.18	3.99	3.71	3.18	2.68	2.20	84.7	4598	PCC
28	1	2611	6' L	20	5.38	5.25	5.01	4.64	4.06	3.43	2.85	84.4	3715	PCC
30	1	2702	6' L	20	4.59	4.46	4.27	4.06	3.38	2.85	2.37	84.0	4357	PCC
31	1	2793	6' L	20	5.39	5.27	5.00	4.55	3.93	3.27	2.61	84.7	3709	PCC
32	2	51	6' R	20	12.42	10.87	9.93	8.17	6.67	5.26	4.07	70.5	1610	AC
33	2	154	6' R	20	26.52	22.56	19.84	13.72	8.86	5.46	3.41	71.5	754	AC
34	2	288	6' R	20	19.46	17.50	15.57	11.08	7.06	4.40	2.69	77.8	1028	AC
35	2	353	6' R	20	17.10	15.39	13.84	9.88	6.68	4.34	2.79	76.5	1169	AC
36	2	451	6' R	20	23.29	19.48	16.97	11.44	7.40	4.65	3.07	77.5	859	AC
37	2	552	6' R	20	21.70	18.60	16.43	11.29	7.49	4.70	3.04	78.1	922	AC
38	2	652	6' R	20	24.71	22.47	19.75	13.41	8.32	4.88	3.02	77.1	809	AC
39	2	752	6' R	20	20.41	17.65	15.57	11.04	7.14	4.51	2.93	77.1	980	AC
40	2	854	6' R	20	18.38	15.62	13.84	9.76	6.46	4.20	2.88	77.1	1088	AC
41	2	949	6' R	20	4.20	4.05	3.92	3.74	3.28	2.79	2.34	77.5	4767	PCC
42	2	1052	6' R	20	4.07	3.93	3.75	3.48	2.93	2.48	2.03	78.1	4917	PCC
43	2	1158	6' R	20	4.61	4.42	4.24	3.73	3.25	2.71	2.22	79.4	4339	PCC
44	2	1249	6' R	20	4.26	4.10	3.91	3.55	3.14	2.67	2.20	80.1	4695	PCC
46	2	1354	6' R	20	4.60	4.42	4.23	3.94	3.29	2.75	2.20	80.1	4344	PCC
47	2	1460	6' R	20	4.70	4.52	4.30	3.84	3.35	2.74	2.20	81.4	4252	PCC
48	2	1551	6' R	20	4.36	4.24	4.06	3.71	3.22	2.72	2.27	81.7	4584	PCC
49	2	1659	6' R	20	4.83	4.66	4.47	4.08	3.61	3.13	2.70	80.7	4143	PCC
50	2	1748	6' R	20	4.11	3.93	3.76	3.37	2.96	2.49	2.06	81.7	4871	PCC
52	2	1853	6' R	20	4.42	4.29	4.10	3.70	3.23	2.77	2.30	82.4	4524	PCC
53	2	1959	6' R	20	4.70	4.52	4.28	3.88	3.37	2.81	2.32	82.7	4258	PCC
54	2	2050	6' R	20	4.26	4.13	3.92	3.59	3.27	2.88	2.62	81.1	4694	PCC
55	2	2126	6' R	20	4.62	4.45	4.24	3.89	3.35	2.84	2.29	82.7	4330	PCC
56	2	2392	6' R	20	3.29	3.18	3.05	2.88	2.45	2.13	1.78	81.4	6087	PCC/TW H
57	2	2453	6' R	20	4.67	4.50	4.27	3.90	3.32	2.79	2.38	83.1	4285	PCC

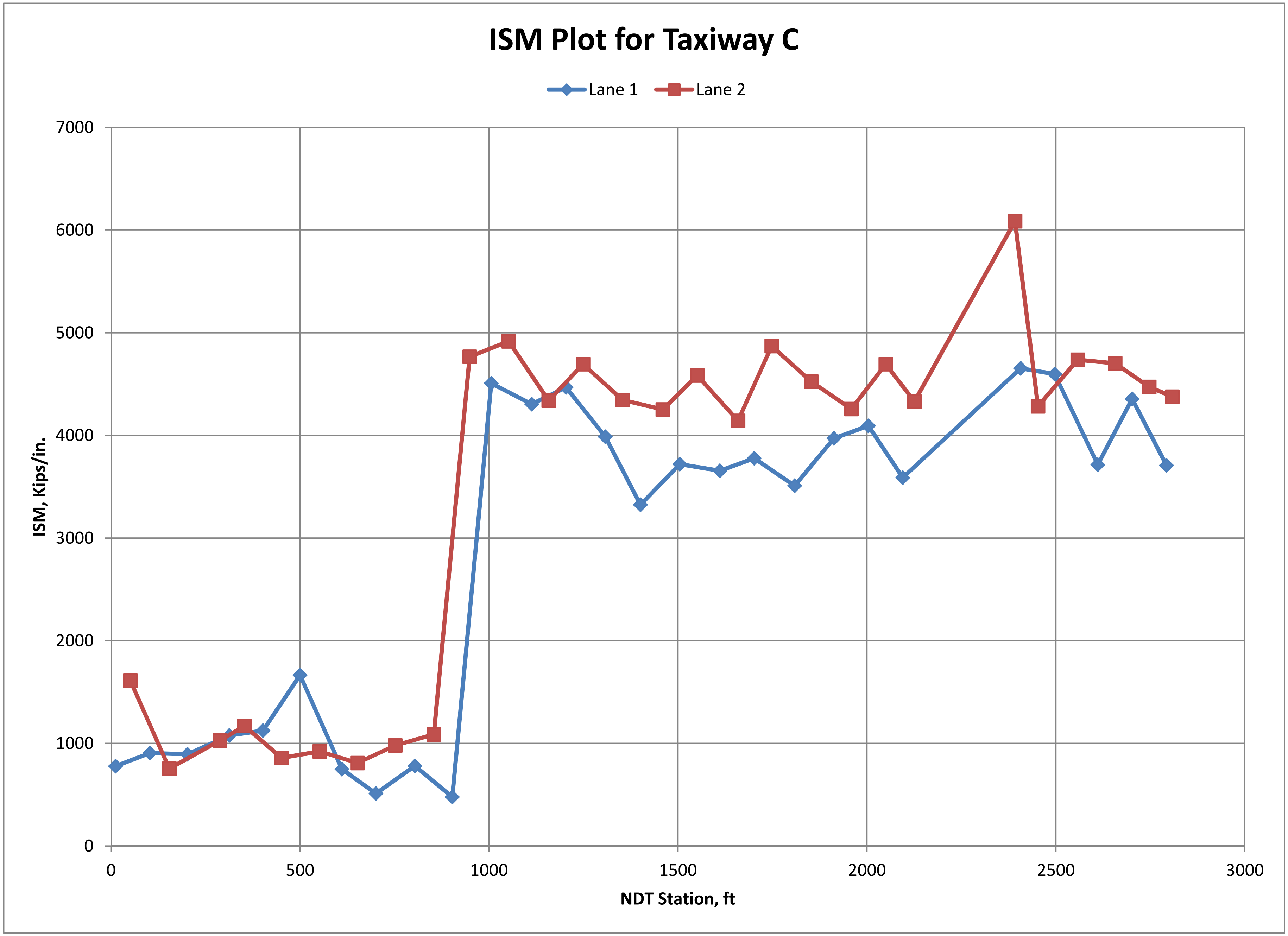
Niagara Falls International Airport

NDT Field Data

Taxiway C

Air Temp. 45.72 F

NDT No.	Lane No.	Station (ft)	Offset	Force (kip)	Displacement Sensors (mils) d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM kip/in	Remarks
0+00 at RW 10R														
58	2	2558	6' R	20	4.22	4.02	3.83	3.48	3.01	2.59	2.15	83.1	4738	PCC
59	2	2657	6' R	20	4.25	4.17	3.94	3.61	3.13	2.70	2.30	82.7	4702	PCC
60	2	2747	6' R	20	4.47	4.27	4.06	3.74	3.14	2.64	2.17	84.7	4473	PCC
62	2	2808	6' R	20	4.57	4.39	4.19	3.84	3.32	2.72	2.25	89.3	4378	PCC
Joint Tests													**d3/d1**	
12	1	1029	6' L	20	9.91	4.40	4.09	3.52	2.82	2.31	1.81	84.0	0.41	
18	1	1514	6' L	20	16.77	3.60	3.41	3.20	2.40	2.08	1.80	85.7	0.20	
24	1	2011	6' L	20	11.17	3.40	3.22	3.03	2.62	2.30	2.02	86.4	0.29	
29	1	2618	6' L	20	10.27	8.88	4.02	3.60	3.01	2.57	2.16	85.0	0.39	
45	2	1256	6' R	20	8.48	3.15	2.97	2.64	2.17	1.85	1.53	80.4	0.35	
51	2	1755	6' R	20	8.52	3.45	3.22	2.89	2.32	1.89	1.59	82.7	0.38	
61	2	2755	6' R	20	10.18	8.24	2.78	2.53	2.18	1.90	1.65	90.0	0.27	
												Average	**0.33**	


ISM Plot for Taxiway C
Lane 1
Lane 2
7000
6000
5000
4000
3000
2000
1000
0
ISM, Kips/in.
0
500
1000
1500
2000
2500
3000
NDT Station, ft

Niagara Falls International Airport

NDT Field Data

Taxiway D1

Air Temp. 41.01 F

NDT No.	Lane No.	Offset	Station (ft)	Force (kip)	d1 (0)	d2 (8")	Displacement Sensors (mils) d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM kip/in	Remarks
0+00 at RW 10L-28R														
1	1	10' L	11	30	5.84	4.78	4.49	4.33	4.00	3.28	2.64	79.1	5,133	AC
2	1	10' L	52	30	5.80	5.24	4.90	4.46	3.96	3.37	2.80	80.1	5,176	
3	1	10' L	107	30	7.68	6.75	6.39	5.80	5.03	4.14	3.35	81.1	3,907	
4	1	10' L	153	30	7.44	6.54	6.20	5.62	4.88	3.98	3.23	82.1	4,032	
5	1	10' L	201	30	11.29	9.49	8.37	6.72	5.42	4.13	2.20	83.1	2,658	
6	2	10' R	24	30	6.51	5.25	4.78	4.42	3.82	3.27	2.75	84.1	4,608	
7	2	10' R	78	30	9.66	8.16	7.68	6.77	5.11	4.14	3.27	85.1	3,105	
8	2	10' R	125	30	8.71	7.50	7.02	6.44	5.43	4.44	3.56	86.1	3,446	
9	2	10' R	178	30	6.30	5.81	5.47	5.19	4.51	3.75	3.07	87.1	4,760	
10	2	10' R	226	30	6.60	5.88	5.58	5.33	4.33	3.64	3.00	88.1	4,545	

Niagara Falls International Airport

NDT Field Data

Taxiway D2

Air Temp. 56.61 F

NDT	Lane	Offset	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	**No.**		**(ft)**	**(kip)**	**d1 (0)**	**d2 (8")**	**d3 (12")**	**d4 (24")**	**d5 (36")**	**d6 (48")**	**d7 (60")**	**Temp (F)**	**kip/in**	**Remarks**
0+00 at RW 6														
1	1	6' L	10	20	10.85	10.26	9.47	7.81	6.25	4.49	3.08	79.1	1,843	AC
2	1	6' L	100	20	13.78	12.30	11.08	8.15	5.81	4.02	2.82	80.1	1,451	
3	1	6' L	209	20	11.15	9.54	8.40	5.95	4.24	2.99	2.16	81.1	1,794	
4	1	6' L	271	20	9.11	8.19	7.49	5.96	4.60	3.40	2.46	82.1	2,195	
5	2	6' R	50	20	13.96	12.71	11.58	8.91	6.54	4.65	3.35	83.1	1,433	
6	2	6' R	151	20	9.56	7.94	6.90	4.64	3.14	2.22	1.70	84.1	2,092	
7	2	6' R	248	20	8.22	6.78	6.11	4.85	3.86	2.93	2.22	85.1	2,432	

Niagara Falls International Airport

NDT Field Data

Taxiway D3

Air Temp. 54.85 F

NDT No.	Lane No.	Offset	Station (ft)	Force (kip)	d1 (0)	d2 (8")	Displacement Sensors (mils) d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM kip/in	Remarks
0+00 at RW 6														
1	1	10' L	11	20	20.63	16.91	14.42	9.49	6.38	4.25	2.95	79.1	970	AC
2	1	10' L	102	20	7.34	6.46	5.90	5.11	4.12	3.31	2.58	80.1	2,723	AC
3	1	10' L	202	20	7.77	6.10	5.58	4.58	3.78	3.03	2.40	81.1	2,573	AC
4	1	10' L	281	20	7.31	6.04	5.49	4.53	3.77	3.02	2.35	82.1	2,736	AC
5	2	10' R	51	20	15.38	12.55	10.88	7.78	5.53	3.81	2.71	83.1	1,300	AC
6	2	10' R	152	20	10.83	9.82	9.03	7.15	5.52	3.97	2.86	84.1	1,847	AC
7	2	10' R	251	20	8.68	7.54	6.92	5.65	4.53	3.43	2.58	85.1	2,304	AC

Niagara Falls International Airport

NDT Field Data

Taxiway D

Air Temp. 62.21 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at RW 24 side														
1	1	16	10' L	30	10.21	8.00	6.97	4.60	2.92	1.90	1.33	85.4	2937	
2	1	100	10' L	30	11.40	9.43	8.38	5.93	4.16	2.87	2.13	86.0	2630	
3	1	202	10' L	30	11.58	9.12	8.03	5.52	3.81	2.65	2.00	87.3	2591	
4	1	302	10' L	30	13.16	11.75	10.58	8.09	5.74	4.13	2.96	87.7	2280	
5	1	404	10' L	30	15.17	13.17	11.97	9.16	6.85	4.92	3.59	81.7	1978	
6	1	518	10' L	30	3.93	3.64	3.62	3.49	3.25	2.85	2.63	84.4	7639	PCC
7	1	612	10' L	30	3.33	3.05	2.96	2.78	2.50	2.14	1.82	84.4	9014	PCC
8	1	704	10' L	30	14.99	13.16	11.95	9.09	6.76	4.83	3.52	85.0	2001	
9	1	809	10' L	30	12.93	11.25	10.30	7.97	5.95	4.23	3.04	84.4	2321	
10	1	905	10' L	30	14.65	12.84	11.67	8.84	6.46	4.56	3.26	84.4	2048	
11	1	1000	10' L	30	13.78	11.79	10.68	8.03	5.89	4.30	3.20	84.7	2177	
12	1	1102	10' L	30	13.07	10.91	10.16	8.55	6.81	5.17	3.75	83.4	2295	
13	1	1201	10' L	30	9.96	7.64	6.92	5.62	4.62	3.58	2.00	83.7	3011	
14	1	1302	10' L	30	6.75	5.78	5.47	4.89	4.41	3.72	3.03	84.4	4445	
15	1	1401	10' L	30	8.72	6.97	6.28	5.29	4.46	3.65	2.92	83.7	3440	
16	1	1500	10' L	30	6.95	6.02	5.76	5.34	3.97	2.88	2.41	82.7	4318	
17	1	1600	10' L	30	5.87	4.93	4.66	4.30	3.76	3.18	2.69	79.4	5113	
18	1	1701	10' L	30	6.56	5.35	5.00	4.53	3.93	3.31	2.86	79.1	4573	
19	1	1801	10' L	30	7.32	6.52	6.19	5.81	5.29	4.47	3.52	79.1	4097	
20	1	1901	10' L	30	5.58	4.67	4.41	4.02	3.53	2.93	2.46	79.8	5380	
21	1	2001	10' L	30	9.18	8.12	7.43	6.11	5.29	4.35	3.61	79.4	3268	
22	1	2101	10' L	30	5.89	4.83	4.56	4.21	3.60	3.00	2.52	78.1	5093	
23	1	2202	10' L	30	8.15	6.43	5.91	5.37	4.70	4.00	3.32	81.4	3682	
24	1	2300	10' L	30	7.75	6.58	6.16	4.68	3.82	3.09	2.48	85.0	3873	
25	1	2401	10' L	30	9.98	9.26	8.67	6.53	5.50	4.41	3.48	85.0	3005	
26	1	2503	10' L	30	8.23	6.97	6.61	6.21	5.48	4.59	3.74	84.4	3644	
27	1	2602	10' L	30	7.55	6.51	6.14	5.57	4.84	3.96	3.24	85.0	3974	
28	1	2700	10' L	30	8.87	7.51	7.21	6.89	6.32	4.61	3.09	85.4	3384	
29	1	2802	10' L	30	13.83	11.72	10.84	9.11	7.52	5.94	3.80	84.4	2170	TW M
30	1	2903	10' L	30	6.20	5.16	4.89	4.41	3.70	2.96	2.38	85.4	4838	TW M
31	1	3000	10' L	30	15.90	13.98	12.81	9.82	7.14	4.93	3.48	84.0	1887	
32	1	3101	10' L	30	16.50	14.82	13.69	10.60	7.90	5.47	3.75	81.4	1818	
33	1	3206	10' L	30	18.09	15.11	13.60	10.18	7.50	5.15	3.53	84.7	1658	
34	1	3303	10' L	30	18.29	15.61	14.18	10.65	7.67	5.27	3.66	83.4	1640	
35	1	3402	10' L	30	15.16	13.43	12.42	9.82	7.45	5.33	3.75	84.0	1979	
36	1	3501	10' L	30	19.26	16.87	15.27	11.63	8.36	5.71	4.15	84.4	1558	
37	1	3699	10' L	30	16.76	14.80	13.58	10.60	7.97	5.59	3.92	84.4	1790	
38	1	3700	10' L	30	17.96	15.92	14.45	11.01	7.89	5.41	3.75	85.4	1670	
39	1	3802	10' L	30	16.46	14.46	13.19	10.19	7.47	5.25	3.76	85.4	1823	
40	1	3900	10' L	30	17.32	15.15	13.78	10.55	7.66	5.40	3.84	84.7	1732	
41	1	4000	10' L	30	18.00	16.37	15.15	12.04	8.85	6.09	4.34	85.0	1666	
42	1	4102	10' L	30	17.52	15.67	14.37	11.01	8.18	5.80	4.19	85.4	1713	
43	1	4204	10' L	30	17.56	15.31	13.90	10.65	7.96	5.74	4.18	86.0	1709	
44	1	4306	10' L	30	14.09	12.55	11.60	9.25	7.08	5.14	3.72	85.7	2129	TW D3
45	1	4403	10' L	30	15.50	13.69	12.51	9.64	7.24	5.24	3.84	86.0	1935	
46	1	4501	10' L	30	15.45	13.73	12.62	9.95	7.48	5.40	3.91	86.7	1942	
47	1	4601	10' L	30	14.96	13.30	12.25	9.67	7.37	5.33	3.82	85.7	2006	
48	1	4701	10' L	30	16.90	14.78	13.60	10.84	7.87	5.55	4.01	86.0	1775	
49	1	4801	10' L	30	13.17	11.62	10.63	8.32	6.26	4.47	3.27	87.7	2278	
50	1	4900	10' L	30	6.96	6.65	6.36	5.69	4.93	4.12	3.36	86.7	4313	PCC/TW C
51	1	5005	10' L	30	10.66	9.61	8.97	7.52	5.95	4.59	3.49	86.4	2814	

Niagara Falls International Airport

NDT Field Data

Taxiway D

Air Temp. 62.21 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at RW 24 side														
52	1	5111	10' L	30	14.46	12.81	11.59	9.22	6.81	4.89	3.52	83.7	2075	
53	1	5208	10' L	30	15.18	12.34	11.19	8.51	6.16	4.39	3.08	85.7	1976	
54	1	5303	10' L	30	13.23	11.55	10.62	8.45	6.33	4.58	3.33	85.4	2268	
55	2	55	10' R	30	7.97	6.63	5.79	4.11	2.88	2.05	1.54	68.6	3763	
56	2	151	10' R	30	10.03	8.67	7.73	5.56	3.98	2.81	2.09	69.2	2992	
57	2	251	10' R	30	11.49	10.17	9.22	7.04	5.22	3.78	2.79	68.2	2611	
58	2	364	10' R	30	11.06	9.89	9.11	7.28	5.60	4.22	3.16	67.6	2711	
59	2	467	10' R	30	4.66	4.28	4.09	3.86	3.30	2.80	2.40	67.6	6432	PCC
60	2	545	10' R	30	4.04	3.78	3.62	3.32	2.93	2.50	2.08	68.6	7426	PCC
61	2	667	10' R	30	6.57	5.71	5.32	4.87	4.20	3.50	2.96	68.2	4564	
62	2	753	10' R	30	11.58	10.51	9.65	7.72	5.87	4.22	3.07	69.5	2591	
63	2	851	10' R	30	12.05	10.78	9.89	7.86	6.01	4.42	3.23	68.6	2489	
64	2	954	10' R	30	11.89	10.81	9.94	8.04	6.17	4.55	3.37	68.6	2523	
65	2	1052	10' R	30	6.08	5.14	4.87	4.53	4.02	3.39	2.85	69.2	4932	TW D1
66	2	1154	10' R	30	13.11	10.53	9.63	7.90	6.27	4.88	3.68	69.2	2288	TW D1
67	2	1251	10' R	30	4.87	4.30	4.05	3.90	3.42	2.99	2.50	69.9	6164	
68	2	1353	10' R	30	4.46	3.75	3.45	3.44	2.86	2.42	2.12	68.9	6723	
69	2	1449	10' R	30	4.70	4.24	4.04	4.04	3.61	3.07	2.81	70.2	6381	
70	2	1551	10' R	30	5.52	4.77	4.53	4.16	3.69	3.13	2.65	71.5	5431	
71	2	1652	10' R	30	8.33	6.91	6.36	5.43	4.51	3.71	2.99	70.5	3603	
72	2	1751	10' R	30	4.85	4.14	3.95	3.85	3.46	3.02	2.64	71.2	6189	
73	2	1850	10' R	30	5.60	4.47	4.12	3.67	3.19	2.65	2.28	71.2	5360	
74	2	1951	10' R	30	4.48	3.93	3.74	3.65	3.28	2.72	2.35	71.2	6698	
75	2	2051	10' R	30	4.60	3.90	3.70	3.42	3.06	2.63	2.23	71.9	6526	
76	2	2150	10' R	30	6.04	5.55	5.13	4.93	3.84	3.18	2.68	71.5	4970	
77	2	2252	10' R	30	5.47	4.65	4.39	4.07	3.63	3.09	2.56	72.5	5481	
78	2	2351	10' R	30	4.74	4.27	4.10	3.99	3.51	2.93	2.49	73.2	6332	CARGO
79	2	2449	10' R	30	5.44	4.77	4.53	4.21	3.77	3.29	2.83	72.5	5518	CARGO
80	2	2551	10' R	30	6.17	5.11	4.67	4.33	3.55	2.96	2.47	73.5	4862	
81	2	2653	10' R	30	4.65	3.99	3.79	3.65	3.07	2.61	2.23	73.8	6457	
82	2	2754	10' R	30	5.87	5.03	4.67	4.07	3.53	2.97	2.45	73.5	5113	
83	2	2852	10' R	30	4.78	4.41	4.15	3.97	3.32	2.68	2.15	74.5	6276	TW M
84	2	2950	10' R	30	10.42	9.76	9.08	7.77	6.15	4.62	3.54	74.2	2878	
85	2	3052	10' R	30	14.54	13.06	12.00	9.27	6.92	4.95	3.47	74.5	2063	
86	2	3152	10' R	30	13.72	12.73	11.76	9.44	7.16	5.19	3.73	75.1	2186	
87	2	3250	10' R	30	12.66	11.74	10.94	8.79	6.90	5.07	3.67	75.5	2370	
88	2	3353	10' R	30	16.20	14.84	13.72	10.68	8.00	5.72	4.05	75.5	1852	
89	2	3450	10' R	30	14.44	13.10	12.03	9.55	7.27	5.33	3.89	76.5	2078	
90	2	3551	10' R	30	12.48	11.58	10.75	8.78	6.94	5.22	3.91	75.5	2403	
91	2	3652	10' R	30	12.57	11.76	10.94	9.02	7.24	5.29	3.89	76.1	2387	
92	2	3753	10' R	30	12.67	11.75	10.87	8.82	6.80	4.98	3.63	77.1	2368	
93	2	3851	10' R	30	13.41	12.66	11.76	9.62	7.48	5.50	3.98	77.1	2238	
94	2	3951	10' R	30	13.08	12.14	11.23	9.16	7.16	5.43	4.06	76.8	2294	
95	2	4056	10' R	30	19.32	17.00	15.23	11.40	8.18	5.76	4.22	76.8	1552	
96	2	4156	10' R	30	12.92	11.72	10.88	8.74	6.92	5.22	3.89	76.1	2323	
97	2	4252	10' R	30	10.96	10.17	9.46	7.89	6.29	4.78	3.64	75.5	2737	
98	2	4352	10' R	30	12.81	11.76	10.88	8.81	6.95	5.20	3.93	76.5	2342	TW D3
99	2	4451	10' R	30	13.49	12.44	11.49	9.32	7.25	5.38	3.99	77.5	2224	
100	2	4552	10' R	30	13.69	12.33	11.37	9.19	7.07	5.17	3.79	77.1	2192	
101	2	4653	10' R	30	10.83	9.70	9.00	7.32	5.85	4.47	3.44	75.1	2769	
102	2	4752	10' R	30	15.05	13.57	12.41	9.65	7.08	4.83	3.33	76.5	1994	

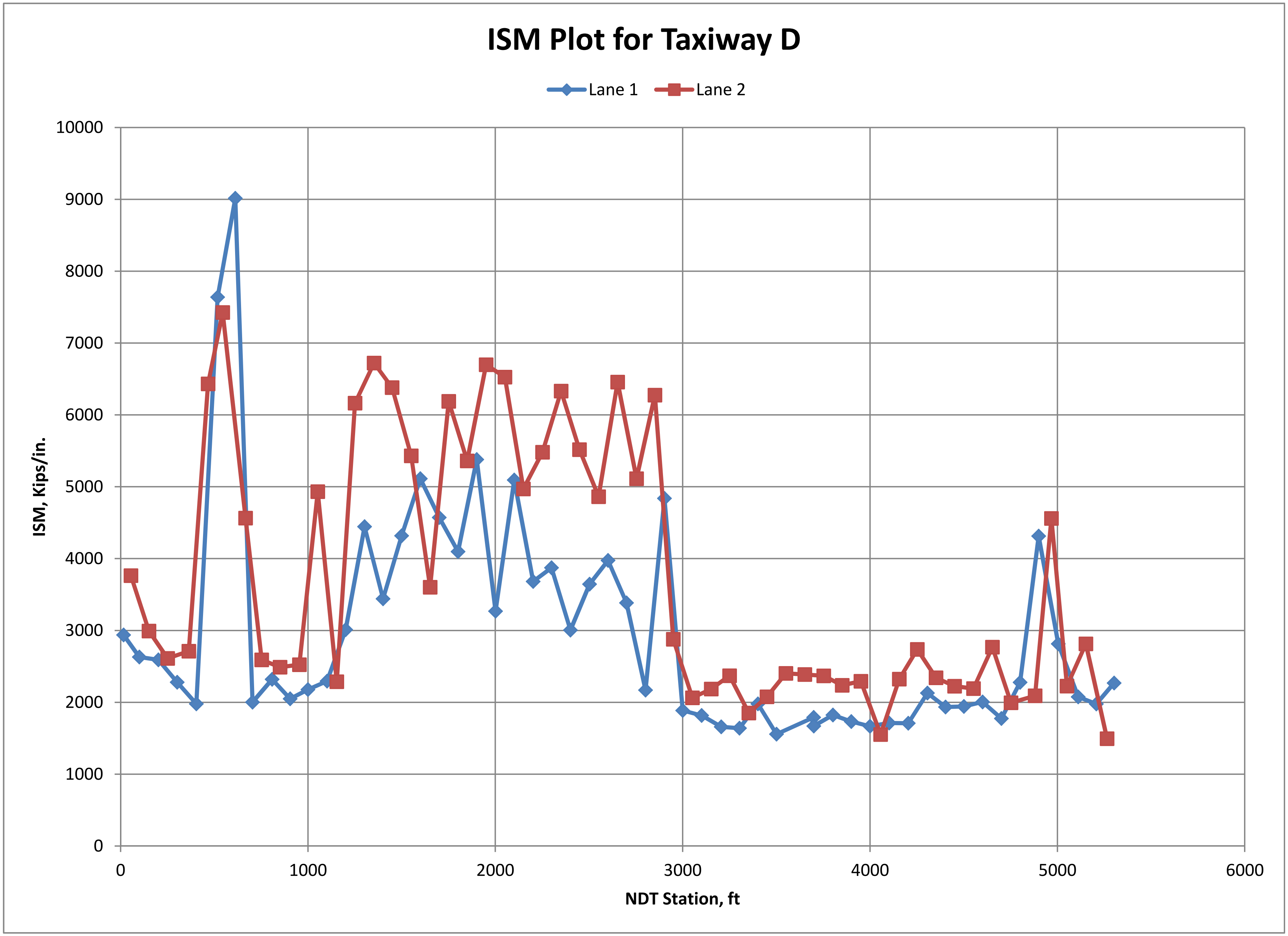
Niagara Falls International Airport

NDT Field Data

Taxiway D

Air Temp. 62.21 F

NDT No.	Lane No.	Station (ft)	Offset	Force (kip)	Displacement Sensors (mils) d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM kip/in	Remarks
0+00 at RW 24 side														
103	2	4881	10' R	30	14.35	12.72	11.66	10.36	9.14	7.84	3.25	77.1	2091	PCC/TW C
104	2	4968	10' R	30	6.58	6.35	6.03	5.49	4.72	3.98	3.27	76.5	4560	PCC/TW C
105	2	5051	10' R	30	13.48	12.19	11.18	9.00	6.65	4.75	3.51	77.8	2226	
106	2	5152	10' R	30	10.66	9.56	8.82	7.25	5.58	4.20	3.15	76.5	2814	
107	2	5265	10' R	30	20.07	16.77	14.79	10.53	7.57	5.25	3.67	77.1	1495	


ISM Plot for Taxiway D
Lane 1
Lane 2
ISM, Kips/in.
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
0
1000
2000
3000
4000
5000
6000
NDT Station, ft

Niagara Falls International Airport

NDT Field Data

Taxiway H

Air Temp. 45.13 F

NDT No.	Lane No.	Offset	Station (ft)	Force (kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM kip/in	Remarks
0+00 at TW D side														
1	1	6' L	12	20	3.88	3.79	3.62	3.43	2.98	2.52	2.11	79.1	5,157	
2	1	6' L	66	20	4.29	4.16	3.99	3.71	3.19	2.64	2.11	80.1	4,657	
3	1	6' L	141	20	4.20	4.13	3.96	3.67	3.22	2.73	2.27	81.1	4,759	
4	1	6' L	219	20	5.47	5.33	5.04	4.52	3.87	3.15	2.47	82.1	3,657	
6	1	6' L	270	20	4.08	3.90	3.74	3.53	3.10	2.66	2.24	84.1	4,906	
7	2	6' R	15	20	3.77	3.65	3.45	3.20	2.81	2.37	1.95	85.1	5,312	
8	2	6' R	36	20	4.11	4.00	3.79	3.42	2.96	2.47	2.05	86.1	4,865	
9	2	6' R	89	20	3.93	3.75	3.59	3.22	2.84	2.38	1.99	87.1	5,086	
10	2	6' R	162	20	4.88	4.65	4.40	3.98	3.41	2.81	2.30	88.1	4,095	
12	2	6' R	245	20	5.10	4.97	4.74	4.37	3.76	3.08	2.45	90.1	3,922	
13	2	6' R	297	20	4.58	4.48	4.27	4.04	3.57	3.07	2.65	91.1	4,366	
Joint Tests													**d3/d1**	
5	1	6' L	228	20	9.68	7.39	6.70	5.34	4.10	3.04	2.25	83.1	0.69	
11	2	6' R	177	20	11.12	9.75	8.91	7.14	5.31	3.84	2.77	89.1	0.80	
												Average	**0.75**	

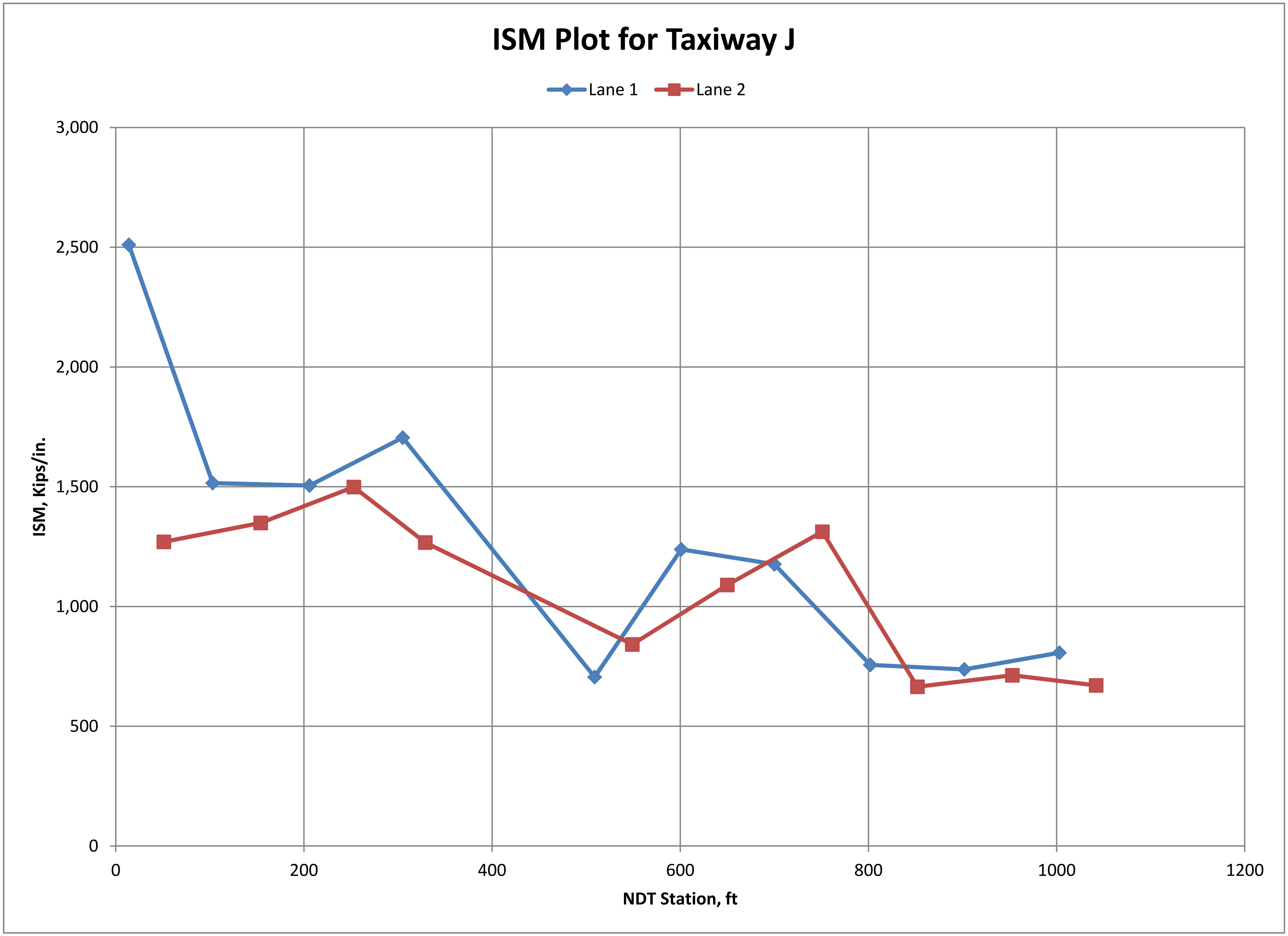
Niagara Falls International Airport

NDT Field Data

Taxiway J

Air Temp. 45.13 F

NDT No.	Lane No.	Station (ft)	Offset	Force (kip)	Displacement Sensors (mils) d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Pvmnt Temp (F)	ISM kip/in	Remarks
0+00 at TW C side														
1	1	14	6' L	20	7.97	6.77	5.87	4.32	3.35	2.64	2.16	74.8	2,510	
2	1	103	6' L	20	13.20	11.84	10.62	7.74	5.53	3.92	2.94	75.1	1,515	
3	1	206	6' L	20	13.29	11.97	10.67	7.79	5.53	3.90	2.97	76.8	1,505	
4	1	305	6' L	20	11.73	10.56	9.46	7.05	5.21	3.75	2.76	76.8	1,705	
5	1	509	6' L	20	28.35	22.23	18.82	11.72	7.18	4.61	3.56	77.1	705	
6	1	601	6' L	20	16.15	14.27	12.65	9.09	6.32	4.35	3.13	77.5	1,239	
7	1	700	6' L	20	17.00	15.25	13.61	9.88	6.77	4.49	3.14	77.8	1,177	
8	1	802	6' L	20	26.44	22.58	19.45	12.56	7.86	4.92	3.64	76.8	756	
9	1	902	6' L	20	27.13	22.86	19.71	12.55	7.55	4.61	3.55	78.1	737	
10	1	1003	6' L	20	24.78	20.83	17.98	11.62	7.10	4.37	3.24	78.1	807	
11	2	51	6' R	20	15.75	14.02	12.40	8.95	6.12	4.17	3.12	72.8	1,270	
12	2	154	6' R	20	14.82	13.11	11.58	8.37	5.78	4.08	3.12	73.5	1,349	
13	2	253	6' R	20	13.34	11.87	10.63	7.69	5.51	3.86	2.90	75.5	1,499	
14	2	329	6' R	20	15.78	13.70	12.07	8.51	5.84	3.96	2.88	75.5	1,267	
15	2	549	6' R	20	23.76	20.06	17.25	11.21	7.06	4.54	3.50	75.5	842	
16	2	650	6' R	20	18.35	15.10	13.05	8.94	6.08	4.12	3.00	77.1	1,090	
17	2	751	6' R	20	15.24	13.52	11.91	8.50	5.94	4.09	2.93	76.1	1,313	
18	2	852	6' R	20	30.07	24.34	20.51	12.37	7.18	4.50	3.65	76.5	665	
19	2	953	6' R	20	28.06	24.33	20.85	13.01	7.54	4.56	3.11	77.1	713	
20	2	1042	6' R	20	29.81	24.52	20.58	12.60	7.38	4.49	2.99	77.8	671	


ISM Plot for Taxiway J
Lane 1
Lane 2
3,000
2,500
2,000
1,500
1,000
500
0
ISM, Kips/in.
0
200
400
600
800
1000
1200
NDT Station, ft

Niagara Falls International Airport

NDT Field Data

Taxiway K

Air Temp. 38.65 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at RW 10L-28R														
1	1	201	6' L	30	11.87	10.04	9.30	7.72	6.02	4.51	3.30	64.3	2,526	APC
2	1	315	6' L	30	5.99	5.72	5.48	4.81	4.08	3.30	2.57	67.6	5,012	
3	1	416	6' L	30	6.45	6.22	5.93	5.41	4.51	3.58	2.86	67.2	4,652	
4	1	517	6' L	30	5.77	5.67	5.42	5.02	4.28	3.59	2.88	67.6	5,202	
6	1	619	6' L	30	6.06	5.85	5.62	5.07	4.47	3.74	3.05	69.5	4,947	
7	1	720	6' L	30	5.80	5.57	5.32	4.79	4.12	3.43	2.75	69.9	5,169	
8	1	794	6' L	30	6.73	6.49	6.22	5.65	4.88	4.08	3.35	69.9	4,460	
9	1	925	6' L	30	8.17	7.77	7.39	6.54	5.63	4.55	3.50	72.8	3,673	
10	1	1013	6' L	30	4.35	4.15	3.99	3.81	3.34	2.84	2.39	72.8	6,904	
12	1	1104	6' L	30	6.84	6.65	6.37	5.84	5.17	4.45	3.85	72.2	4,387	
13	1	1210	6' L	30	6.99	6.79	6.56	6.04	5.34	4.47	3.64	71.5	4,291	
14	1	1301	6' L	30	6.73	6.58	6.35	5.99	5.55	5.11	4.88	73.2	4,460	
15	1	1406	6' L	30	6.25	6.08	5.85	5.48	5.06	4.60	4.31	73.2	4,800	
16	1	1510	6' L	30	7.27	7.01	6.68	5.86	4.99	3.98	3.11	71.9	4,124	
18	1	1603	6' L	30	6.03	5.86	5.62	5.28	4.80	4.35	2.68	72.8	4,973	
19	1	1709	6' L	30	7.60	7.52	7.22	6.84	6.34	5.76	5.24	73.2	3,947	
20	1	1800	6' L	30	7.63	7.36	7.08	6.40	5.62	4.87	4.36	72.5	3,934	
21	1	1909	6' L	30	6.17	6.05	5.80	5.51	4.97	4.33	3.68	71.5	4,864	
24	1	2118	6' L	30	7.69	7.50	7.23	6.65	5.84	4.85	3.85	74.2	3,904	
25	1	2209	6' L	30	7.20	7.06	6.82	6.58	6.01	5.54	5.31	73.5	4,166	
26	1	2300	6' L	30	7.35	7.25	6.98	6.54	6.05	5.51	5.13	74.5	4,084	
27	1	2404	6' L	30	6.67	6.55	6.34	6.12	5.77	5.30	4.83	72.8	4,501	
28	1	2535	6' L	30	6.72	6.44	6.16	5.55	4.78	3.95	3.11	71.5	4,466	
29	1	2612	6' L	30	7.98	7.65	7.32	6.75	5.82	4.98	4.27	71.2	3,759	
30	1	2703	6' L	30	6.04	5.78	5.49	4.85	4.15	3.32	2.54	70.5	4,965	
31	1	2825	6' L	30	6.71	6.56	6.26	5.55	4.75	3.83	2.98	69.2	4,472	
32	1	2916	6' L	30	7.92	7.66	7.31	6.51	5.53	4.40	3.32	68.2	3,786	
33	1	3008	6' L	30	6.37	6.06	5.79	5.19	4.37	3.55	2.88	66.9	4,707	
35	2	268	6' R	30	6.94	6.70	6.44	5.94	4.92	3.91	3.10	64.3	4,325	
42	3	316	6' R	30	7.59	7.38	7.10	6.48	5.68	4.74	3.91	64.9	3,951	
36	2	341	6' R	30	7.47	7.27	7.04	6.36	5.51	4.57	3.78	65.6	4,014	
43	3	415	6' R	30	6.19	5.97	5.73	5.12	4.41	3.67	2.95	65.3	4,846	
38	2	469	6' R	30	6.71	6.49	6.38	6.00	5.09	4.07	3.31	68.2	4,470	
44	3	518	6' R	30	5.88	5.62	5.43	4.97	4.26	3.51	2.83	66.9	5,104	
39	2	545	6' R	30	6.07	5.84	5.62	5.20	4.50	3.70	3.00	68.2	4,945	
46	3	615	6' R	30	5.63	5.36	5.13	4.64	3.98	3.32	2.70	66.6	5,327	
40	2	693	6' R	30	7.52	7.33	7.02	6.38	5.67	4.73	3.87	68.2	3,989	
47	3	720	6' R	30	5.40	5.14	4.89	4.29	3.60	2.89	2.27	66.9	5,552	
41	2	766	6' R	30	8.37	8.17	7.87	7.30	6.53	5.60	4.68	67.2	3,586	
48	2	873	6' R	30	7.60	7.24	6.89	6.23	5.29	4.33	3.38	67.6	3,947	
49	2	955	6' R	30	5.24	5.07	4.87	4.58	4.27	3.89	3.60	67.9	5,725	
50	2	1047	6' R	30	5.99	5.89	5.69	5.52	5.28	4.96	4.68	67.6	5,005	
51	2	1152	6' R	30	5.15	4.95	4.78	4.43	4.03	3.48	3.05	67.9	5,826	
52	2	1257	6' R	30	4.89	4.65	4.50	4.17	3.77	3.27	2.83	67.6	6,130	
53	2	1352	6' R	30	5.21	5.01	4.83	4.53	4.18	3.71	3.28	70.2	5,757	
54	2	1456	6' R	30	5.41	5.24	5.04	4.69	4.28	3.70	3.09	69.2	5,549	
56	2	1547	6' R	30	5.28	5.12	4.94	4.63	4.23	3.79	3.39	69.9	5,684	
57	2	1653	6' R	30	4.97	4.83	4.63	4.35	4.03	3.66	3.34	69.5	6,038	
58	2	1759	6' R	30	5.43	5.38	5.21	5.08	4.99	4.73	4.49	69.2	5,529	
60	2	1851	6' R	30	5.18	5.03	4.90	4.77	4.61	4.36	4.17	70.9	5,788	
61	2	1945	6' R	30	5.86	5.69	5.48	5.12	4.77	4.30	3.90	69.9	5,117	

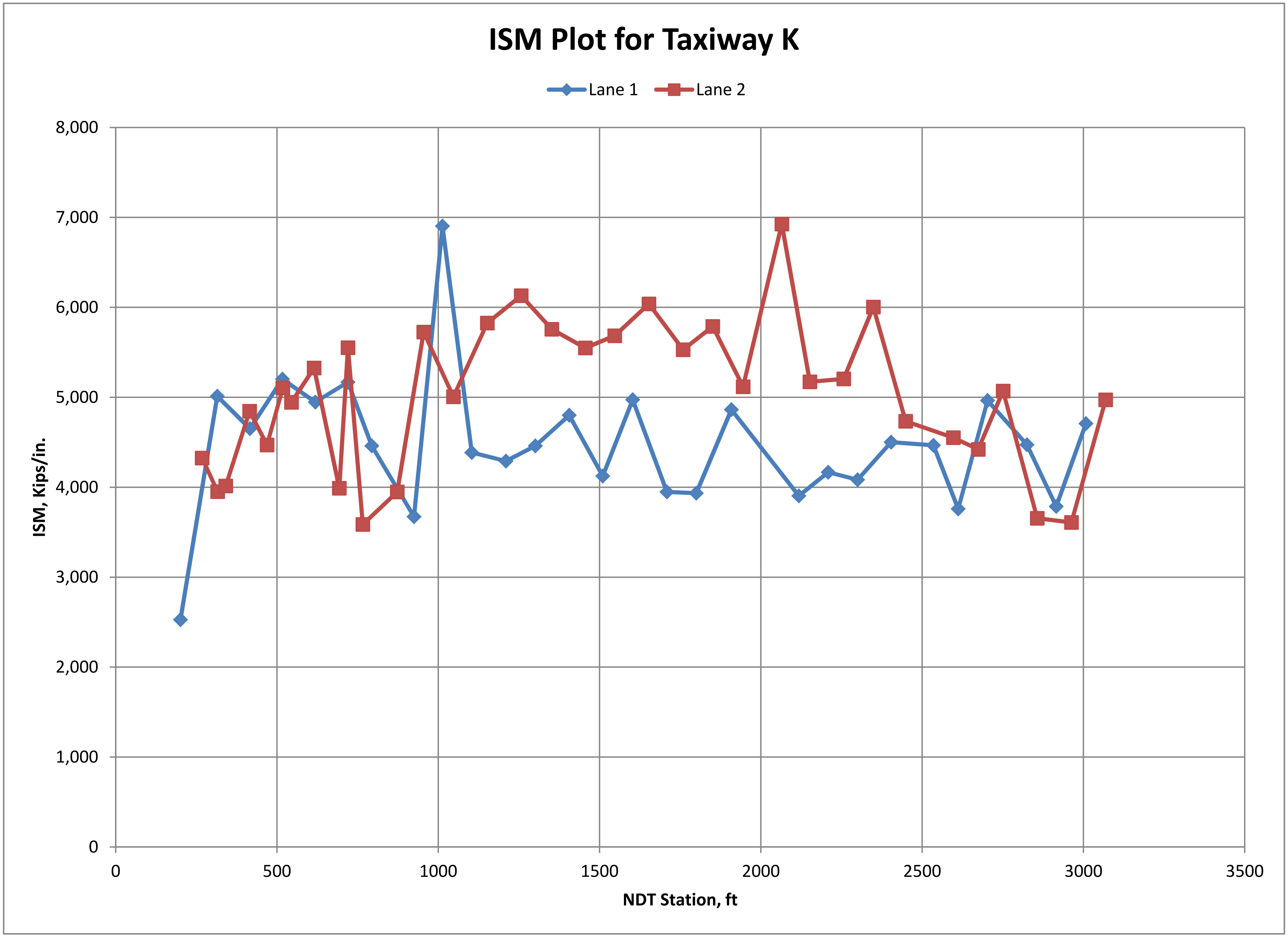
Niagara Falls International Airport

NDT Field Data

Taxiway K

Air Temp. 38.65 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at RW 10L-28R														
62	2	2065	6' R	30	4.33	4.14	3.99	3.86	3.48	3.08	2.66	70.2	6,927	
63	2	2152	6' R	30	5.80	5.78	5.58	5.38	5.26	5.05	4.85	69.9	5,172	
64	2	2257	6' R	30	5.76	5.66	5.49	5.31	4.96	4.47	4.00	70.5	5,204	
66	2	2349	6' R	30	5.00	4.81	4.64	4.32	3.89	3.28	2.75	70.2	6,004	
67	2	2449	6' R	30	6.34	5.91	5.63	4.96	4.24	3.40	2.65	70.2	4,734	
69	2	2597	6' R	30	6.59	6.32	6.09	5.49	4.74	3.90	3.11	68.6	4,551	
70	2	2674	6' R	30	6.79	6.50	6.25	5.61	4.98	4.25	3.64	67.2	4,421	
71	2	2751	6' R	30	5.92	5.68	5.42	4.88	4.35	3.79	3.39	67.6	5,069	
73	2	2857	6' R	30	8.21	7.98	7.66	6.75	5.65	4.38	3.17	66.6	3,655	
74	2	2963	6' R	30	8.31	8.05	7.72	6.92	5.92	4.80	3.70	65.9	3,609	
75	2	3069	6' R	30	6.03	5.75	5.48	4.90	4.17	3.38	2.59	65.6	4,972	
Joint Tests													**d3/d1**	
5	1	527	6' L	30	10.30	9.13	8.47	6.89	5.55	4.22	3.21	68.9	0.82	
11	1	1021	6' L	30	9.58	5.78	5.44	4.55	3.70	2.92	2.24	73.2	0.57	
17	1	1521	6' L	30	17.53	12.99	11.94	9.69	7.69	5.98	4.58	73.5	0.68	
23	1	2054	6' L	30	11.52	7.10	6.61	5.99	4.62	3.64	2.88	74.2	0.57	
34	1	3018	6' L	30	13.69	12.00	10.95	8.88	6.89	4.93	3.50	68.2	0.80	
37	2	352	6' R	30	22.56	16.44	15.21	12.53	9.64	7.15	5.20	66.6	0.67	
45	3	528	6' R	30	11.25	9.32	8.57	7.09	5.44	4.06	2.94	66.2	0.76	
55	2	1464	6' R	30	12.94	8.05	7.60	6.49	5.11	4.01	3.08	70.2	0.59	
59	2	1767	6' R	30	13.12	7.05	6.57	5.71	4.79	3.90	3.18	71.2	0.50	
65	2	2265	6' R	30	11.81	10.84	7.07	6.24	5.43	4.57	3.79	70.9	0.60	
72	2	2760	6' R	30	12.43	10.96	10.10	8.13	6.48	4.88	3.73	67.6	0.81	


ISM Plot for Taxiway K
Lane 1
Lane 2
ISM, Kips/in.
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
0
500
1000
1500
2000
2500
3000
3500
NDT Station, ft

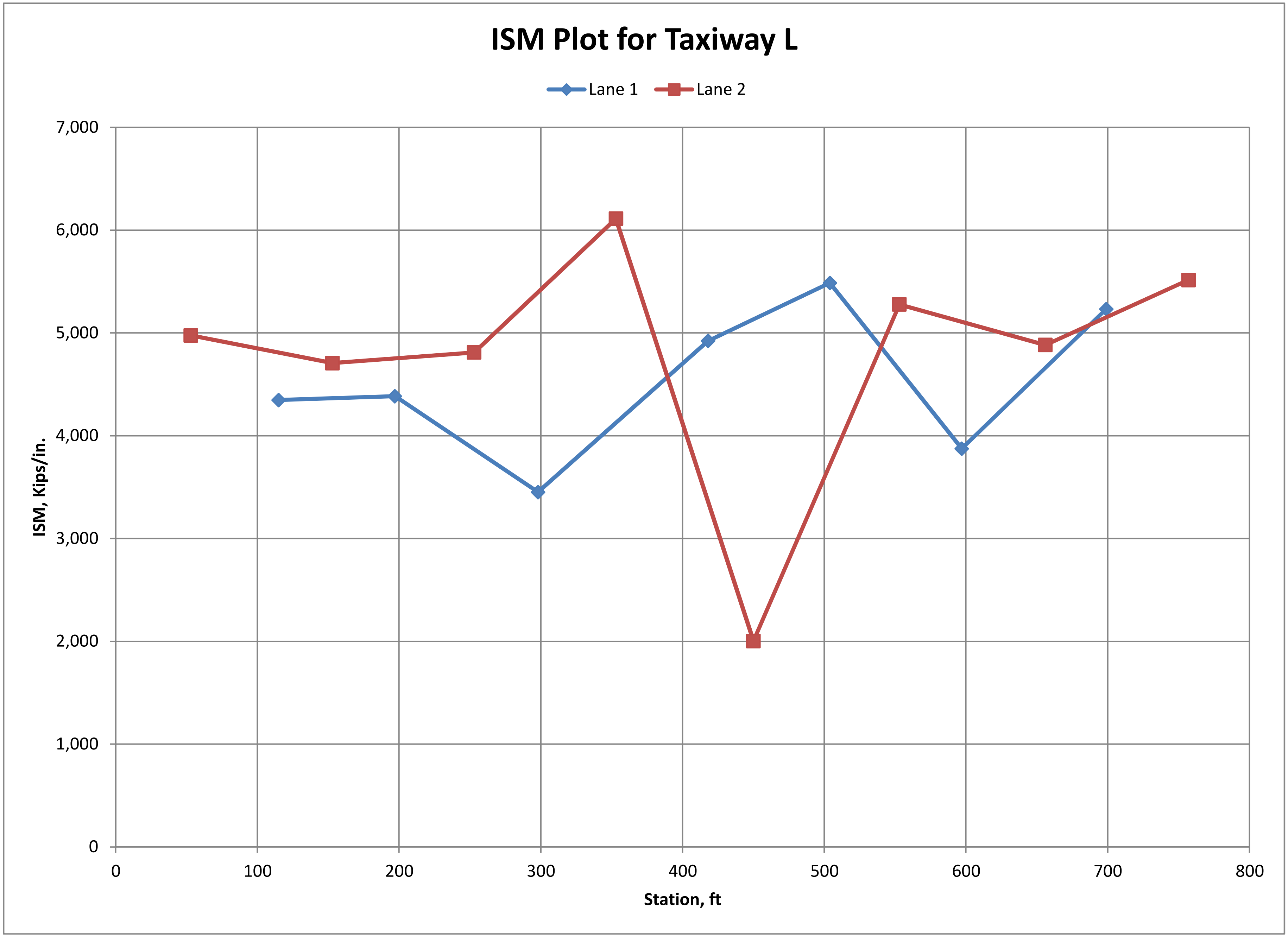
Niagara Falls International Airport

NDT Field Data

Taxiway L

Air Temp. 45.43 F

NDT	Lane	Station	Offset	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.	(ft)		(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
0+00 at RW 28L side														
1	1	115	10' L	20	4.60	4.44	4.25	3.89	3.45	2.87	2.34	78.4	4,348	PCC
2	1	197	10' L	20	4.56	4.44	4.27	3.93	3.51	3.02	2.51	77.8	4,384	PCC
3	1	298	10' L	20	5.79	5.25	4.90	4.39	3.74	3.02	2.36	78.1	3,452	AC
4	1	418	10' L	20	4.06	3.64	3.44	3.12	2.74	2.34	1.96	79.8	4,923	AC
5	1	504	10' L	20	3.65	3.10	2.87	2.69	2.43	2.11	1.79	80.1	5,487	AC
6	1	597	10' L	20	5.16	4.09	3.78	3.65	3.23	2.72	2.17	79.4	3,875	AC
7	1	699	8' L	20	3.82	3.71	3.52	3.27	2.86	2.40	1.99	80.1	5,231	PCC
9	2	53	16' R	20	4.02	3.91	3.74	3.53	3.11	2.62	2.17	76.1	4,976	PCC
10	2	153	16' R	20	4.25	4.10	3.88	3.55	3.09	2.64	2.17	77.8	4,707	PCC
11	2	253	16' R	20	4.16	4.00	3.81	3.52	3.07	2.56	1.72	81.1	4,811	PCC
13	2	353	16' R	20	3.27	2.94	2.83	2.73	2.60	2.32	1.96	81.1	6,112	AC
14	2	450	16' R	20	9.99	9.38	8.51	7.14	5.80	4.81	3.76	82.4	2,003	AC
15	2	553	16' R	20	3.79	3.11	2.86	2.57	2.27	1.94	1.16	82.1	5,277	AC
16	2	656	7' R	20	4.10	3.91	3.72	3.39	2.97	2.49	2.09	83.1	4,883	PCC
17	2	757	7' R	20	3.63	3.45	3.26	2.99	2.53	2.17	1.80	82.1	5,515	PCC
PCC Joint Tests													**d3/d1**	
8	1	708	10' L	20	10.51	4.53	4.15	3.36	2.71	2.09	1.53	80.4	0.39	
12	2	261	16' R	20	9.75	2.63	2.44	2.19	1.90	1.61	1.39	81.7	0.25	
												Average	**0.32**	


ISM Plot for Taxiway L
Lane 1
Lane 2
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
ISM, Kips/in.
0
100
200
300
400
500
600
700
800
Station, ft

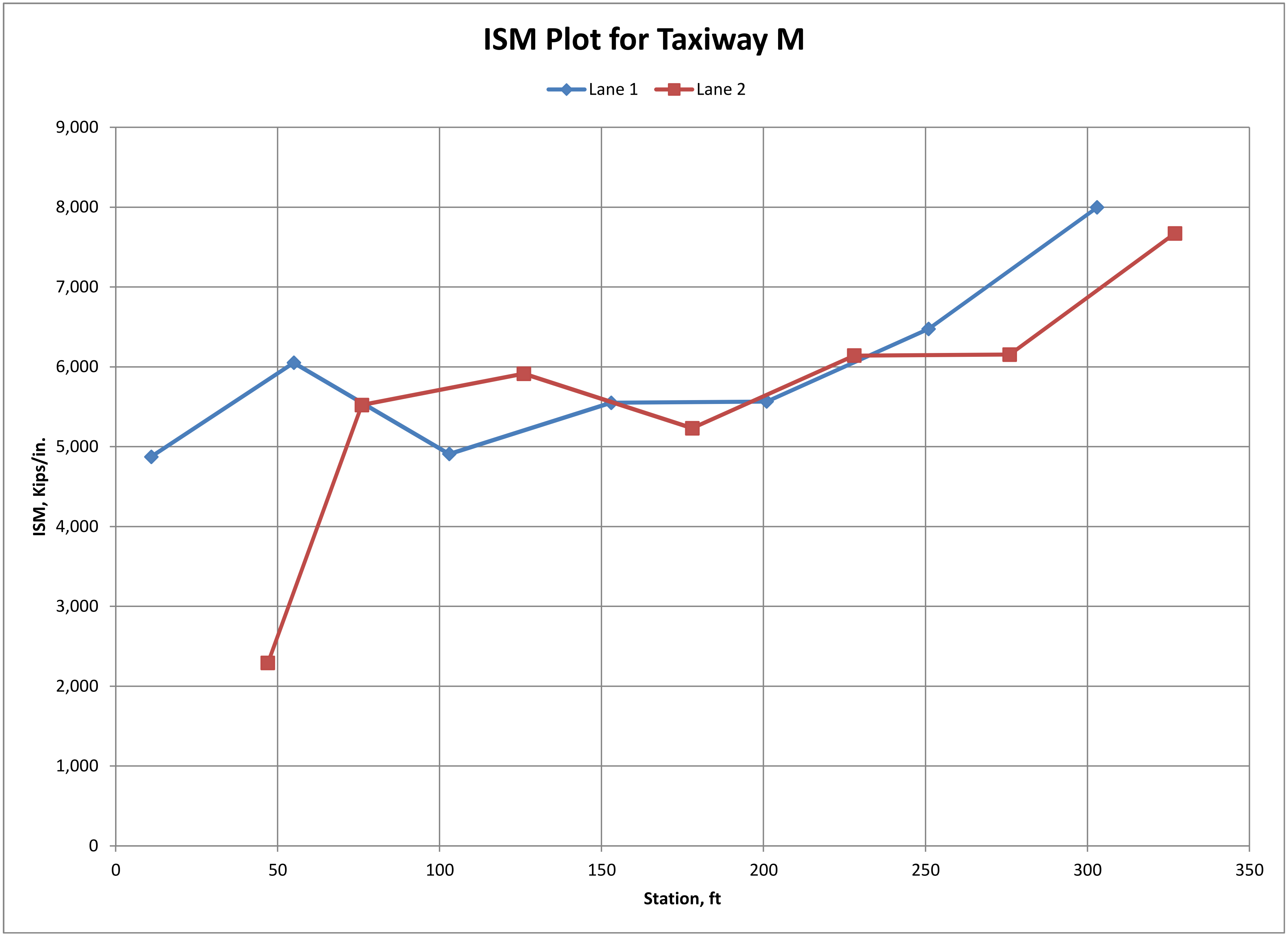
Niagara Falls International Airport

NDT Field Data

Taxiway M

Air Temp. 43.66 F

NDT	Lane	Offset	Station	Force	Displacement Sensors (mils)							Pvmnt	ISM	
No.	No.		(ft)	(kip)	d1 (0)	d2 (8")	d3 (12")	d4 (24")	d5 (36")	d6 (48")	d7 (60")	Temp (F)	kip/in	Remarks
1	1	17' L	11	30	6.15	5.91	5.73	5.14	4.54	3.77	3.08	79.1	4,874	PCC
2	1	17' L	55	30	4.96	4.73	4.55	4.13	3.69	3.08	2.62	80.7	6,051	PCC
3	1	17' L	103	30	6.11	5.85	5.67	5.17	4.70	4.06	3.61	81.1	4,909	PCC
4	1	17' L	153	30	5.40	5.13	4.91	4.49	3.95	3.31	2.76	81.7	5,551	PCC
6	1	17' L	201	30	5.39	5.11	4.89	4.45	3.87	3.26	2.71	83.7	5,566	PCC
7	1	17' L	251	30	4.63	4.33	4.11	3.63	3.10	2.60	2.12	84.4	6,476	PCC
8	1	17' L	303	30	3.75	3.20	3.06	2.89	2.56	2.16	1.83	86.4	7,997	AC
9	2	17' R	47	30	13.09	12.62	12.13	11.47	9.47	7.88	6.34	86.0	2,291	PCC
10	2	17' R	76	30	5.43	5.28	5.07	4.87	4.25	3.67	3.06	88.0	5,523	PCC CRACK
11	2	17' R	126	30	5.07	4.88	4.65	4.23	3.76	3.17	2.64	89.3	5,915	PCC
12	2	17' R	178	30	5.73	5.48	5.21	4.65	4.06	3.32	2.74	90.0	5,232	PCC
13	2	17' R	228	30	4.89	4.73	4.50	4.12	3.64	3.03	2.52	90.0	6,141	PCC
15	2	17' R	276	30	4.88	4.45	4.23	3.86	3.45	2.93	2.48	89.3	6,154	AC
16	2	17' R	327	30	3.91	3.33	3.20	2.99	2.69	2.29	1.97	90.0	7,671	AC
Joint Tests													**d3/d1**	
5	1	17' L	163	30	13.41	4.43	4.10	3.52	2.32	1.94	1.58	83.4	0.31	
14	2	17' R	239	30	12.53	3.65	3.46	2.90	2.42	2.09	1.84	90.6	0.28	
												Average	**0.29**	


ISM Plot for Taxiway M
Lane 1
Lane 2
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
ISM, Kips/in.
0
50
100
150
200
250
300
350
Station, ft

APPENDIX C

DESIGN OUTPUT

FAARFIELD - Airport Pavement Design (V 1.305, 9/28/10 64-bit)

Section Cargo-Re in Job 1231-NFIA. PMS Section CONDA-01
Working directory is C:\Program Files (x86)\FAA\FAARFIELD\

The structure is New Flexible.
Design Life = 20 years.
A design has not been completed for this section.

Pavement Structure Information by Layer, Top First

No.	Type	Thickness in	Modulus psi	Poisson's Ratio	Strength R,psi
1	P-401/ P-403 HMA Surface	6.60	200,000	0.35	0
2	P-401/ P-403 St (flex)	6.50	400,000	0.35	0
3	Undefined	7.50	150,000	0.35	0
4	Subgrade	0.00	13,200	0.35	0

Total thickness to the top of the subgrade = 20.60 in

Airplane Information

No.	Name	Gross Wt. lbs	Annual Departures	% Annual Growth
1	A320-200 Twin std	163,000	31	0.00
2	B757-200	256,000	31	0.00
3	B747-8 Freighter (Preliminary)	978,000	226	0.00

Additional Airplane Information

Subgrade CDF

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	A320-200 Twin std	0.00	0.00	1.43
2	B757-200	0.00	0.00	0.72
3	B747-8 Freighter (Preliminary)	1.00	1.00	0.75

FAARFIELD - Airport Pavement Design (V 1.305, 9/28/10 64-bit)

Section Cargo-Re2 in Job 1231-NFIA.PMS Section CONDA-01 PCC reconstruction
Working directory is C:\Program Files (x86)\FAA\FAARFIELD\

The structure is New Rigid.
Design Life = 20 years.
A design for this section was completed on 12/13/13 at 11:31:34.

Pavement Structure Information by Layer, Top First

No.	Type	Thickness in	Modulus psi	Poisson's Ratio	Strength R,psi
1	PCC Surface	13.79	4,000,000	0.15	685
2	P-401/ P-403 St (flex)	6.50	400,000	0.35	0
3	Undefined	7.50	150,000	0.35	0
4	Subgrade	0.00	16,184	0.40	0

Total thickness to the top of the subgrade = 27.79 in

Airplane Information

No.	Name	Gross Wt. lbs	Annual Departures	% Annual Growth
1	A320-200 Twin std	163,000	31	0.00
2	B757-200	256,000	31	0.00
3	B747-8 Freighter (Preliminary)	978,000	226	0.00

Additional Airplane Information

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	A320-200 Twin std	0.00	0.01	3.70
2	B757-200	0.00	0.00	3.90
3	B747-8 Freighter (Preliminary)	1.00	1.00	3.56

FAARFIELD - Airport Pavement Design (V 1.305, 9/28/10 64-bit)

Section Apron-Re in Job 1231-NFIA.
Working directory is C:\Program Files (x86)\FAA\FAARFIELD\

The structure is New Rigid.
Design Life = 20 years.
A design for this section was completed on 12/13/13 at 11:42:45.

Pavement Structure Information by Layer, Top First

No.	Type	Thickness in	Modulus psi	Poisson's Ratio	Strength R,psi
1	PCC Surface	13.67	4,000,000	0.15	685
2	P-401/ P-403 St (flex)	6.00	400,000	0.35	0
3	P-209 Cr Ag	12.00	52,227	0.35	0
4	Subgrade	0.00	17,160	0.40	0

Total thickness to the top of the subgrade = 31.67 in

Airplane Information

No.	Name	Gross Wt. lbs	Annual Departures	% Annual Growth
1	A320-200 Twin std	163,000	2,332	0.00
2	B757-200	256,000	63	0.00
3	B767-300	361,000	226	0.00

Additional Airplane Information

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	A320-200 Twin std	0.99	0.99	3.70
2	B757-200	0.00	0.00	3.90
3	B767-300	0.01	0.02	3.69

FAARFIELD - Airport Pavement Design (V 1.305, 9/28/10 64-bit)

Section GA-Re in Job 1231-NFIA.
Working directory is C:\Program Files (x86)\FAA\FAARFIELD\

The structure is AC Overlay on Flexible. Asphalt CDF was not computed.
Design Life = 20 years.
A design for this section was completed on 12/13/13 at 11:46:59.

Pavement Structure Information by Layer, Top First

No.	Type	Thickness in	Modulus psi	Poisson's Ratio	Strength R,psi
1	P-401/ P-403 HMA Overlay	2.56	200,000	0.35	0
2	P-401/ P-403 HMA Surface	4.60	200,000	0.35	0
3	P-209 Cr Ag	9.00	30,014	0.35	0
4	Subgrade	0.00	9,900	0.35	0

Total thickness to the top of the subgrade = 16.16 in

Airplane Information

No.	Name	Gross Wt. lbs	Annual Departures	% Annual Growth
1	DC9-32	90,700	97	0.00
2	Gulfstream-G-II	39,600	97	0.00
3	Dual Whl-30	26,430	292	0.00
4	Learjet-55	20,000	487	0.00
5	Citation-V	18,000	877	0.00
6	SuperKingAir-B200	15,000	1,754	0.00
7	Citation-525	10,000	975	0.00
8	Chk.Six-PA-32	3,750	6,433	0.00

Additional Airplane Information

Subgrade CDF

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	DC9-32	1.00	1.00	1.64
2	Gulfstream-G-II	0.00	0.00	2.02
3	Dual Whl-30	0.00	0.00	2.37
4	Learjet-55	0.00	0.00	2.43
5	Citation-V	0.00	0.00	3.38
6	SuperKingAir-B200	0.00	0.00	2.46
7	Citation-525	0.00	0.00	3.46
8	Chk.Six-PA-32	0.00	0.00	3.67

FAARFIELD - Airport Pavement Design (V 1.305, 9/28/10 64-bit)

Section GA-Re2 in Job 1231-NFIA.
Working directory is C:\Program Files (x86)\FAA\FAARFIELD\

The structure is New Rigid.
Design Life = 20 years.
A design for this section was completed on 12/13/13 at 11:53:29.

Pavement Structure Information by Layer, Top First

No.	Type	Thickness in	Modulus psi	Poisson's Ratio	Strength R,psi
1	PCC Surface	9.16	4,000,000	0.15	685
2	P-209 Cr Ag	12.00	43,608	0.35	0
3	Subgrade	0.00	12,152	0.40	0

Total thickness to the top of the subgrade = 21.16 in

Airplane Information

No.	Name	Gross Wt. lbs	Annual Departures	% Annual Growth
1	DC9-32	90,700	97	0.00
2	Gulfstream-G-II	39,600	97	0.00
3	Dual Whl-30	26,430	292	0.00
4	Learjet-55	20,000	487	0.00
5	Citation-V	18,000	877	0.00
6	SuperKingAir-B200	15,000	1,754	0.00
7	Citation-525	10,000	975	0.00
8	Chk.Six-PA-32	3,750	6,433	0.00

Additional Airplane Information

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	DC9-32	1.00	1.00	3.65
2	Gulfstream-G-II	0.00	0.00	4.49
3	Dual Whl-30	0.00	0.00	6.42
4	Learjet-55	0.00	0.00	8.61
5	Citation-V	0.00	0.00	5.52
6	SuperKingAir-B200	0.00	0.00	7.93
7	Citation-525	0.00	0.00	6.00
8	Chk.Six-PA-32	0.00	0.00	7.53

FAARFIELD - Airport Pavement Design (V 1.305, 9/28/10 64-bit)

Section WestRamp-Re in Job 1231-NFIA.West Ramp Sections AC replacement for existing PCC
Working directory is C:\Program Files (x86)\FAA\FAARFIELD\

The structure is New Flexible.
Design Life = 20 years.
A design has not been completed for this section.

Pavement Structure Information by Layer, Top First

No.	Type	Thickness in	Modulus psi	Poisson's Ratio	Strength R,psi
1	P-401/ P-403 HMA Surface	6.50	200,000	0.35	0
2	P-209 Cr Ag	12.00	38,972	0.35	0
3	Subgrade	0.00	9,900	0.35	0

Total thickness to the top of the subgrade = 18.50 in

Airplane Information

No.	Name	Gross Wt. lbs	Annual Departures	% Annual Growth
1	DC9-32	90,700	97	0.00
2	Gulfstream-G-II	39,600	97	0.00
3	Dual Whl-30	26,430	292	0.00
4	Learjet-55	20,000	487	0.00
5	Citation-V	18,000	877	0.00
6	SuperKingAir-B200	15,000	1,754	0.00
7	Citation-525	10,000	975	0.00
8	Chk.Six-PA-32	3,750	6,433	0.00

Additional Airplane Information

Subgrade CDF

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	DC9-32	0.30	0.30	1.59
2	Gulfstream-G-II	0.00	0.00	1.92
3	Dual Whl-30	0.00	0.00	2.23
4	Learjet-55	0.00	0.00	2.28
5	Citation-V	0.00	0.00	3.09
6	SuperKingAir-B200	0.00	0.00	2.31
7	Citation-525	0.00	0.00	3.15
8	Chk.Six-PA-32	0.00	0.00	3.32

FAARFIELD - Airport Pavement Design (V 1.305, 9/28/10 64-bit)

Section OVR2801B-SR in Job 1231-NFIA.
Working directory is C:\Program Files (x86)\FAA\FAARFIELD\

The structure is New Flexible. Asphalt CDF was not computed.
Design Life = 20 years.
A design for this section was completed on 09/04/13 at 11:21:40.

Pavement Structure Information by Layer, Top First

No.	Type	Thickness in	Modulus psi	Poisson's Ratio	Strength R,psi
1	P-401/ P-403 HMA Surface	5.00	200,000	0.35	0
2	P-401/ P-403 St (flex)	7.65	400,000	0.35	0
3	P-154 UnCr Ag	14.00	21,777	0.35	0
4	Subgrade	0.00	9,750	0.35	0

Total thickness to the top of the subgrade = 26.65 in

Airplane Information

No.	Name	Gross Wt. lbs	Annual Departures	% Annual Growth
1	C-130	155,000	8,049	0.00
2	DC9-32	90,700	97	0.00
3	Gulfstream-G-II	39,600	97	0.00
4	Dual Whl-30	26,430	292	0.00
5	Learjet-55	20,000	487	0.00
6	Citation-V	18,000	877	0.00
7	SuperKingAir-B200	15,000	1,754	0.00
8	Citation-525	10,000	975	0.00
9	Chk.Six-PA-32	3,750	6,433	0.00
10	A320-200 Twin std	163,000	2,332	0.00
11	B757-200	256,000	63	0.00
12	B767-300	361,000	195	0.00

Additional Airplane Information

Subgrade CDF

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	C-130	0.00	0.05	0.96
2	DC9-32	0.00	0.00	1.44
3	Gulfstream-G-II	0.00	0.00	1.67
4	Dual Whl-30	0.00	0.00	1.88
5	Learjet-55	0.00	0.00	1.90
6	Citation-V	0.00	0.00	2.39
7	SuperKingAir-B200	0.00	0.00	1.92
8	Citation-525	0.00	0.00	2.42
9	Chk.Six-PA-32	0.00	0.00	2.51
10	A320-200 Twin std	0.63	0.65	1.27
11	B757-200	0.04	0.04	0.66
12	B767-300	0.33	0.45	0.65

FAARFIELD - Airport Pavement Design (V 1.305, 9/28/10 64-bit)

Section OVR2801B-S3 in Job 1231-NFIA.
Working directory is C:\Program Files (x86)\FAA\FAARFIELD\

The structure is New Rigid.
Design Life = 20 years.
A design for this section was completed on 12/13/13 at 12:22:07.

Pavement Structure Information by Layer, Top First

No.	Type	Thickness in	Modulus psi	Poisson's Ratio	Strength R,psi
1	PCC Surface	12.87	4,000,000	0.15	685
2	P-401/ P-403 St (flex)	4.00	400,000	0.35	0
3	P-154 UnCr Ag	14.00	38,912	0.35	0
4	Subgrade	0.00	36,565	0.40	0

Total thickness to the top of the subgrade = 30.87 in

Airplane Information

No.	Name	Gross Wt. lbs	Annual Departures	% Annual Growth
1	C-130	155,000	8,049	0.00
2	DC9-32	90,700	97	0.00
3	Gulfstream-G-II	39,600	97	0.00
4	Dual Whl-30	26,430	292	0.00
5	Learjet-55	20,000	487	0.00
6	Citation-V	18,000	877	0.00
7	SuperKingAir-B200	15,000	1,754	0.00
8	Citation-525	10,000	975	0.00
9	Chk.Six-PA-32	3,750	6,433	0.00
10	A320-200 Twin std	163,000	3,079	0.00
11	B757-200	256,000	63	0.00

Additional Airplane Information

No.	Name	CDF Contribution	CDF Max for Airplane	P/C Ratio
1	C-130	0.00	0.00	4.67
2	DC9-32	0.00	0.00	3.65
3	Gulfstream-G-II	0.00	0.00	4.49
4	Dual Whl-30	0.00	0.00	6.42
5	Learjet-55	0.00	0.00	8.61
6	Citation-V	0.00	0.00	5.52
7	SuperKingAir-B200	0.00	0.00	7.93
8	Citation-525	0.00	0.00	6.00
9	Chk.Six-PA-32	0.00	0.00	7.53
10	A320-200 Twin std	1.00	1.00	3.70
11	B757-200	0.00	0.00	3.90

APPENDIX D

BUDGET DETAILS

APPENDIX D-1

SCENARIO 1: COST PER YEAR TO ELIMINATE MAJOR M&R BACKLOG IN 5-YEARS

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Back Log Elimination in 5 Years
5-Year Funding Summary

Plan Year	Stop Gap Funded	Preventive Funded	Global Funded	Major Under Critical PCI Funded	Major Above Critical PCI Funded	Total
1/1/2014	$170,608	$206,735	$0	$6,468,581	$0	$6,845,923
1/1/2015	$120,144	$242,620	$0	$6,376,914	$0	$6,739,678
1/1/2016	$86,933	$264,410	$0	$6,491,708	$0	$6,843,051
1/1/2017	$53,062	$249,440	$0	$6,516,286	$0	$6,818,788
1/1/2018	$0	$300,392	$0	$6,041,283	$0	$6,341,674

Back Log Elimination in 5 Years
5-Year Unfunded Summary

Plan Year	Stop Gap Unfunded	Preventive Unfunded	Global Unfunded	Major Under Critical PCI Unfunded	Major Above Critical PCI Unfunded	Total
1/1/2014	$0	$0	$0	$15,922,127	$0	$15,922,127
1/1/2015	$0	$0	$0	$9,765,829	$0	$9,765,829
1/1/2016	$0	$0	$0	$7,431,255	$0	$7,431,255
1/1/2017	$0	$0	$0	$4,952,249	$0	$4,952,249
1/1/2018	$0	$0	$0	$0	$0	$0

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Back Log Elimination in 5 Years

5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
CALSPAN	01	Preventive $1938 Before: 96.61 After: 96.78	Preventive $2650 Before: 94.14 After: 94.34	Preventive $3454 Before: 91.35 After: 91.57	Preventive $4074 Before: 88.4 After: 88.63	Preventive $4500 Before: 85.44 After: 85.67
CONDA	01	Preventive $633 Before: 60.43 After: 60.48	Do Nothing Before: 58.99 After: 58.99	Do Nothing Before: 57.34 After: 57.34	Do Nothing Before: 55.53 After: 55.53	Major Below Critical $1058805 Before: 53.59 After: 100
GAA	01	Do Nothing Before: 58.14 After: 58.14	Do Nothing Before: 56.41 After: 56.41	Stopgap $23603 Before: 54.53 After: 54.53	Stopgap $24819 Before: 52.53 After: 52.53	Major Below Critical $2331718 Before: 50.43 After: 100
GAA	02	Preventive $19676 Before: 77.25 After: 77.32	Preventive $21227 Before: 75.3 After: 75.36	Preventive $22577 Before: 73.6 After: 73.65	Preventive $23747 Before: 72.13 After: 72.18	Preventive $24725 Before: 70.9 After: 70.93
GAA	02A	Preventive $14831 Before: 81.74 After: 81.83	Preventive $16051 Before: 79.32 After: 79.4	Preventive $17602 Before: 77.13 After: 77.2	Preventive $18975 Before: 75.19 After: 75.25	Preventive $20164 Before: 73.51 After: 73.56
GAA	03	Preventive $2374 Before: 61.6 After: 61.64	Preventive $430 Before: 60.29 After: 60.34	Do Nothing Before: 58.84 After: 58.84	Do Nothing Before: 57.17 After: 57.17	Do Nothing Before: 55.35 After: 55.35
GAA	03A	Preventive $2119 Before: 84.57 After: 84.66	Preventive $2294 Before: 81.93 After: 82.02	Preventive $2477 Before: 79.49 After: 79.57	Preventive $2720 Before: 77.28 After: 77.35	Preventive $2935 Before: 75.33 After: 75.39
HELIA	01	Stopgap $31785 Before: 35.1 After: 35.1	Stopgap $33343 Before: 33.74 After: 33.74	Major Below Critical $2372055 Before: 32.59 After: 100	Preventive $3862 Before: 99.4 After: 99.44	Preventive $5333 Before: 97.9 After: 97.97
HELIA	02	Stopgap $8000 Before: 21.61 After: 21.61	Major Below Critical $401752 Before: 18.72 After: 100	Preventive $654 Before: 99.4 After: 99.44	Preventive $903 Before: 97.9 After: 97.97	Preventive $1256 Before: 95.78 After: 95.86
OVER10	01	Preventive $8899 Before: 88.45 After: 88.55	Preventive $9595 Before: 86.24 After: 86.35	Preventive $10329 Before: 83.91 After: 84.02	Preventive $11106 Before: 81.45 After: 81.57	Preventive $12141 Before: 78.9 After: 79.02

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Back Log Elimination in 5 Years

5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
OVER10	02	Preventive $6364 Before: 91.8 After: 91.88	Preventive $7403 Before: 89.84 After: 89.94	Preventive $7985 Before: 87.73 After: 87.83	Preventive $8606 Before: 85.48 After: 85.58	Preventive $9262 Before: 83.1 After: 83.21
OVR28	01A	Preventive $898 Before: 99.71 After: 99.73	Preventive $1032 Before: 99.17 After: 99.2	Preventive $1230 Before: 98.37 After: 98.42	Preventive $1488 Before: 97.33 After: 97.38	Preventive $1800 Before: 96.07 After: 96.13
OVR28	01B	Preventive $701 Before: 61.48 After: 61.61	Do Nothing Before: 58.68 After: 58.68	Do Nothing Before: 55.78 After: 55.78	Major Below Critical $340400 Before: 52.92 After: 100	Preventive $629 Before: 99.79 After: 99.8
OVR28	02	Preventive $7715 Before: 83.05 After: 83.16	Preventive $8286 Before: 80.56 After: 80.68	Preventive $9187 Before: 77.98 After: 78.1	Preventive $10205 Before: 75.32 After: 75.44	Preventive $11246 Before: 72.6 After: 72.72
RW10L	01	Preventive $2565 Before: 88.45 After: 88.58	Preventive $2762 Before: 86.28 After: 86.41	Preventive $2971 Before: 83.98 After: 84.12	Preventive $3191 Before: 81.56 After: 81.71	Preventive $3477 Before: 79.05 After: 79.21
RW10L	02	Preventive $4237 Before: 99.71 After: 99.73	Preventive $4858 Before: 99.18 After: 99.22	Preventive $5771 Before: 98.4 After: 98.45	Preventive $6962 Before: 97.38 After: 97.45	Preventive $8412 Before: 96.14 After: 96.23
RW10L	02A	Preventive $8474 Before: 99.71 After: 99.73	Preventive $9716 Before: 99.18 After: 99.22	Preventive $11541 Before: 98.4 After: 98.45	Preventive $13924 Before: 97.38 After: 97.45	Preventive $16825 Before: 96.14 After: 96.23
RW10L	03	Preventive $540 Before: 99.71 After: 99.73	Preventive $619 Before: 99.18 After: 99.22	Preventive $736 Before: 98.4 After: 98.45	Preventive $888 Before: 97.38 After: 97.45	Preventive $1073 Before: 96.14 After: 96.23
RW10L	03A	Preventive $1080 Before: 99.71 After: 99.73	Preventive $1239 Before: 99.18 After: 99.22	Preventive $1472 Before: 98.4 After: 98.45	Preventive $1775 Before: 97.38 After: 97.45	Preventive $2145 Before: 96.14 After: 96.23
RW10L	04	Preventive $3576 Before: 99.71 After: 99.73	Preventive $4100 Before: 99.18 After: 99.22	Preventive $4871 Before: 98.4 After: 98.45	Preventive $5876 Before: 97.38 After: 97.45	Preventive $7100 Before: 96.14 After: 96.23

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Back Log Elimination in 5 Years

5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
RW10L	04A	Preventive $7152 Before: 99.71 After: 99.73	Preventive $8201 Before: 99.18 After: 99.22	Preventive $9741 Before: 98.4 After: 98.45	Preventive $11752 Before: 97.38 After: 97.45	Preventive $14201 Before: 96.14 After: 96.23
RW10L	05	Preventive $1342 Before: 99.71 After: 99.73	Preventive $1539 Before: 99.18 After: 99.22	Preventive $1828 Before: 98.4 After: 98.45	Preventive $2206 Before: 97.38 After: 97.45	Preventive $2665 Before: 96.14 After: 96.23
RW10L	05A	Preventive $2685 Before: 99.71 After: 99.73	Preventive $3078 Before: 99.18 After: 99.22	Preventive $3657 Before: 98.4 After: 98.45	Preventive $4412 Before: 97.38 After: 97.45	Preventive $5331 Before: 96.14 After: 96.23
RW10R	01	Major Below Critical $3557097 Before: 27.45 After: 100	Preventive $5217 Before: 99.79 After: 99.8	Preventive $5937 Before: 99.3 After: 99.33	Preventive $7042 Before: 98.55 After: 98.59	Preventive $8499 Before: 97.56 After: 97.61
RW10R	01A	Preventive $5714 Before: 72.61 After: 72.74	Preventive $6122 Before: 69.84 After: 69.97	Preventive $4386 Before: 67.05 After: 67.17	Preventive $2626 Before: 64.22 After: 64.35	Preventive $877 Before: 61.41 After: 61.54
RW10R	02	Major Below Critical $94700 Before: 38.34 After: 100	Preventive $139 Before: 99.79 After: 99.8	Preventive $158 Before: 99.3 After: 99.33	Preventive $187 Before: 98.55 After: 98.59	Preventive $226 Before: 97.56 After: 97.61
RW624	01	Major Below Critical $253750 Before: 15.45 After: 100	Preventive $372 Before: 99.79 After: 99.81	Preventive $423 Before: 99.31 After: 99.35	Preventive $499 Before: 98.58 After: 98.63	Preventive $601 Before: 97.61 After: 97.67
RW624	01A	Major Below Critical $507500 Before: 18.45 After: 100	Preventive $744 Before: 99.79 After: 99.81	Preventive $845 Before: 99.31 After: 99.35	Preventive $998 Before: 98.58 After: 98.63	Preventive $1202 Before: 97.61 After: 97.67
RW624	02	Preventive $4403 Before: 84.12 After: 84.26	Preventive $4730 Before: 81.71 After: 81.86	Preventive $5139 Before: 79.21 After: 79.36	Preventive $5723 Before: 76.62 After: 76.78	Preventive $6323 Before: 73.96 After: 74.13
RW624	03	Preventive $27332 Before: 73.64 After: 73.8	Preventive $29944 Before: 70.93 After: 71.09	Major Below Critical $1727849 Before: 68.18 After: 100	Preventive $4099 Before: 99.79 After: 99.81	Preventive $4654 Before: 99.31 After: 99.34

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Back Log Elimination in 5 Years

5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
RW624	03A	Preventive $52545 Before: 75.7 After: 75.87	Preventive $57880 Before: 73.03 After: 73.2	Preventive $63315 Before: 70.31 After: 70.48	Major Below Critical $3660135 Before: 67.55 After: 100	Preventive $8498 Before: 99.79 After: 99.81
RW624	04	Preventive $928 Before: 99.71 After: 99.73	Preventive $1064 Before: 99.18 After: 99.22	Preventive $1264 Before: 98.4 After: 98.45	Preventive $1525 Before: 97.38 After: 97.45	Preventive $1843 Before: 96.14 After: 96.23
RW624	04A	Preventive $1774 Before: 99.71 After: 99.73	Preventive $2034 Before: 99.18 After: 99.22	Preventive $2416 Before: 98.4 After: 98.45	Preventive $2915 Before: 97.38 After: 97.45	Preventive $3522 Before: 96.14 After: 96.23
TERMA	01	Preventive $220 Before: 99.08 After: 99.18	Preventive $309 Before: 97.36 After: 97.52	Preventive $430 Before: 95.04 After: 95.23	Preventive $570 Before: 92.33 After: 92.55	Preventive $706 Before: 89.43 After: 89.65
TERMA	02	Stopgap $18609 Before: 33.18 After: 33.18	Stopgap $19374 Before: 31.96 After: 31.96	Stopgap $19963 Before: 31.02 After: 31.02	Stopgap $20378 Before: 30.36 After: 30.36	Major Below Critical $1298910 Before: 29.96 After: 100
TERMA	03	Stopgap $5812 Before: 65.47 After: 65.47	Stopgap $6402 Before: 65.01 After: 65.01	Stopgap $7070 Before: 64.49 After: 64.49	Stopgap $7865 Before: 63.87 After: 63.87	Major Below Critical $1351850 Before: 63.11 After: 100
TERMA	04	Preventive $8977 Before: 92.63 After: 92.84	Preventive $11291 Before: 89.74 After: 89.96	Preventive $12532 Before: 86.78 After: 87	Preventive $13759 Before: 83.85 After: 84.07	Preventive $14925 Before: 81.07 After: 81.27
TWC	01	Stopgap $7383 Before: 36.23 After: 36.23	Stopgap $7957 Before: 34.16 After: 34.16	Stopgap $8464 Before: 32.33 After: 32.33	Major Below Critical $574345 Before: 30.73 After: 100	Preventive $873 Before: 99.66 After: 99.71
TWC	02	Stopgap $12352 Before: 51.18 After: 51.18	Major Below Critical $1135605 Before: 49.58 After: 100	Preventive $4901 Before: 94.97 After: 95.36	Preventive $7304 Before: 90.87 After: 91.21	Preventive $8620 Before: 87.25 After: 87.56
TWC	03	Stopgap $6820 Before: 44.97 After: 44.97	Stopgap $7060 Before: 43.26 After: 43.26	Major Below Critical $659504 Before: 41.56 After: 100	Preventive $2364 Before: 94.95 After: 95.34	Preventive $3515 Before: 90.87 After: 91.21

Back Log Elimination in 5 Years

5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
TWC	04	Preventive $3483 Before: 89.67 After: 89.9	Preventive $3850 Before: 86.82 After: 87.06	Preventive $4245 Before: 83.76 After: 84.02	Preventive $4660 Before: 80.54 After: 80.81	Preventive $5330 Before: 77.21 After: 77.49
TWD	01	Stopgap $6967 Before: 65.39 After: 65.39	Major Below Critical $1509355 Before: 64.88 After: 100	Preventive $7583 Before: 94.97 After: 95.36	Preventive $11301 Before: 90.87 After: 91.21	Preventive $13337 Before: 87.25 After: 87.56
TWD	01A	Major Below Critical $297040 Before: 68.54 After: 100	Preventive $740 Before: 99.66 After: 99.71	Preventive $917 Before: 98.78 After: 98.87	Preventive $1193 Before: 97.41 After: 97.54	Preventive $1553 Before: 95.62 After: 95.78
TWD	02	Stopgap $3575 Before: 56.72 After: 56.72	Major Below Critical $374268 Before: 53.27 After: 100	Preventive $717 Before: 99.66 After: 99.71	Preventive $891 Before: 98.77 After: 98.86	Preventive $1157 Before: 97.41 After: 97.54
TWD	03	Major Below Critical $952359 Before: 68.88 After: 100	Preventive $5463 Before: 94.97 After: 95.36	Preventive $8135 Before: 90.88 After: 91.22	Preventive $9608 Before: 87.25 After: 87.56	Preventive $10650 Before: 84.06 After: 84.33
TWD	04	Preventive $1595 Before: 99.51 After: 99.57	Preventive $2004 Before: 98.53 After: 98.63	Preventive $2612 Before: 97.07 After: 97.21	Preventive $3396 Before: 95.19 After: 95.36	Preventive $4322 Before: 92.97 After: 93.16
TWD1	01	Preventive $885 Before: 94.06 After: 94.44	Preventive $1266 Before: 90.07 After: 90.41	Preventive $1438 Before: 86.55 After: 86.85	Preventive $1586 Before: 83.44 After: 83.7	Preventive $1716 Before: 80.72 After: 80.95
TWD2	01	Major Below Critical $118220 Before: 57.69 After: 100	Preventive $227 Before: 99.66 After: 99.71	Preventive $281 Before: 98.78 After: 98.87	Preventive $365 Before: 97.41 After: 97.54	Preventive $476 Before: 95.62 After: 95.78
TWD2	02	Major Below Critical $28370 Before: 65.54 After: 100	Preventive $64 Before: 99.66 After: 99.71	Preventive $79 Before: 98.78 After: 98.87	Preventive $103 Before: 97.41 After: 97.54	Preventive $134 Before: 95.62 After: 95.78
TWD3	01	Stopgap $2491 Before: 35.34 After: 35.34	Stopgap $2670 Before: 33.37 After: 33.37	Major Below Critical $187543 Before: 31.64 After: 100	Preventive $285 Before: 99.66 After: 99.7	Preventive $354 Before: 98.77 After: 98.86

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Back Log Elimination in 5 Years

5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
TWD3	02	Major Below Critical $99889 Before: 52.88 After: 100	Preventive $191 Before: 99.66 After: 99.71	Preventive $237 Before: 98.78 After: 98.87	Preventive $309 Before: 97.41 After: 97.54	Preventive $402 Before: 95.62 After: 95.78
TWD3	03	Stopgap $6978 Before: 42.56 After: 42.56	Stopgap $7359 Before: 39.91 After: 39.91	Stopgap $8134 Before: 37.49 After: 37.49	Major Below Critical $664260 Before: 35.28 After: 100	Preventive $1010 Before: 99.66 After: 99.71
TWG	01	Stopgap $6544 Before: 30.75 After: 30.75	Stopgap $6758 Before: 29.7 After: 29.7	Stopgap $6972 Before: 28.65 After: 28.65	Major Below Critical $422197 Before: 27.61 After: 100	Preventive $1461 Before: 94.97 After: 95.36
TWH	01	Stopgap $1907 Before: 65.39 After: 65.39	Major Below Critical $413130 Before: 64.88 After: 100	Preventive $2076 Before: 94.97 After: 95.36	Preventive $3093 Before: 90.87 After: 91.21	Preventive $3650 Before: 87.25 After: 87.56
TWJ	01	Major Below Critical $148044 Before: 67.53 After: 100	Preventive $356 Before: 99.66 After: 99.71	Preventive $441 Before: 98.78 After: 98.87	Preventive $574 Before: 97.41 After: 97.54	Preventive $747 Before: 95.62 After: 95.78
TWJ	02	Stopgap $7893 Before: 45.34 After: 45.34	Stopgap $8361 Before: 42.49 After: 42.49	Major Below Critical $794847 Before: 39.85 After: 100	Preventive $1208 Before: 99.66 After: 99.7	Preventive $1501 Before: 98.77 After: 98.86
TWK	01	Stopgap $8122 Before: 40.98 After: 40.98	Stopgap $8517 Before: 39.33 After: 39.33	Major Below Critical $749911 Before: 37.76 After: 100	Preventive $2601 Before: 94.95 After: 95.34	Preventive $3867 Before: 90.87 After: 91.21
TWK	01A	Preventive $1078 Before: 94.06 After: 94.44	Preventive $1542 Before: 90.07 After: 90.41	Preventive $1751 Before: 86.55 After: 86.85	Preventive $1932 Before: 83.44 After: 83.7	Preventive $2090 Before: 80.72 After: 80.95
TWK	02	Stopgap $15141 Before: 54.38 After: 54.38	Major Below Critical $1489952 Before: 52.93 After: 100	Preventive $6501 Before: 94.97 After: 95.36	Preventive $9688 Before: 90.87 After: 91.21	Preventive $11434 Before: 87.25 After: 87.56
TWK	03	Stopgap $8251 Before: 61.01 After: 61.01	Major Below Critical $1052852 Before: 60.09 After: 100	Preventive $4605 Before: 94.97 After: 95.36	Preventive $6863 Before: 90.87 After: 91.21	Preventive $8099 Before: 87.25 After: 87.56

Back Log Elimination in 5 Years

5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
TWL	01	Stopgap $6705 Before: 20.75 After: 20.75	Stopgap $6880 Before: 19.7 After: 19.7	Stopgap $7071 Before: 18.65 After: 18.65	Major Below Critical $329875 Before: 17.61 After: 100	Preventive $1142 Before: 94.97 After: 95.36
TWL	02	Major Below Critical $126904 Before: 25.75 After: 100	Preventive $439 Before: 94.97 After: 95.36	Preventive $654 Before: 90.88 After: 91.22	Preventive $772 Before: 87.25 After: 87.56	Preventive $856 Before: 84.06 After: 84.33
TWL	03	Stopgap $3404 Before: 44.97 After: 44.97	Stopgap $3524 Before: 43.26 After: 43.26	Stopgap $3644 Before: 41.56 After: 41.56	Major Below Critical $340214 Before: 39.89 After: 100	Preventive $1177 Before: 94.97 After: 95.36
TWL	04	Stopgap $1869 Before: 54.34 After: 54.34	Stopgap $1939 Before: 52.89 After: 52.89	Stopgap $2011 Before: 51.37 After: 51.37	Major Below Critical $184861 Before: 49.77 After: 100	Preventive $802 Before: 94.97 After: 95.36
TWM	01	Major Below Critical $203821 Before: 66.34 After: 100	Preventive $1073 Before: 94.97 After: 95.36	Preventive $1597 Before: 90.88 After: 91.22	Preventive $1886 Before: 87.25 After: 87.56	Preventive $2091 Before: 84.06 After: 84.33
TWM	02	Major Below Critical $80887 Before: 69.7 After: 100	Preventive $478 Before: 94.97 After: 95.36	Preventive $712 Before: 90.88 After: 91.22	Preventive $840 Before: 87.25 After: 87.56	Preventive $932 Before: 84.06 After: 84.33

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Back Log Elimination in 5 Years
Branch Annual Area Weighted Conditon After Repair

Branch ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
<all>	79	82	86	89	92
<all>	79	82	86	89	92
CALSPAN	97	94	92	89	86
CONDA	60	59	57	56	100
GAA	70	68	66	64	79
HELIA	33	43	100	99	98
OVER10	90	88	86	83	81
OVR28	83	81	79	87	85
RW10L	99	99	98	97	96
RW10R	96	96	95	94	93
RW624	81	79	84	98	98
TERMA	69	67	66	64	93
TWC	55	74	83	92	89
TWD	83	98	95	92	89
TWD1	94	90	87	84	81
TWD2	100	100	99	98	96
TWD3	49	46	57	100	99
TWG	31	30	29	100	95
TWH	65	100	95	91	88
TWJ	58	56	100	99	98
TWK	57	89	96	91	88
TWL	46	44	43	98	94
TWM	100	95	91	88	84

APPENDIX D-2

SCENARIO 2: COST PER YEAR TO MAINTAIN CURRENT PCI AREA WEIGHTED PCI FOR 5-YEARS

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Budget to Maintain Current Area Weighted PCI for 5 Years

5-Year Funding Summary

Plan Year	Stop Gap Funded	Preventive Funded	Global Funded	Major Under Critical PCI Funded	Major Above Critical PCI Funded	Total
1/1/2014	$236,783	$206,735	$0	$1,510,180	$0	$1,953,697
1/1/2015	$241,387	$230,202	$0	$1,492,053	$0	$1,963,643
1/1/2016	$264,512	$227,815	$0	$1,454,217	$0	$1,946,544
1/1/2017	$274,607	$190,840	$0	$1,457,164	$0	$1,922,612
1/1/2018	$295,849	$220,529	$0	$1,410,491	$0	$1,926,870

Budget to Maintain Current Area Weighted PCI for 5 Years

5-Year Unfunded Summary

Plan Year	Stop Gap Unfunded	Preventive Unfunded	Global Unfunded	Major Under Critical PCI Unfunded	Major Above Critical PCI Unfunded	Total
1/1/2014	$0	$0	$0	$20,880,528	$0	$20,880,528
1/1/2015	$0	$0	$0	$19,639,201	$0	$19,639,201
1/1/2016	$0	$0	$0	$22,425,643	$0	$22,425,643
1/1/2017	$0	$0	$0	$25,266,108	$0	$25,266,108
1/1/2018	$0	$0	$0	$25,635,360	$0	$25,635,360

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Budget to Maintain Current Area Weighted PCI for 5 Years
5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
CALSPAN	01	Preventive $1938 Before: 96.61 After: 96.78	Preventive $2650 Before: 94.14 After: 94.34	Preventive $3454 Before: 91.35 After: 91.57	Preventive $4074 Before: 88.4 After: 88.63	Preventive $4500 Before: 85.44 After: 85.67
CONDA	01	Preventive $633 Before: 60.43 After: 60.48	Do Nothing Before: 58.99 After: 58.99	Do Nothing Before: 57.34 After: 57.34	Do Nothing Before: 55.53 After: 55.53	Stopgap $10977 Before: 53.59 After: 53.59
GAA	01	Do Nothing Before: 58.14 After: 58.14	Do Nothing Before: 56.41 After: 56.41	Stopgap $23603 Before: 54.53 After: 54.53	Stopgap $24819 Before: 52.53 After: 52.53	Stopgap $26091 Before: 50.44 After: 50.44
GAA	02	Preventive $19676 Before: 77.25 After: 77.32	Preventive $21227 Before: 75.3 After: 75.36	Preventive $22577 Before: 73.6 After: 73.65	Preventive $23747 Before: 72.13 After: 72.18	Preventive $24725 Before: 70.9 After: 70.93
GAA	02A	Preventive $14831 Before: 81.74 After: 81.83	Preventive $16051 Before: 79.32 After: 79.4	Preventive $17602 Before: 77.13 After: 77.2	Preventive $18975 Before: 75.19 After: 75.25	Preventive $20164 Before: 73.51 After: 73.56
GAA	03	Preventive $2374 Before: 61.6 After: 61.64	Preventive $430 Before: 60.29 After: 60.34	Do Nothing Before: 58.84 After: 58.84	Do Nothing Before: 57.17 After: 57.17	Do Nothing Before: 55.35 After: 55.35
GAA	03A	Preventive $2119 Before: 84.57 After: 84.66	Preventive $2294 Before: 81.93 After: 82.02	Preventive $2477 Before: 79.49 After: 79.57	Preventive $2720 Before: 77.28 After: 77.35	Preventive $2935 Before: 75.33 After: 75.39
HELIA	01	Stopgap $31785 Before: 35.1 After: 35.1	Stopgap $33343 Before: 33.74 After: 33.74	Stopgap $34659 Before: 32.59 After: 32.59	Stopgap $35747 Before: 31.64 After: 31.64	Stopgap $36629 Before: 30.87 After: 30.87
HELIA	02	Stopgap $8000 Before: 21.61 After: 21.61	Stopgap $8596 Before: 18.72 After: 18.72	Stopgap $9128 Before: 16.32 After: 16.32	Major Below Critical $401752 Before: 13.91 After: 100	Preventive $654 Before: 99.4 After: 99.44
OVER10	01	Preventive $8899 Before: 88.45 After: 88.55	Preventive $9595 Before: 86.24 After: 86.35	Preventive $10329 Before: 83.91 After: 84.02	Preventive $11106 Before: 81.45 After: 81.57	Preventive $12141 Before: 78.9 After: 79.02
OVER10	02	Preventive $6364 Before: 91.8 After: 91.88	Preventive $7403 Before: 89.84 After: 89.94	Preventive $7985 Before: 87.73 After: 87.83	Preventive $8606 Before: 85.48 After: 85.58	Preventive $9262 Before: 83.1 After: 83.21

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Budget to Maintain Current Area Weighted PCI for 5 Years

5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
OVR28	01A	Preventive $898 Before: 99.71 After: 99.73	Preventive $1032 Before: 99.17 After: 99.2	Preventive $1230 Before: 98.37 After: 98.42	Preventive $1488 Before: 97.33 After: 97.38	Preventive $1800 Before: 96.07 After: 96.13
OVR28	01B	Preventive $701 Before: 61.48 After: 61.61	Do Nothing Before: 58.68 After: 58.68	Do Nothing Before: 55.78 After: 55.78	Stopgap $3589 Before: 52.92 After: 52.92	Stopgap $3836 Before: 50.14 After: 50.14
OVR28	02	Preventive $7715 Before: 83.05 After: 83.16	Preventive $8286 Before: 80.56 After: 80.68	Preventive $9187 Before: 77.98 After: 78.1	Preventive $10205 Before: 75.32 After: 75.44	Preventive $11246 Before: 72.6 After: 72.72
RW10L	01	Preventive $2565 Before: 88.45 After: 88.58	Preventive $2762 Before: 86.28 After: 86.41	Preventive $2971 Before: 83.98 After: 84.12	Preventive $3191 Before: 81.56 After: 81.71	Preventive $3477 Before: 79.05 After: 79.21
RW10L	02	Preventive $4237 Before: 99.71 After: 99.73	Preventive $4858 Before: 99.18 After: 99.22	Preventive $5771 Before: 98.4 After: 98.45	Preventive $6962 Before: 97.38 After: 97.45	Preventive $8412 Before: 96.14 After: 96.23
RW10L	02A	Preventive $8474 Before: 99.71 After: 99.73	Preventive $9716 Before: 99.18 After: 99.22	Preventive $11541 Before: 98.4 After: 98.45	Preventive $13924 Before: 97.38 After: 97.45	Preventive $16825 Before: 96.14 After: 96.23
RW10L	03	Preventive $540 Before: 99.71 After: 99.73	Preventive $619 Before: 99.18 After: 99.22	Preventive $736 Before: 98.4 After: 98.45	Preventive $888 Before: 97.38 After: 97.45	Preventive $1073 Before: 96.14 After: 96.23
RW10L	03A	Preventive $1080 Before: 99.71 After: 99.73	Preventive $1239 Before: 99.18 After: 99.22	Preventive $1472 Before: 98.4 After: 98.45	Preventive $1775 Before: 97.38 After: 97.45	Preventive $2145 Before: 96.14 After: 96.23
RW10L	04	Preventive $3576 Before: 99.71 After: 99.73	Preventive $4100 Before: 99.18 After: 99.22	Preventive $4871 Before: 98.4 After: 98.45	Preventive $5876 Before: 97.38 After: 97.45	Preventive $7100 Before: 96.14 After: 96.23
RW10L	04A	Preventive $7152 Before: 99.71 After: 99.73	Preventive $8201 Before: 99.18 After: 99.22	Preventive $9741 Before: 98.4 After: 98.45	Preventive $11752 Before: 97.38 After: 97.45	Preventive $14201 Before: 96.14 After: 96.23
RW10L	05	Preventive $1342 Before: 99.71 After: 99.73	Preventive $1539 Before: 99.18 After: 99.22	Preventive $1828 Before: 98.4 After: 98.45	Preventive $2206 Before: 97.38 After: 97.45	Preventive $2665 Before: 96.14 After: 96.23

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Budget to Maintain Current Area Weighted PCI for 5 Years
5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
RW10L	05A	Preventive $2685 Before: 99.71 After: 99.73	Preventive $3078 Before: 99.18 After: 99.22	Preventive $3657 Before: 98.4 After: 98.45	Preventive $4412 Before: 97.38 After: 97.45	Preventive $5331 Before: 96.14 After: 96.23
RW10R	01	Stopgap $60801 Before: 27.45 After: 27.45	Stopgap $61592 Before: 26.99 After: 26.99	Stopgap $62380 Before: 26.53 After: 26.53	Stopgap $63171 Before: 26.07 After: 26.07	Stopgap $63962 Before: 25.61 After: 25.61
RW10R	01A	Preventive $5714 Before: 72.61 After: 72.74	Preventive $6122 Before: 69.84 After: 69.97	Preventive $4386 Before: 67.05 After: 67.17	Preventive $2626 Before: 64.22 After: 64.35	Preventive $877 Before: 61.41 After: 61.54
RW10R	02	Major Below Critical $94700 Before: 38.34 After: 100	Preventive $139 Before: 99.79 After: 99.8	Preventive $158 Before: 99.3 After: 99.33	Preventive $187 Before: 98.55 After: 98.59	Preventive $226 Before: 97.56 After: 97.61
RW624	01	Major Below Critical $253750 Before: 15.45 After: 100	Preventive $372 Before: 99.79 After: 99.81	Preventive $423 Before: 99.31 After: 99.35	Preventive $499 Before: 98.58 After: 98.63	Preventive $601 Before: 97.61 After: 97.67
RW624	01A	Major Below Critical $507500 Before: 18.45 After: 100	Preventive $744 Before: 99.79 After: 99.81	Preventive $845 Before: 99.31 After: 99.35	Preventive $998 Before: 98.58 After: 98.63	Preventive $1202 Before: 97.61 After: 97.67
RW624	02	Preventive $4403 Before: 84.12 After: 84.26	Preventive $4730 Before: 81.71 After: 81.86	Preventive $5139 Before: 79.21 After: 79.36	Preventive $5723 Before: 76.62 After: 76.78	Preventive $6323 Before: 73.96 After: 74.13
RW624	03	Preventive $27332 Before: 73.64 After: 73.8	Preventive $29944 Before: 70.93 After: 71.09	Stopgap $3508 Before: 68.18 After: 68.18	Stopgap $9195 Before: 65.23 After: 65.23	Stopgap $14881 Before: 62.28 After: 62.28
RW624	03A	Preventive $52545 Before: 75.7 After: 75.87	Preventive $57880 Before: 73.03 After: 73.2	Preventive $63315 Before: 70.31 After: 70.48	Stopgap $9790 Before: 67.55 After: 67.55	Stopgap $21539 Before: 64.61 After: 64.61
RW624	04	Preventive $928 Before: 99.71 After: 99.73	Preventive $1064 Before: 99.18 After: 99.22	Preventive $1264 Before: 98.4 After: 98.45	Preventive $1525 Before: 97.38 After: 97.45	Preventive $1843 Before: 96.14 After: 96.23
RW624	04A	Preventive $1774 Before: 99.71 After: 99.73	Preventive $2034 Before: 99.18 After: 99.22	Preventive $2416 Before: 98.4 After: 98.45	Preventive $2915 Before: 97.38 After: 97.45	Preventive $3522 Before: 96.14 After: 96.23

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Budget to Maintain Current Area Weighted PCI for 5 Years
5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
TERMA	01	Preventive $220 Before: 99.08 After: 99.18	Preventive $309 Before: 97.36 After: 97.52	Preventive $430 Before: 95.04 After: 95.23	Preventive $570 Before: 92.33 After: 92.55	Preventive $706 Before: 89.43 After: 89.65
TERMA	02	Stopgap $18609 Before: 33.18 After: 33.18	Stopgap $19374 Before: 31.96 After: 31.96	Stopgap $19963 Before: 31.02 After: 31.02	Stopgap $20378 Before: 30.36 After: 30.36	Stopgap $20628 Before: 29.96 After: 29.96
TERMA	03	Stopgap $5812 Before: 65.47 After: 65.47	Stopgap $6402 Before: 65.01 After: 65.01	Stopgap $7070 Before: 64.49 After: 64.49	Stopgap $7865 Before: 63.87 After: 63.87	Stopgap $8841 Before: 63.11 After: 63.11
TERMA	04	Preventive $8977 Before: 92.63 After: 92.84	Preventive $11291 Before: 89.74 After: 89.96	Preventive $12532 Before: 86.78 After: 87	Preventive $13759 Before: 83.85 After: 84.07	Preventive $14925 Before: 81.07 After: 81.27
TWC	01	Stopgap $7383 Before: 36.23 After: 36.23	Stopgap $7957 Before: 34.16 After: 34.16	Stopgap $8464 Before: 32.33 After: 32.33	Stopgap $8908 Before: 30.73 After: 30.73	Stopgap $9288 Before: 29.36 After: 29.36
TWC	02	Stopgap $12352 Before: 51.18 After: 51.18	Stopgap $12821 Before: 49.58 After: 49.58	Stopgap $13305 Before: 47.93 After: 47.93	Stopgap $13800 Before: 46.24 After: 46.24	Major Below Critical $1283587 Before: 44.53 After: 100
TWC	03	Stopgap $6820 Before: 44.97 After: 44.97	Stopgap $7060 Before: 43.26 After: 43.26	Major Below Critical $659504 Before: 41.56 After: 100	Preventive $2364 Before: 94.95 After: 95.34	Preventive $3515 Before: 90.87 After: 91.21
TWC	04	Preventive $3483 Before: 89.67 After: 89.9	Preventive $3850 Before: 86.82 After: 87.06	Preventive $4245 Before: 83.76 After: 84.02	Preventive $4660 Before: 80.54 After: 80.81	Preventive $5330 Before: 77.21 After: 77.49
TWD	01	Stopgap $6967 Before: 65.39 After: 65.39	Stopgap $7738 Before: 64.88 After: 64.88	Stopgap $8553 Before: 64.34 After: 64.34	Stopgap $9429 Before: 63.76 After: 63.76	Stopgap $10383 Before: 63.13 After: 63.13
TWD	01A	Major Below Critical $297040 Before: 68.54 After: 100	Preventive $740 Before: 99.66 After: 99.71	Preventive $917 Before: 98.78 After: 98.87	Preventive $1193 Before: 97.41 After: 97.54	Preventive $1553 Before: 95.62 After: 95.78
TWD	02	Stopgap $3575 Before: 56.72 After: 56.72	Stopgap $3912 Before: 53.27 After: 53.27	Major Below Critical $374658 Before: 49.96 After: 100	Preventive $717 Before: 99.66 After: 99.7	Preventive $891 Before: 98.77 After: 98.86

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Budget to Maintain Current Area Weighted PCI for 5 Years

5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
TWD	03	Stopgap $1219 Before: 68.88 After: 68.88	Major Below Critical $979023 Before: 68.09 After: 100	Preventive $5463 Before: 94.97 After: 95.36	Preventive $8141 Before: 90.87 After: 91.21	Preventive $9608 Before: 87.25 After: 87.56
TWD	04	Preventive $1595 Before: 99.51 After: 99.57	Preventive $2004 Before: 98.53 After: 98.63	Preventive $2612 Before: 97.07 After: 97.21	Preventive $3396 Before: 95.19 After: 95.36	Preventive $4322 Before: 92.97 After: 93.16
TWD1	01	Preventive $885 Before: 94.06 After: 94.44	Preventive $1266 Before: 90.07 After: 90.41	Preventive $1438 Before: 86.55 After: 86.85	Preventive $1586 Before: 83.44 After: 83.7	Preventive $1716 Before: 80.72 After: 80.95
TWD2	01	Stopgap $1099 Before: 57.69 After: 57.69	Major Below Critical $118220 Before: 54.2 After: 100	Preventive $227 Before: 99.66 After: 99.71	Preventive $282 Before: 98.77 After: 98.86	Preventive $365 Before: 97.41 After: 97.54
TWD2	02	Major Below Critical $28370 Before: 65.54 After: 100	Preventive $64 Before: 99.66 After: 99.71	Preventive $79 Before: 98.78 After: 98.87	Preventive $103 Before: 97.41 After: 97.54	Preventive $134 Before: 95.62 After: 95.78
TWD3	01	Stopgap $2491 Before: 35.34 After: 35.34	Major Below Critical $187543 Before: 33.38 After: 100	Preventive $285 Before: 99.66 After: 99.71	Preventive $354 Before: 98.77 After: 98.86	Preventive $460 Before: 97.41 After: 97.54
TWD3	02	Major Below Critical $99889 Before: 52.88 After: 100	Preventive $191 Before: 99.66 After: 99.71	Preventive $237 Before: 98.78 After: 98.87	Preventive $309 Before: 97.41 After: 97.54	Preventive $402 Before: 95.62 After: 95.78
TWD3	03	Stopgap $6978 Before: 42.56 After: 42.56	Stopgap $7359 Before: 39.91 After: 39.91	Stopgap $8134 Before: 37.49 After: 37.49	Stopgap $8840 Before: 35.29 After: 35.29	Stopgap $9469 Before: 33.33 After: 33.33
TWG	01	Stopgap $6544 Before: 30.75 After: 30.75	Stopgap $6758 Before: 29.7 After: 29.7	Stopgap $6972 Before: 28.65 After: 28.65	Stopgap $7186 Before: 27.6 After: 27.6	Stopgap $7400 Before: 26.55 After: 26.55
TWH	01	Stopgap $1907 Before: 65.39 After: 65.39	Stopgap $2118 Before: 64.88 After: 64.88	Major Below Critical $420055 Before: 64.34 After: 100	Preventive $2081 Before: 94.95 After: 95.34	Preventive $3093 Before: 90.87 After: 91.21
TWJ	01	Major Below Critical $148044 Before: 67.53 After: 100	Preventive $356 Before: 99.66 After: 99.71	Preventive $441 Before: 98.78 After: 98.87	Preventive $574 Before: 97.41 After: 97.54	Preventive $747 Before: 95.62 After: 95.78

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Budget to Maintain Current Area Weighted PCI for 5 Years
5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
TWJ	02	Stopgap $7893 Before: 45.34 After: 45.34	Stopgap $8361 Before: 42.49 After: 42.49	Stopgap $8828 Before: 39.85 After: 39.85	Stopgap $9761 Before: 37.42 After: 37.42	Stopgap $10601 Before: 35.23 After: 35.23
TWK	01	Stopgap $8122 Before: 40.98 After: 40.98	Stopgap $8517 Before: 39.33 After: 39.33	Stopgap $9089 Before: 37.75 After: 37.75	Stopgap $9629 Before: 36.26 After: 36.26	Stopgap $10121 Before: 34.9 After: 34.9
TWK	01A	Preventive $1078 Before: 94.06 After: 94.44	Preventive $1542 Before: 90.07 After: 90.41	Preventive $1751 Before: 86.55 After: 86.85	Preventive $1932 Before: 83.44 After: 83.7	Preventive $2090 Before: 80.72 After: 80.95
TWK	02	Stopgap $15141 Before: 54.38 After: 54.38	Stopgap $15704 Before: 52.93 After: 52.93	Stopgap $16295 Before: 51.41 After: 51.41	Stopgap $16913 Before: 49.82 After: 49.82	Stopgap $17551 Before: 48.18 After: 48.18
TWK	03	Stopgap $8251 Before: 61.01 After: 61.01	Stopgap $9095 Before: 60.09 After: 60.09	Stopgap $9431 Before: 59.08 After: 59.08	Major Below Critical $1055413 Before: 57.96 After: 100	Preventive $4605 Before: 94.97 After: 95.36
TWL	01	Stopgap $6705 Before: 20.75 After: 20.75	Stopgap $6880 Before: 19.7 After: 19.7	Stopgap $7071 Before: 18.65 After: 18.65	Stopgap $7262 Before: 17.6 After: 17.6	Stopgap $7453 Before: 16.55 After: 16.55
TWL	02	Stopgap $2273 Before: 25.75 After: 25.75	Stopgap $2338 Before: 24.7 After: 24.7	Stopgap $2402 Before: 23.65 After: 23.65	Stopgap $2466 Before: 22.6 After: 22.6	Major Below Critical $126904 Before: 21.56 After: 100
TWL	03	Stopgap $3404 Before: 44.97 After: 44.97	Stopgap $3524 Before: 43.26 After: 43.26	Stopgap $3644 Before: 41.56 After: 41.56	Stopgap $3772 Before: 39.89 After: 39.89	Stopgap $4035 Before: 38.29 After: 38.29
TWL	04	Stopgap $1869 Before: 54.34 After: 54.34	Stopgap $1939 Before: 52.89 After: 52.89	Stopgap $2011 Before: 51.37 After: 51.37	Stopgap $2088 Before: 49.78 After: 49.78	Stopgap $2166 Before: 48.14 After: 48.14
TWM	01	Stopgap $782 Before: 66.34 After: 66.34	Major Below Critical $207267 Before: 65.82 After: 100	Preventive $1073 Before: 94.97 After: 95.36	Preventive $1599 Before: 90.87 After: 91.21	Preventive $1886 Before: 87.25 After: 87.56
TWM	02	Major Below Critical $80887 Before: 69.7 After: 100	Preventive $478 Before: 94.97 After: 95.36	Preventive $712 Before: 90.88 After: 91.22	Preventive $840 Before: 87.25 After: 87.56	Preventive $932 Before: 84.06 After: 84.33

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Budget to Maintain Current Area Weighted PCI for 5 Years
Branch Annual Area Weighted Conditon After Repair

Branch ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
<all>	75	75	74	74	73
<all>	75	75	74	74	73
CALSPAN	97	94	92	89	86
CONDA	60	59	57	56	54
GAA	70	68	66	64	63
HELIA	33	32	30	42	41
OVER10	90	88	86	83	81
OVR28	83	81	79	77	75
RW10L	99	99	98	97	96
RW10R	35	34	34	33	32
RW624	81	79	77	74	72
TERMA	69	67	66	64	63
TWC	55	53	63	60	82
TWD	75	82	85	83	81
TWD1	94	90	87	84	81
TWD2	67	100	100	99	97
TWD3	49	59	57	56	54
TWG	31	30	29	28	27
TWH	65	65	100	95	91
TWJ	58	56	53	51	49
TWK	57	55	54	65	63
TWL	37	36	34	33	41
TWM	77	99	94	90	87

APPENDIX D-3

SCENARIO 3: OPTIMUM BUDGET SCENARIO

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Optimum Budget Scenario

5-Year Funding Summary

Plan Year	Stop Gap Funded	Preventive Funded	Global Funded	Major Under Critical PCI Funded	Major Above Critical PCI Funded	Total
1/1/2014	$232,405	$67,481	$0	$3,807,435	$0	$4,107,320
1/1/2015	$191,169	$108,669	$0	$4,195,312	$600,841	$5,095,991
1/1/2016	$141,494	$158,233	$0	$4,427,380	$0	$4,727,107
1/1/2017	$99,164	$200,754	$0	$3,549,579	$1,814,622	$5,664,118
1/1/2018	$121,568	$177,585	$0	$0	$5,564,769	$5,863,921

Optimum Budget Scenario

5-Year Unfunded Summary

Plan Year	Stop Gap Unfunded	Preventive Unfunded	Global Unfunded	Major Under Critical PCI Unfunded	Major Above Critical PCI Unfunded	Total
1/1/2014	$0	$139,254	$0	$6,388,859	$0	$6,528,113
1/1/2015	$0	$124,468	$0	$6,532,416	$0	$6,656,884
1/1/2016	$0	$81,454	$0	$10,707,156	$0	$10,788,609
1/1/2017	$0	$14,047	$0	$14,676,462	$0	$14,690,510
1/1/2018	$0	$28,143	$0	$15,379,001	$0	$15,407,144

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Optimum Budget Scenario
5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
CALSPAN	01	Do Nothing Before: 96.61 After: 96.61	Do Nothing Before: 93.93 After: 93.93	Do Nothing Before: 90.9 After: 90.9	Do Nothing Before: 87.71 After: 87.71	Do Nothing Before: 84.55 After: 84.55
CONDA	01	Do Nothing Before: 60.43 After: 60.43	Do Nothing Before: 58.94 After: 58.94	Do Nothing Before: 57.28 After: 57.28	Major Above Critical $1814622 Before: 55.47 After: 100	Preventive $2173 Before: 99.4 After: 99.44
GAA	01	Do Nothing Before: 58.14 After: 58.14	Do Nothing Before: 56.41 After: 56.41	Stopgap $23603 Before: 54.53 After: 54.53	Stopgap $24819 Before: 52.53 After: 52.53	Stopgap $26091 Before: 50.44 After: 50.44
GAA	02	Do Nothing Before: 77.25 After: 77.25	Do Nothing Before: 75.24 After: 75.24	Do Nothing Before: 73.5 After: 73.5	Preventive $23850 Before: 72 After: 72.05	Major Above Critical $2114912 Before: 70.78 After: 100
GAA	02A	Do Nothing Before: 81.74 After: 81.74	Do Nothing Before: 79.24 After: 79.24	Do Nothing Before: 76.99 After: 76.99	Preventive $19102 Before: 75.01 After: 75.07	Major Above Critical $1882804 Before: 73.35 After: 100
GAA	03	Do Nothing Before: 61.6 After: 61.6	Do Nothing Before: 60.25 After: 60.25	Do Nothing Before: 58.73 After: 58.73	Do Nothing Before: 57.05 After: 57.05	Major Above Critical $1233925 Before: 55.23 After: 100
GAA	03A	Do Nothing Before: 84.57 After: 84.57	Do Nothing Before: 81.85 After: 81.85	Preventive $2494 Before: 79.34 After: 79.42	Preventive $2735 Before: 77.15 After: 77.22	Major Above Critical $333128 Before: 75.21 After: 100
HELIA	01	Stopgap $31785 Before: 35.1 After: 35.1	Stopgap $33343 Before: 33.74 After: 33.74	Major Below Critical $2175965 Before: 32.59 After: 100	Preventive $3862 Before: 99.4 After: 99.44	Preventive $5333 Before: 97.9 After: 97.97
HELIA	02	Stopgap $8000 Before: 21.61 After: 21.61	Stopgap $8596 Before: 18.72 After: 18.72	Major Below Critical $419373 Before: 16.32 After: 100	Preventive $654 Before: 99.4 After: 99.44	Preventive $903 Before: 97.9 After: 97.97
OVER10	01	Do Nothing Before: 88.45 After: 88.45	Do Nothing Before: 86.14 After: 86.14	Do Nothing Before: 83.69 After: 83.69	Preventive $11212 Before: 81.11 After: 81.22	Do Nothing Before: 78.55 After: 78.55
OVER10	02	Do Nothing Before: 91.8 After: 91.8	Do Nothing Before: 89.75 After: 89.75	Do Nothing Before: 87.53 After: 87.53	Do Nothing Before: 85.15 After: 85.15	Do Nothing Before: 82.65 After: 82.65

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Optimum Budget Scenario
5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
OVR28	01A	Do Nothing Before: 99.71 After: 99.71	Do Nothing Before: 99.14 After: 99.14	Do Nothing Before: 98.29 After: 98.29	Preventive $1527 Before: 97.17 After: 97.23	Preventive $1847 Before: 95.88 After: 95.94
OVR28	01B	Do Nothing Before: 61.48 After: 61.48	Major Above Critical $600841 Before: 58.55 After: 100	Do Nothing Before: 99.79 After: 99.79	Preventive $722 Before: 99.27 After: 99.3	Preventive $857 Before: 98.51 After: 98.55
OVR28	02	Do Nothing Before: 83.05 After: 83.05	Do Nothing Before: 80.45 After: 80.45	Do Nothing Before: 77.75 After: 77.75	Preventive $10346 Before: 74.95 After: 75.07	Preventive $11391 Before: 72.22 After: 72.35
RW10L	01	Preventive $2565 Before: 88.45 After: 88.58	Preventive $2762 Before: 86.28 After: 86.41	Preventive $2971 Before: 83.98 After: 84.12	Preventive $3191 Before: 81.56 After: 81.71	Preventive $3477 Before: 79.05 After: 79.21
RW10L	02	Preventive $4237 Before: 99.71 After: 99.73	Preventive $4858 Before: 99.18 After: 99.22	Preventive $5771 Before: 98.4 After: 98.45	Preventive $6962 Before: 97.38 After: 97.45	Preventive $8412 Before: 96.14 After: 96.23
RW10L	02A	Preventive $8474 Before: 99.71 After: 99.73	Do Nothing Before: 99.18 After: 99.18	Preventive $11679 Before: 98.34 After: 98.4	Preventive $14087 Before: 97.31 After: 97.38	Preventive $17010 Before: 96.06 After: 96.14
RW10L	03	Do Nothing Before: 99.71 After: 99.71	Do Nothing Before: 99.14 After: 99.14	Preventive $752 Before: 98.29 After: 98.34	Preventive $908 Before: 97.24 After: 97.31	Preventive $1096 Before: 95.98 After: 96.06
RW10L	03A	Do Nothing Before: 99.71 After: 99.71	Do Nothing Before: 99.14 After: 99.14	Preventive $1504 Before: 98.29 After: 98.34	Preventive $1817 Before: 97.24 After: 97.31	Preventive $2193 Before: 95.98 After: 96.06
RW10L	04	Preventive $3576 Before: 99.71 After: 99.73	Do Nothing Before: 99.18 After: 99.18	Preventive $4929 Before: 98.34 After: 98.4	Preventive $5945 Before: 97.31 After: 97.38	Preventive $7178 Before: 96.06 After: 96.14
RW10L	04A	Preventive $7152 Before: 99.71 After: 99.73	Do Nothing Before: 99.18 After: 99.18	Preventive $9857 Before: 98.34 After: 98.4	Preventive $11890 Before: 97.31 After: 97.38	Preventive $14356 Before: 96.06 After: 96.14
RW10L	05	Preventive $1342 Before: 99.71 After: 99.73	Do Nothing Before: 99.18 After: 99.18	Preventive $1850 Before: 98.34 After: 98.4	Preventive $2232 Before: 97.31 After: 97.38	Preventive $2695 Before: 96.06 After: 96.14

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Optimum Budget Scenario
5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
RW10L	05A	Preventive $2685 Before: 99.71 After: 99.73	Do Nothing Before: 99.18 After: 99.18	Preventive $3700 Before: 98.34 After: 98.4	Preventive $4463 Before: 97.31 After: 97.38	Preventive $5389 Before: 96.06 After: 96.14
RW10R	01	Stopgap $60801 Before: 27.45 After: 27.45	Stopgap $61574 Before: 27 After: 27	Stopgap $62364 Before: 26.54 After: 26.54	Major Below Critical $3465402 Before: 26.08 After: 100	Preventive $5217 Before: 99.79 After: 99.8
RW10R	01A	Preventive $5714 Before: 72.61 After: 72.74	Preventive $6122 Before: 69.84 After: 69.97	Preventive $4386 Before: 67.05 After: 67.17	Preventive $2626 Before: 64.22 After: 64.35	Preventive $877 Before: 61.41 After: 61.54
RW10R	02	Stopgap $1121 Before: 38.34 After: 38.34	Stopgap $1215 Before: 36.29 After: 36.29	Stopgap $1300 Before: 34.43 After: 34.43	Major Below Critical $84177 Before: 32.77 After: 100	Preventive $139 Before: 99.79 After: 99.8
RW624	01	Stopgap $5887 Before: 15.45 After: 15.45	Major Below Critical $314160 Before: 15 After: 100	Preventive $372 Before: 99.79 After: 99.81	Preventive $423 Before: 99.31 After: 99.34	Preventive $499 Before: 98.58 After: 98.63
RW624	01A	Stopgap $10934 Before: 18.45 After: 18.45	Major Below Critical $628320 Before: 18 After: 100	Preventive $744 Before: 99.79 After: 99.81	Preventive $845 Before: 99.31 After: 99.34	Preventive $998 Before: 98.58 After: 98.63
RW624	02	Preventive $4403 Before: 84.12 After: 84.26	Preventive $4730 Before: 81.71 After: 81.86	Preventive $5139 Before: 79.21 After: 79.36	Preventive $5723 Before: 76.62 After: 76.78	Preventive $6323 Before: 73.96 After: 74.13
RW624	03	Preventive $27332 Before: 73.64 After: 73.8	Preventive $29944 Before: 70.93 After: 71.09	Stopgap $3508 Before: 68.18 After: 68.18	Stopgap $9195 Before: 65.23 After: 65.23	Stopgap $14881 Before: 62.28 After: 62.28
RW624	03A	Do Nothing Before: 75.7 After: 75.7	Preventive $58199 Before: 72.87 After: 73.03	Preventive $63657 Before: 70.14 After: 70.31	Stopgap $10469 Before: 67.38 After: 67.38	Stopgap $22219 Before: 64.44 After: 64.44
RW624	04	Do Nothing Before: 99.71 After: 99.71	Do Nothing Before: 99.14 After: 99.14	Preventive $1292 Before: 98.29 After: 98.34	Preventive $1561 Before: 97.24 After: 97.31	Preventive $1884 Before: 95.98 After: 96.06
RW624	04A	Do Nothing Before: 99.71 After: 99.71	Preventive $2054 Before: 99.14 After: 99.18	Preventive $2445 Before: 98.34 After: 98.4	Preventive $2949 Before: 97.31 After: 97.38	Preventive $3561 Before: 96.06 After: 96.14

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Optimum Budget Scenario
5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
TERMA	01	Do Nothing Before: 99.08 After: 99.08	Do Nothing Before: 97.2 After: 97.2	Do Nothing Before: 94.65 After: 94.65	Preventive $604 Before: 91.67 After: 91.89	Preventive $723 Before: 88.74 After: 88.97
TERMA	02	Major Below Critical $2577037 Before: 33.18 After: 100	Do Nothing Before: 99.34 After: 99.34	Do Nothing Before: 97.62 After: 97.62	Preventive $4387 Before: 95.17 After: 95.36	Preventive $5833 Before: 92.48 After: 92.69
TERMA	03	Major Below Critical $1230398 Before: 65.47 After: 100	Do Nothing Before: 99.34 After: 99.34	Do Nothing Before: 97.62 After: 97.62	Preventive $6284 Before: 95.17 After: 95.36	Preventive $8355 Before: 92.48 After: 92.69
TERMA	04	Do Nothing Before: 92.63 After: 92.63	Do Nothing Before: 89.51 After: 89.51	Preventive $12726 Before: 86.32 After: 86.55	Preventive $13945 Before: 83.41 After: 83.63	Preventive $15098 Before: 80.66 After: 80.86
TWC	01	Stopgap $7383 Before: 36.23 After: 36.23	Major Below Critical $186343 Before: 34.16 After: 100	Preventive $873 Before: 99.66 After: 99.71	Preventive $1085 Before: 98.77 After: 98.86	Preventive $1408 Before: 97.41 After: 97.54
TWC	02	Stopgap $12352 Before: 51.18 After: 51.18	Major Below Critical $639552 Before: 49.58 After: 100	Preventive $4901 Before: 94.97 After: 95.36	Preventive $7304 Before: 90.87 After: 91.21	Preventive $8620 Before: 87.25 After: 87.56
TWC	03	Stopgap $6820 Before: 44.97 After: 44.97	Major Below Critical $319851 Before: 43.26 After: 100	Preventive $2358 Before: 94.97 After: 95.36	Preventive $3515 Before: 90.87 After: 91.21	Preventive $4148 Before: 87.25 After: 87.56
TWC	04	Do Nothing Before: 89.67 After: 89.67	Do Nothing Before: 86.57 After: 86.57	Preventive $4313 Before: 83.23 After: 83.49	Preventive $4732 Before: 79.99 After: 80.26	Preventive $5450 Before: 76.65 After: 76.93
TWD	01	Stopgap $6967 Before: 65.39 After: 65.39	Stopgap $7738 Before: 64.88 After: 64.88	Stopgap $8553 Before: 64.34 After: 64.34	Stopgap $9429 Before: 63.76 After: 63.76	Stopgap $10383 Before: 63.13 After: 63.13
TWD	01A	Stopgap $490 Before: 68.54 After: 68.54	Stopgap $1741 Before: 64.81 After: 64.81	Stopgap $2976 Before: 61.13 After: 61.13	Stopgap $3605 Before: 57.52 After: 57.52	Stopgap $3955 Before: 54.04 After: 54.04
TWD	02	Stopgap $3575 Before: 56.72 After: 56.72	Stopgap $3912 Before: 53.27 After: 53.27	Stopgap $4235 Before: 49.96 After: 49.96	Stopgap $4542 Before: 46.81 After: 46.81	Stopgap $4830 Before: 43.86 After: 43.86

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Optimum Budget Scenario
5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
TWD	03	Stopgap $1219 Before: 68.88 After: 68.88	Stopgap $2080 Before: 68.09 After: 68.09	Stopgap $2820 Before: 67.41 After: 67.41	Stopgap $3473 Before: 66.81 After: 66.81	Stopgap $4072 Before: 66.26 After: 66.26
TWD	04	Do Nothing Before: 99.51 After: 99.51	Do Nothing Before: 98.42 After: 98.42	Preventive $2733 Before: 96.78 After: 96.92	Preventive $3542 Before: 94.84 After: 95.01	Preventive $4497 Before: 92.55 After: 92.75
TWD1	01	Do Nothing Before: 94.06 After: 94.06	Do Nothing Before: 89.74 After: 89.74	Preventive $1466 Before: 85.97 After: 86.26	Preventive $1611 Before: 82.93 After: 83.18	Preventive $1738 Before: 80.27 After: 80.49
TWD2	01	Stopgap $1099 Before: 57.69 After: 57.69	Stopgap $1207 Before: 54.2 After: 54.2	Stopgap $1310 Before: 50.85 After: 50.85	Stopgap $1409 Before: 47.65 After: 47.65	Stopgap $1501 Before: 44.65 After: 44.65
TWD2	02	Stopgap $129 Before: 65.54 After: 65.54	Stopgap $236 Before: 61.85 After: 61.85	Stopgap $305 Before: 58.24 After: 58.24	Stopgap $336 Before: 54.72 After: 54.72	Stopgap $365 Before: 51.35 After: 51.35
TWD3	01	Stopgap $2491 Before: 35.34 After: 35.34	Stopgap $2669 Before: 33.38 After: 33.38	Major Below Critical $62945 Before: 31.64 After: 100	Preventive $285 Before: 99.66 After: 99.7	Preventive $354 Before: 98.77 After: 98.86
TWD3	02	Stopgap $1054 Before: 52.88 After: 52.88	Stopgap $1140 Before: 49.59 After: 49.59	Major Below Critical $42272 Before: 46.47 After: 100	Preventive $191 Before: 99.66 After: 99.7	Preventive $238 Before: 98.77 After: 98.86
TWD3	03	Stopgap $6978 Before: 42.56 After: 42.56	Stopgap $7355 Before: 39.92 After: 39.92	Major Below Critical $196193 Before: 37.49 After: 100	Preventive $1010 Before: 99.66 After: 99.7	Preventive $1255 Before: 98.77 After: 98.86
TWG	01	Stopgap $6544 Before: 30.75 After: 30.75	Major Below Critical $917069 Before: 29.71 After: 100	Preventive $1461 Before: 94.97 After: 95.36	Preventive $2177 Before: 90.87 After: 91.21	Preventive $2570 Before: 87.25 After: 87.56
TWH	01	Stopgap $1907 Before: 65.39 After: 65.39	Major Below Critical $1190017 Before: 64.88 After: 100	Preventive $2076 Before: 94.97 After: 95.36	Preventive $3093 Before: 90.87 After: 91.21	Preventive $3650 Before: 87.25 After: 87.56
TWJ	01	Stopgap $399 Before: 67.53 After: 67.53	Stopgap $1000 Before: 63.81 After: 63.81	Stopgap $1591 Before: 60.15 After: 60.15	Stopgap $1781 Before: 56.57 After: 56.57	Stopgap $1948 Before: 53.12 After: 53.12

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Optimum Budget Scenario
5-Year Maintenance Activities

Branch	Section ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
TWJ	02	Stopgap $7893 Before: 45.34 After: 45.34	Stopgap $8361 Before: 42.49 After: 42.49	Major Below Critical $234763 Before: 39.85 After: 100	Preventive $1208 Before: 99.66 After: 99.7	Preventive $1501 Before: 98.77 After: 98.86
TWK	01	Stopgap $8122 Before: 40.98 After: 40.98	Stopgap $8517 Before: 39.33 After: 39.33	Major Below Critical $606825 Before: 37.75 After: 100	Preventive $2601 Before: 94.95 After: 95.34	Preventive $3867 Before: 90.87 After: 91.21
TWK	01A	Do Nothing Before: 94.06 After: 94.06	Do Nothing Before: 89.74 After: 89.74	Preventive $1785 Before: 85.97 After: 86.26	Preventive $1961 Before: 82.93 After: 83.18	Preventive $2116 Before: 80.27 After: 80.49
TWK	02	Stopgap $15141 Before: 54.38 After: 54.38	Stopgap $15704 Before: 52.93 After: 52.93	Stopgap $16295 Before: 51.41 After: 51.41	Stopgap $16913 Before: 49.82 After: 49.82	Stopgap $17551 Before: 48.18 After: 48.18
TWK	03	Stopgap $8251 Before: 61.01 After: 61.01	Stopgap $9095 Before: 60.09 After: 60.09	Stopgap $9431 Before: 59.08 After: 59.08	Stopgap $9737 Before: 57.97 After: 57.97	Stopgap $10067 Before: 56.77 After: 56.77
TWL	01	Stopgap $6705 Before: 20.75 After: 20.75	Stopgap $6878 Before: 19.71 After: 19.71	Major Below Critical $429763 Before: 18.66 After: 100	Preventive $1144 Before: 94.95 After: 95.34	Preventive $1701 Before: 90.87 After: 91.21
TWL	02	Stopgap $2273 Before: 25.75 After: 25.75	Stopgap $2337 Before: 24.71 After: 24.71	Major Below Critical $148901 Before: 23.66 After: 100	Preventive $440 Before: 94.95 After: 95.34	Preventive $654 Before: 90.87 After: 91.21
TWL	03	Stopgap $3404 Before: 44.97 After: 44.97	Stopgap $3524 Before: 43.26 After: 43.26	Major Below Critical $110380 Before: 41.56 After: 100	Do Nothing Before: 94.95 After: 94.95	Do Nothing Before: 90.52 After: 90.52
TWL	04	Stopgap $1869 Before: 54.34 After: 54.34	Stopgap $1939 Before: 52.89 After: 52.89	Stopgap $2011 Before: 51.37 After: 51.37	Stopgap $2088 Before: 49.78 After: 49.78	Stopgap $2166 Before: 48.14 After: 48.14
TWM	01	Stopgap $782 Before: 66.34 After: 66.34	Stopgap $894 Before: 65.82 After: 65.82	Stopgap $1003 Before: 65.31 After: 65.31	Stopgap $1114 Before: 64.79 After: 64.79	Stopgap $1229 Before: 64.25 After: 64.25
TWM	02	Stopgap $29 Before: 69.7 After: 69.7	Stopgap $115 Before: 68.79 After: 68.79	Stopgap $189 Before: 68.02 After: 68.02	Stopgap $252 Before: 67.35 After: 67.35	Stopgap $309 Before: 66.76 After: 66.76

NIAGARA FALLS INTERNATIONAL AIRPORT
PAVEMENT MANAGEMENT SYSTEM UPDATE

Optimum Budget Scenario
Branch Annual Area Weighted Conditon After Repair

Branch ID	Jan-14	Jan-15	Jan-16	Jan-17	Jan-18
<all>	76	78	81	84	84
<all>	76	78	81	84	84
CALSPAN	97	94	91	88	85
CONDA	60	59	57	100	99
GAA	70	68	66	64	84
HELIA	33	32	100	99	98
OVER10	90	88	85	83	80
OVR28	83	90	88	86	84
RW10L	99	99	98	97	96
RW10R	34	33	32	95	95
RW624	76	79	76	74	72
TERMA	97	96	93	91	88
TWC	55	97	94	90	87
TWD	72	71	69	68	67
TWD1	94	90	86	83	80
TWD2	59	56	52	49	46
TWD3	43	40	100	100	99
TWG	31	100	95	91	88
TWH	65	100	95	91	88
TWJ	50	47	91	90	88
TWK	57	55	65	63	61
TWL	37	36	89	85	81
TWM	67	67	66	66	65

APPENDIX E

CONVENTIONAL TESTING RESULT

SJB SERVICES, INC.

Contract
Drilling
and
Testing

☐ **CORPORATE/**
BUFFALO OFFICE
5167 South Park Avenue
Hamburg, NY 14075
Phone: (716) 649-8110
Fax: (716) 649-8051

☐ **ALBANY OFFICE**
PO Box 2199
Ballston Spa, NY 12020

5 Knabner Road
Mechanicville, NY 12118
Phone: (518) 899-7491
Fax: (518) 899-7496

☐ **CORTLAND OFFICE**
60 Miller Street
Cortland, NY 13045
Phone: (607) 758-7182
Fax: (607) 758-7188

☐ **ROCHESTER OFFICE**
535 Summit Point Drive
Henrietta, NY 14467
Phone: (585) 359-2730
Fax: (585) 359-9668

PROJECT:	**NIAGARA FALLS INTERNATIONAL AIRPORT** **NIAGARA FALLS, NEW YORK**
CLIENT:	**ROY D. MCQUEEN & ASSOCIATES, LTD**
PROJECT NO.	**BD-12-170**
DATE:	**FEBRUARY 22, 2013**

This report presents the results of the pavement cores obtained at the Niagara Falls International Airport located in Niagara Falls, New York. The pavement cores and borings were requested and authorized by Mr. Christopher S. Decker, PE representing Roy D. McQueen & Associates, LTD.

On December 12th, 2012, an SJB/EMPIRE GEO SERVICES, INC. (SJB) field crew was present at the site to obtain twenty (20) 6-inch diameter core samples at the Niagara Falls International Airport (NFIA). The core and boring locations were provided by Roy D. McQueen & Associates, Ltd. See the Pavement Core / Boring Location Site Plan in Appendix 'A'.

The pavement core samples were obtained utilizing a thin wall diamond bit mounted on a core boring machine. The field coring was performed in accordance with ASTM C42 – "Obtaining and Testing of Drilled Cores". Upon completion of the coring operation, the cores were extracted and transported to our laboratory in Hamburg, New York, where they were visually examined, logged, and photographed. The results are included in Appendix 'B' and the Pavement Thickness Summary is included in Appendix 'C'. All core holes were filled with rapid setting grout.

The borings were performed on December 12th, 2012, utilizing a CME-550X drill rig, and the soil samples were obtained using hollow stem augers in accordance with ASTM D-1586. The Boring Logs are included in Appendix 'D'.

This concludes our investigation at this time. If you have any questions, please do not hesitate to contact our office.

Sincerely,
SJB/EMPIRE GEO SERVICES, INC.

Richard Zynda

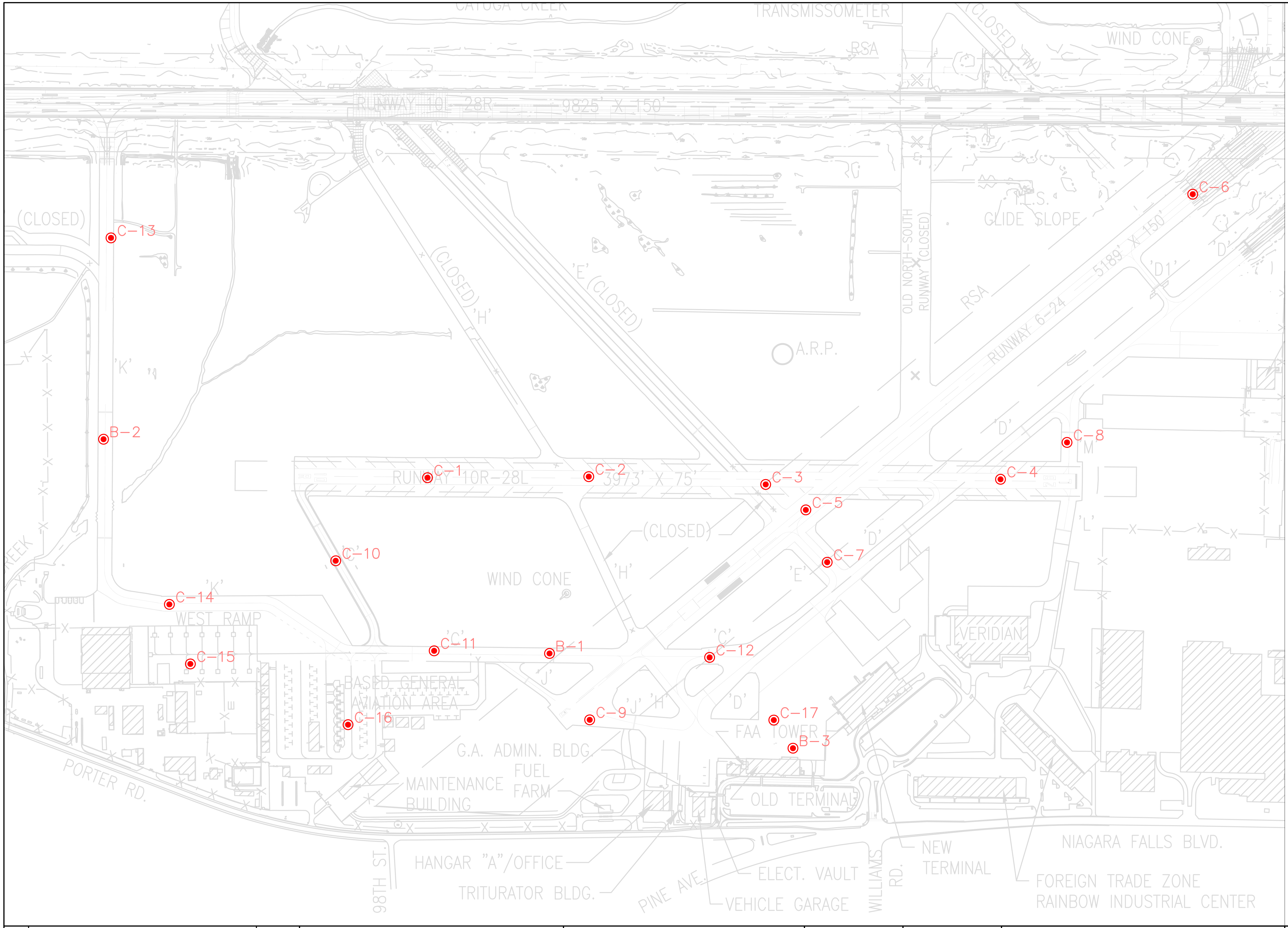
Richard Zynda, P.E.
Project Manager

Stanley J. Blas
President

Attachments:
Appendix 'A' – Pavement Core / Boring Location Site Plan
Appendix 'B' – Core / Boring Photographs and Descriptions
Appendix 'C' – Pavement Thickness Summary
Appendix 'D' – Boring Logs

APPENDIX ‘A’

PAVEMENT CORE / BORING LOCATION SITE PLAN



N

◉ B–# 10–foot Boring

◉ C–# Pavement Core

State Plane Coordinates

No.	Northing	Easting
B-1	1130417.787	1051147.112
B-2	1131505.191	1048883.906
B-3	1129936.887	1052382.434
C-1	1131309.797	1050527.819
C-2	1131315.344	1051346.238
C-3	1131275.806	1052243.988
C-4	1131301.699	1053435.720
C-5	1131146.398	1052447.613
C-6	113274888%	1054411.127
C-7	1130880.856	1052556.137
C-8	1131488.799	1053773.207
C-9	1130081.023	1051350.874
C-10	1130888.377	1050062.144
C-11	1130410.326	1050561.304
C-12	1130397.737	1051959.519
C-13	1132527.139	1048921.570
C-14	1130666.776	1049217.885
C-15	1130364.617	1049324.493
C-16	1130056.236	1050124.594
C-17	1130079.719	1052285.261

NO.	REVISION	DATE

Engineering Technology Research

DATE 11/8/2012
SCALE 1"=500'
DESIGNED SM
CHECKED CD
DRAWN BX
ACCEPTED
SUBMITTED
APPROVED

Niagara Falls International Airport
Sustainable Master Plan
Update

Pavement Core/Boring Locations

PROJECT IDENTIFIER

SHEET NAME

VOLUME of

APPENDIX ‘B’

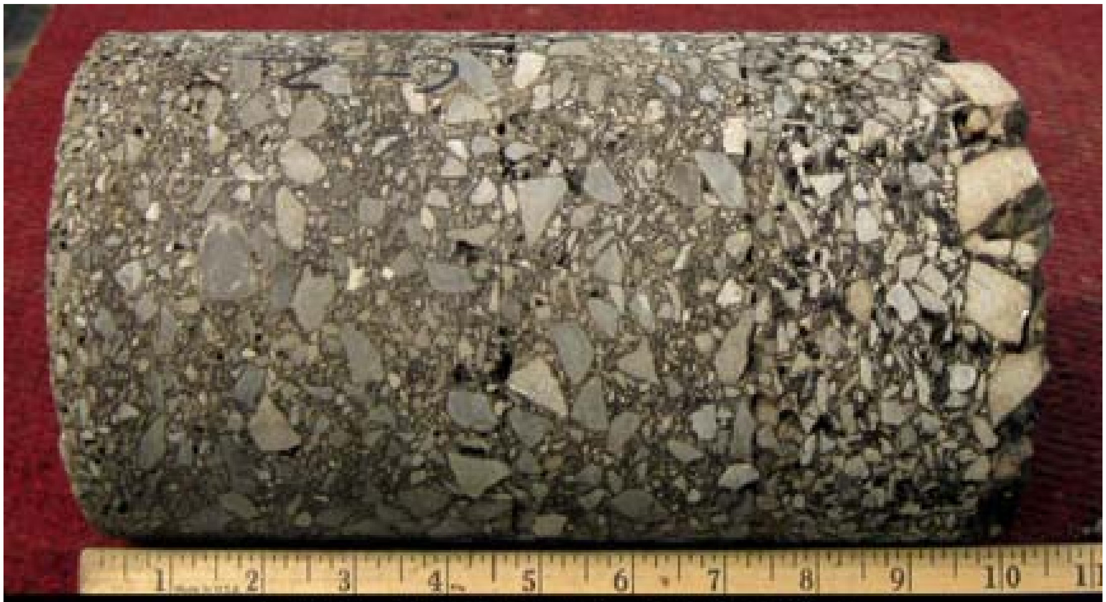
CORE / BORING PHOTOGRAPHS AND DESCRIPTIONS

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

NFIA RUNWAY: CORE C-1

CORE NUMBER	DESCRIPTION
C-1	TOTAL CORE LENGTH = 10.87” CORE DIAMETER = 6.00” TOTAL ASPHALT = 10.87” - 1st Top Layer = 1.50” - Aggregate = 0.26” stone - 1st Binder Layer = 4.32” - Aggregate = 0.72” stone - 2nd Binder Layer = 2.24” - Aggregate = 0.66” stone - 1st T&L Layer = 0.22” - Aggregate = 0.08” sand - 3rd Binder Layer = 2.59” - Aggregate = 0.41” stone

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY



NFIA RUNWAY: CORE C-2

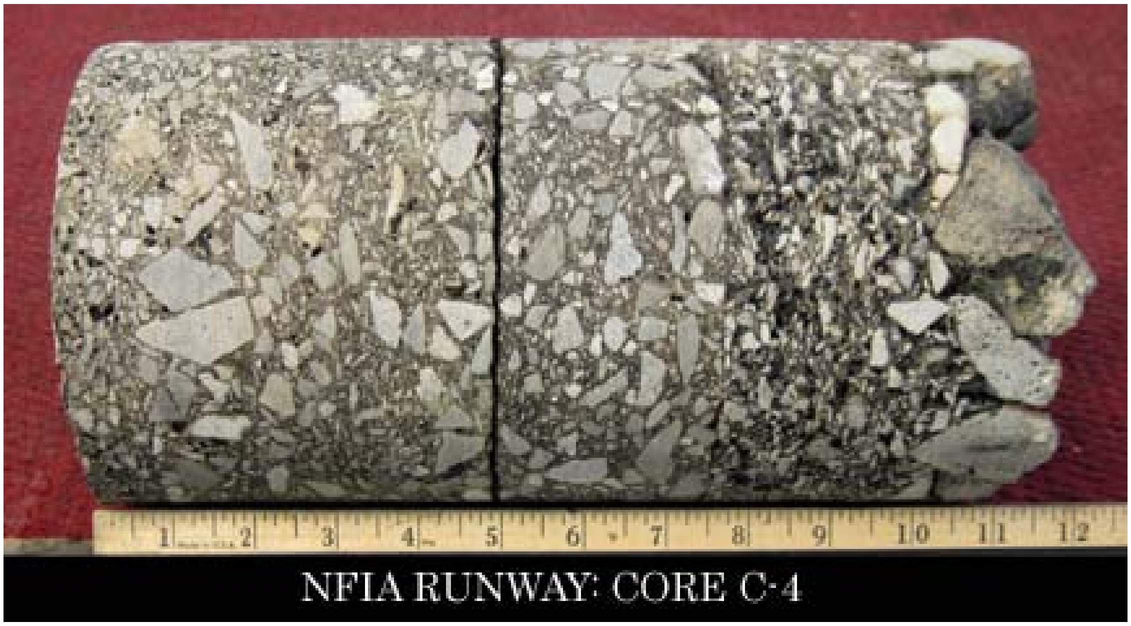
CORE NUMBER	DESCRIPTION
C-2	TOTAL CORE LENGTH = 10.59” CORE DIAMETER = 6.00” TOTAL ASPHALT = 10.59” - 1st Top Layer = 1.19” - Aggregate = 0.30” stone - 1st Binder Layer = 3.60” - Aggregate = 0.62” stone - 2nd Binder Layer = 2.56” - Aggregate = 0.52” stone - 3rd Binder Layer = 2.17” - Aggregate = 0.43” stone - 1st Base Layer = 1.07” - Aggregate = 0.72” stone

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

NFIA RUNWAY: CORE C-3

CORE NUMBER	DESCRIPTION
C-3	TOTAL CORE LENGTH = 9.87” CORE DIAMETER = 6.00” TOTAL ASPHALT = 9.87” - 1st Binder Layer = 1.43” - Aggregate = 0.56” stone - 2nd Binder Layer = 1.93” - Aggregate = 0.70” stone - 3rd Binder Layer = 1.85” - Aggregate = 0.56” stone - 4th Binder Layer = 1.15” - Aggregate = 0.56” stone - 1st Top Layer = 1.03” - Aggregate = 0.24” stone - 2nd Top Layer = 0.97” - Aggregate = 0.29” stone - 3rd Top Layer = 1.51” - Aggregate = 0.27” stone

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY



CORE NUMBER	DESCRIPTION
C-4	TOTAL CORE LENGTH = 10.00” CORE DIAMETER = 6.00” TOTAL ASPHALT = 10.00” - 1st Top Layer = 0.95” - Aggregate = 0.27” stone - 1st Binder Layer = 3.96” - Aggregate = 0.76” stone - 2nd Binder Layer = 2.50” - Aggregate = 0.66” stone - 2nd Top Layer = 2.38” - Aggregate = 0.34” stone - Subbase aggregate attached to bottom of layer

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

NFIA RUNWAY: CORE C-5

CORE NUMBER	DESCRIPTION
C-5	TOTAL CORE LENGTH = 12.62” CORE DIAMETER = 6.00” TOTAL ASPHALT = 12.62” - 1st Top Layer = 2.53” - Aggregate = 0.366” stone - 2nd Top Layer = 2.19” - Aggregate = 0.433” stone - 1st Binder Layer = 1.77” - Aggregate = 0.75” stone - 2nd Binder Layer = 1.60” - Aggregate = 0.602” stone - 3rd Binder Layer = 2.36” - Aggregate = 0.722” stone - 3rd Top Layer = 2.17” - Aggregate = 0.43” stone - Subbase aggregate attached to bottom of layer

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

NFIA RUNWAY: CORE C-6

CORE NUMBER	DESCRIPTION
C-6	TOTAL CORE LENGTH = 10.54” CORE DIAMETER = 6.00” TOTAL ASPHALT = 6.97” - 1st Top Layer = 1.76” - Aggregate = 0.50” stone - 2nd Top Layer = 2.00” - Aggregate = 0.50” stone - 1st Binder Layer = 3.21” - Aggregate = 0.577” stone - 1st Base Layer = 3.57” - Aggregate = 1.90” stone

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

NFIA RUNWAY: CORE C-7

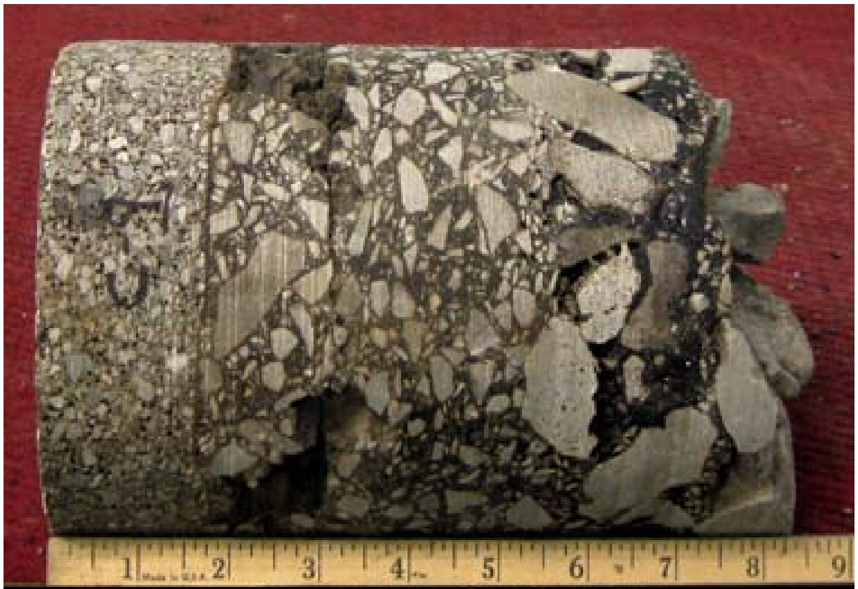
CORE NUMBER	DESCRIPTION
C-7	TOTAL CORE LENGTH = 12.62” CORE DIAMETER = 6.00” TOTAL ASPHALT = 12.62” - 1st Top Layer = 1.59” - Aggregate = 0.533” stone - 2nd Top Layer = 2.52” - Aggregate = 0.60” stone - 1st Binder Layer = 3.70” - Aggregate = 0.827” stone - 2nd Binder Layer = 2.79” - Aggregate = 0.794” stone - 3rd Binder Layer = 1.30” - Aggregate = 0.625” stone - 3rd Top Layer = 0.72” - Aggregate = 0.51” stone

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

NFIA RUNWAY: CORE C-8

CORE NUMBER	DESCRIPTION
C-8	TOTAL CORE LENGTH = 13.29” CORE DIAMETER = 6.00” TOTAL CONCRETE = 13.29” - 1st Concrete Layer = 13.29” - Aggregate = 1.45” crushed stone

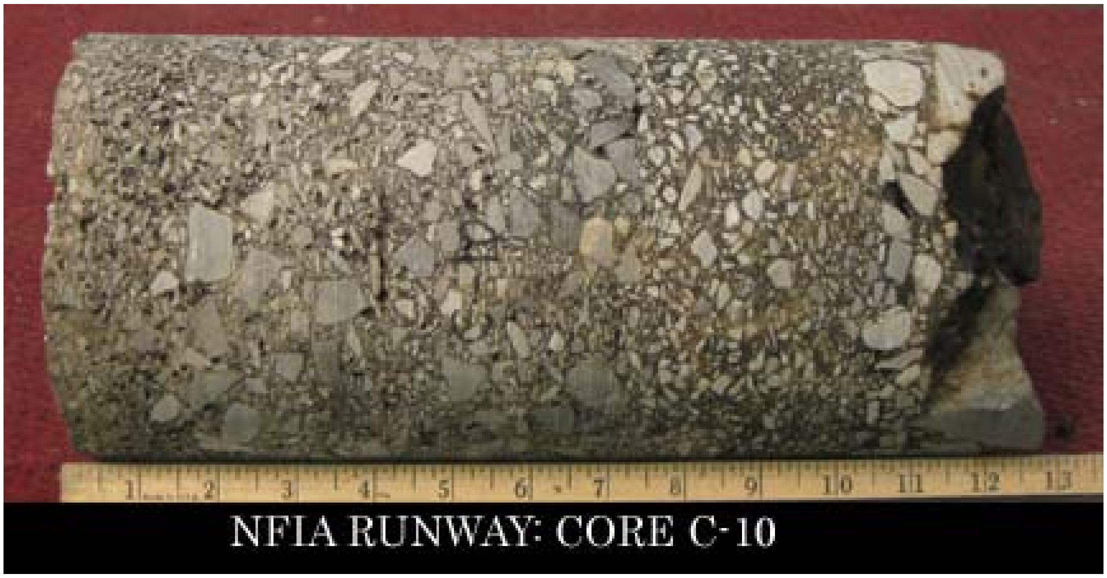
SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY



NFIA RUNWAY: CORE C-9

CORE NUMBER	DESCRIPTION
C-9	TOTAL CORE LENGTH = 7.57” CORE DIAMETER = 6.00” TOTAL ASPHALT = 7.57” - 1st Top Layer = 1.67” - Aggregate = 0.22” stone - 1st Binder Layer = 2.16” - Aggregate = 0.67” stone - Layer contained voids - 2nd Binder Layer = 1.60” - Aggregate = 0.45” stone - 1st Base Layer = 2.14” - Aggregate = 1.13” stone

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY



NFIA RUNWAY: CORE C-10

CORE NUMBER	DESCRIPTION
C-10	TOTAL CORE LENGTH = 12.52” CORE DIAMETER = 6.00” TOTAL ASPHALT = 12.52” - 1st Top Layer = 1.63” - Aggregate = 0.418” stone - 1st Binder Layer = 2.42” - Aggregate = 0.54” stone - 2nd Binder Layer = 3.20” - Aggregate = 0.73” stone - 2nd Top Layer = 1.82” - Aggregate = 0.30” stone - 3rd Top Layer = 0.88” - Aggregate = 0.21” stone - 3rd Binder Layer = 0.94” - Aggregate = 0.74” stone - 1st Base Layer = 1.63” - Aggregate = 1.50” stone

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

CORE NUMBER	DESCRIPTION
C-11	TOTAL CORE LENGTH = 11.64” CORE DIAMETER = 6.00” TOTAL CONCRETE = 11.64” - 1st Concrete Layer = 11.64” - Aggregate = 1.28” crushed stone - No Rebar

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

NFIA RUNWAY: CORE C-12

CORE NUMBER	DESCRIPTION
C-12	TOTAL CORE LENGTH = 10.48” CORE DIAMETER = 6.00” TOTAL CONCRETE = 10.48” - 1st Concrete Layer = 10.48” - Aggregate = 1.35” crushed stone - Color change within the concrete approx. 6” from top of layer - No Rebar

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

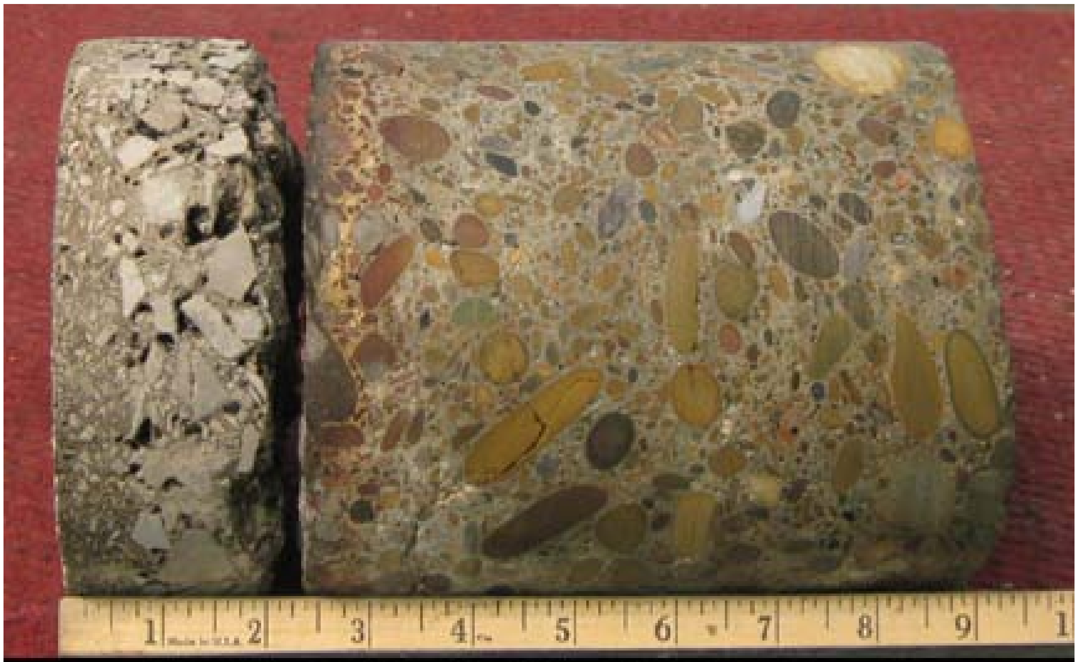
NFIA RUNWAY: CORE C-13

CORE NUMBER	DESCRIPTION
C-13	TOTAL CORE LENGTH = 11.63” CORE DIAMETER = 6.00” TOTAL CONCRETE = 11.63” - 1st Concrete Layer = 11.63” - Aggregate = 0.83” crushed stone - No Rebar

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

CORE NUMBER	DESCRIPTION
C-14	TOTAL CORE LENGTH = 13.30” CORE DIAMETER = 6.00” TOTAL CONCRETE = 13.30” - 1st Concrete Layer = 13.30” - Aggregate = 1.75” crushed stone - No Rebar

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY



NFIA RUNWAY: CORE C-15

CORE NUMBER	DESCRIPTION
C-15	TOTAL CORE LENGTH = 9.16” CORE DIAMETER = 6.00” TOTAL ASPHALT = 2.39” - 1st Top Layer = 0.68” - Aggregate = 0.15” stone - 1st Binder Layer = 1.71” - Aggregate = 0.67” stone TOTAL CONCRETE = 6.77” - 1st Concrete Layer = 6.77” - Aggregate = 0.63” round stone - Horizontal crack approx. 2.7” from top of layer

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

NFIA RUNWAY: CORE C-16

CORE NUMBER	DESCRIPTION
C-16	TOTAL CORE LENGTH = 7.77” CORE DIAMETER = 6.00” TOTAL CONCRETE = 6.42” - 1st Concrete Layer = 6.42” - Aggregate = 0.85” crushed stone - Wire mesh located at 3.67” from top of layer - Subbase aggregate attached to bottom of layer

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

NFIA RUNWAY: CORE C-17

CORE NUMBER	DESCRIPTION
C-17	TOTAL CORE LENGTH = 11.85” CORE DIAMETER = 6.00” TOTAL CONCRETE = 11.85” - 1st Concrete Layer = 11.85” - Aggregate = 1.87” crushed stone - Wire mesh located at 4.92” from top of layer - #10 rebar located at 6.4” from top of layer

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

CORE NUMBER	DESCRIPTION
B-1	TOTAL CORE LENGTH = 10.09” CORE DIAMETER = 6.00” TOTAL CONCRETE = 10.09” - 1st Concrete Layer = 10.09” - Aggregate = 1.23” crushed stone - No Rebar

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

CORE NUMBER	DESCRIPTION
B-2	TOTAL CORE LENGTH = 12.72” CORE DIAMETER = 6.00” TOTAL CONCRETE = 12.72” - 1st Concrete Layer = 12.72” - Aggregate = 1.35” crushed stone - No Rebar

SJB SERVICES, INC.
BD-12-170
NFIA
CORE SUMMARY

CORE NUMBER	DESCRIPTION
B-3	TOTAL CORE LENGTH = 4.60” CORE DIAMETER = 6.00” TOTAL ASPHALT = 4.60” - 1st Top Layer = 2.16” - Aggregate = 0.41” stone - 2nd Top Layer = 2.44” - Aggregate = 0.40” stone

APPENDIX ‘C’

PAVEMENT THICKNESS SUMMARY

PAVEMENT CORE THICKNESS SUMMARY
VARIOUS TAXIWAYS AT NFIA
NIAGARA FALLS, NY

CORE NUMBER	PAVEMENT DEPTH	SUBBASE THICKNESS
C-1	10.9" ASPHALT	13"
C-2	10.6" ASPHALT	12"
C-3	9.9" ASPHALT	8"
C-4	10.0" ASPHALT	12"
C-5	12.6" ASPHALT	14"
C-6	7.0" ASPHALT	14"
C-7	12.6" ASPHALT	12.5"
C-8	13.3" CONCRETE	13"
C-9	7.6" ASPHALT	12"
C-10	12.5" ASPHALT	12"
C-11	11.6" CONCRETE	12"
C-12	10.5" CONCRETE	14"
C-13	11.6" CONCRETE	12"
C-14	13.3" CONCRETE	8"
C-15	2.4" ASPHALT OVER 6.8" CONCRETE	12"
C-16	6.5" CONCRETE	12"
C-17	11.8" CONCRETE	12"
B-1	10.1" CONCRETE	9"
B-2	12.7" CONCRETE	9"
B-3	4.6" ASPHALT	9"

NOTE : THICKNESS MEASURMENTS ROUNDED FOR USE IN THIS TABLE.
REFER TO THE CORE LOG PHOTOGRAPH FOR DETAILS

APPENDIX ‘D’

BORING LOGS

SJB SERVICES, INC.
SUBSURFACE LOG

DATE
START 12/20/2012
FINISH 12/20/2012
SHEET 1 OF 1

HOLE NO. B-1
SURF. ELEV
G.W. DEPTH See Notes

PROJECT: PROPOSED RUNWAY IMPROVEMENTS
LOCATION: NFIA - PORTER ROAD
NIAGARA FALLS, NEW YORK
PROJ. NO.: BD-12-170

DEPTH FT.		SMPL NO.	BLOWS ON SAMPLER 0/6	6/12	12/18	N		SOIL OR ROCK CLASSIFICATION	NOTES
		C	O	R	E			CONCRETE	Driller notes approx. 10" Concrete and 9" Subbase
		1	42	21				Grey-Black Crushed CONCRETE, some Silt, tr.slag (moist, FILL)	
		2	3	6				Brown-Black and Grey Clayey SILT, tr.sand (moist, FILL)	
			5	9		11			
5		3	4	9				Brown-Grey Silty CLAY, tr.sand (moist, v.stiff, CL)	
			12	12		21			
		4	18	13				Becomes Red-Brown (hard)	
			19	12		32			
		5	17	12				(v.stiff)	
10			13	14		25			
								Boring Complete at 10.0'	No free standing water encountered at boring completion.
15									
20									

N = NO. BLOWS TO DRIVE 2-INCH SPOON 12-INCHES WITH A 140 LB. PIN WT. FALLING 30-INCHES PER BLOW

CLASSIFIED BY: Geologist

DRILLER: S. WOLKIEWICZ

DRILL RIG TYPE : CME-550X

METHOD OF INVESTIGATION ASTM D-1586 USING HOLLOW STEM AUGERS