Maine Department of Transportation

Pavement Condition Report

MaineDOT

Loring International Airport (ME16)

DuBois & King inc.

ARA

Submitted To:
Maine Department of Transportation
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Executive Summary

Background

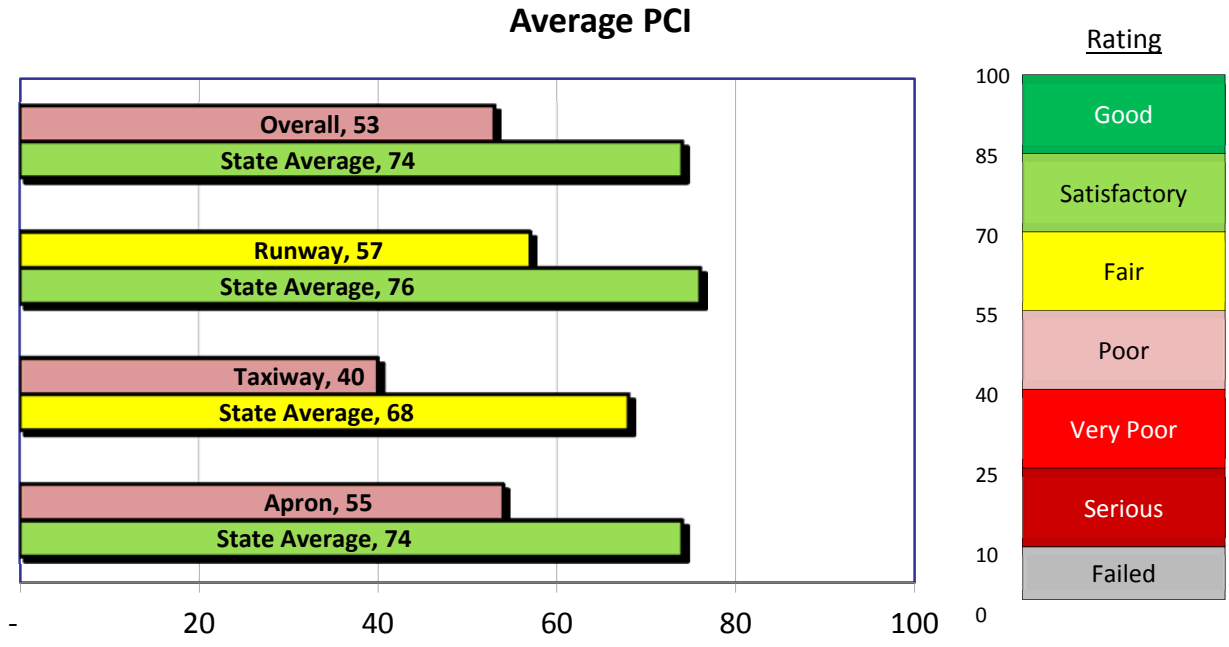
To assist individual airports to effectively maintain their pavement infrastructure and help improve airport pavement conditions statewide, the Maine Department of Transportation (MaineDOT) contracted with DuBois & King, Inc. (D&K) to provide pavement evaluation surveys at local airports. Assisting D&K on this effort was Applied Research Associates, Inc. (ARA). This report documents the pavement condition at Loring International Airport (LOR) in October 2018.

A primary objective of the pavement management program is to determine maintenance and rehabilitation needs by comparing pavement condition to a standardized benchmark called the minimum service level (MSL), defined by MaineDOT as the minimum pavement condition desirable in managing Maine airfield pavements. The benchmark MSL values used to trigger rehabilitation are shown below.

Runway	Taxiway	Apron
70	70	70

Pavement Condition

The average inspected Pavement Condition Index (PCI) for all the airfield pavements at LOR was 53. Runways had an average inspected PCI of 57, which is below the MSL of 70. Taxiways had an average inspected PCI of 40, and aprons had an average inspected PCI of 55. A comparison of the average PCI values at LOR to the statewide average PCI values, by branch use, is shown in the figure below.



Capital Improvement Program

The table below provides a summary of the projected funds needed to perform major rehabilitation on all pavement sections forecasted to fall below the MSL within the next 5 years. Seventeen sections were identified for major rehabilitation based on their PCI rating. If no action is taken, the overall PCI is projected to drop from 53 to 44 by 2023.

Project Year	Calendar Year	Amount	PCI Before	PCI After
Year 1	2019	$0	51	51
Year 2	2020	$123,983,140	49	97
Year 3	2021	$291,905	95	96
Year 4	2022	$0	95	95
Year 5	2023	$0	93	93
	5-Year Total	**$126,275,045**		

Maintenance

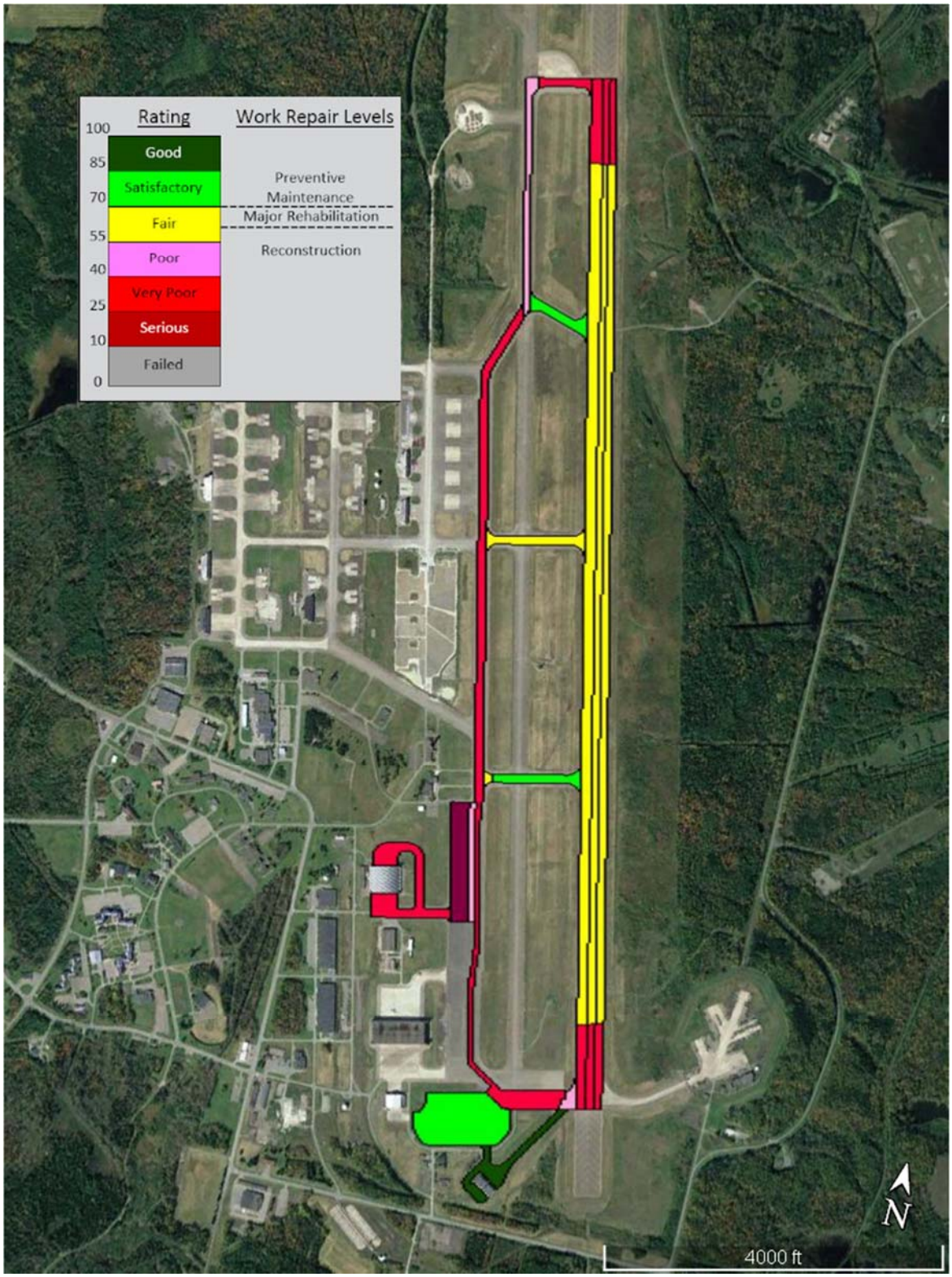
Based on the pavement distress documented during the survey, an analysis of potential maintenance projects identified needs of approximately $5.8 million. The estimated quantity and cost for each type of maintenance action is shown in the table below. The decision matrix and unit costs upon which these estimates are based are described in section 3 and appendix E of this report.

Ongoing development of capital improvement projects may address some of these maintenance needs. To help budgeting and prevent duplication of effort, all pavement features recommended for maintenance should be compared to planned improvements prior to finalizing a maintenance program strategy.

Specific recommendations to help prioritize airfield maintenance are found in chapter 3 of this report. The table below further summarizes the identified maintenance needs.

Work Item	Quantity	Unit	Cost
Crack Sealing - AC	369,387	Ft	$509,758
Crack Sealing - PCC	8,663	Ft	$34,045
Joint Seal (Localized)	140,972	Ft	$542,741
Patching - AC Deep	36,974	SqFt	$686,969
Patching - AC Shallow	60,509	SqFt	$1,017,154
Patching - PCC Full Depth	1,153	SqFt	$137,219
Patching - PCC Partial Depth	1,020	SqFt	$63,048
Slab Replacement - PCC	57,964	SqFt	$1,828,757
Surface Seal	1,574,539	SqFt	$960,471
		Total:	**$5,780,162**

AC = asphalt concrete; PCC = portland cement concrete; SqFt. = square feet; Ft = linear feet


Rating
Work Repair Levels
100
85
70
55
40
25
10
0
Good
Satisfactory
Fair
Poor
Very Poor
Serious
Failed
Preventive Maintenance
Major Rehabilitation
Reconstruction
N
4000 ft

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Abbreviations and Acronyms

AAC	Asphalt Overlaid with Asphalt
AC	Asphalt Concrete
APC	PCC Overlaid with Asphalt
APMS	Airport Pavement Management System
ARA	Applied Research Associates, Inc.
ASTM	American Society for Testing and Materials
CAD	Computer-aided Drafting
CIP	Capital Improvement Plan
D&K	Dubois & King, Inc.
FAA	Federal Aviation Administration
FOD	Foreign Object Debris
GIS	Geographic Information System
L&T	Longitudinal & Transverse Cracking
LCD	Last Construction Date
LOR	Loring International Airport
M&R	Maintenance and Rehabilitation
MaineDOT	Maine Department of Transportation
MSL	Minimum Service Level
PCC	Portland Cement Concrete
PCI	Pavement Condition Index

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1. Introduction

Pavement conditions were assessed using the Pavement Condition Index (PCI) procedure outlined in Federal Aviation Administration (FAA) Advisory Circular 150/5380 and ASTM D5340 for airfield pavements. The PCI was developed to provide a numerical value representing the overall pavement condition that correlates well with the ratings of experienced engineers. During a PCI survey, visible signs of deterioration within a selected sample unit are recorded and analyzed. The recorded distress data are used to calculate a PCI value from 0 to 100, with 100 representing a pavement in excellent condition. The PCI evaluation makes it possible to forecast future deterioration and allows for accurate projections of maintenance and rehabilitation (M&R) needs.

The data collected during this project were entered into the PAVER pavement management software program developed by the U.S. Army Corps of Engineers, Construction Engineering Research Laboratory. The capabilities of PAVER were utilized to meet the following project objectives:

- Update and store pavement inventory and condition data.
- Develop models to predict future conditions.
- Develop M&R recommendations.
- Plan budgets for future M&R needs.
- Report the results at the individual airport and statewide level.

1.1 Project Background

The 36 publicly owned airports throughout Maine play a key role in the movement of goods and services, with an estimated overall economic impact of $1.5 billion. MaineDOT realizes the value in maintaining the paved facilities by implementing and updating an airport pavement management system (APMS). An APMS provides guidance for decisions regarding pavement M&R policies at an airport and can identify short-, medium-, and long-term rehabilitation needs, as well as provide an accessible historical record of life-extending pavement maintenance activities.

1.2 Pavement Management Approach

The main goal of any pavement management system is to identify pavements that will receive the most benefit from an optimally timed repair. By projecting the rate at which the pavement condition will deteriorate, the optimal time for applying treatments can be determined. Typically, the optimal repair time is the point at which a gradual rate of deterioration begins to increase to a much faster rate, as illustrated in Figure 1. It is critical to identify this point in time to avoid higher rehabilitation costs caused by excess deterioration.

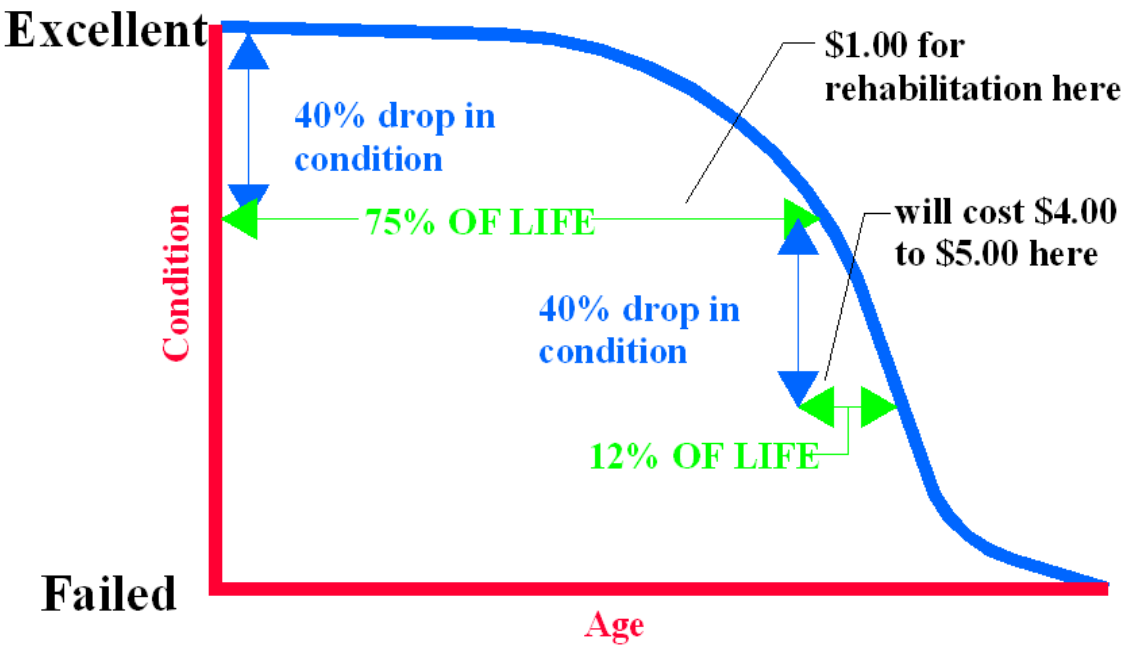


Figure 1. Pavement condition life cycle.

Often, the identified needs will cost more than the available budget and will need to be prioritized over time. The APMS can measure the impact of a limited budget scenario by projecting the future condition of deferred projects. Ultimately, the APMS will provide MaineDOT and the airport a planning tool that can help identify pavement needs, optimize the selection of projects and treatments over a multi-year period, and understand the consequences of these plans.

1.3 Scope of Work

MaineDOT retained D&K/ARA to implement the APMS for the Maine publicly owned general aviation airports. A PCI survey was completed at each airport, and available construction history information was compiled and included in the PAVER database and subsequent analysis. D&K and MaineDOT coordinated the PCI inspections with each airport. After the fieldwork was completed, ARA updated the PAVER database for each airport. PAVER was then used to develop a maintenance work plan based on current distresses. In addition, a 5-year projection identifying recommended pavement repairs was prepared at the state level for the various stakeholders to use as a planning tool. Individual reports, such as this one, were prepared for each airport documenting the results of the pavement inspections. A statewide analysis report was prepared based on that inspection year's airports. The airport maps were linked to the PAVER database to allow for geographic information system (GIS) viewing of data.

2. Project Approach

2.1 Update Pavement Inventory

The pavement inventory at LOR includes all airfield pavements intended for aviation-related traffic. The main objective in updating the pavement inventory was to determine the year of construction (or most recent overlay), the limits of the project, and the surface type for each pavement area based on construction history. When available, MaineDOT provided access to this information from their historical records. This information was used to update the pavement section definitions on the computer-aided drafting (CAD) map and in the PAVER database based on project limits, surface type, layer properties, traffic patterns, and overall condition.

2.1.1 Pavement Network Definition

The construction history information was used to divide the pavement network at LOR into management units—branches, sections, and sample units. A branch is a single entity that serves a distinct function. For example, a runway is considered a branch because it serves a single function (allowing aircraft to take off and land). On an airfield, a branch typically represents an entire runway, taxiway, or apron.

Because of the disparity of characteristics that can occur throughout a branch, it is further subdivided into units called sections. A section is a portion of the pavement that has uniform construction history, pavement structure, traffic patterns, and condition throughout its entire length or area. Sections are used as a management unit for the selection of potential M&R projects. The guideline for determining section breaks is to consider the section as a "repair unit"—a portion of the pavement that will be managed independently and evaluated separately for pavement maintenance and rehabilitation.

Pavement sections are further subdivided into sample units for inspection purposes. The typical sample unit size for asphalt concrete (AC) pavements is 5,000 square feet ± 2,000 square feet, and the typical sample unit size for portland cement concrete (PCC) pavements is 20 slabs ± 8 slabs. A statistical based sampling rate described in ASTM D5340 was used to determine the number of sample units to inspect for each section. The inspected sample units were representative of the overall condition within a section and were used to extrapolate the condition as a whole.

2.1.2 Naming Scheme

For the pavement management system to work efficiently, some unique identifiers were added to the database. The branch names assigned were designed to assist in identification of the pavement area. The first characters are used to identify the pavement use—apron, runway, taxiway, or taxilane (pavement in and around hangar areas). The next character is a number or letter used to further identify the pavement branch (such as RY119 for Runway 1-19 or APA for Apron A). The sections for each branch are assigned a sequential number (001, 002, and so on). Table 1 presents the branches defined for LOR and their corresponding areas.

Table 1. Branch definition.

Branch ID	Name	Number of Sections	Area (SF)
APA	Apron A	3	721,000
APB	Apron B	2	827,800
CTB	Connecting Taxiway B	1	106,150
CTC	Connecting Taxiway C	1	130,700
CTD	Connecting Taxiway D	2	130,050
PTA	Parallel Taxiway A	4	1,290,850
RY119	Runway 1-19	6	3,630,000
Airport Total			**6,836,550**

Figure 2 presents the network definition for LOR and represents the pavements included in the APMS. Some privately built/maintained pavements and "driveways" leading into hangars may not be included within this report nor represented on Figure 2 because they are considered outside the scope of work.

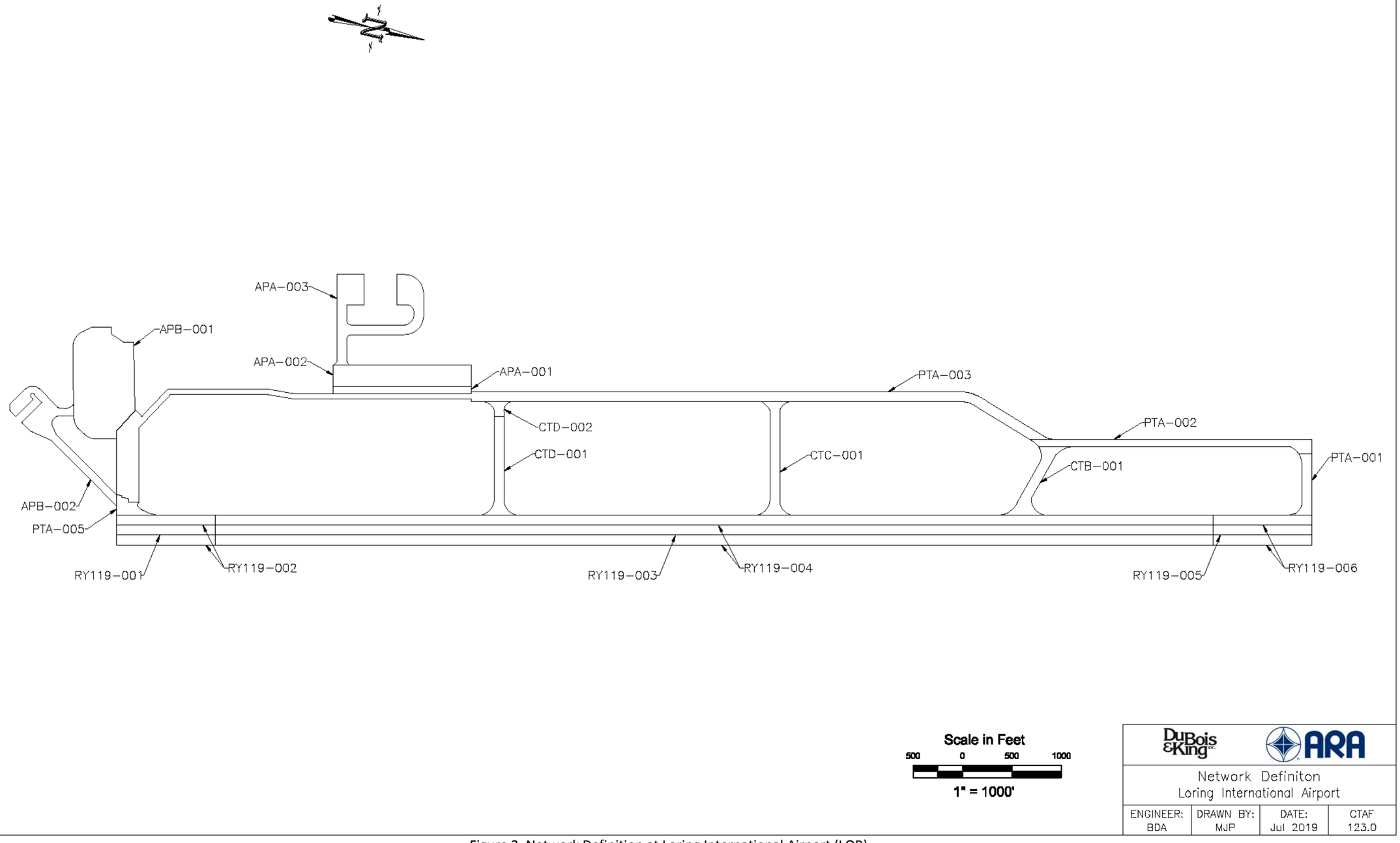


Figure 2. Network Definition at Loring International Airport (LOR)

2.2 Pavement Evaluation

The pavement surfaces at LOR were visually inspected on October 9, 2018 using the PCI procedure. During a PCI inspection, inspectors walk over the surface of the pavement and identify visible signs of distress within a sample unit. Appendix A presents the scalable map used during the inspection to locate the inspected sample units. Each distress type was identified, then classified as low, medium, or high severity, and recorded on field sheets. In general, the higher the severity, the higher the foreign object damage (FOD) potential. The quantity, or extent, is measured for each distress/severity combination.

After collecting and summarizing the distress type, severity, and quantity for each of the inspected sample units, the distress data were entered into the PAVER database and a PCI was calculated. The PCI procedure uses established deduct curves to determine the number of points to deduct for each distress type/severity combination, depending on the density of the distress. The inspected sample unit PCIs were then averaged to determine an overall PCI for that section.

The PCI value provides a general sense as to the level of rehabilitation that will be needed to repair a given pavement. In general terms, maintenance activities such as crack sealing and patching often provide benefit when the PCI is above 70. However, as the pavement continues to deteriorate, more complex and expensive treatments will be necessary. Pavements with a PCI between 60 and 70 are good candidates for a mill and inlay or overlay. Once the PCI drops below 60, MaineDOT typically programs reconstruction as the preferred rehabilitation alternative. Figure 3 presents the PCI inputs, rating scale, and corresponding general work repair levels.

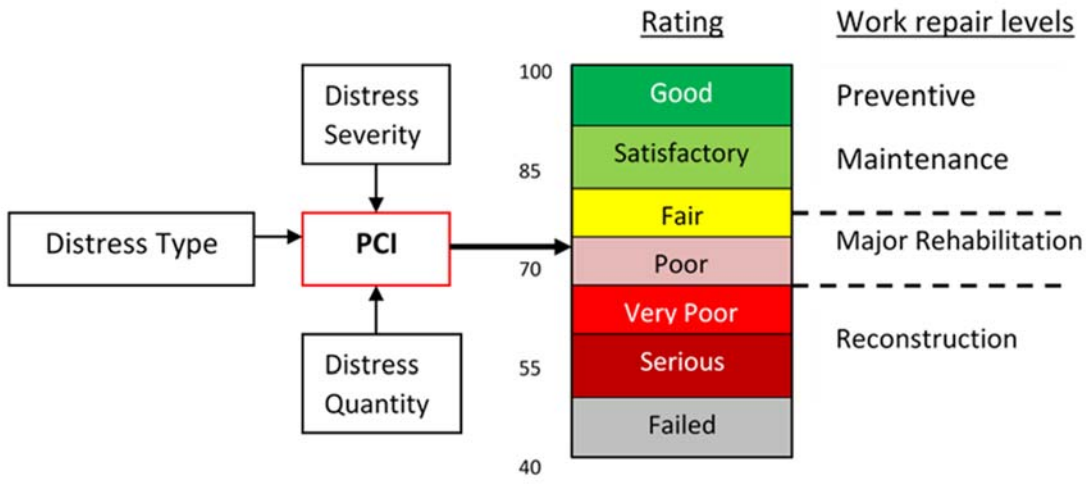


Figure 3. PCI rating scale and repair levels.

2.2.1 Distress Types

To better understand the cause of pavement deterioration, it is necessary to look at the distress types associated with each PCI. Each distress type has been classified into one of three groups based on cause—load, climate/durability, or other. Load-related distresses such as alligator cracking in asphalt pavements, or corner breaks in PCC pavements, indicate that the structural integrity of the pavement has been compromised. Climate-related distresses indicate that the pavement has aged due to seasonal environmental effects. Distresses that cannot be attributed solely to either load or climate are classified as other. Table 2 shows distress types for both asphalt and concrete surfaced pavements in the PCI procedure and their classification. The table also identifies which distresses were observed at LOR during the pavement inspection.

Table 2. PCI distress types.

Asphalt Distresses	Cause Classification	Concrete Distresses	Cause Classification
*Alligator cracking	*Load	Blowup	Climate
Bleeding	Other	*Corner break	*Load
*Block cracking	*Climate	*Linear cracking	*Load
Corrugation	Other	*Durability cracking	*Climate
*Depression	*Other	*Joint seal damage	*Climate
Jet blast	Other	*Small patch	*Other
*Joint reflection cracking	*Climate	*Large patch	*Other
*L&T cracking	*Climate	Popouts	Other
Oil spillage	Other	*Pumping	*Other
*Patching	*Other	*Scaling/crazing	*Other
Polished aggregate	Other	*Faulting	*Other
*Raveling	*Climate	*Shattered slab	*Load
*Rutting	*Load	*Shrinkage cracking	*Other
*Shoving	*Other	*Joint spalling	*Other
Slippage cracking	Other	*Corner spalling	*Other
Swelling	Other	Alkali silica reaction	Climate
*Weathering	*Climate		

* Indicates distresses found at LOR

2.3 PCI Results

The results of the 2018 PCI inspection are presented in Table 3 and Figure 7. The overall area-weighted PCI for LOR is 53. When summarizing PCI values, an area-weighted calculation is used instead of a straight mathematical average because the area-weighted calculations eliminate the skewing of the PCI due to disparities between section sizes.

Figure 4 and Figure 5 present the overall PCI for LOR by area distribution and pavement use, respectively. Table 3 presents the PCI summary for each section at LOR, including the drop in PCI per year. Generally, pavement sections will deteriorate between 1 and 3 PCI points per year. Sections deteriorating at higher rates may need maintenance above the normal application rates and should be closely monitored in case major repairs become necessary earlier than expected.

Appendix B provides a graphical illustration of the projected PCI for each pavement section along with additional summary data including various repair alternatives. Appendix C contains the detailed inspection report with sample unit data produced from PAVER. Appendix D describes the distress types most commonly identified during the PCI inspections of Maine airports.

Table 3. PCI section summary table.

Branch ID	Section ID	Surface Type[1]	Section Area (SF)	LCD[2]	2018 PCI	Drop in PCI/Yr[3]	% Deduct due to	
							Load	Climate
APA	001	AC	109,150	1958	41	1.0	34	66
APA	002	AC	297,500	1952	24	1.2	25	75
APA	003	AC	314,350	1948	26	1.1	31	69
APB	001	PCC	611,400	1955	76	0.4	27	35
APB	002	PCC	216,400	1955	86	0.2	0	81
CTB	001	AC	106,150	1948	74	0.4	0	100
CTC	001	AC	130,700	1952	63	0.6	20	80
CTD	001	AC	110,550	1952	72	0.4	25	65
CTD	002	AC	19,500	1952	62	0.6	0	100
PTA	001	PCC	67,350	1956	28	1.2	80	6
PTA	002	AC	222,050	1948	53	0.7	31	69
PTA	003	AC	959,750	1948	26	1.1	35	65
PTA	005	PCC	41,700	1952	46	0.8	67	20
RY119	001	PCC	100,000	1955	29	1.1	64	11
RY119	002	PCC	200,000	1956	34	1.1	77	12
RY119	003	AC	1,010,000	1952	63	0.6	12	85
RY119	004	AC	2,020,000	1952	61	0.6	9	91
RY119	005	PCC	100,000	1956	37	1.0	71	9
RY119	006	PCC	200,000	1956	35	1.0	82	16

[1] AC = asphalt cement; AAC = asphalt overlaid with asphalt; PCC = portland cement concrete; APC = PCC overlaid with asphalt

[2] LCD = last construction date (original construction, last overlay, or reconstruction [whichever is most recent])

[3] Drop in PCI/Yr = (100 – PCI)/age where age = 2018 – LCD

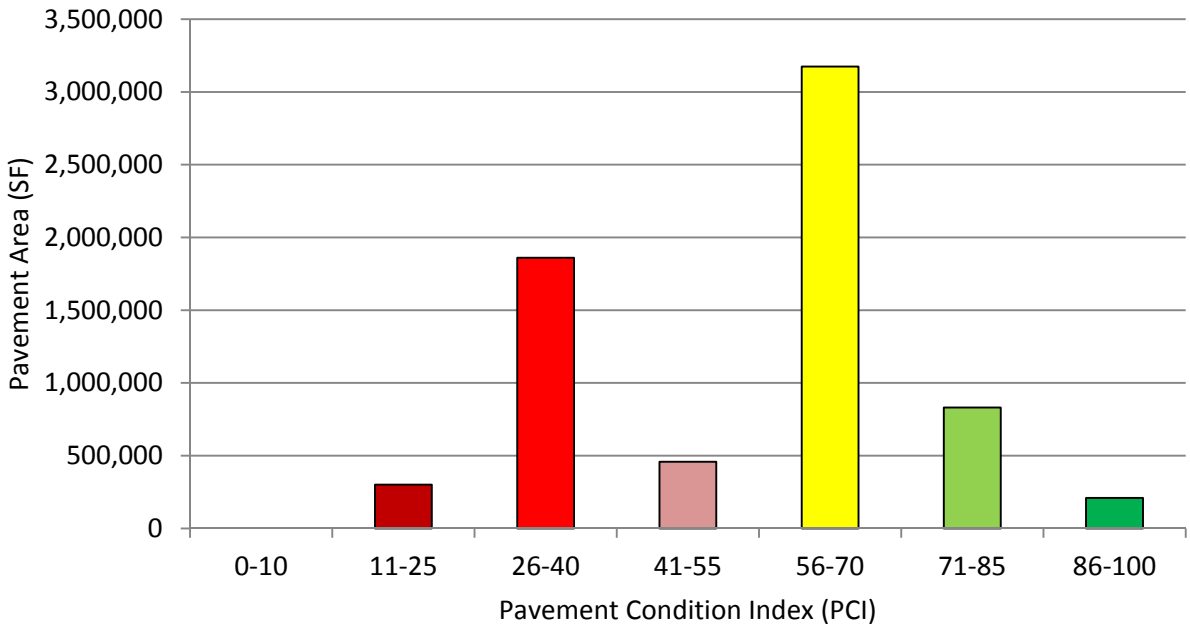


Figure 4. Condition distribution.

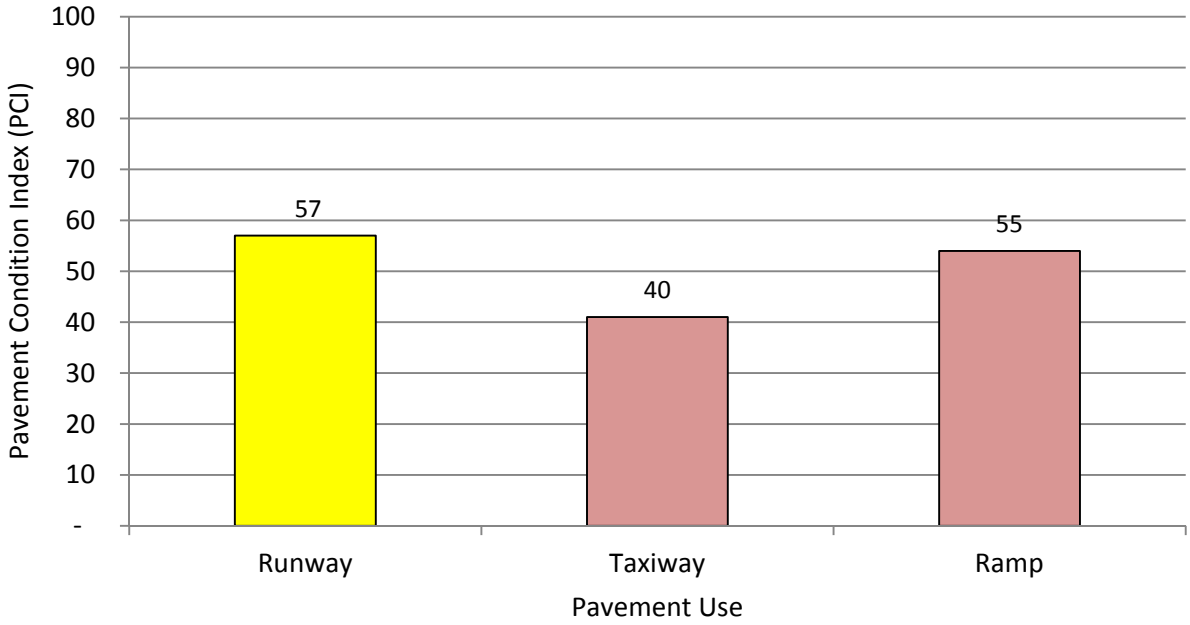


Figure 5. Area-weighted PCI by pavement use.

2.4 Projected PCI

After the 2018 distress data were entered into PAVER and the PCI determined, a modeling approach was used to predict future PCI levels based on historical PCI data from MaineDOT' s airports. Pavements were grouped together in performance families based on similar construction, traffic, pavement use, and other factors affecting pavement performance. These performance models predict future PCI, not future distresses.

Figure 6 shows the projected PCI at LOR by percent area for the next 5 years assuming no maintenance or major repairs (overlays, reconstruction, etc.) are performed during that period. It shows how quickly the pavement network will deteriorate if no capital improvements are made. The corresponding projected PCI values for each pavement section are shown in Table 4.

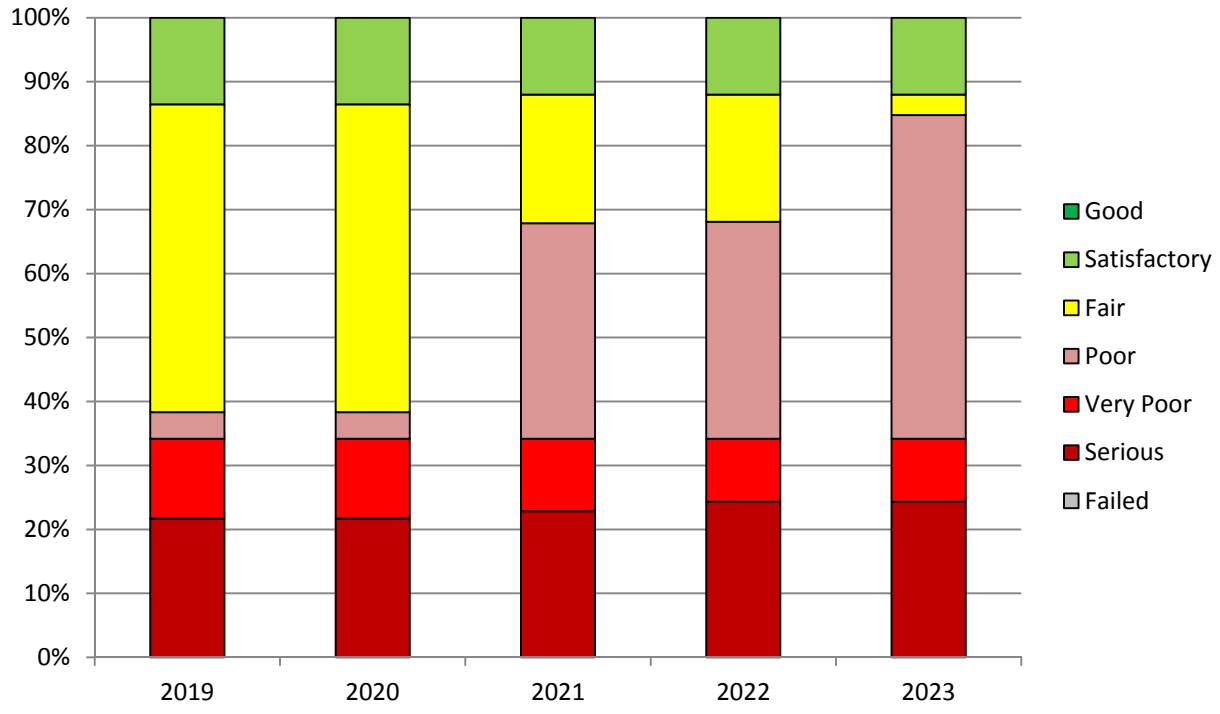
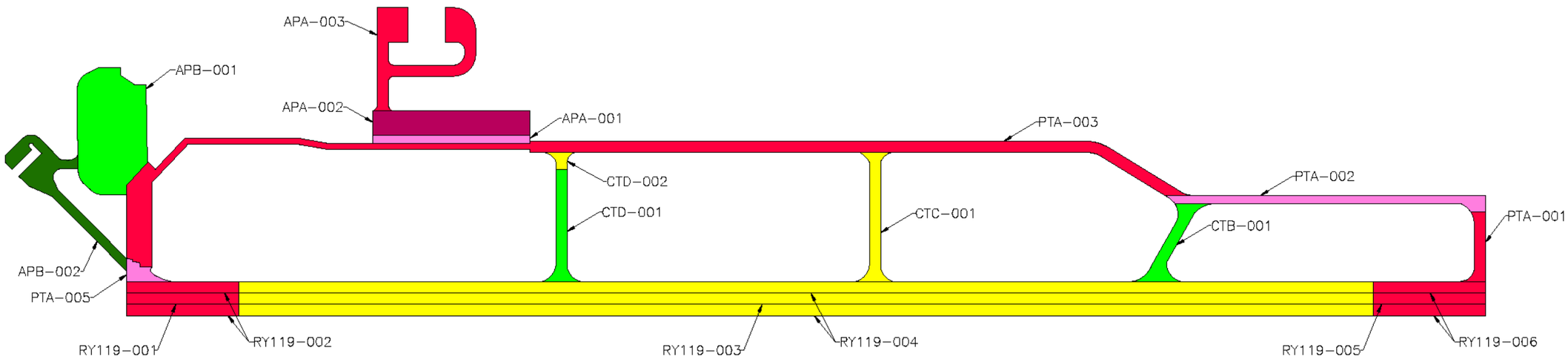


Figure 6. Projected PCI by percent area.

Table 4. Projected PCI by section (no M&R).

Branch ID	Section ID	2019	2020	2021	2022	2023
APA	001	39	37	35	33	30
APA	002	22	20	17	15	13
APA	003	24	22	20	17	15
APB	001	75	74	73	72	71
APB	002	85	84	83	82	81
CTB	001	72	71	69	67	65
CTC	001	61	59	57	56	54
CTD	001	70	69	67	65	63
CTD	002	60	58	56	54	53
PTA	001	27	26	25	24	23
PTA	002	51	49	47	45	43
PTA	003	24	22	19	17	15
PTA	005	45	44	43	42	41
RY119	001	28	27	26	25	24
RY119	002	33	32	31	30	29
RY119	003	61	59	57	56	54
RY119	004	59	57	55	53	51
RY119	005	36	35	34	33	32
RY119	006	34	33	32	31	30



	FAILED	SERIOUS	VERY POOR	POOR	FAIR	SATISFACTORY	GOOD	PCI INDEX
NS	0-10	11-25	26-40	41-55	56-70	71-85	86-100	

Scale in Feet

500 0 500 1000

1" = 1000'

DuBois & King Inc. ARA

2018 Pavement Condition Map
Loring International Airport

ENGINEER:	DRAWN BY:	DATE:	CTAF
BDA	MJP	Jul 2019	123.0

Figure 7. 2018 PCI Map at Loring International Airport (LOR)

3. Maintenance and Rehabilitation Needs

A 5-year M&R program was developed for LOR based on the 2018 pavement inspections and the projected PCI deterioration. The recommendations are divided into two categories—near term maintenance (local M&R) and major rehabilitation (major M&R). The near term maintenance is intended to address annual maintenance needs such as crack sealing and localized patching. The major rehabilitation treatments are applied globally and are capable of returning the pavement to a nearly distress-free state. Costs for both categories were developed based on recent bid tabs and are intended to represent typical unit costs in Maine. While these cost estimates provide a useful network-level planning tool, they are not meant to represent an engineer's estimate for any particular project. Project-specific cost estimates must be developed on a case-by-case basis.

Table 5 shows the unit costs used to determine the near term maintenance needs and Table 6 shows the unit costs used to determine the major rehabilitation needs. Unlike the maintenance costs based on specific action items, PAVER estimates major rehabilitation costs based on the PCI value. Therefore, the costs shown in Table 6 are meant to represent a unit cost for complete reconstruction (PCI < 60) of $31.01 for PCC and $20.40 for AC pavement. For major rehabilitation (PCI between 61 and 70), unit costs are $8.75 for PCC and $2.75 for AC pavement. Note that the unit cost of $2.75 between PCI values of 61 and 70 for AC pavement represents the cost of a 2-inch mill and inlay.

Table 5. Local M&R unit costs

Treatment Name	Unit Cost
Crack Sealing - AC	$1.38 / Ft
Crack Sealing - PCC	$3.93 / Ft
Grinding (Localized)	$5.75 / Ft
Joint Seal (Localized)	$3.85 / Ft
Patching - AC Deep	$18.56 / SqFt
Patching - AC Shallow	$16.81 / SqFt
Surface Treatment	$0.61 / SqFt
Patching - PCC Full Depth	$119.00 / SqFt
Patching - PCC Partial Depth	$61.63 / SqFt
Slab Replacement - PCC	$31.55 / SqFt
Undersealing - PCC	$3.03 / Ft

Table 6. Major M&R unit costs

PCI	Cost AC	Cost PCC
0-60	$20.40 / SqFt	$31.01 / SqFt
61-70	$2.75 / SqFt	$8.75 / SqFt
71-80	$1.10 / SqFt	$5.45 / SqFt
81-100	$0.61 / SqFt	$0.61/ SqFt

3.1 Local M&R

Near term maintenance includes activities such as crack sealing, patching, and surface treatments that help to slow the rate of deterioration. Localized maintenance policies were developed for the AC and PCC surfaces. The policies, provided in appendix E, present the recommended maintenance treatment for each distress/severity combination.

Table 7 presents the summary of maintenance work quantities and estimated costs to apply the near term maintenance plan at LOR. The repair quantities are based on extrapolated distress quantities from PAVER using the 2018 PCI inspection and the maintenance policy matrix as defined in appendix E.

Table 7. Airport maintenance summary

Treatment	Estimated Repair Quantity	Units	Estimated Costs
Crack Sealing - AC	369,387	Ft	$509,758
Crack Sealing - PCC	8,663	Ft	$34,045
Joint Seal (Localized)	140,972	Ft	$542,741
Patching - AC Deep	36,974	SqFt	$686,969
Patching - AC Shallow	60,509	SqFt	$1,017,154
Patching - PCC Full Depth	1,153	SqFt	$137,219
Patching - PCC Partial Depth	1,020	SqFt	$63,048
Slab Replacement - PCC	57,964	SqFt	$1,828,757
Surface Seal	1,574,539	SqFt	$960,471
		Total:	**$5,780,162**

When using this plan, it is recommended that the entire pavement section be viewed to determine whether the identified distress types are so advanced in density and severity that maintenance efforts will no longer be cost-effective. Table 8 provides a more detailed breakdown of the maintenance needs with each pavement section classified as preventive, restorative, or stopgap. Preventive maintenance is defined as occurring above the minimum service level (MSL) and is recommended as a cost-effective means of prolonging the pavement life. Restorative maintenance occurs below the MSL but has the ability to increase the PCI above the MSL. It is recommended that the airport engineer perform a life cycle cost analysis comparing restorative maintenance to major rehabilitation to determine the ideal repair strategy. Stopgap maintenance is defined as maintenance needs that will not restore the pavement to the MSL. Stopgap maintenance is typically limited to the minimum necessary to control FOD and maintain safety until such time as major rehabilitation can be programmed.

Table 8. Maintenance type by section

Branch	Section	Maintenance Type	PCI Before	PCI After	Cost
APA	001	Stopgap	41	57	$109,003
APA	002	Stopgap	24	55	$618,244
APA	003	Stopgap	26	51	$459,654
APB	001	Preventive	76	89	$359,267
APB	002	Preventive	86	98	$84,947
CTB	001	Preventive	74	79	$516
CTC	001	Stopgap	63	67	$15,163
CTD	001	Preventive	72	77	$15,000
CTD	002	Stopgap	62	66	$207
PTA	001	Stopgap	28	66	$349,053
PTA	002	Stopgap	53	57	$88,629
PTA	003	Stopgap	26	47	$1,347,944
PTA	005	Restorative	46	77	$71,734
RY119	001	Stopgap	29	60	$390,139
RY119	002	Stopgap	34	66	$624,962
RY119	003	Stopgap	63	67	$179,127
RY119	004	Stopgap	61	65	$340,865
RY119	005	Stopgap	37	67	$255,880
RY119	006	Stopgap	35	68	$469,827

It is important to understand that the maintenance plan is based on the distress types, severities, and quantities found during the 2018 PCI survey. As field conditions change, the maintenance plan will become less accurate. Therefore, the maintenance plan will be most useful if implemented as soon as is practical. Applying maintenance treatments should be an annual event at the airport, and this maintenance plan can serve as a baseline for that work. The recommended maintenance type for each section is shown in Figure 9 and summarized in Table 8. Recommended maintenance actions by section are provided in Table 9. Guidelines for performing crack sealing and patching techniques are provided in appendix F.

Table 9. Maintenance details by section

Branch	Section	Work Type	Quantity	Unit	Cost
APA	001	Crack Sealing - AC	28,079	Ft	$38,750
APA	001	Patching - AC Deep	811	SqFt	$15,052
APA	001	Surface Seal	90,492	SqFt	$55,200
APA	002	Crack Sealing - AC	71,356	Ft	$98,472
APA	002	Patching - AC Deep	2,618	SqFt	$48,644
APA	002	Patching - AC Shallow	18,657	SqFt	$313,633
APA	002	Surface Seal	258,187	SqFt	$157,495
APA	003	Crack Sealing - AC	61,665	Ft	$85,099
APA	003	Patching - AC Deep	3,460	SqFt	$64,278
APA	003	Patching - AC Shallow	14,783	SqFt	$248,501
APA	003	Surface Seal	101,271	SqFt	$61,776
APB	001	Crack Sealing - PCC	653	Ft	$2,567
APB	001	Joint Seal (Localized)	81,510	Ft	$313,813
APB	001	Patching - PCC Partial Depth	693	SqFt	$42,888
APB	002	Joint Seal (Localized)	20,625	Ft	$79,406
APB	002	Patching - PCC Partial Depth	89	SqFt	$5,541
CTB	001	Crack Sealing - AC	374	Ft	$516
CTC	001	Crack Sealing - AC	2,187	Ft	$3,018
CTC	001	Patching - AC Deep	453	SqFt	$8,424
CTC	001	Surface Seal	6,099	SqFt	$3,721
CTD	001	Crack Sealing - AC	1,535	Ft	$2,118
CTD	001	Patching - AC Deep	591	SqFt	$10,985
CTD	001	Surface Seal	3,111	SqFt	$1,898
CTD	002	Crack Sealing - AC	150	Ft	$207
PTA	001	Crack Sealing - PCC	724	Ft	$2,847
PTA	001	Joint Seal (Localized)	3,629	Ft	$13,973
PTA	001	Patching - PCC Full Depth	166	SqFt	$19,705
PTA	001	Patching - PCC Partial Depth	14	SqFt	$877
PTA	001	Slab Replacement - PCC	9,878	SqFt	$311,652
PTA	002	Crack Sealing - AC	6,903	Ft	$9,526
PTA	002	Surface Seal	129,677	SqFt	$79,103
PTA	003	Crack Sealing - AC	122,060	Ft	$168,444
PTA	003	Patching - AC Deep	29,041	SqFt	$539,586
PTA	003	Patching - AC Shallow	25,946	SqFt	$436,155
PTA	003	Surface Seal	334,031	SqFt	$203,759
PTA	005	Crack Sealing - PCC	414	Ft	$1,627
PTA	005	Joint Seal (Localized)	3,025	Ft	$11,646
PTA	005	Patching - PCC Full Depth	88	SqFt	$10,458
PTA	005	Patching - PCC Partial Depth	22	SqFt	$1,355
PTA	005	Slab Replacement - PCC	1,479	SqFt	$46,649
RY119	001	Crack Sealing - PCC	1,350	Ft	$5,306
RY119	001	Joint Seal (Localized)	4,140	Ft	$15,939
RY119	001	Patching - PCC Full Depth	410	SqFt	$48,802
RY119	001	Patching - PCC Partial Depth	74	SqFt	$4,592
RY119	001	Slab Replacement - PCC	10,001	SqFt	$315,500
RY119	002	Crack Sealing - PCC	2,786	Ft	$10,948
RY119	002	Joint Seal (Localized)	6,343	Ft	$24,420
RY119	002	Patching - PCC Full Depth	192	SqFt	$22,873

Branch	Section	Work Type	Quantity	Unit	Cost
RY119	002	Patching - PCC Partial Depth	53	SqFt	$3,328
RY119	002	Slab Replacement - PCC	17,857	SqFt	$563,393
RY119	003	Crack Sealing - AC	31,535	Ft	$43,519
RY119	003	Surface Seal	222,308	SqFt	$135,608
RY119	004	Crack Sealing - AC	43,542	Ft	$60,089
RY119	004	Patching - AC Shallow	1,123	SqFt	$18,865
RY119	004	Surface Seal	429,362	SqFt	$261,912
RY119	005	Crack Sealing - PCC	950	Ft	$3,734
RY119	005	Joint Seal (Localized)	6,900	Ft	$26,565
RY119	005	Patching - PCC Full Depth	205	SqFt	$24,401
RY119	005	Patching - PCC Partial Depth	65	SqFt	$3,993
RY119	005	Slab Replacement - PCC	6,250	SqFt	$197,188
RY119	006	Crack Sealing - PCC	1,786	Ft	$7,018
RY119	006	Joint Seal (Localized)	14,800	Ft	$56,980
RY119	006	Patching - PCC Full Depth	93	SqFt	$10,979
RY119	006	Patching - PCC Partial Depth	8	SqFt	$475
RY119	006	Slab Replacement - PCC	12,500	SqFt	$394,375

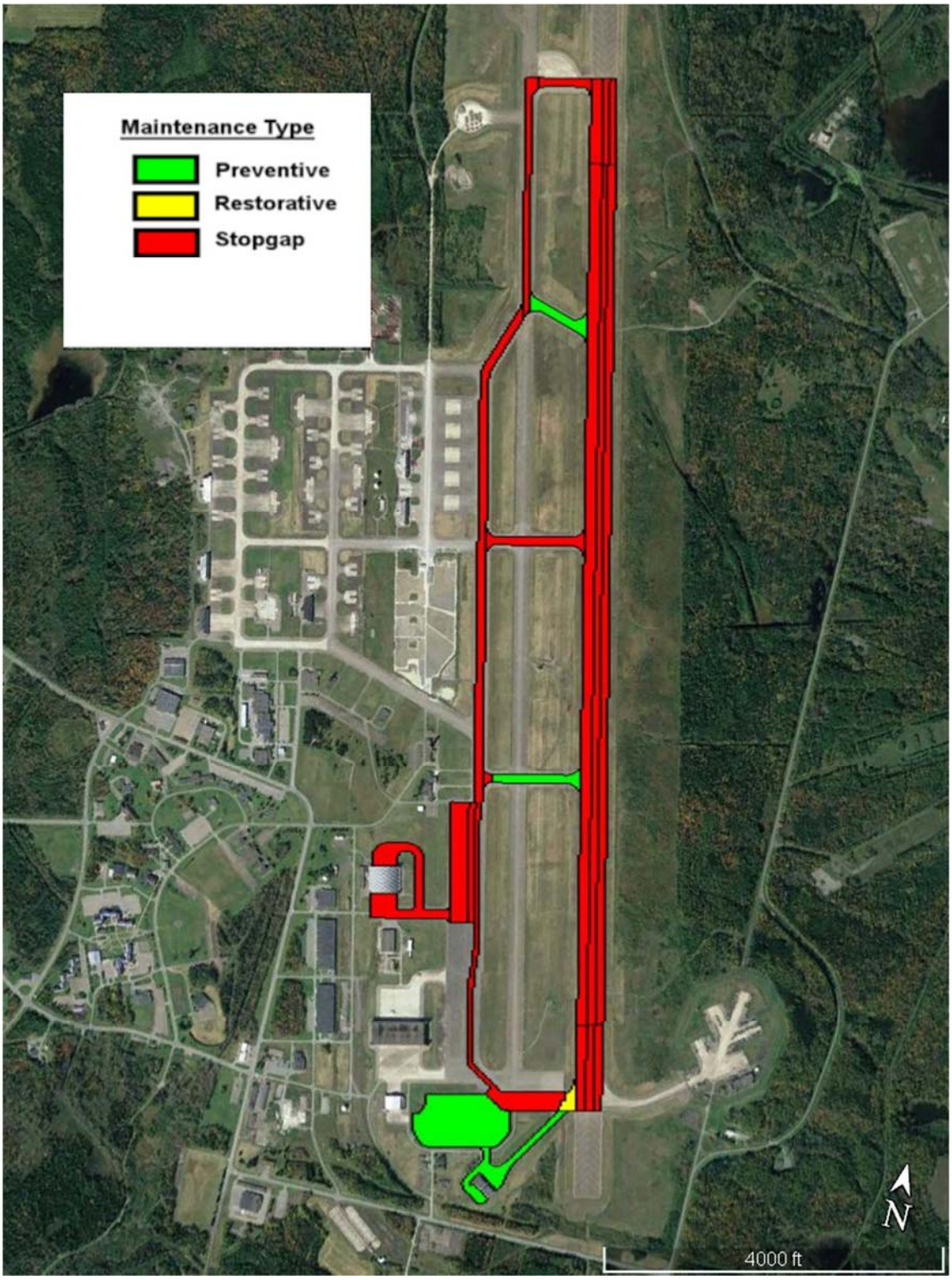


Figure 8. Maintenance type

3.2 Major M&R

In addition to the annual maintenance activities such as crack sealing and patching, some pavements may require more substantial rehabilitation. As a planning aid to the airport and MaineDOT, Table 10 provides a summary from PAVER of the predicted 5-year pavement rehabilitation needs at LOR. The recommended timing of each improvement action is defined as the year that the pavement condition is projected to reach the MSL. By establishing benchmark MSL targets, it is possible to plan objectively for future needs against a standard set of performance criteria. Based on D&K/ARA's recommendations and a review of national best practices, MaineDOT Division of Aviation has selected benchmark MSL values of 70 for all airside pavement. These MSL values fall within the typical range of those used throughout the nation to manage general aviation airport pavement.

The pavement sections identified for major rehabilitation in Table 10 and shown in Figure 9 are at or are predicted to reach a condition level where major M&R should be considered. While the predicted rehabilitation timeline identifies specific sections and the general timing for the repair, more in-depth project-level studies will be needed to determine exactly how to fix each pavement (i.e. asphalt overlay, reconstruction, or some other repair alternative). Additionally, the airport may find it desirable to adjust the timing of projects to meet fiscal and operational constraints. For example, if the runway and several connector taxiways were forecast to reach the MSL in various years ranging from 2019-2023, it may be preferable to group these pavement sections into a single project.

Note that identifying projects for work does not guarantee that federal or state funding will be available to complete the work in the year shown. The airport and MaineDOT should view these recommendations as viable projects when preparing future capital improvement plans (CIP).

Table 10. 5-year major rehabilitation plan.

Branch ID	Section ID	Year	Predicted PCI Before Rehab	Estimated Cost
APA	001	2020	37	$2,226,622
APA	002	2020	20	$6,068,896
APA	003	2020	22	$6,412,630
CTC	001	2020	59	$2,666,234
CTD	001	2020	69	$304,005
CTD	002	2020	58	$397,793
PTA	001	2020	26	$2,088,531
PTA	002	2020	49	$4,529,742
PTA	003	2020	22	$19,578,564
PTA	005	2020	44	$1,293,122
RY119	001	2020	27	$3,101,011
RY119	002	2020	32	$6,202,022
RY119	003	2020	59	$20,603,646
RY119	004	2020	57	$41,207,292
RY119	005	2020	35	$3,101,011
RY119	006	2020	33	$6,202,021
CTB	001	2021	69	$291,905
			5-year Airport Total	**$126,275,045**

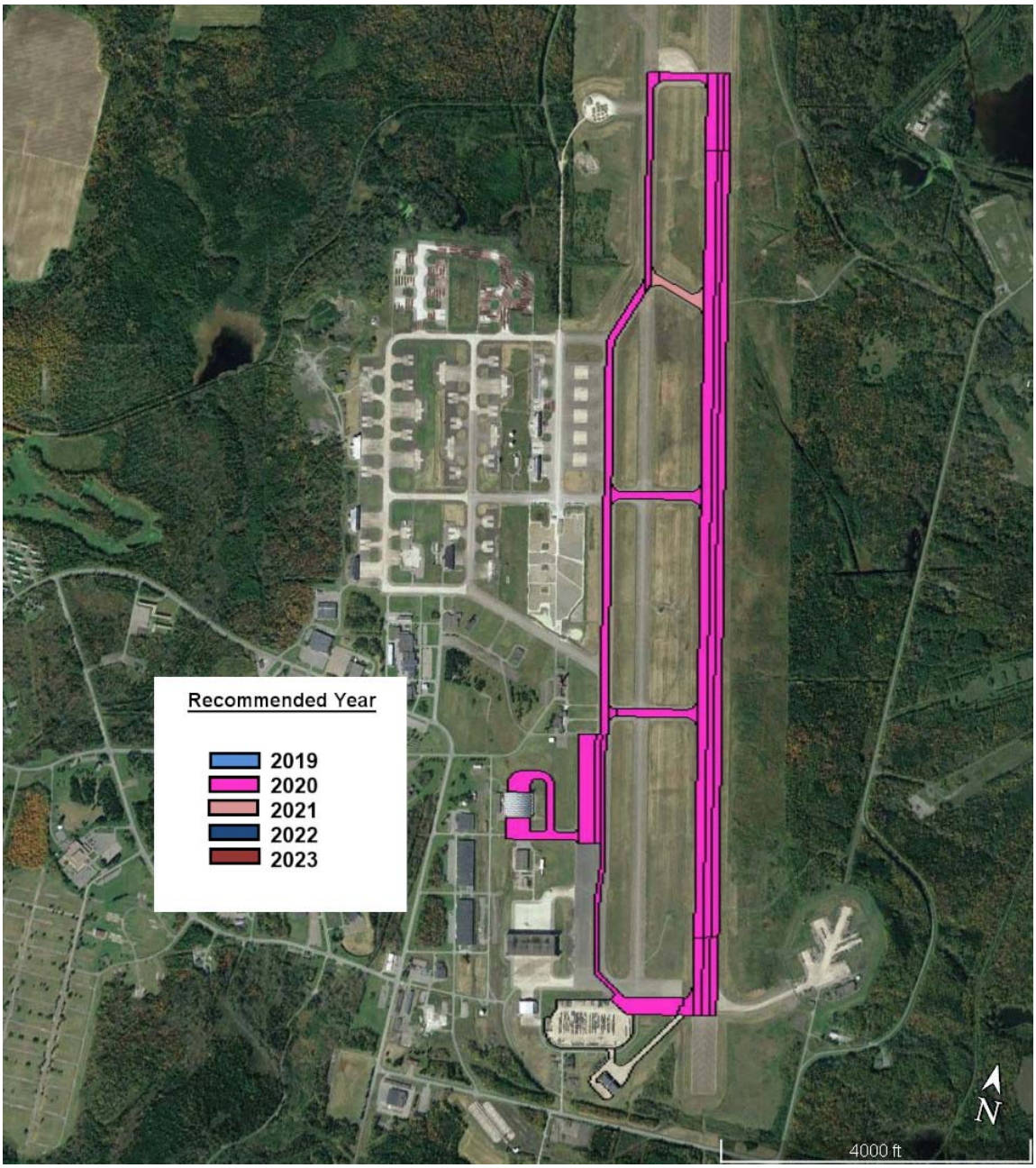


Figure 9. Major M&R

3.3 Airfield Capital Improvement Plan - Unlimited Budget

Assuming that all pavement sections below the MSL receive major M&R and that all pavement sections above the MSL receive preventive maintenance, the total funding needs for the identified maintenance and rehabilitation projects at LOR are shown in Table 11. Note that funding sources will vary by airport, but it is generally assumed that major M&R projects will be eligible for FAA AIP funding and that preventive maintenance will be completed with airport/city staff. Pavement sections, where restorative maintenance appears to be a cost effective alternative to major M&R, have been flagged for additional analysis by the airport sponsor / design engineer. If this pavement repair plan were to be implemented as shown, the subsequent projected PCI values for each pavement section are shown in Table 12.

Table 11. Summary of repair needs (unlimited budget)

Branch ID	Section ID	Year	Type of Repair	Funding Sources	Cost
APA	001	2020	Major M&R	FAA/Local	$2,226,622
APA	002	2020	Major M&R	FAA/Local	$6,068,896
APA	003	2020	Major M&R	FAA/Local	$6,412,630
APB	001	2020	Preventive Maintenance	Local / City Crew	$359,267
APB	002	2020	Preventive Maintenance	Local / City Crew	$84,768
CTB	001	2020[1]	Preventive Maintenance	Local / City Crew	$511
CTC	001	2020	Major M&R	FAA/Local	$2,666,234
CTD	001	2020	Major M&R	FAA/Local	$304,005
CTD	002	2020	Major M&R	FAA/Local	$397,793
PTA	001	2020	Major M&R	FAA/Local	$2,088,531
PTA	002	2020	Major M&R	FAA/Local	$4,529,742
PTA	003	2020	Major M&R	FAA/Local	$19,578,564
PTA	005	2020	Major M&R	FAA/Local	$1,293,122
RY119	001	2020	Major M&R	FAA/Local	$3,101,011
RY119	002	2020	Major M&R	FAA/Local	$6,202,022
RY119	003	2020	Major M&R	FAA/Local	$20,603,646
RY119	004	2020	Major M&R	FAA/Local	$41,207,292
RY119	005	2020	Major M&R	FAA/Local	$3,101,011
RY119	006	2020	Major M&R	FAA/Local	$6,202,021
CTB	001	2021[1]	Major M&R	FAA/Local	$291,905
APA	001	2023	Preventive Maintenance	Local / City Crew	
APA	002	2023	Preventive Maintenance	Local / City Crew	
APA	003	2023	Preventive Maintenance	Local / City Crew	
APB	001	2023	Preventive Maintenance	Local / City Crew	
APB	002	2023	Preventive Maintenance	Local / City Crew	
CTB	001	2023	Preventive Maintenance	Local / City Crew	
CTC	001	2023	Preventive Maintenance	Local / City Crew	
CTD	001	2023	Preventive Maintenance	Local / City Crew	
CTD	002	2023	Preventive Maintenance	Local / City Crew	
PTA	001	2023	Preventive Maintenance	Local / City Crew	
PTA	002	2023	Preventive Maintenance	Local / City Crew	

Branch ID	Section ID	Year	Type of Repair	Funding Sources	Cost
PTA	003	2023	Preventive Maintenance	Local / City Crew	
PTA	005	2023	Preventive Maintenance	Local / City Crew	
RY119	001	2023	Preventive Maintenance	Local / City Crew	
RY119	002	2023	Preventive Maintenance	Local / City Crew	
RY119	003	2023	Preventive Maintenance	Local / City Crew	
RY119	004	2023	Preventive Maintenance	Local / City Crew	
RY119	005	2023	Preventive Maintenance	Local / City Crew	
RY119	006	2023	Preventive Maintenance	Local / City Crew	
				Total:	**$126,719,593**

[1] Preventive Maintenance for CTB-001 estimated at $511 will keep section PCI above 70 until 2025.

Table 12. Projected PCI by section (unlimited funding)

Branch ID	Section ID	2019	2020	2021	2022	2023
APA	001	39	100	98	96	95
APA	002	22	100	98	96	95
APA	003	24	100	98	96	95
APB	001	75	89	88	87	86
APB	002	85	98	97	96	95
CTB	001	72	71	100	99	97
CTC	001	61	100	99	97	96
CTD	001	70	100	99	97	96
CTD	002	60	100	99	97	96
PTA	001	27	100	99	98	97
PTA	002	51	100	99	97	96
PTA	003	24	100	99	97	96
PTA	005	45	100	99	98	97
RY119	001	28	100	99	98	97
RY119	002	33	100	99	98	97
RY119	003	61	100	99	97	96
RY119	004	59	100	99	97	96
RY119	005	36	100	99	98	97
RY119	006	34	100	99	98	97

3.4 Airport Responsibilities

The FAA has defined an acceptable maintenance-management program, and this report fulfills many requirements of such a program, including documenting:

- Locations of all runways, taxiways, and aprons.
- Dimensions of the pavement system.
- Types of pavement.
- Year of construction or most recent major rehabilitation.

In accordance with best practices, the airport owner should be an active participant specifically by implementing the following actions:

- Conduct a "drive-by" inspection at least monthly to detect changes in pavement condition.
- Record the date of each "drive-by" inspection and any maintenance performed as a result.
- Document all maintenance activities.
- Document detailed inspection information with a history of recorded pavement deterioration by PCI survey (e.g., this report).
- Maintain all records on file for a minimum of 5 years.

An example of a form that can be completed during “drive-by” inspections is provided in appendix F.

Appendix A: Sample Unit Maps

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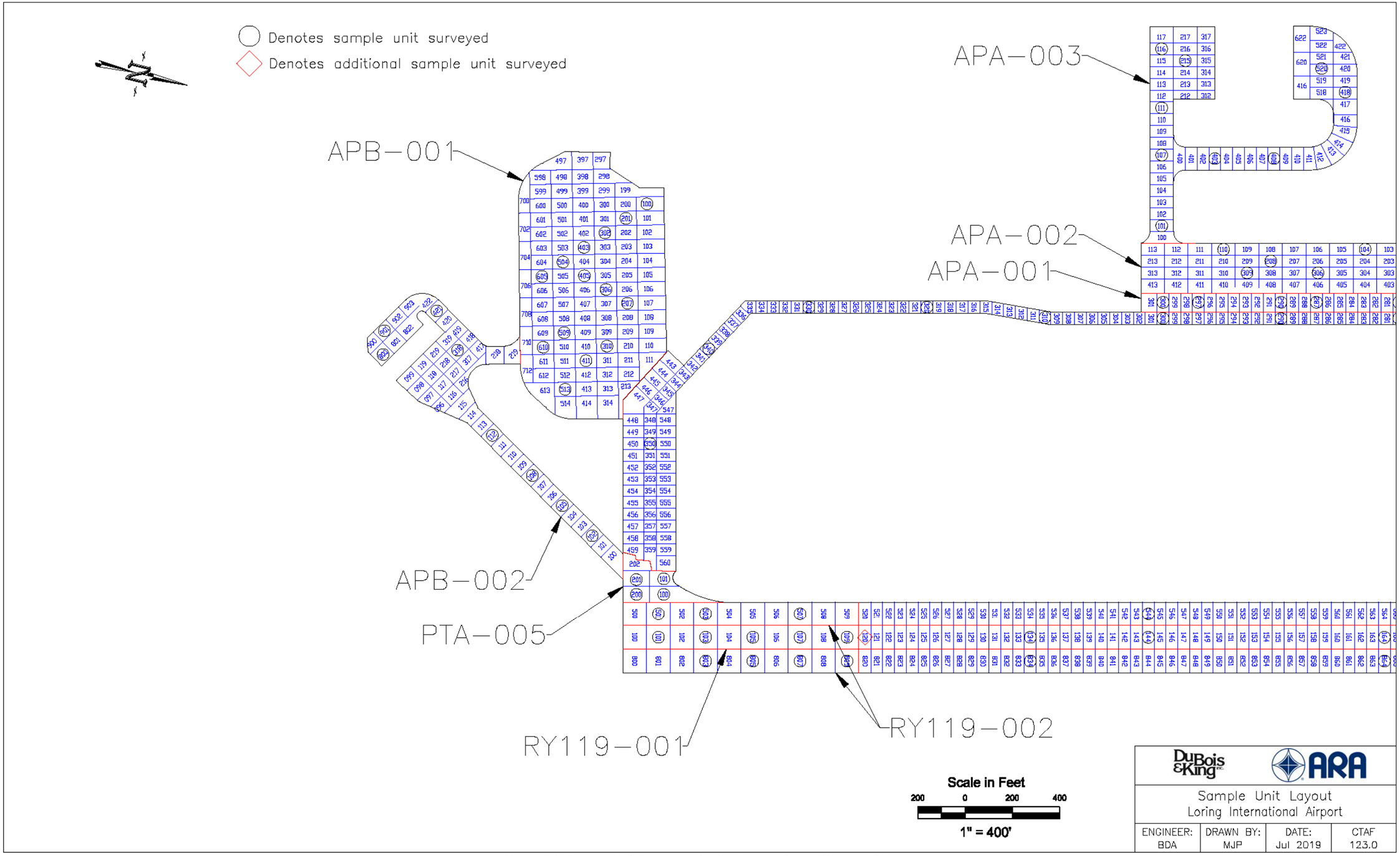

Figure A1. Sample Unit Layout at Loring International Airport (LOR)

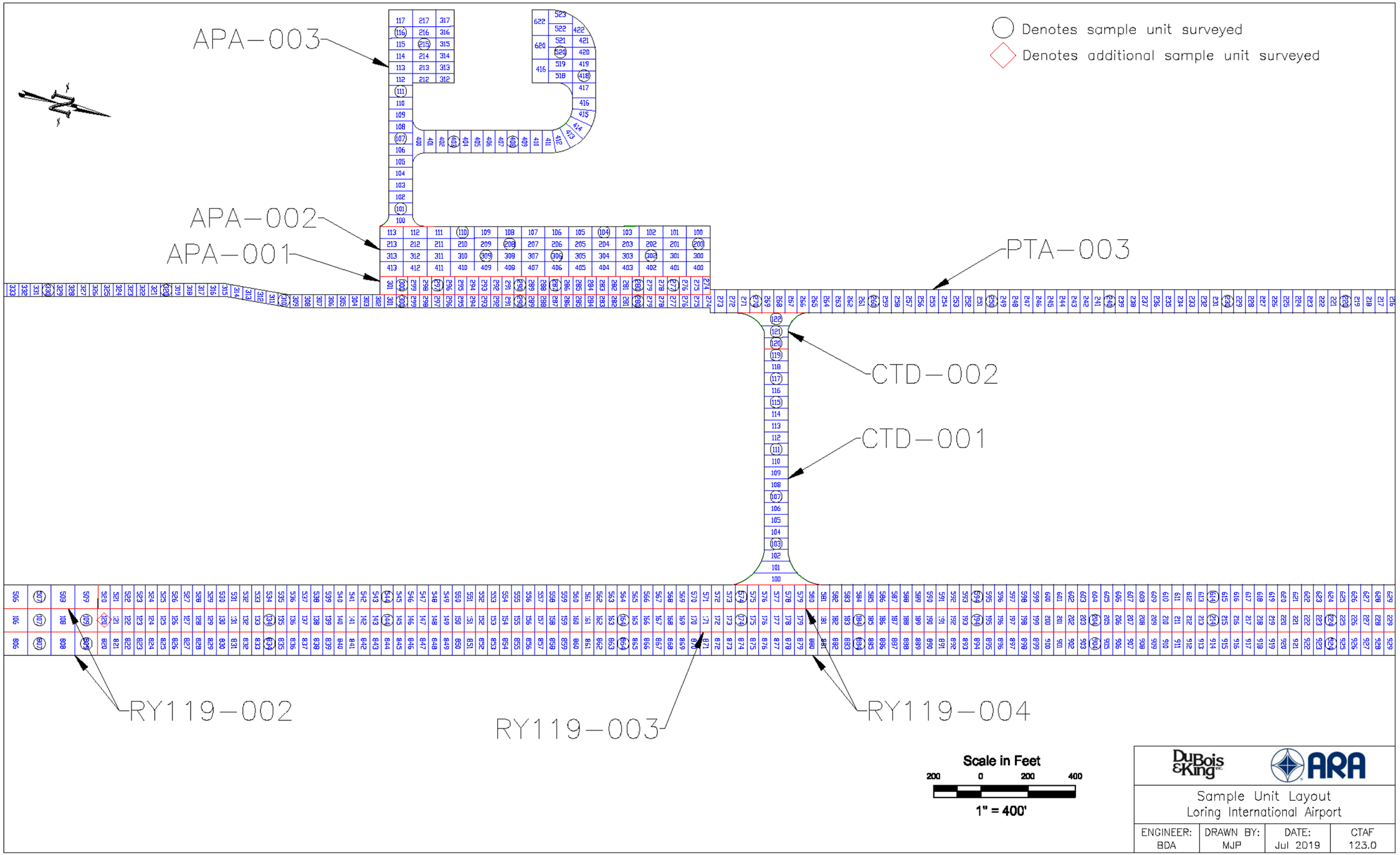

Figure A2. Sample Unit Layout at Loring International Airport (LOR)

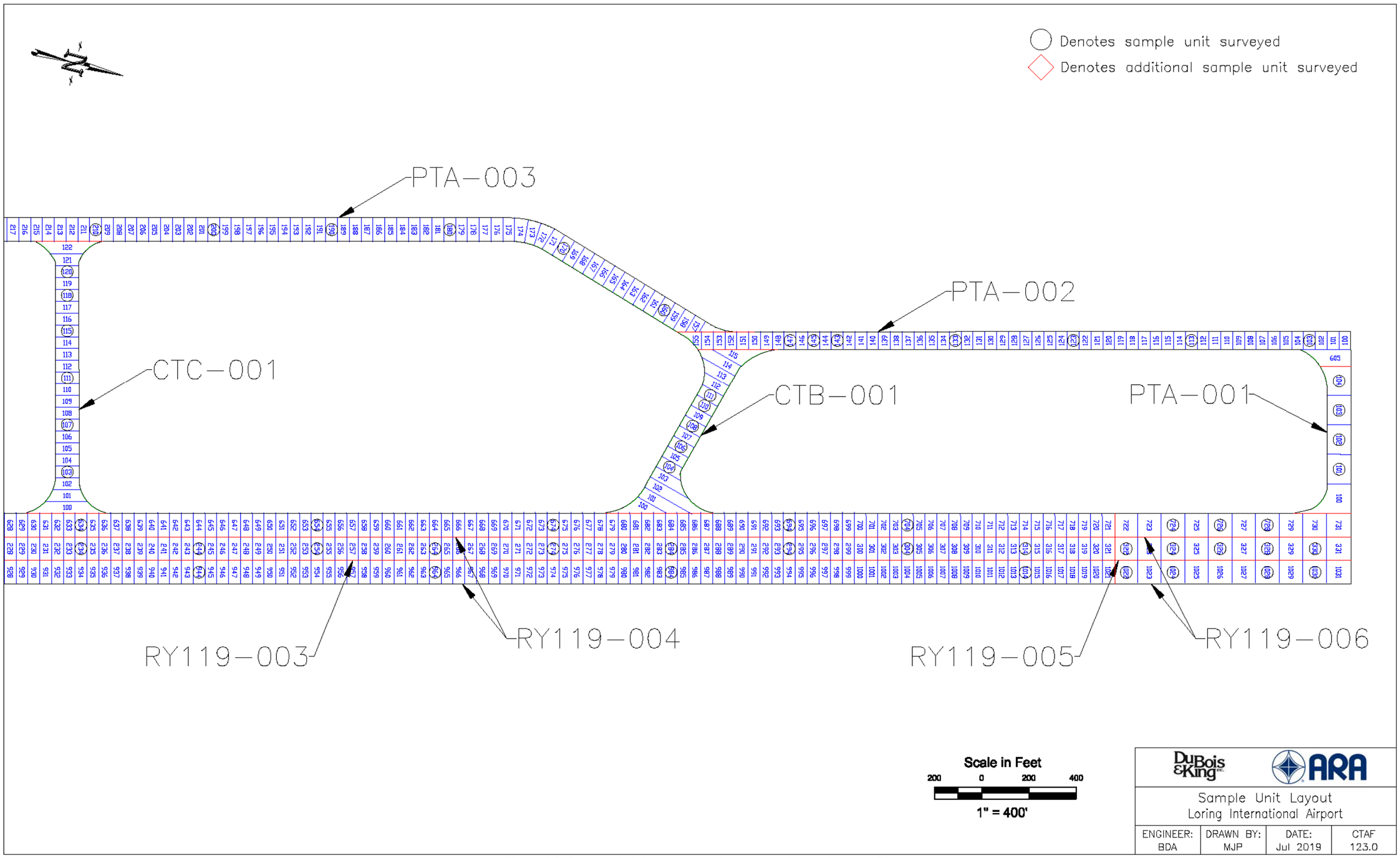

Figure A3. Sample Unit Layout at Loring International Airport (LOR)

Appendix B: Pavement Analysis

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ARAPA

ARA Pavement Analysis

Section:	**LOR::APA::001**
Description:	Apron A
PaveType:	AC
Area:	175,200
Built:	1/15/1958
Age:	61yr

InspPCI:	**41**
InspPCI Rating:	Poor
InspDate:	10/9/2018
PCI Family:	2019 MAINE AC APRON-TLN
NormalPCI:	0
MSL:	70

Work History	Year	Thickness (in)	Type
1	1958	0.0	new construction - ac
2	1958	9.0	surface course - pcc (layer construct)
3	1958	63.0	base course - aggregate
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

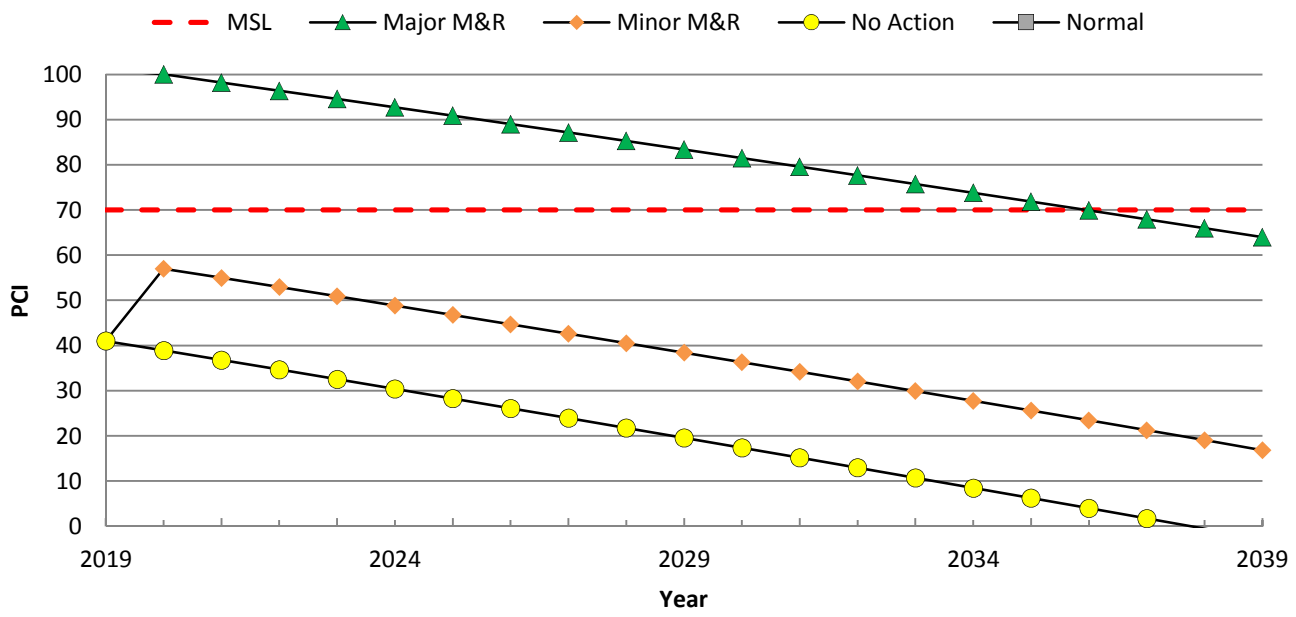
Basic Cause of Distress:

Traffic/Load:	34%		
Age/Weather:	66%	**Total Samples:**	45
Other:	0%	**Insp. Samples:**	6

Extrapolated Distress:	Type	Quantity	Severity	Units
1	alligator	1,123	low	SqFt
2	alligator	1,123	medium	SqFt
3	block	3,744	low	SqFt
4	block	147,872	medium	SqFt
5	patch	187	low	SqFt
6	weathering	145,251	medium	SqFt
7	-	-	-	-
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::APA::001** **Description:** Apron A



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**3,574,019**	**100**
Minor	**All Minor**	**2020**	**174,250**	**57**
1	Surface Seal	145251 SqFt	88,603	-
2	Crack Sealing - AC	45071 Ft	62,199	-
3	Patching - AC Deep	1262 SqFt	23,447	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::APA::002**
Description:	Apron A
PaveType:	AC
Area:	301,250
Built:	1/15/1952
Age:	67yr

InspPCI:	**24**
InspPCI Rating:	Serious
InspDate:	10/9/2018
PCI Family:	2019 MAINE AC APRON-TLN
NormalPCI:	0
MSL:	70

Work History	Year	Thickness (in)	Type
1	1952	0.0	new construction - ac
2	1952	3.0	surface course - ac (layer construct)
3	1952	7.0	base course - aggregate
4	1952	60.0	subbase - aggregate
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

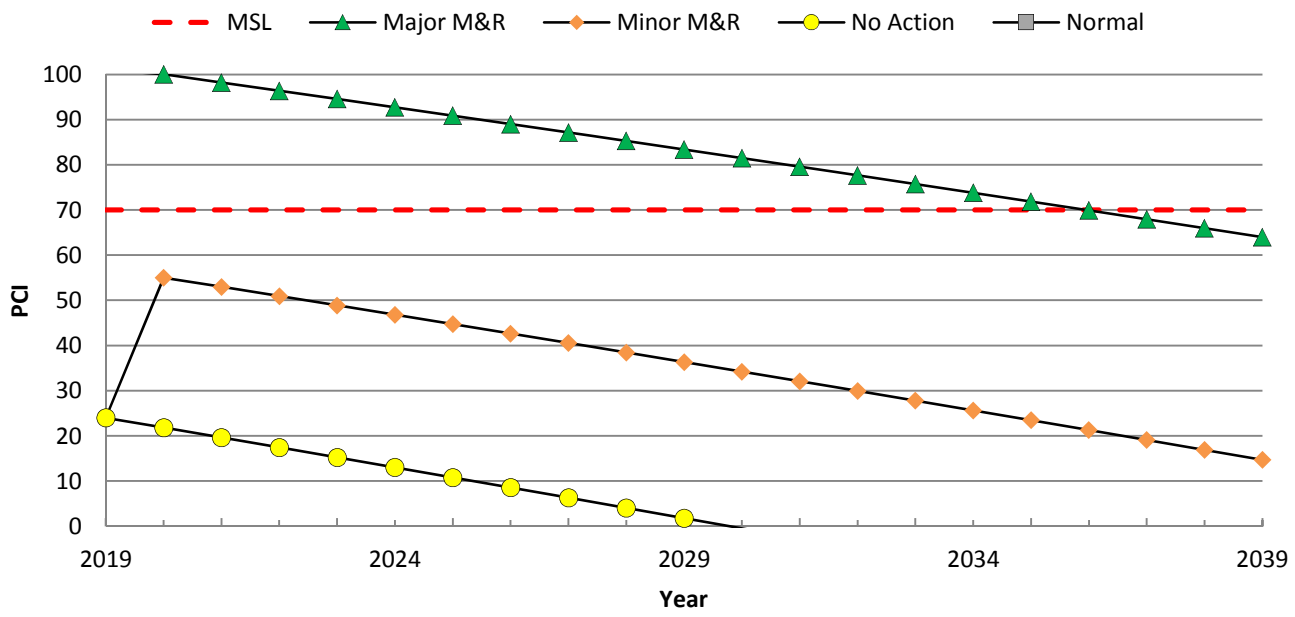
Basic Cause of Distress:

Traffic/Load:	25%		
Age/Weather:	75%	**Total Samples:**	134
Other:	0%	**Insp. Samples:**	7

Extrapolated Distress:	Type	Quantity	Severity	Units
1	alligator	861	medium	SqFt
2	alligator	1,506	high	SqFt
3	block	27,543	low	SqFt
4	block	232,823	medium	SqFt
5	l & t crack	1,291	high	Ft
6	ravelling	18,893	high	SqFt
7	weathering	261,442	medium	SqFt
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::APA::002** **Description:** Apron A



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**6,145,395**	**100**
Minor	**All Minor**	**2020**	**626,003**	**55**
1	Patching - AC Shallow	18893 SqFt	317,586	-
2	Surface Seal	261442 SqFt	159,480	-
3	Crack Sealing - AC	72256 Ft	99,714	-
4	Patching - AC Deep	2649 SqFt	49,223	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::APA::003**
Description:	Apron A
PaveType:	AC
Area:	332,750
Built:	1/15/1948
Age:	71yr

InspPCI:	**26**
InspPCI Rating:	Very Poor
InspDate:	10/9/2018
PCI Family:	2019 MAINE AC APRON-TLN
NormalPCI:	0
MSL:	70

Work History	Year	Thickness (in)	Type
1	1948	0.0	new construction - ac
2	1948	3.0	surface course - ac (layer construct)
3	1948	9.0	base course - aggregate
4	1948	55.0	subbase - aggregate
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

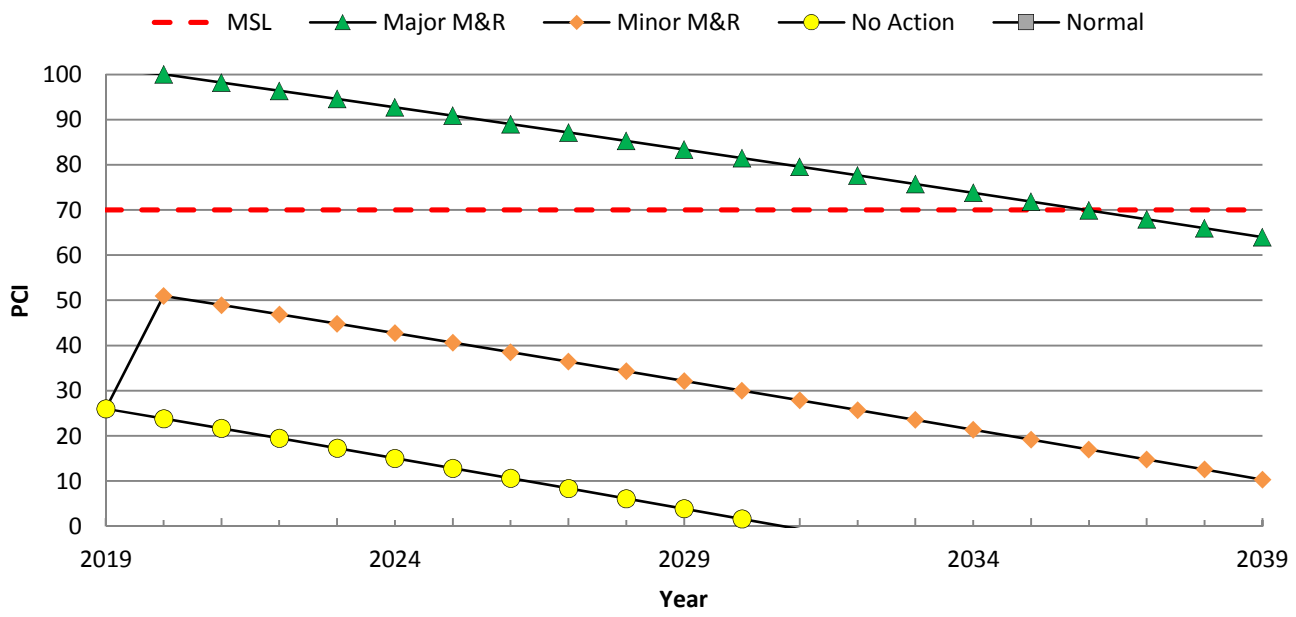
Basic Cause of Distress:

Traffic/Load:	31%		
Age/Weather:	69%	**Total Samples:**	54
Other:	0%	**Insp. Samples:**	9

Extrapolated Distress:	Type	Quantity	Severity	Units
1	alligator	4,497	low	SqFt
2	alligator	2,799	medium	SqFt
3	alligator	540	high	SqFt
4	block	78,421	low	SqFt
5	block	202,888	medium	SqFt
6	block	3,597	high	SqFt
7	l & t crack	1,619	medium	Ft
8	l & t crack	720	high	Ft
9	ravelling	15,648	high	SqFt
10	weathering	62,053	low	SqFt
11	weathering	107,200	medium	SqFt
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::APA::003** **Description:** Apron A



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**6,787,984**	**100**
Minor	**All Minor**	**2020**	**486,386**	**51**
1	Patching - AC Shallow	15649 SqFt	263,047	-
2	Crack Sealing - AC	65275 Ft	90,080	-
3	Patching - AC Deep	3653 SqFt	67,867	-
4	Surface Seal	107200 SqFt	65,392	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::APB::001**
Description:	Apron B
PaveType:	PCC
Area:	611,400
Built:	1/15/1955
Age:	64yr

InspPCI:	**76**
InspPCI Rating:	Satisfactory
InspDate:	10/9/2018
PCI Family:	2019 MAINE PCC
NormalPCI:	41
MSL:	70

Work History	Year	Thickness (in)	Type
1	1955	0.0	new construction - pcc
2	1955	15.0	surface course - pcc (layer construct)
3	1955	55.0	base course - aggregate
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

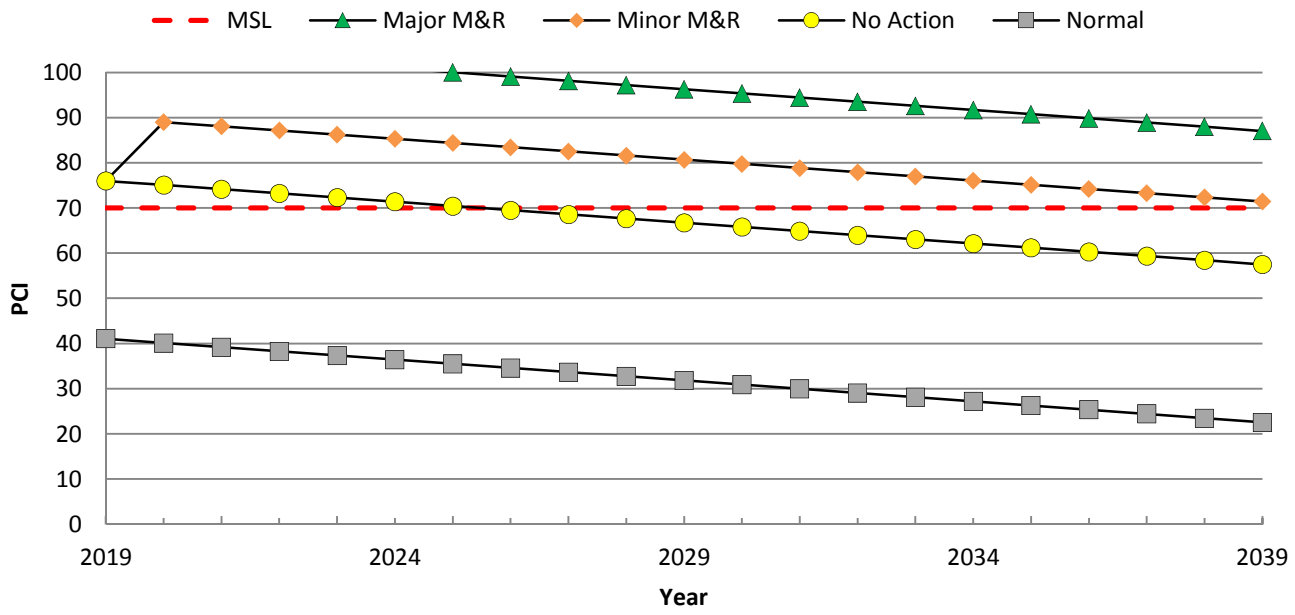
Basic Cause of Distress:

Traffic/Load:	27%		
Age/Weather:	35%	**Total Samples:**	120
Other:	38%	**Insp. Samples:**	13

Extrapolated Distress:	Type	Quantity	Severity	Units
1	corner break	44	low	Slabs
2	corner spall	9	low	Slabs
3	corner spall	26	medium	Slabs
4	corner spall	44	high	Slabs
5	faulting	17	low	Slabs
6	joint spall	9	low	Slabs
7	joint spall	35	medium	Slabs
8	joint spall	35	high	Slabs
9	jt seal dmg	2,717	high	Slabs
10	ltd crack	44	low	Slabs
11	ltd crack	44	medium	Slabs
12	scaling	17	low	Slabs
13	scaling	96	medium	Slabs
14	shattered slab	9	low	Slabs
15	shrinkage	35	n/a	Slabs
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::APB::001** **Description:** Apron B



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2025**	**5,349,511**	**100**
Minor	**All Minor**	**2020**	**359,267**	**89**
1	Joint Seal (Localized)	81510 Ft	313,813	-
2	Patching - PCC Partial Depth	693 SqFt	42,888	-
3	Crack Sealing - PCC	653 Ft	2,567	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::APB::002**
Description:	Apron B
PaveType:	PCC
Area:	209,550
Built:	1/15/1955
Age:	64yr

InspPCI:	**86**
InspPCI Rating:	Good
InspDate:	10/9/2018
PCI Family:	2019 MAINE PCC
NormalPCI:	41
MSL:	70

Work History	Year	Thickness (in)	Type
1	1955	0.0	new construction - pcc
2	1955	15.0	surface course - pcc (layer construct)
3	1955	55.0	base course - aggregate
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

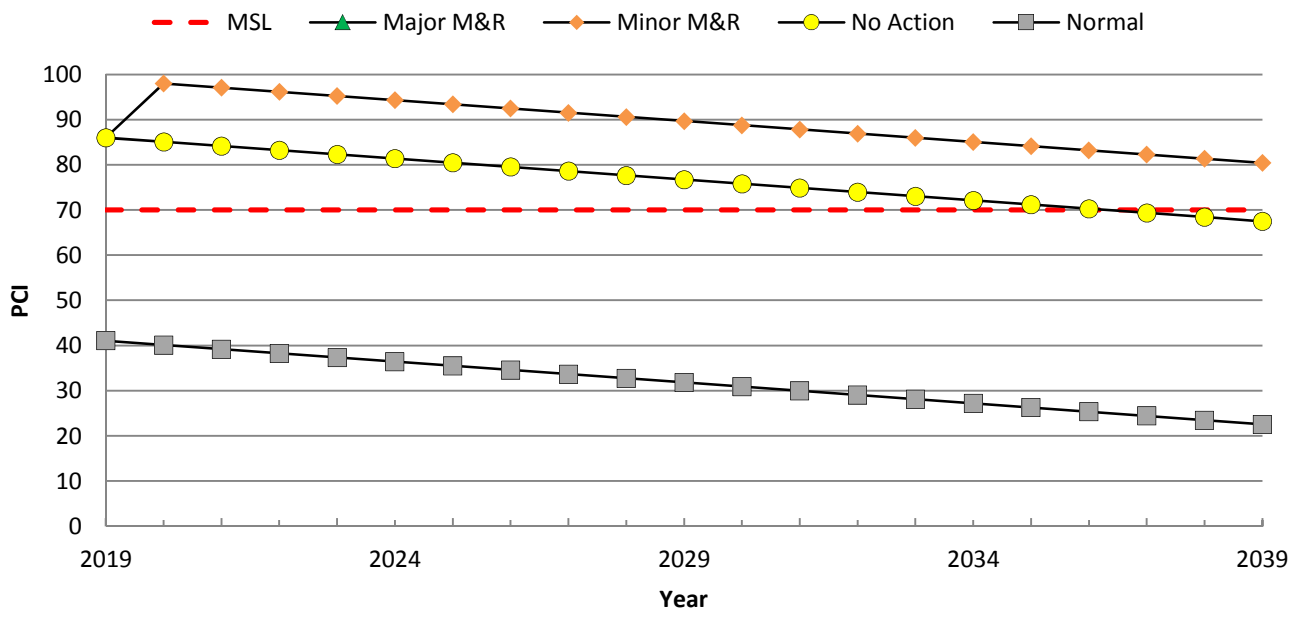
Basic Cause of Distress:

Traffic/Load:	0%		
Age/Weather:	81%	**Total Samples:**	48
Other:	19%	**Insp. Samples:**	8

Extrapolated Distress:	Type	Quantity	Severity	Units
1	corner spall	6	low	Slabs
2	corner spall	6	medium	Slabs
3	corner spall	12	high	Slabs
4	joint spall	6	medium	Slabs
5	jt seal dmg	239	medium	Slabs
6	jt seal dmg	692	high	Slabs
7	large patch	12	low	Slabs
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::APB::002** **Description:** Apron B



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	-	-	-	-
Minor	**All Minor**	**2020**	**84,768**	**98**
1	Joint Seal (Localized)	20625 Ft	79,406	-
2	Patching - PCC Partial Depth	87 SqFt	5,362	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	LOR::CTB::001
Description:	Connecting Taxiway B
PaveType:	AC
Area:	105,100
Built:	1/15/1948
Age:	71yr

InspPCI:	74
InspPCI Rating:	Satisfactory
InspDate:	10/9/2018
PCI Family:	2019 MAINE AC RW-TW
NormalPCI:	0
MSL:	70

Work History	Year	Thickness (in)	Type
1	1948	0.0	new construction - ac
2	1948	3.0	surface course - ac (layer construct)
3	1948	9.0	base course - aggregate
4	1948	55.0	subbase - aggregate
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

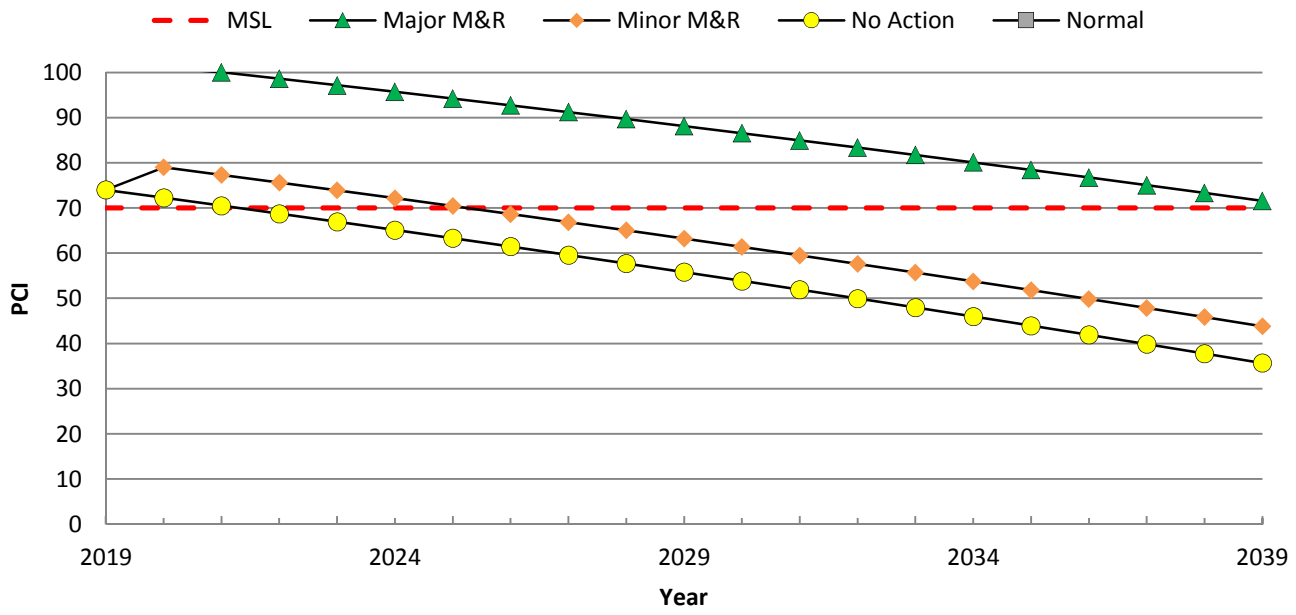
Basic Cause of Distress:

Traffic/Load:	0%		
Age/Weather:	100%	Total Samples:	18
Other:	0%	Insp. Samples:	5

Extrapolated Distress:	Type	Quantity	Severity	Units
1	l & t crack	8,728	low	Ft
2	l & t crack	370	medium	Ft
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::CTB::001** **Description:** Connecting Taxiway B



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2021**	**289,018**	**100**
Minor	**All Minor**	**2020**	**511**	**79**
1	Crack Sealing - AC	370 Ft	511	-
2	-	-	-	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::CTC::001**
Description:	Connecting Taxiway C
PaveType:	AC
Area:	129,750
Built:	1/15/1952
Age:	67yr

InspPCI:	**63**
InspPCI Rating:	Fair
InspDate:	10/9/2018
PCI Family:	2019 MAINE AC RW-TW
NormalPCI:	0
MSL:	70

Work History	Year	Thickness (in)	Type
1	1952	0.0	new construction - ac
2	1952	3.0	surface course - ac (layer construct)
3	1952	7.0	base course - aggregate
4	1952	60.0	subbase - aggregate
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

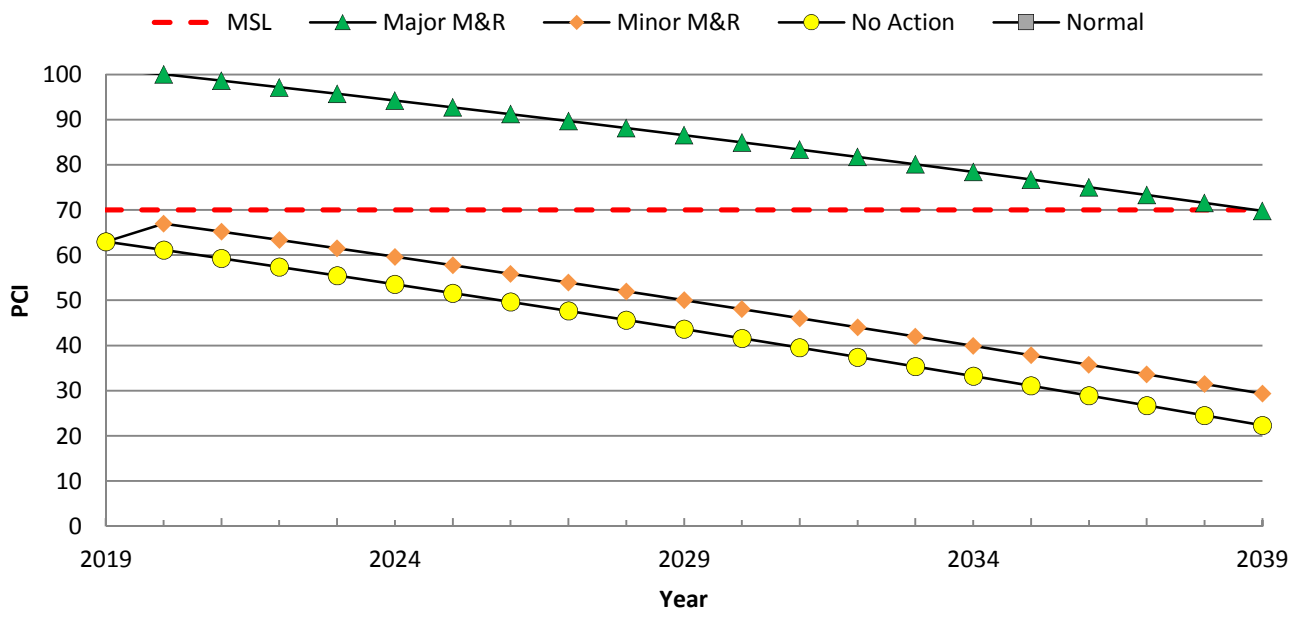
Basic Cause of Distress:

Traffic/Load:	20%		
Age/Weather:	80%	**Total Samples:**	23
Other:	0%	**Insp. Samples:**	6

Extrapolated Distress:	Type	Quantity	Severity	Units
1	alligator	260	low	SqFt
2	alligator	43	medium	SqFt
3	depression	195	low	SqFt
4	l & t crack	12,274	low	Ft
5	l & t crack	2,163	medium	Ft
6	l & t crack	9	high	Ft
7	patch	2,811	low	SqFt
8	patch	303	medium	SqFt
9	ravelling	6,055	medium	SqFt
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::CTC::001** **Description:** Connecting Taxiway C



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**2,646,855**	**100**
Minor	**All Minor**	**2020**	**15,060**	**67**
1	Patching - AC Deep	450 SqFt	8,370	-
2	Surface Seal	6055 SqFt	3,694	-
3	Crack Sealing - AC	2171 Ft	2,996	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::CTD::001**
Description:	Connecting Taxiway D
PaveType:	AC
Area:	114,850
Built:	1/15/1952
Age:	67yr

InspPCI:	**72**
InspPCI Rating:	Satisfactory
InspDate:	10/9/2018
PCI Family:	2019 MAINE AC RW-TW
NormalPCI:	0
MSL:	70

Work History	Year	Thickness (in)	Type
1	1952	0.0	new construction - ac
2	1952	3.0	surface course - ac (layer construct)
3	1952	7.0	base course - aggregate
4	1952	60.0	subbase - aggregate
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

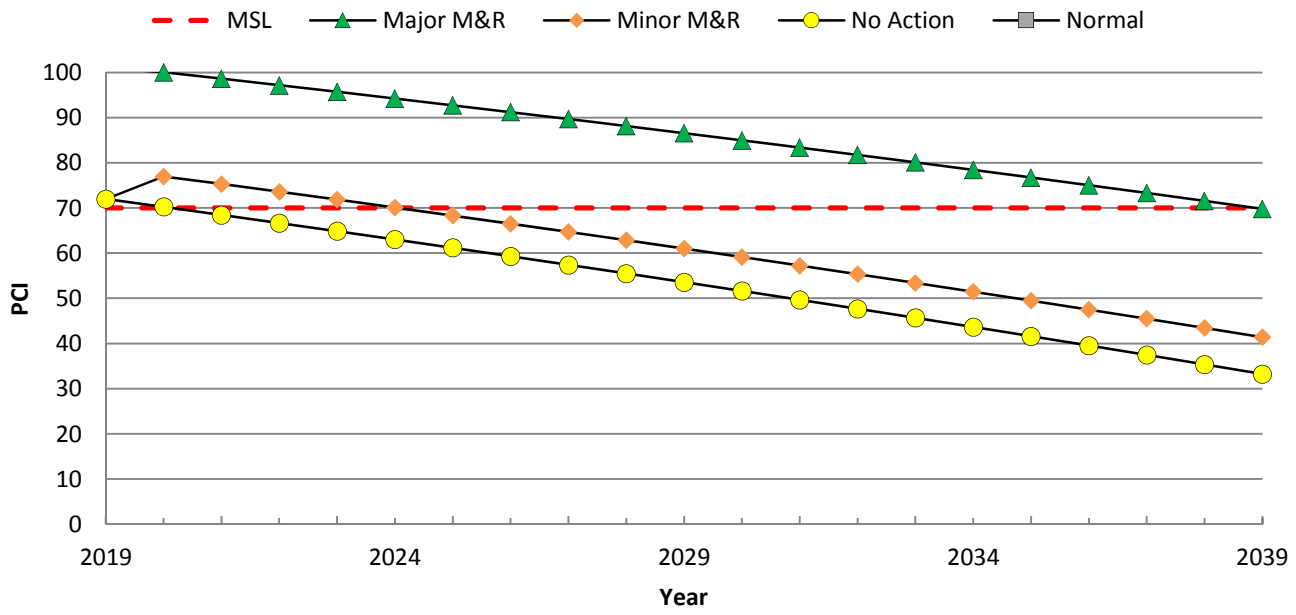
Basic Cause of Distress:

Traffic/Load:	25%		
Age/Weather:	65%	**Total Samples:**	21
Other:	10%	**Insp. Samples:**	7

Extrapolated Distress:	Type	Quantity	Severity	Units
1	alligator	250	medium	SqFt
2	depression	60	low	SqFt
3	depression	220	medium	SqFt
4	l & t crack	7,298	low	Ft
5	l & t crack	1,595	medium	Ft
6	ravelling	2,197	low	SqFt
7	ravelling	1,000	medium	SqFt
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::CTD::001** **Description:** Connecting Taxiway D



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**315,829**	**100**
Minor	**All Minor**	**2020**	**15,317**	**77**
1	Patching - AC Deep	601 SqFt	11,167	-
2	Crack Sealing - AC	1594 Ft	2,201	-
3	Surface Seal	3197 SqFt	1,950	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::CTD::002**
Description:	Connecting Taxiway D
PaveType:	AC
Area:	14,650
Built:	2/15/1952
Age:	67yr

InspPCI:	**62**
InspPCI Rating:	Fair
InspDate:	10/9/2018
PCI Family:	2019 MAINE AC RW-TW
NormalPCI:	0
MSL:	70

Work History	Year	Thickness (in)	Type
1	1952	0.0	new construction - ac
2	-	-	-
3	-	-	-
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

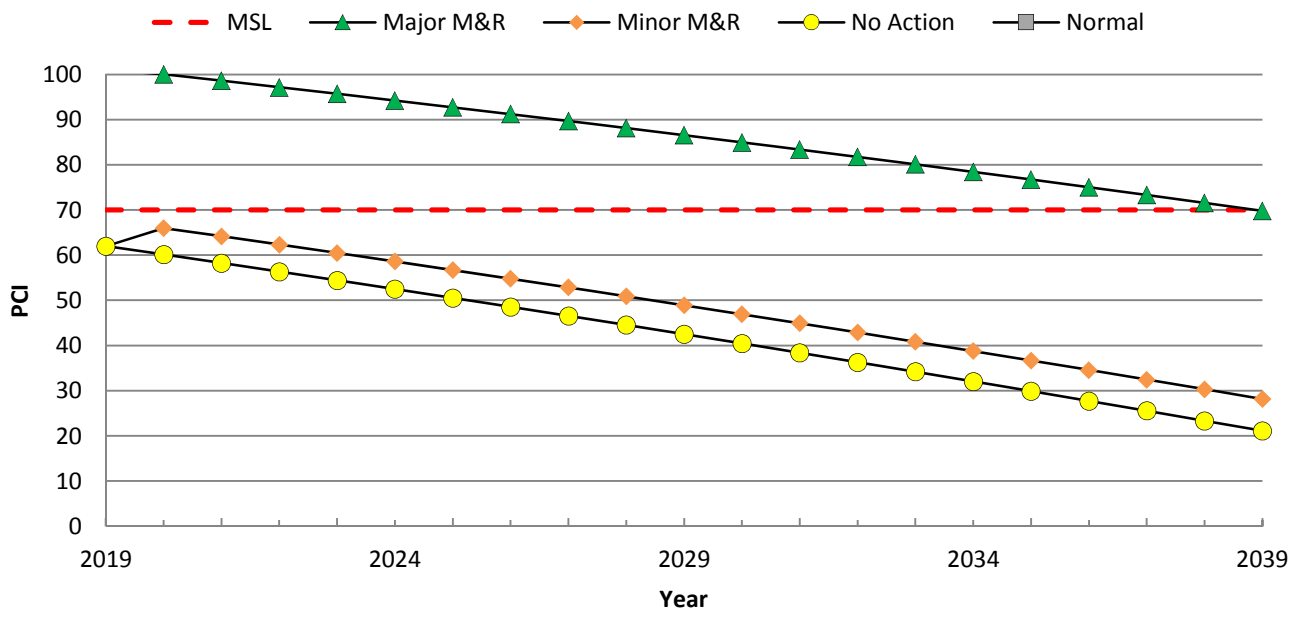
Basic Cause of Distress:

Traffic/Load:	0%		
Age/Weather:	100%	**Total Samples:**	3
Other:	0%	**Insp. Samples:**	3

Extrapolated Distress:	Type	Quantity	Severity	Units
1	block	6,857	low	SqFt
2	l & t crack	906	low	Ft
3	l & t crack	113	medium	Ft
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::CTD::002** **Description:** Connecting Taxiway D



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**298,855**	**100**
Minor	**All Minor**	**2020**	**156**	**66**
1	Crack Sealing - AC	113 Ft	156	-
2	-	-	-	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

No Section Photo

ARA Pavement Analysis

Section:	**LOR::PTA::001**
Description:	Parallel Taxiway A
PaveType:	PCC
Area:	79,050
Built:	1/15/1956
Age:	63yr

InspPCI:	**28**
InspPCI Rating:	Very Poor
InspDate:	10/9/2018
PCI Family:	2019 MAINE PCC
NormalPCI:	42
MSL:	70

Work History	Year	Thickness (in)	Type
1	1956	0.0	new construction - ac
2	1956	0.0	surface course - pcc (layer construct)
3	1956	52.0	base course - aggregate
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

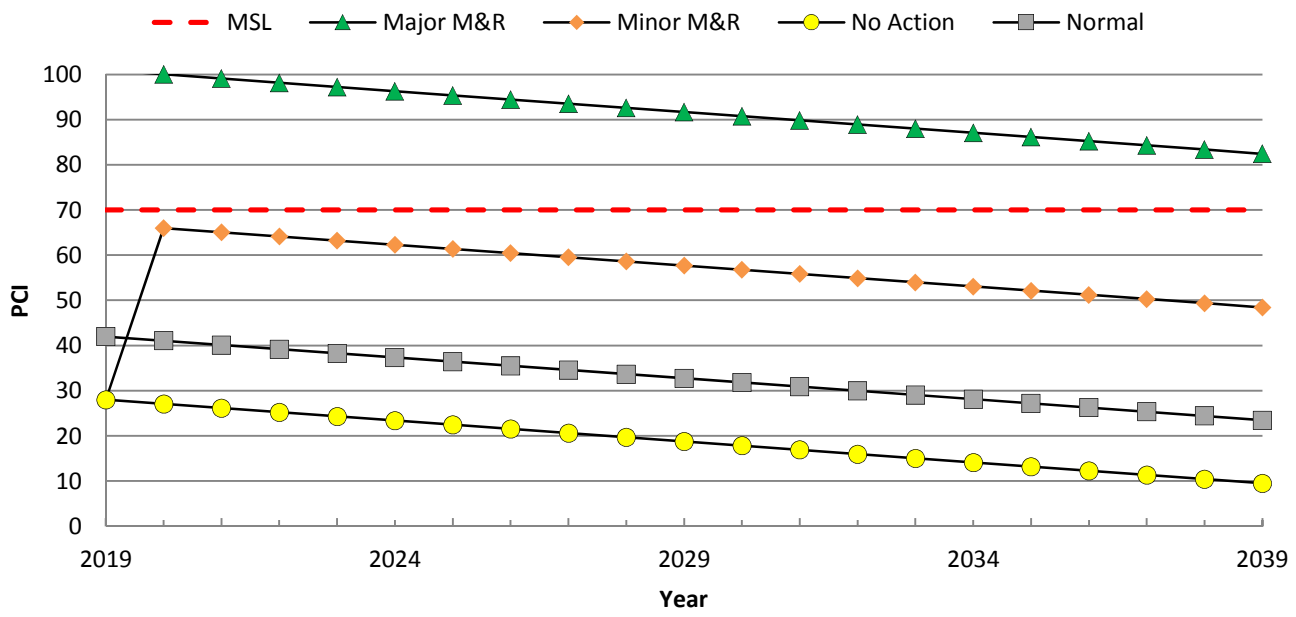
Basic Cause of Distress:

Traffic/Load:	80%		
Age/Weather:	6%	**Total Samples:**	5
Other:	14%	**Insp. Samples:**	4

Extrapolated Distress:	Type	Quantity	Severity	Units
1	corner break	6	low	Slabs
2	corner spall	2	high	Slabs
3	d-crack	2	low	Slabs
4	joint spall	2	high	Slabs
5	jt seal dmg	95	medium	Slabs
6	large patch	2	medium	Slabs
7	large patch	2	high	Slabs
8	ltd crack	22	low	Slabs
9	ltd crack	34	medium	Slabs
10	ltd crack	11	high	Slabs
11	scaling	2	medium	Slabs
12	shattered slab	5	low	Slabs
13	shattered slab	8	medium	Slabs
14	shrinkage	8	n/a	Slabs
15	small patch	2	medium	Slabs
16	small patch	2	high	Slabs
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::PTA::001** **Description:** Parallel Taxiway A



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**2,451,349**	**100**
Minor	**All Minor**	**2020**	**404,900**	**66**
1	Slab Replacement - PCC	11524 SqFt	363,595	-
2	Patching - PCC Full Depth	194 SqFt	22,989	-
3	Joint Seal (Localized)	3629 Ft	13,973	-
4	Crack Sealing - PCC	845 Ft	3,321	-
5	Patching - PCC Partial Depth	17 SqFt	1,023	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::PTA::002**
Description:	Parallel Taxiway A
PaveType:	AC
Area:	241,700
Built:	1/15/1948
Age:	71yr

InspPCI:	**53**
InspPCI Rating:	Poor
InspDate:	10/9/2018
PCI Family:	2019 MAINE AC RW-TW
NormalPCI:	0
MSL:	70

Work History	Year	Thickness (in)	Type
1	1948	0.0	new construction - ac
2	1948	3.0	surface course - ac (layer construct)
3	1948	9.0	base course - aggregate
4	1948	55.0	subbase - aggregate
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

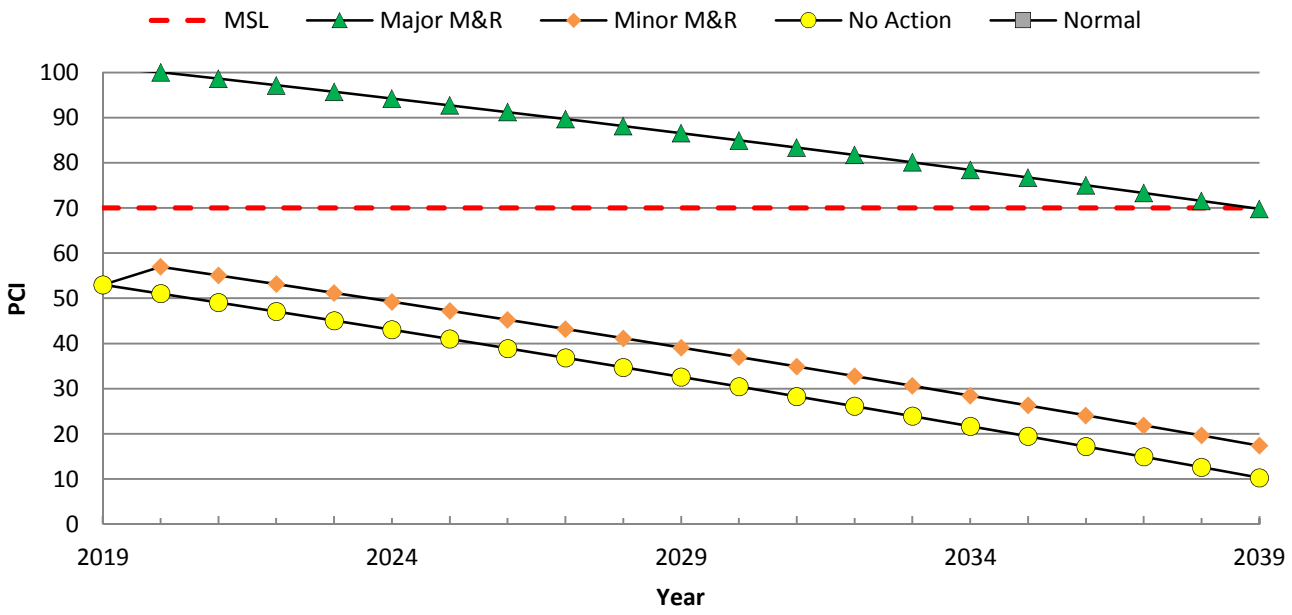
Basic Cause of Distress:

Traffic/Load:	31%		
Age/Weather:	69%	**Total Samples:**	58
Other:	0%	**Insp. Samples:**	7

Extrapolated Distress:	Type	Quantity	Severity	Units
1	alligator	5,801	low	SqFt
2	l & t crack	11,786	low	Ft
3	l & t crack	7,513	medium	Ft
4	ravelling	99,442	low	SqFt
5	ravelling	276	medium	SqFt
6	weathering	41,434	medium	SqFt
7	-	-	-	-
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::PTA::002** **Description:** Parallel Taxiway A



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**4,930,596**	**100**
Minor	**All Minor**	**2020**	**96,472**	**57**
1	Surface Seal	141154 SqFt	86,103	-
2	Crack Sealing - AC	7513 Ft	10,369	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	LOR::PTA::003
Description:	Parallel Taxiway A
PaveType:	AC
Area:	848,300
Built:	1/15/1948
Age:	71yr

InspPCI:	26
InspPCI Rating:	Very Poor
InspDate:	10/9/2018
PCI Family:	2019 MAINE AC RW-TW
NormalPCI:	0
MSL:	70

Work History	Year	Thickness (in)	Type
1	1948	0.0	new construction - ac
2	1948	3.0	surface course - ac (layer construct)
3	1948	9.0	base course - aggregate
4	1948	55.0	subbase - aggregate
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

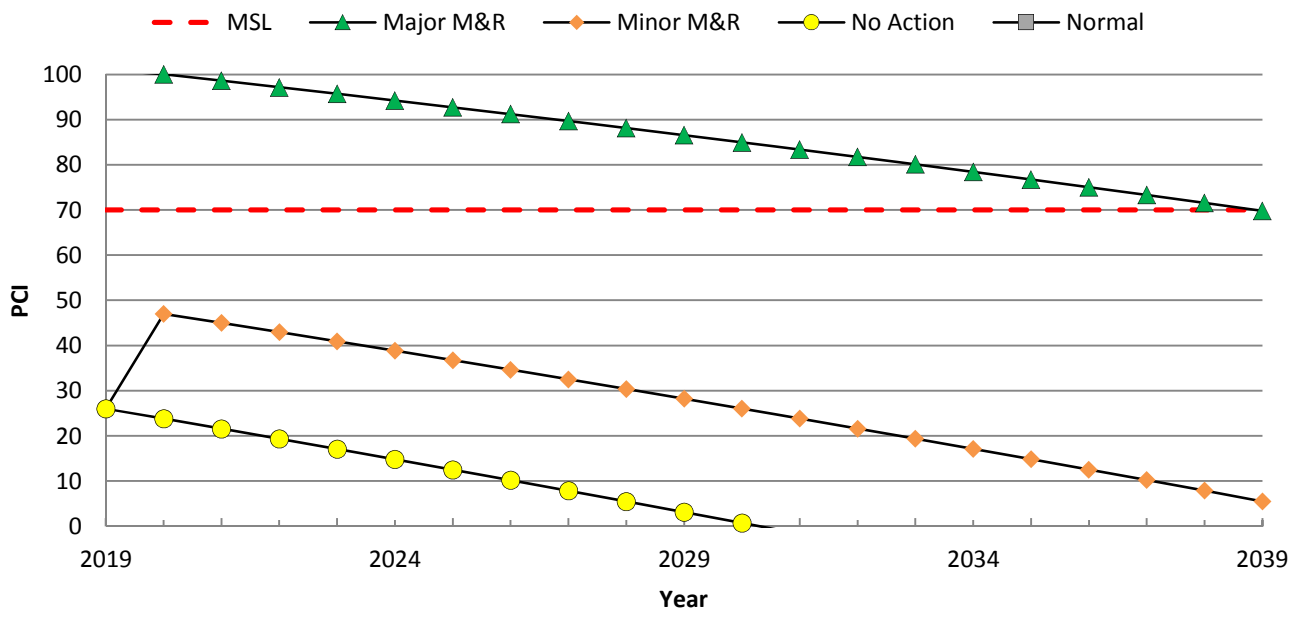
Basic Cause of Distress:

Traffic/Load:	35%		
Age/Weather:	65%	Total Samples:	225
Other:	0%	Insp. Samples:	20

Extrapolated Distress:	Type	Quantity	Severity	Units
1	alligator	18,798	low	SqFt
2	alligator	31,194	medium	SqFt
3	alligator	817	high	SqFt
4	block	121,235	low	SqFt
5	block	446,800	medium	SqFt
6	block	9,535	high	SqFt
7	depression	136	low	SqFt
8	l & t crack	25,759	low	Ft
9	l & t crack	2,275	medium	Ft
10	patch	681	low	SqFt
11	patch	613	medium	SqFt
12	ravelling	129,408	low	SqFt
13	ravelling	257,455	medium	SqFt
14	ravelling	30,050	high	SqFt
15	rutting	681	low	SqFt
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::PTA::003** **Description:** Parallel Taxiway A



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**17,305,024**	**100**
Minor	**All Minor**	**2020**	**1,559,798**	**47**
1	Patching - AC Deep	33563 SqFt	623,585	-
2	Patching - AC Shallow	30050 SqFt	505,140	-
3	Surface Seal	386862 SqFt	235,987	-
4	Crack Sealing - AC	141366 Ft	195,086	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::PTA::005**
Description:	Parallel Taxiway A
PaveType:	PCC
Area:	41,700
Built:	1/15/1952
Age:	67yr

InspPCI:	**46**
InspPCI Rating:	Poor
InspDate:	10/9/2018
PCI Family:	2019 MAINE PCC
NormalPCI:	38
MSL:	70

Work History	Year	Thickness (in)	Type
1	1952	0.0	new construction - ac
2	1952	3.0	surface course - ac (layer construct)
3	1952	7.0	base course - aggregate
4	1952	60.0	subbase - aggregate
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

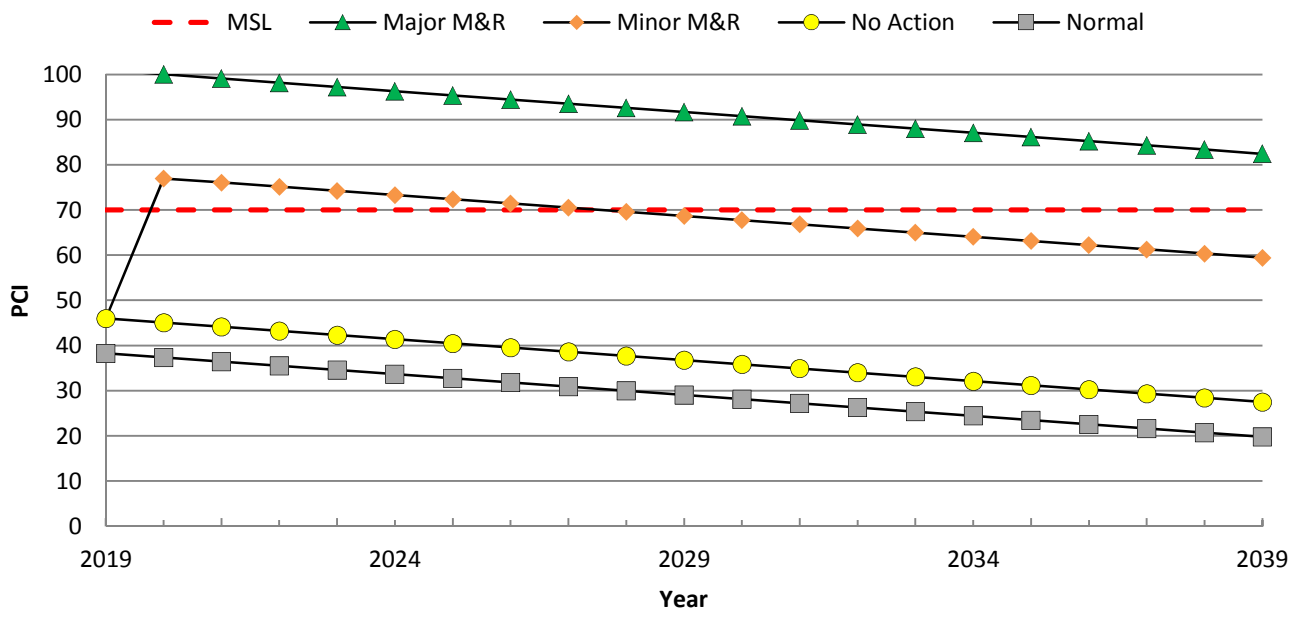
Basic Cause of Distress:

Traffic/Load:	67%		
Age/Weather:	20%	**Total Samples:**	10
Other:	13%	**Insp. Samples:**	4

Extrapolated Distress:	Type	Quantity	Severity	Units
1	d-crack	1	medium	Slabs
2	joint spall	1	medium	Slabs
3	joint spall	2	high	Slabs
4	jt seal dmg	46	high	Slabs
5	ltd crack	15	low	Slabs
6	ltd crack	14	medium	Slabs
7	ltd crack	2	high	Slabs
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::PTA::005** **Description:** Parallel Taxiway A



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**1,293,122**	**100**
Minor	**All Minor**	**2020**	**71,734**	**77**
1	Slab Replacement - PCC	1479 SqFt	46,649	-
2	Joint Seal (Localized)	3025 Ft	11,646	-
3	Patching - PCC Full Depth	88 SqFt	10,458	-
4	Crack Sealing - PCC	414 Ft	1,627	-
5	Patching - PCC Partial Depth	22 SqFt	1,355	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::RY119::001**
Description:	Runway 1-19
PaveType:	PCC
Area:	100,000
Built:	1/15/1955
Age:	64yr

InspPCI:	**29**
InspPCI Rating:	Very Poor
InspDate:	10/9/2018
PCI Family:	2019 MAINE PCC
NormalPCI:	41
MSL:	70

Work History	Year	Thickness (in)	Type
1	1948	0.0	new construction - pcc
2	1948	15-20	surface course - pcc (layer construct)
3	1948	52.0	base course - aggregate
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

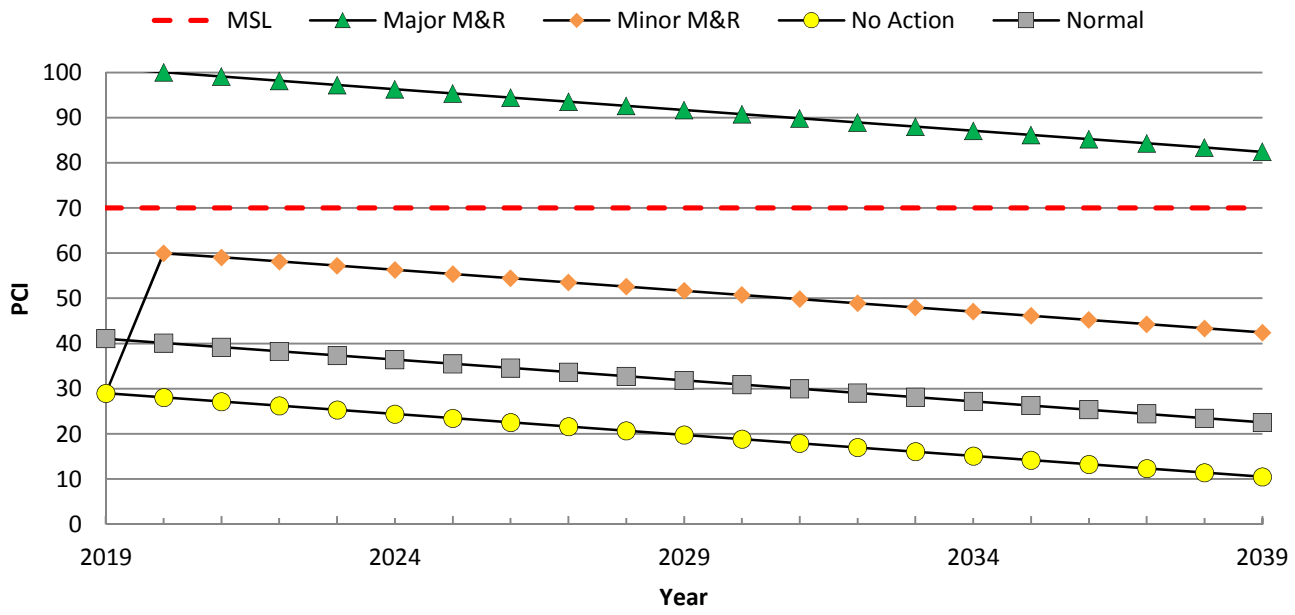
Basic Cause of Distress:

Traffic/Load:	64%		
Age/Weather:	11%	**Total Samples:**	10
Other:	25%	**Insp. Samples:**	5

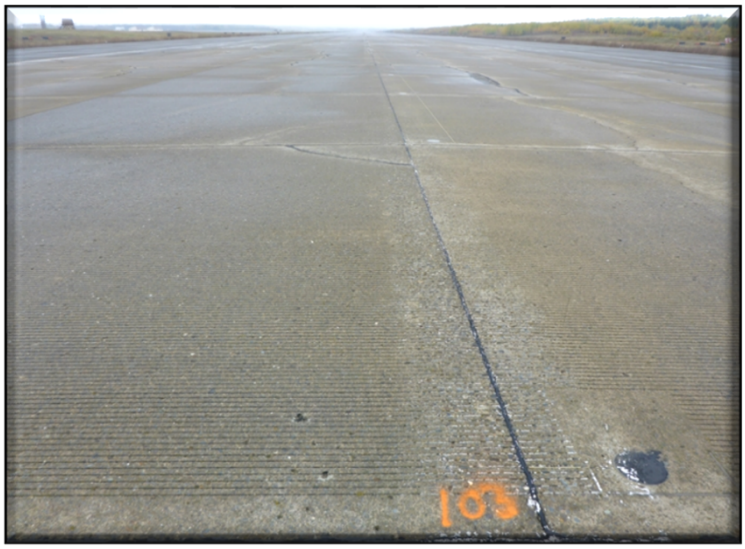
Extrapolated Distress:	Type	Quantity	Severity	Units
1	corner break	4	low	Slabs
2	corner spall	6	high	Slabs
3	d-crack	8	low	Slabs
4	d-crack	4	medium	Slabs
5	joint spall	2	low	Slabs
6	joint spall	4	medium	Slabs
7	joint spall	4	high	Slabs
8	jt seal dmg	96	medium	Slabs
9	large patch	8	medium	Slabs
10	ltd crack	44	low	Slabs
11	ltd crack	54	medium	Slabs
12	ltd crack	12	high	Slabs
13	pumping	2	n/a	Slabs
14	scaling	16	low	Slabs
15	scaling	4	medium	Slabs
16	shattered slab	2	low	Slabs
17	shattered slab	4	medium	Slabs
18	small patch	12	low	Slabs
19	small patch	12	medium	Slabs
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::RY119::001** **Description:** Runway 1-19



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**3,101,011**	**100**
Minor	**All Minor**	**2020**	**390,139**	**60**
1	Slab Replacement - PCC	10001 SqFt	315,500	-
2	Patching - PCC Full Depth	410 SqFt	48,802	-
3	Joint Seal (Localized)	4140 Ft	15,939	-
4	Crack Sealing - PCC	1350 Ft	5,306	-
5	Patching - PCC Partial Depth	74 SqFt	4,592	-
6	-	-	-	-
7	-	-	-	-



ARA Pavement Analysis

Section:	**LOR::RY119::002**
Description:	Runway 1-19
PaveType:	PCC
Area:	200,000
Built:	2/15/1956
Age:	63yr

InspPCI:	**34**
InspPCI Rating:	Very Poor
InspDate:	10/9/2018
PCI Family:	2019 MAINE PCC
NormalPCI:	42
MSL:	70

Work History	Year	Thickness (in)	Type
1	1948	0.0	new construction - pcc
2	1948	15-20	surface course - pcc (layer construct)
3	1948	52.0	base course - aggregate
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

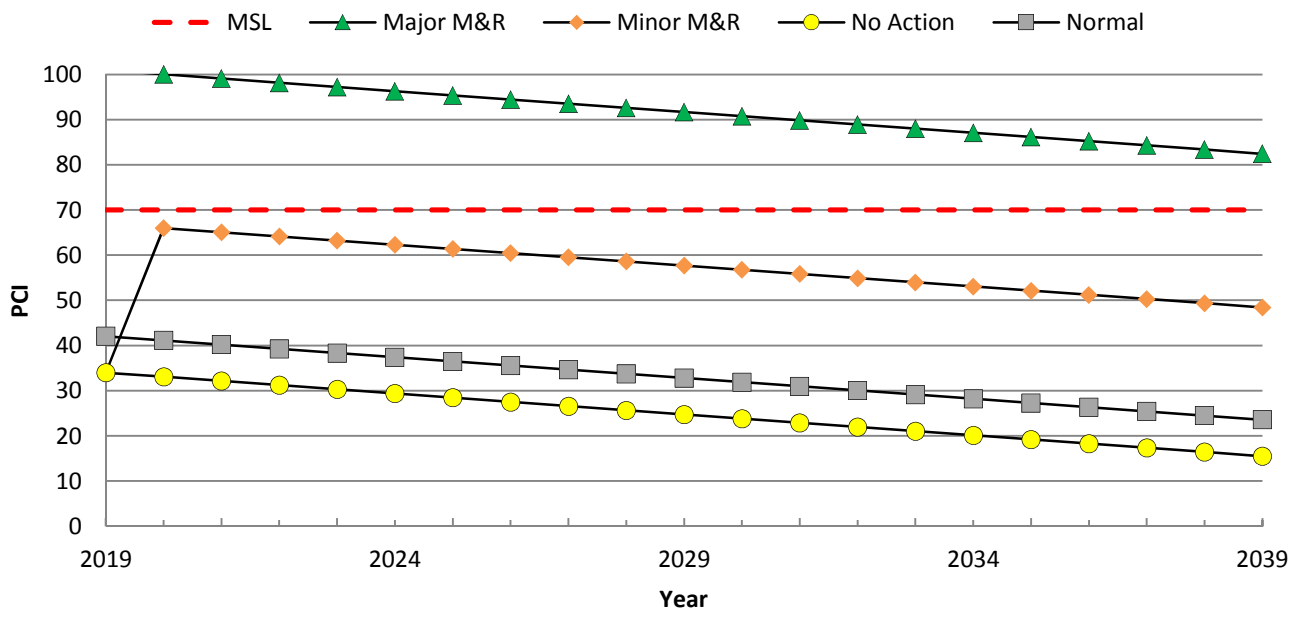
Basic Cause of Distress:

Traffic/Load:	77%		
Age/Weather:	12%	**Total Samples:**	20
Other:	11%	**Insp. Samples:**	7

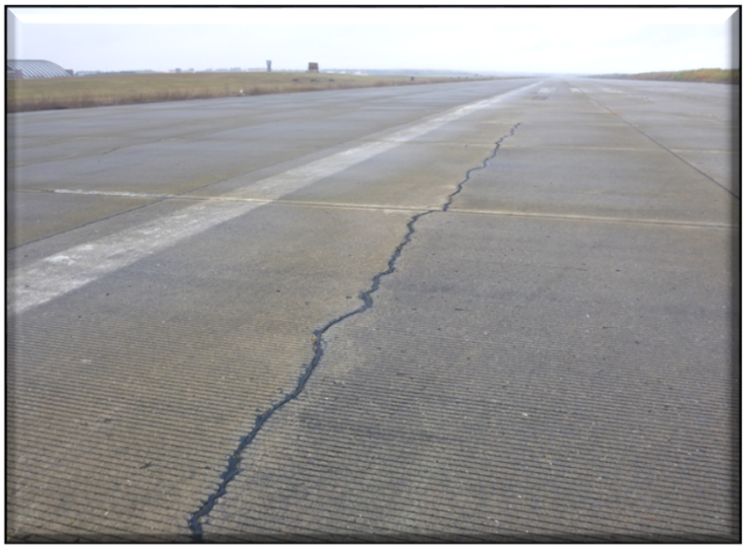
Extrapolated Distress:	Type	Quantity	Severity	Units
1	corner break	31	low	Slabs
2	corner break	6	medium	Slabs
3	corner spall	6	medium	Slabs
4	corner spall	6	high	Slabs
5	d-crack	20	low	Slabs
6	joint spall	3	high	Slabs
7	jt seal dmg	183	low	Slabs
8	jt seal dmg	137	medium	Slabs
9	large patch	3	medium	Slabs
10	ltd crack	54	low	Slabs
11	ltd crack	111	medium	Slabs
12	ltd crack	26	high	Slabs
13	scaling	6	low	Slabs
14	scaling	3	medium	Slabs
15	shattered slab	3	medium	Slabs
16	shrinkage	3	n/a	Slabs
17	small patch	6	medium	Slabs
18	small patch	3	high	Slabs
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::RY119::002** **Description:** Runway 1-19



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**6,202,022**	**100**
Minor	**All Minor**	**2020**	**624,962**	**66**
1	Slab Replacement - PCC	17857 SqFt	563,393	-
2	Joint Seal (Localized)	6343 Ft	24,420	-
3	Patching - PCC Full Depth	192 SqFt	22,873	-
4	Crack Sealing - PCC	2786 Ft	10,948	-
5	Patching - PCC Partial Depth	53 SqFt	3,328	-
6	-	-	-	-
7	-	-	-	-



ARA Pavement Analysis

Section:	**LOR::RY119::003**
Description:	Runway 1-19
PaveType:	AC
Area:	1,010,000
Built:	1/15/1952
Age:	67yr

InspPCI:	**63**
InspPCI Rating:	Fair
InspDate:	10/9/2018
PCI Family:	2019 MAINE AC RW-TW
NormalPCI:	0
MSL:	70

Work History	Year	Thickness (in)	Type
1	1955	0.0	overlay - ac
2	1955	3.0	surface course - ac (layer construct)
3	1948	0.0	new construction - pcc
4	1948	15-20	surface course - pcc (layer construct)
5	1948	52.0	base course - aggregate
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

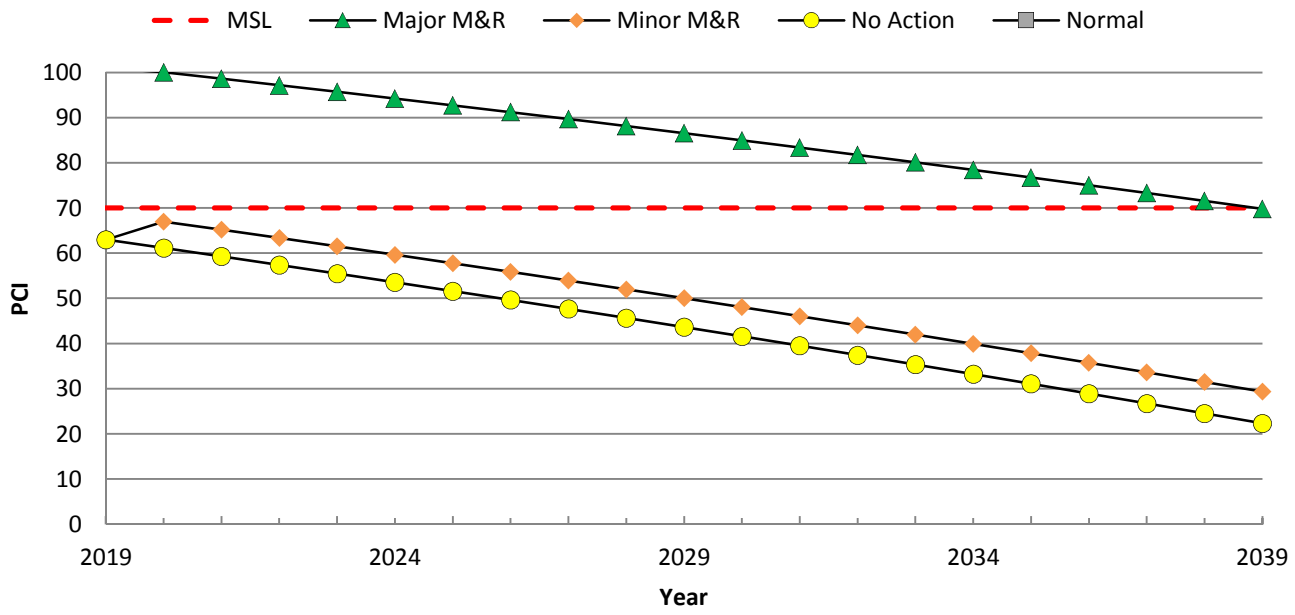
Basic Cause of Distress:

Traffic/Load:	12%		
Age/Weather:	85%	**Total Samples:**	202
Other:	3%	**Insp. Samples:**	19

Extrapolated Distress:	Type	Quantity	Severity	Units
1	alligator	1,846	low	SqFt
2	l & t crack	54,379	low	Ft
3	l & t crack	26,200	medium	Ft
4	ravelling	168,970	low	SqFt
5	ravelling	16,168	medium	SqFt
6	shoving	500	low	SqFt
7	-	-	-	-
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::RY119::003** **Description:** Runway 1-19



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**20,603,646**	**100**
Minor	**All Minor**	**2020**	**149,091**	**67**
1	Surface Seal	185137 SqFt	112,934	-
2	Crack Sealing - AC	26200 Ft	36,157	-
3	-	-	-	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::RY119::004**
Description:	Runway 1-19
PaveType:	AC
Area:	2,020,000
Built:	2/15/1952
Age:	67yr

InspPCI:	**61**
InspPCI Rating:	Fair
InspDate:	10/9/2018
PCI Family:	2019 MAINE AC RW-TW
NormalPCI:	0
MSL:	70

Work History	Year	Thickness (in)	Type
1	1955	0.0	overlay - ac
2	1955	3.0	surface course - ac (layer construct)
3	1948	0.0	new construction - pcc
4	1948	15-20	surface course - pcc (layer construct)
5	1948	52.0	base course - aggregate
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

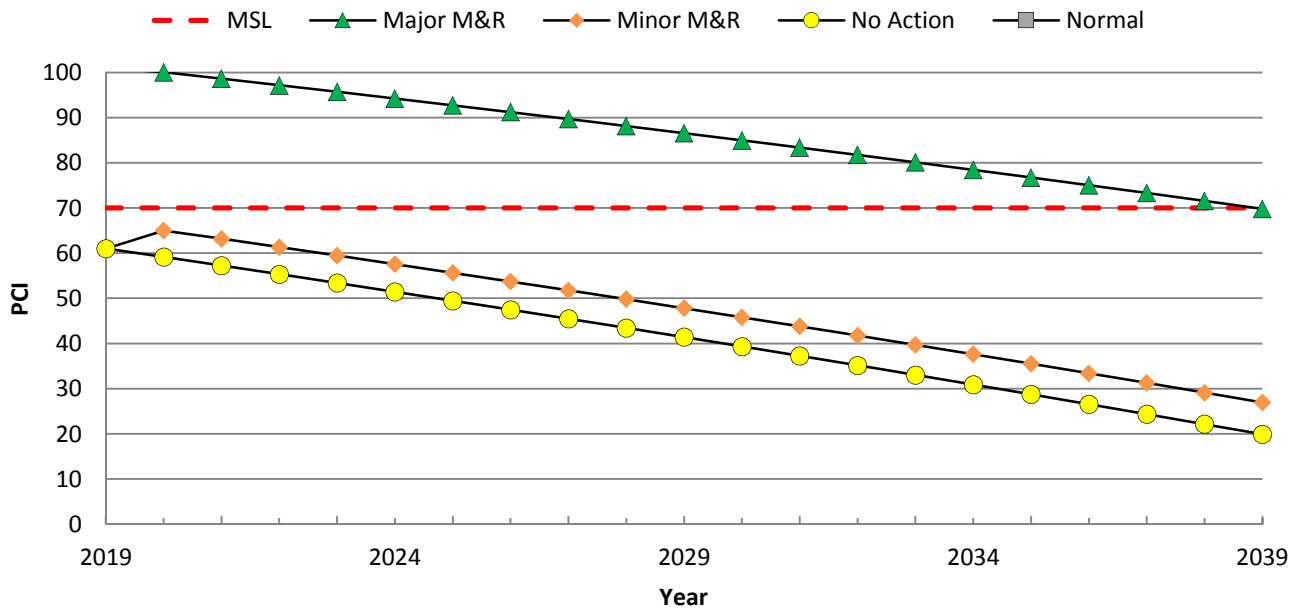
Basic Cause of Distress:

Traffic/Load:	9%		
Age/Weather:	91%	**Total Samples:**	404
Other:	0%	**Insp. Samples:**	18

Extrapolated Distress:	Type	Quantity	Severity	Units
1	alligator	253	low	SqFt
2	jt refl crack	6,185	low	Ft
3	jt refl crack	3,585	medium	Ft
4	l & t crack	227,205	low	Ft
5	l & t crack	45,391	medium	Ft
6	ravelling	427,903	low	SqFt
7	ravelling	55,034	medium	SqFt
8	ravelling	1,262	high	SqFt
9	-	-	-	-
10	-	-	-	-
11	-	-	-	-
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::RY119::004** **Description:** Runway 1-19



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**41,207,292**	**100**
Minor	**All Minor**	**2020**	**383,397**	**65**
1	Surface Seal	482937 SqFt	294,592	-
2	Crack Sealing - AC	48975 Ft	67,587	-
3	Patching - AC Shallow	1263 SqFt	21,218	-
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::RY119::005**
Description:	Runway 1-19
PaveType:	PCC
Area:	100,000
Built:	1/15/1956
Age:	63yr

InspPCI:	**37**
InspPCI Rating:	Very Poor
InspDate:	10/9/2018
PCI Family:	2019 MAINE PCC
NormalPCI:	42
MSL:	70

Work History	Year	Thickness (in)	Type
1	1948	0.0	new construction - pcc
2	1948	15-20	surface course - pcc (layer construct)
3	1948	52.0	base course - aggregate
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

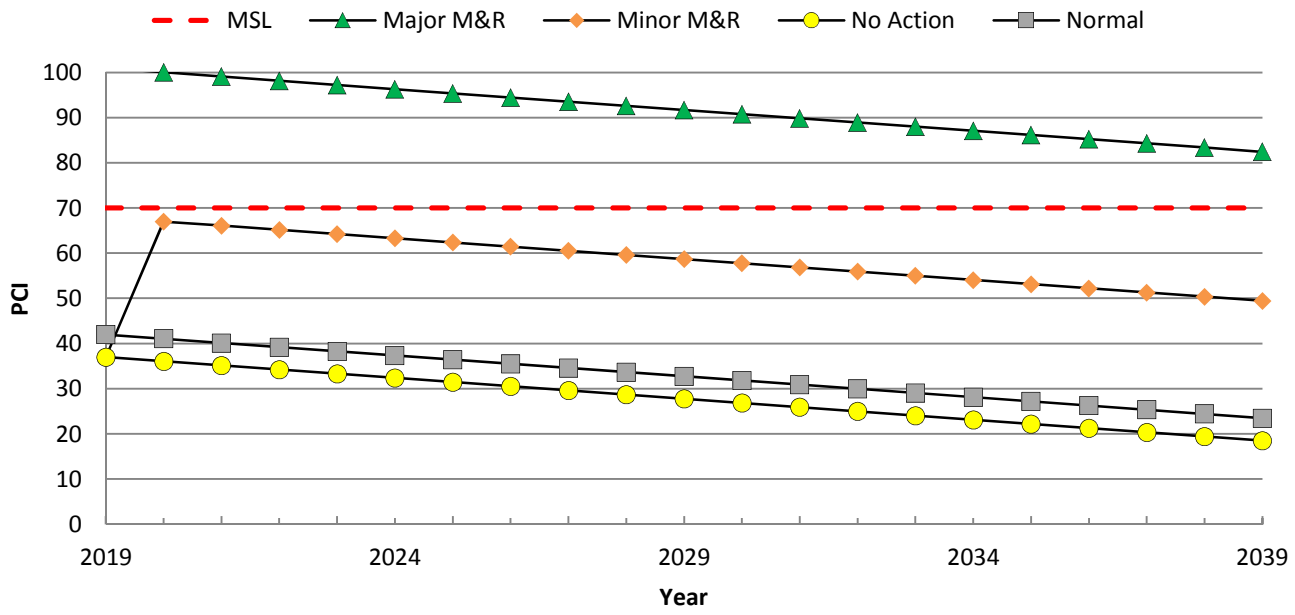
Basic Cause of Distress:

Traffic/Load:	71%		
Age/Weather:	9%	**Total Samples:**	20
Other:	20%	**Insp. Samples:**	5

Extrapolated Distress:	Type	Quantity	Severity	Units
1	corner break	6	low	Slabs
2	corner spall	6	high	Slabs
3	d-crack	2	medium	Slabs
4	joint spall	6	high	Slabs
5	jt seal dmg	160	medium	Slabs
6	large patch	2	medium	Slabs
7	ltd crack	60	low	Slabs
8	ltd crack	38	medium	Slabs
9	ltd crack	2	high	Slabs
10	scaling	24	low	Slabs
11	scaling	2	medium	Slabs
12	shattered slab	4	low	Slabs
13	shattered slab	8	medium	Slabs
14	shrinkage	4	n/a	Slabs
15	small patch	2	low	Slabs
16	small patch	2	medium	Slabs
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::RY119::005** **Description:** Runway 1-19



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**3,101,011**	**100**
Minor	**All Minor**	**2020**	**255,880**	**67**
1	Slab Replacement - PCC	6250 SqFt	197,188	-
2	Joint Seal (Localized)	6900 Ft	26,565	-
3	Patching - PCC Full Depth	205 SqFt	24,401	-
4	Patching - PCC Partial Depth	65 SqFt	3,993	-
5	Crack Sealing - PCC	950 Ft	3,734	-
6	-	-	-	-
7	-	-	-	-

ARA Pavement Analysis

Section:	**LOR::RY119::006**
Description:	Runway 1-19
PaveType:	PCC
Area:	200,000
Built:	2/15/1956
Age:	63yr

InspPCI:	**35**
InspPCI Rating:	Very Poor
InspDate:	10/9/2018
PCI Family:	2019 MAINE PCC
NormalPCI:	42
MSL:	70

Work History	Year	Thickness (in)	Type
1	1948	0.0	new construction - pcc
2	1948	15-20	surface course - pcc (layer construct)
3	1948	52.0	base course - aggregate
4	-	-	-
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-
9	-	-	-
10	-	-	-

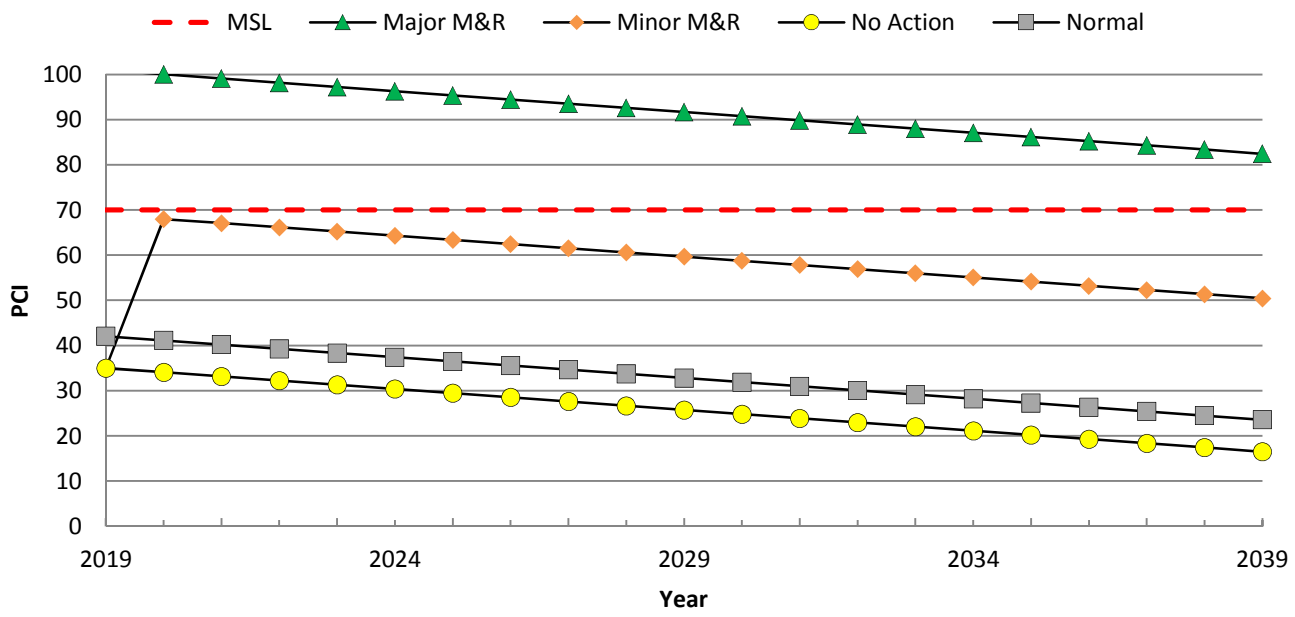
Basic Cause of Distress:

Traffic/Load:	82%		
Age/Weather:	16%	**Total Samples:**	40
Other:	2%	**Insp. Samples:**	7

Extrapolated Distress:	Type	Quantity	Severity	Units
1	corner break	3	medium	Slabs
2	corner spall	3	medium	Slabs
3	jt seal dmg	274	medium	Slabs
4	jt seal dmg	46	high	Slabs
5	ltd crack	174	low	Slabs
6	ltd crack	71	medium	Slabs
7	scaling	3	medium	Slabs
8	shattered slab	31	low	Slabs
9	shattered slab	17	medium	Slabs
10	shattered slab	3	high	Slabs
11	shrinkage	3	n/a	Slabs
12	-	-	-	-
13	-	-	-	-
14	-	-	-	-
15	-	-	-	-
16	-	-	-	-
17	-	-	-	-
18	-	-	-	-
19	-	-	-	-
20	-	-	-	-

ARA Pavement Analysis

Section: **LOR::RY119::006** **Description:** Runway 1-19



M&R	Action	Year / Quantity	Cost ($)	Ending PCI
Major	**Major M&R**	**2020**	**6,202,021**	**100**
Minor	**All Minor**	**2020**	**469,827**	**68**
1	Slab Replacement - PCC	12500 SqFt	394,375	-
2	Joint Seal (Localized)	14800 Ft	56,980	-
3	Patching - PCC Full Depth	93 SqFt	10,979	-
4	Crack Sealing - PCC	1786 Ft	7,018	-
5	Patching - PCC Partial Depth	8 SqFt	475	-
6	-	-	-	-
7	-	-	-	-

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Appendix C: PCI Distress Report

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Re-Inspection Report

Generated Date 7/26/2019

Network: LOR **Name:** Loring International Airport

Branch: APA **Name:** Apron A **Use:** APRON **Area:** 721,000 SqFt

Section: 002 of 3 **From:** a **To:** b **Last Const.:** 1/15/1952

Surface: AC **Family:** 2019 MAINE AC APRON-TLN **Zone:** **Category:** **Rank:** P

Area: 297,500 SqFt **Length:** 1,460 Ft **Width:** 210 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 56 **Surveyed:** 7

Conditions: **PCI:** 24

Sample Number: 104	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	10	
41	ALLIGATOR CR	H	150.00	SqFt			
43	BLOCK CR	M	4350.00	SqFt			
52	RAVELING	H	500.00	SqFt			
57	WEATHERING	M	4350.00	SqFt			
Sample Number: 110	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	28	
43	BLOCK CR	L	300.00	SqFt			
43	BLOCK CR	M	4200.00	SqFt			
52	RAVELING	H	350.00	SqFt			
57	WEATHERING	M	4650.00	SqFt			
Sample Number: 200	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	30	
43	BLOCK CR	L	2400.00	SqFt			
43	BLOCK CR	M	2400.00	SqFt			
52	RAVELING	H	225.00	SqFt			
57	WEATHERING	M	4675.00	SqFt			
Sample Number: 208	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	24	
43	BLOCK CR	M	4400.00	SqFt			
52	RAVELING	H	600.00	SqFt			
57	WEATHERING	M	4400.00	SqFt			
Sample Number: 302	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	34	
43	BLOCK CR	M	3900.00	SqFt			
48	L & T CR	H	100.00	Ft			
52	RAVELING	H	100.00	SqFt			
57	WEATHERING	M	3800.00	SqFt			
Sample Number: 306	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	7	
41	ALLIGATOR CR	M	50.00	SqFt			
41	ALLIGATOR CR	H	25.00	SqFt			
43	BLOCK CR	L	500.00	SqFt			
43	BLOCK CR	M	4000.00	SqFt			
48	L & T CR	H	50.00	Ft			
52	RAVELING	H	300.00	SqFt			
57	WEATHERING	M	4700.00	SqFt			
Sample Number: 309	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	31	
41	ALLIGATOR CR	M	50.00	SqFt			
43	BLOCK CR	M	3800.00	SqFt			
52	RAVELING	H	120.00	SqFt			
57	WEATHERING	M	3800.00	SqFt			

Network: LOR **Name:** Loring International Airport

Branch: APA **Name:** Apron A **Use:** APRON **Area:** 721,000 SqFt

Section: 003 of 3 **From:** a **To:** b **Last Const.:** 1/15/1948

Surface: AC **Family:** 2019 MAINE AC APRON-TLN **Zone:** **Category:** **Rank:** P

Area: 314,350 SqFt **Length:** 900 Ft **Width:** 350 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 62 **Surveyed:** 9

Conditions: **PCI:** 26

Sample Number: 101 **Type:** R **Area:** 6250.00 SqFt **PCI:** 22

43	BLOCK CR	M	3600.00	SqFt
48	L & T CR	M	175.00	Ft
48	L & T CR	H	50.00	Ft
52	RAVELING	H	940.00	SqFt
57	WEATHERING	M	5000.00	SqFt

Sample Number: 107 **Type:** R **Area:** 5000.00 SqFt **PCI:** 21

41	ALLIGATOR CR	L	200.00	SqFt
41	ALLIGATOR CR	M	75.00	SqFt
43	BLOCK CR	M	3300.00	SqFt
43	BLOCK CR	H	500.00	SqFt
52	RAVELING	H	20.00	SqFt

Sample Number: 111 **Type:** R **Area:** 5000.00 SqFt **PCI:** 36

41	ALLIGATOR CR	M	84.00	SqFt
43	BLOCK CR	M	4900.00	SqFt
57	WEATHERING	M	2500.00	SqFt

Sample Number: 116 **Type:** R **Area:** 5000.00 SqFt **PCI:** 20

43	BLOCK CR	M	4200.00	SqFt
48	L & T CR	M	50.00	Ft
48	L & T CR	H	50.00	Ft
52	RAVELING	H	600.00	SqFt
57	WEATHERING	M	2500.00	SqFt

Sample Number: 215 **Type:** R **Area:** 5000.00 SqFt **PCI:** 39

43	BLOCK CR	L	2000.00	SqFt
43	BLOCK CR	M	2500.00	SqFt
52	RAVELING	H	90.00	SqFt
57	WEATHERING	M	4900.00	SqFt

Sample Number: 403 **Type:** R **Area:** 5000.00 SqFt **PCI:** 29

43	BLOCK CR	L	2000.00	SqFt
43	BLOCK CR	M	2750.00	SqFt
52	RAVELING	H	250.00	SqFt
57	WEATHERING	L	4750.00	SqFt

Sample Number: 408 **Type:** R **Area:** 5000.00 SqFt **PCI:** 23

41	ALLIGATOR CR	L	150.00	SqFt
41	ALLIGATOR CR	M	100.00	SqFt
43	BLOCK CR	L	1000.00	SqFt
43	BLOCK CR	M	3500.00	SqFt
52	RAVELING	H	125.00	SqFt
57	WEATHERING	L	3875.00	SqFt

Sample Number: 418 **Type:** R **Area:** 5000.00 SqFt **PCI:** 24

41	ALLIGATOR CR	L	150.00	SqFt
41	ALLIGATOR CR	M	130.00	SqFt
43	BLOCK CR	L	3400.00	SqFt
43	BLOCK CR	M	1250.00	SqFt
52	RAVELING	H	100.00	SqFt

Sample Number: 520 **Type:** R **Area:** 5000.00 SqFt **PCI:** 25

41	ALLIGATOR CR	L	125.00	SqFt
41	ALLIGATOR CR	H	75.00	SqFt
43	BLOCK CR	L	2500.00	SqFt
43	BLOCK CR	M	2200.00	SqFt
52	RAVELING	H	50.00	SqFt

Network: LOR **Name:** Loring International Airport

Branch: APA **Name:** Apron A **Use:** APRON **Area:** 721,000 SqFt

Section: 001 of 3 **From:** a **To:** b **Last Const.:** 1/15/1958

Surface: AC **Family:** 2019 MAINE AC APRON-TLN **Zone:** **Category:** **Rank:** P

Area: 109,150 SqFt **Length:** 1,460 Ft **Width:** 120 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 28 **Surveyed:** 6

Conditions: **PCI:** 41

Sample Number: 277	**Type:**	R	**Area:**	3900.00 SqFt	**PCI:**	38	
41	ALLIGATOR CR	L	50.00	SqFt			
43	BLOCK CR	M	3800.00	SqFt			
57	WEATHERING	M	3800.00	SqFt			
Sample Number: 280	**Type:**	R	**Area:**	3900.00 SqFt	**PCI:**	46	
43	BLOCK CR	M	3150.00	SqFt			
57	WEATHERING	M	3900.00	SqFt			
Sample Number: 287	**Type:**	R	**Area:**	3900.00 SqFt	**PCI:**	48	
43	BLOCK CR	L	500.00	SqFt			
43	BLOCK CR	M	2400.00	SqFt			
57	WEATHERING	M	3900.00	SqFt			
Sample Number: 290	**Type:**	R	**Area:**	3900.00 SqFt	**PCI:**	38	
41	ALLIGATOR CR	L	50.00	SqFt			
43	BLOCK CR	M	3800.00	SqFt			
57	WEATHERING	M	3900.00	SqFt			
Sample Number: 297	**Type:**	R	**Area:**	3900.00 SqFt	**PCI:**	42	
43	BLOCK CR	M	3900.00	SqFt			
57	WEATHERING	M	3900.00	SqFt			
Sample Number: 300	**Type:**	R	**Area:**	3900.00 SqFt	**PCI:**	34	
41	ALLIGATOR CR	L	50.00	SqFt			
41	ALLIGATOR CR	M	150.00	SqFt			
43	BLOCK CR	M	2700.00	SqFt			
50	PATCHING	L	25.00	SqFt			

Network: LOR **Name:** Loring International Airport

Branch: APB **Name:** Apron B **Use:** APRON **Area:** 827,800 SqFt

Section: 001 of 2 **From:** a **To:** b **Last Const.:** 1/15/1955

Surface: PCC **Family:** 2019 MAINE PCC **Zone:** **Category:** **Rank:** P

Area: 611,400 SqFt **Length:** 1,000 Ft **Width:** 620 Ft

Slabs: 2,717 **Slab Length:** 15 Ft **Slab Width:** 15 Ft **Joint Length:** 81,510 Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 104 **Surveyed:** 13

Conditions: **PCI:** 76

Sample Number: 201 **Type:** R **Area:** 24.00 Slabs **PCI:** 83

65	JT SEAL DMG	H	24.00 Slabs
73	SHRINKAGE CR	N	1.00 Slabs
75	CORNER SPALL	H	1.00 Slabs

Sample Number: 207 **Type:** R **Area:** 24.00 Slabs **PCI:** 63

62	CORNER BREAK	L	3.00 Slabs
63	LINEAR CR	L	1.00 Slabs
63	LINEAR CR	M	1.00 Slabs
65	JT SEAL DMG	H	24.00 Slabs
74	JOINT SPALL	H	1.00 Slabs
75	CORNER SPALL	H	2.00 Slabs

Sample Number: 302 **Type:** R **Area:** 24.00 Slabs **PCI:** 73

62	CORNER BREAK	L	2.00 Slabs
63	LINEAR CR	M	2.00 Slabs
65	JT SEAL DMG	H	24.00 Slabs

Sample Number: 306 **Type:** R **Area:** 24.00 Slabs **PCI:** 71

63	LINEAR CR	L	3.00 Slabs
63	LINEAR CR	M	1.00 Slabs
65	JT SEAL DMG	H	24.00 Slabs
73	SHRINKAGE CR	N	1.00 Slabs
74	JOINT SPALL	L	1.00 Slabs
74	JOINT SPALL	M	2.00 Slabs

Sample Number: 310 **Type:** R **Area:** 24.00 Slabs **PCI:** 88

65	JT SEAL DMG	H	24.00 Slabs

Sample Number: 403 **Type:** R **Area:** 24.00 Slabs **PCI:** 69

65	JT SEAL DMG	H	24.00 Slabs
70	SCALING	M	3.00 Slabs
74	JOINT SPALL	H	2.00 Slabs

Sample Number: 405 **Type:** R **Area:** 24.00 Slabs **PCI:** 83

65	JT SEAL DMG	H	24.00 Slabs
70	SCALING	L	1.00 Slabs
70	SCALING	M	1.00 Slabs

Sample Number: 411 **Type:** R **Area:** 24.00 Slabs **PCI:** 88

65	JT SEAL DMG	H	24.00 Slabs

Sample Number: 504 **Type:** R **Area:** 24.00 Slabs **PCI:** 73

65	JT SEAL DMG	H	24.00 Slabs
70	SCALING	M	3.00 Slabs
73	SHRINKAGE CR	N	2.00 Slabs
74	JOINT SPALL	M	1.00 Slabs
75	CORNER SPALL	L	1.00 Slabs
75	CORNER SPALL	M	1.00 Slabs

Sample Number: 509 **Type:** R **Area:** 24.00 Slabs **PCI:** 78

65	JT SEAL DMG	H	24.00 Slabs
70	SCALING	M	2.00 Slabs
75	CORNER SPALL	M	2.00 Slabs

Sample Number: 513 **Type:** R **Area:** 24.00 Slabs **PCI:** 74

63	LINEAR CR	L	1.00 Slabs
63	LINEAR CR	M	1.00 Slabs
65	JT SEAL DMG	H	24.00 Slabs
72	SHAT. SLAB	L	1.00 Slabs

Sample Number: 605 **Type:** R **Area:** 24.00 Slabs **PCI:** 77

65	JT SEAL DMG	H	24.00 Slabs
74	JOINT SPALL	H	1.00 Slabs
75	CORNER SPALL	H	2.00 Slabs

Sample Number: 610 **Type:** R **Area:** 24.00 Slabs **PCI:** 74

65	JT SEAL DMG	H	24.00 Slabs

Branch:	APB	**Name:**	Apron B	**Use:**	APRON	**Area:**	827,800 SqFt

70	SCALING	L	1.00	Slabs
70	SCALING	M	2.00	Slabs
71	FAULTING	L	2.00	Slabs
74	JOINT SPALL	M	1.00	Slabs

Network: LOR **Name:** Loring International Airport

Branch: APB **Name:** Apron B **Use:** APRON **Area:** 827,800 SqFt

Section: 002 of 2 **From:** a **To:** b **Last Const.:** 1/15/1955

Surface: PCC **Family:** 2019 MAINE PCC **Zone:** **Category:** **Rank:** P

Area: 216,400 SqFt **Length:** 2,300 Ft **Width:** 75 Ft

Slabs: 962 **Slab Length:** 15 Ft **Slab Width:** 15 Ft **Joint Length:** 20,625 Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 46 **Surveyed:** 8

Conditions: **PCI:** 86

Sample Number: 102	**Type:** R	**Area:** 20.00 Slabs	**PCI:** 83		
65	JT SEAL DMG	H	20.00 Slabs		
75	CORNER SPALL	H	1.00 Slabs		
Sample Number: 105	**Type:** R	**Area:** 20.00 Slabs	**PCI:** 88		
65	JT SEAL DMG	H	20.00 Slabs		
Sample Number: 108	**Type:** R	**Area:** 20.00 Slabs	**PCI:** 88		
65	JT SEAL DMG	H	20.00 Slabs		
Sample Number: 112	**Type:** R	**Area:** 20.00 Slabs	**PCI:** 80		
65	JT SEAL DMG	H	20.00 Slabs		
74	JOINT SPALL	M	1.00 Slabs		
75	CORNER SPALL	M	1.00 Slabs		
Sample Number: 318	**Type:** R	**Area:** 16.00 Slabs	**PCI:** 88		
65	JT SEAL DMG	H	16.00 Slabs		
Sample Number: 421	**Type:** R	**Area:** 20.00 Slabs	**PCI:** 81		
65	JT SEAL DMG	H	20.00 Slabs		
75	CORNER SPALL	L	1.00 Slabs		
75	CORNER SPALL	H	1.00 Slabs		
Sample Number: 800	**Type:** R	**Area:** 20.00 Slabs	**PCI:** 93		
65	JT SEAL DMG	M	20.00 Slabs		
Sample Number: 901	**Type:** R	**Area:** 20.00 Slabs	**PCI:** 88		
65	JT SEAL DMG	M	20.00 Slabs		
67	LARGE PATCH	L	2.00 Slabs		

Network: LOR **Name:** Loring International Airport

Branch: CTB **Name:** Connecting Taxiway B **Use:** TAXIWAY **Area:** 106,150 SqFt

Section: 001 of 1 **From:** a **To:** b **Last Const.:** 1/15/1948

Surface: AC **Family:** 2019 MAINE AC RW-TW **Zone:** **Category:** **Rank:** P

Area: 106,150 SqFt **Length:** 800 Ft **Width:** 100 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 16 **Surveyed:** 5

Conditions: **PCI:** 74

Sample Number:	104	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	75
48	L & T CR		L	407.00 Ft			
48	L & T CR		M	9.00 Ft			
Sample Number:	106	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	74
48	L & T CR		L	411.00 Ft			
48	L & T CR		M	12.00 Ft			
Sample Number:	108	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	74
48	L & T CR		L	435.00 Ft			
48	L & T CR		M	9.00 Ft			
Sample Number:	110	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	74
48	L & T CR		L	427.00 Ft			
48	L & T CR		M	41.00 Ft			
Sample Number:	111	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	75
48	L & T CR		L	396.00 Ft			
48	L & T CR		M	17.00 Ft			

Network: LOR **Name:** Loring International Airport

Branch: CTC **Name:** Connecting Taxiway C **Use:** TAXIWAY **Area:** 130,700 SqFt

Section: 001 of 1 **From:** a **To:** b **Last Const.:** 1/15/1952

Surface: AC **Family:** 2019 MAINE AC RW-TW **Zone:** **Category:** **Rank:** P

Area: 130,700 SqFt **Length:** 1,150 Ft **Width:** 100 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 23 **Surveyed:** 6

Conditions: **PCI:** 63

Sample Number: 103 **Type:** R **Area:** 5000.00 SqFt **PCI:** 59

41	ALLIGATOR CR	M	10.00	SqFt
48	L & T CR	L	602.00	Ft
48	L & T CR	M	25.00	Ft
52	RAVELING	M	400.00	SqFt

Sample Number: 107 **Type:** R **Area:** 5000.00 SqFt **PCI:** 53

41	ALLIGATOR CR	L	10.00	SqFt
48	L & T CR	L	780.00	Ft
48	L & T CR	M	98.00	Ft
48	L & T CR	H	2.00	Ft
52	RAVELING	M	200.00	SqFt

Sample Number: 111 **Type:** R **Area:** 5000.00 SqFt **PCI:** 67

45	DEPRESSION	L	45.00	SqFt
48	L & T CR	L	319.00	Ft
48	L & T CR	M	67.00	Ft
52	RAVELING	M	200.00	SqFt

Sample Number: 115 **Type:** R **Area:** 5000.00 SqFt **PCI:** 68

48	L & T CR	L	252.00	Ft
48	L & T CR	M	50.00	Ft
50	PATCHING	L	650.00	SqFt
50	PATCHING	M	70.00	SqFt

Sample Number: 118 **Type:** R **Area:** 5000.00 SqFt **PCI:** 68

48	L & T CR	L	404.00	Ft
48	L & T CR	M	135.00	Ft
52	RAVELING	M	300.00	SqFt

Sample Number: 120 **Type:** R **Area:** 5000.00 SqFt **PCI:** 60

41	ALLIGATOR CR	L	50.00	SqFt
48	L & T CR	L	481.00	Ft
48	L & T CR	M	125.00	Ft
52	RAVELING	M	300.00	SqFt

Network: LOR **Name:** Loring International Airport

Branch: CTD **Name:** Connecting Taxiway D **Use:** TAXIWAY **Area:** 130,050 SqFt

Section: 001 of 2 **From:** a **To:** b **Last Const.:** 1/15/1952

Surface: AC **Family:** 2019 MAINE AC RW-TW **Zone:** **Category:** **Rank:** P

Area: 110,550 SqFt **Length:** 1,050 Ft **Width:** 100 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 20 **Surveyed:** 7

Conditions: **PCI:** 72

Sample Number: 103 **Type:** R **Area:** 5000.00 SqFt **PCI:** 66

48	L & T CR	L	517.00	Ft
48	L & T CR	M	168.00	Ft
52	RAVELING	L	200.00	SqFt

Sample Number: 107 **Type:** R **Area:** 5000.00 SqFt **PCI:** 75

48	L & T CR	L	250.00	Ft
48	L & T CR	M	54.00	Ft
52	RAVELING	L	200.00	SqFt

Sample Number: 110 **Type:** R **Area:** 5000.00 SqFt **PCI:** 73

48	L & T CR	L	236.00	Ft
48	L & T CR	M	115.00	Ft
52	RAVELING	L	200.00	SqFt

Sample Number: 111 **Type:** A **Area:** 5000.00 SqFt **PCI:** 33

41	ALLIGATOR CR	M	250.00	SqFt
45	DEPRESSION	L	60.00	SqFt
48	L & T CR	L	377.00	Ft
48	L & T CR	M	64.00	Ft
52	RAVELING	M	1000.00	SqFt

Sample Number: 115 **Type:** R **Area:** 5000.00 SqFt **PCI:** 71

45	DEPRESSION	M	60.00	SqFt
48	L & T CR	L	373.00	Ft
48	L & T CR	M	52.00	Ft

Sample Number: 117 **Type:** R **Area:** 5000.00 SqFt **PCI:** 82

48	L & T CR	L	215.00	Ft
48	L & T CR	M	11.00	Ft

Sample Number: 119 **Type:** R **Area:** 5000.00 SqFt **PCI:** 78

48	L & T CR	L	299.00	Ft
48	L & T CR	M	18.00	Ft

Network: LOR **Name:** Loring International Airport

Branch: CTD **Name:** Connecting Taxiway D **Use:** TAXIWAY **Area:** 130,050 SqFt

Section: 002 of 2 **From:** a **To:** b **Last Const.:** 2/15/1952

Surface: AC **Family:** 2019 MAINE AC RW-TW **Zone:** **Category:** **Rank:** P

Area: 19,500 SqFt **Length:** 100 Ft **Width:** 100 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 3 **Surveyed:** 3

Conditions: **PCI:** 62

Sample Number: 120 **Type:** R **Area:** 3600.00 SqFt **PCI:** 62

43	BLOCK CR	L	1440.00	SqFt
48	L & T CR	L	235.00	Ft
48	L & T CR	L	212.00	Ft
48	L & T CR	M	23.00	Ft

Sample Number: 121 **Type:** R **Area:** 5000.00 SqFt **PCI:** 63

43	BLOCK CR	L	2000.00	SqFt
48	L & T CR	L	212.00	Ft
48	L & T CR	M	40.00	Ft

Sample Number: 122 **Type:** R **Area:** 5800.00 SqFt **PCI:** 60

43	BLOCK CR	L	3300.00	SqFt
48	L & T CR	L	231.00	Ft
48	L & T CR	M	48.00	Ft

Network: LOR **Name:** Loring International Airport

Branch: PTA **Name:** Parallel Taxiway A **Use:** TAXIWAY **Area:** 1,290,850 SqFt

Section: 001 of 4 **From:** ab **To:** b **Last Const.:** 1/15/1956

Surface: PCC **Family:** 2019 MAINE PCC **Zone:** **Category:** **Rank:** P

Area: 67,350 SqFt **Length:** 700 Ft **Width:** 100 Ft

Slabs: 108 **Slab Length:** 25 Ft **Slab Width:** 25 Ft **Joint Length:** 4,800 Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 5 **Surveyed:** 4

Conditions: **PCI:** 28

Sample Number: 101 **Type:** R **Area:** 20.00 Slabs **PCI:** 26

62	CORNER BREAK	L	1.00	Slabs
62	CORNER BREAK	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
64	DURABIL. CR	L	1.00	Slabs
66	SMALL PATCH	H	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
73	SHRINKAGE CR	N	1.00	Slabs
73	SHRINKAGE CR	N	1.00	Slabs
73	SHRINKAGE CR	N	1.00	Slabs
73	SHRINKAGE CR	N	1.00	Slabs
75	CORNER SPALL	H	1.00	Slabs

Sample Number: 102 **Type:** R **Area:** 20.00 Slabs **PCI:** 38

62	CORNER BREAK	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
65	JT SEAL DMG	M	20.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs

Sample Number: 103 **Type:** R **Area:** 20.00 Slabs **PCI:** 41

62	CORNER BREAK	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
65	JT SEAL DMG	M	20.00	Slabs
67	LARGE PATCH	H	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
73	SHRINKAGE CR	N	1.00	Slabs

Sample Number: 104 **Type:** R **Area:** 22.00 Slabs **PCI:** 7

63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs

Branch:	PTA	**Name:**	Parallel Taxiway A	**Use:**	TAXIWAY	**Area:**	1,290,850 SqFt

63	LINEAR CR	H	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
65	JT SEAL DMG	M	22.00	Slabs
66	SMALL PATCH	M	1.00	Slabs
67	LARGE PATCH	M	1.00	Slabs
70	SCALING	M	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs
74	JOINT SPALL	H	1.00	Slabs

Network: LOR **Name:** Loring International Airport

Branch: PTA **Name:** Parallel Taxiway A **Use:** TAXIWAY **Area:** 1,290,850 SqFt

Section: 005 of 4 **From:** a **To:** b **Last Const.:** 1/15/1952

Surface: PCC **Family:** 2019 MAINE PCC **Zone:** **Category:** **Rank:** P

Area: 41,700 SqFt **Length:** 200 Ft **Width:** 250 Ft

Slabs: 60 **Slab Length:** 46 Ft **Slab Width:** 15 Ft **Joint Length:** 3,970 Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 5 **Surveyed:** 4

Conditions: **PCI:** 46

Sample Number: 100 **Type:** R **Area:** 20.00 Slabs **PCI:** 40

63	LINEAR CR	L	4.00	Slabs
63	LINEAR CR	M	3.00	Slabs
63	LINEAR CR	H	1.00	Slabs
65	JT SEAL DMG	H	20.00	Slabs
74	JOINT SPALL	M	1.00	Slabs
74	JOINT SPALL	H	2.00	Slabs

Sample Number: 101 **Type:** R **Area:** 28.00 Slabs **PCI:** 47

63	LINEAR CR	L	4.00	Slabs
63	LINEAR CR	L	4.00	Slabs
63	LINEAR CR	M	3.00	Slabs
63	LINEAR CR	H	2.00	Slabs
65	JT SEAL DMG	H	28.00	Slabs
74	JOINT SPALL	H	1.00	Slabs

Sample Number: 200 **Type:** R **Area:** 20.00 Slabs **PCI:** 45

63	LINEAR CR	L	3.00	Slabs
63	LINEAR CR	M	5.00	Slabs
63	LINEAR CR	M	4.00	Slabs
64	DURABIL. CR	M	2.00	Slabs

Sample Number: 201 **Type:** R **Area:** 16.00 Slabs **PCI:** 53

63	LINEAR CR	L	6.00	Slabs
63	LINEAR CR	M	4.00	Slabs
65	JT SEAL DMG	H	16.00	Slabs

Network: LOR **Name:** Loring International Airport

Branch: PTA **Name:** Parallel Taxiway A **Use:** TAXIWAY **Area:** 1,290,850 SqFt

Section: 002 of 4 **From:** a **To:** b **Last Const.:** 1/15/1948

Surface: AC **Family:** 2019 MAINE AC RW-TW **Zone:** **Category:** **Rank:** P

Area: 222,050 SqFt **Length:** 3,000 Ft **Width:** 75 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 57 **Surveyed:** 7

Conditions: **PCI:** 53

Sample Number: 103 **Type:** R **Area:** 3750.00 SqFt **PCI:** 50

41	ALLIGATOR CR	L	100.00	SqFt
48	L & T CR	L	97.00	Ft
48	L & T CR	M	141.00	Ft
52	RAVELING	M	30.00	SqFt
57	WEATHERING	M	2000.00	SqFt

Sample Number: 113 **Type:** R **Area:** 3750.00 SqFt **PCI:** 50

41	ALLIGATOR CR	L	80.00	SqFt
48	L & T CR	L	155.00	Ft
48	L & T CR	M	178.00	Ft
52	RAVELING	L	300.00	SqFt
57	WEATHERING	M	2500.00	SqFt

Sample Number: 123 **Type:** R **Area:** 3750.00 SqFt **PCI:** 55

41	ALLIGATOR CR	L	100.00	SqFt
48	L & T CR	L	126.00	Ft
48	L & T CR	M	77.00	Ft
52	RAVELING	L	2000.00	SqFt

Sample Number: 133 **Type:** R **Area:** 3750.00 SqFt **PCI:** 55

41	ALLIGATOR CR	L	50.00	SqFt
48	L & T CR	L	315.00	Ft
48	L & T CR	M	117.00	Ft
52	RAVELING	L	2500.00	SqFt

Sample Number: 143 **Type:** R **Area:** 3750.00 SqFt **PCI:** 52

41	ALLIGATOR CR	L	110.00	SqFt
48	L & T CR	L	206.00	Ft
48	L & T CR	M	116.00	Ft
52	RAVELING	L	2000.00	SqFt

Sample Number: 145 **Type:** R **Area:** 3750.00 SqFt **PCI:** 55

41	ALLIGATOR CR	L	100.00	SqFt
48	L & T CR	L	225.00	Ft
48	L & T CR	M	75.00	Ft
52	RAVELING	L	2000.00	SqFt

Sample Number: 147 **Type:** R **Area:** 3750.00 SqFt **PCI:** 54

41	ALLIGATOR CR	L	90.00	SqFt
48	L & T CR	L	156.00	Ft
48	L & T CR	M	112.00	Ft
52	RAVELING	L	2000.00	SqFt

Network: LOR **Name:** Loring International Airport

Branch: PTA **Name:** Parallel Taxiway A **Use:** TAXIWAY **Area:** 1,290,850 SqFt

Section: 003 of 4 **From:** a **To:** b **Last Const.:** 1/15/1948

Surface: AC **Family:** 2019 MAINE AC RW-TW **Zone:** **Category:** **Rank:** P

Area: 959,750 SqFt **Length:** 10,000 Ft **Width:** 75 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 235 **Surveyed:** 20

Conditions: **PCI:** 26

Sample Number: 160 **Type:** R **Area:** 5000.00 SqFt **PCI:** 24

41	ALLIGATOR CR	L	100.00	SqFt
41	ALLIGATOR CR	M	600.00	SqFt
48	L & T CR	L	430.00	Ft
48	L & T CR	M	65.00	Ft
53	RUTTING	L	50.00	SqFt

Sample Number: 170 **Type:** R **Area:** 5000.00 SqFt **PCI:** 18

41	ALLIGATOR CR	L	300.00	SqFt
41	ALLIGATOR CR	M	150.00	SqFt
43	BLOCK CR	M	4000.00	SqFt
48	L & T CR	L	120.00	Ft
52	RAVELING	M	2000.00	SqFt

Sample Number: 180 **Type:** R **Area:** 5000.00 SqFt **PCI:** 29

41	ALLIGATOR CR	L	150.00	SqFt
43	BLOCK CR	L	1850.00	SqFt
43	BLOCK CR	M	3000.00	SqFt
52	RAVELING	L	3000.00	SqFt
52	RAVELING	M	500.00	SqFt

Sample Number: 190 **Type:** R **Area:** 5000.00 SqFt **PCI:** 22

41	ALLIGATOR CR	L	150.00	SqFt
41	ALLIGATOR CR	M	50.00	SqFt
43	BLOCK CR	L	500.00	SqFt
43	BLOCK CR	M	3700.00	SqFt
48	L & T CR	L	40.00	Ft
52	RAVELING	M	300.00	SqFt
52	RAVELING	H	200.00	SqFt

Sample Number: 200 **Type:** R **Area:** 5000.00 SqFt **PCI:** 15

41	ALLIGATOR CR	L	200.00	SqFt
41	ALLIGATOR CR	M	250.00	SqFt
43	BLOCK CR	L	1050.00	SqFt
43	BLOCK CR	M	3500.00	SqFt
52	RAVELING	M	2000.00	SqFt

Sample Number: 210 **Type:** R **Area:** 5000.00 SqFt **PCI:** 18

41	ALLIGATOR CR	L	250.00	SqFt
41	ALLIGATOR CR	M	150.00	SqFt
43	BLOCK CR	L	500.00	SqFt
43	BLOCK CR	M	3000.00	SqFt
48	L & T CR	L	127.00	Ft
48	L & T CR	M	12.00	Ft
52	RAVELING	M	300.00	SqFt
52	RAVELING	H	60.00	SqFt

Sample Number: 220 **Type:** R **Area:** 5000.00 SqFt **PCI:** 23

41	ALLIGATOR CR	M	250.00	SqFt
43	BLOCK CR	L	1000.00	SqFt
43	BLOCK CR	M	3500.00	SqFt
50	PATCHING	M	45.00	SqFt
52	RAVELING	M	500.00	SqFt
52	RAVELING	H	30.00	SqFt

Sample Number: 230 **Type:** R **Area:** 5000.00 SqFt **PCI:** 22

41	ALLIGATOR CR	M	350.00	SqFt
43	BLOCK CR	L	500.00	SqFt
43	BLOCK CR	M	4000.00	SqFt
50	PATCHING	L	30.00	SqFt
52	RAVELING	M	400.00	SqFt
52	RAVELING	H	30.00	SqFt

Sample Number: 240 **Type:** R **Area:** 5000.00 SqFt **PCI:** 19

41	ALLIGATOR CR	M	100.00	SqFt
43	BLOCK CR	L	1000.00	SqFt
43	BLOCK CR	M	3100.00	SqFt

43	BLOCK CR	H	700.00	SqFt
52	RAVELING	H	6.00	SqFt

Sample Number: 250 **Type:** R **Area:** 5000.00 SqFt **PCI:** 20

41	ALLIGATOR CR	L	100.00	SqFt
41	ALLIGATOR CR	M	150.00	SqFt
41	ALLIGATOR CR	H	20.00	SqFt
43	BLOCK CR	L	1000.00	SqFt
43	BLOCK CR	M	2500.00	SqFt
45	DEPRESSION	L	10.00	SqFt
48	L & T CR	L	135.00	Ft
50	PATCHING	L	20.00	SqFt
52	RAVELING	M	1000.00	SqFt

Sample Number: 260 **Type:** R **Area:** 5000.00 SqFt **PCI:** 30

41	ALLIGATOR CR	M	50.00	SqFt
43	BLOCK CR	L	1500.00	SqFt
43	BLOCK CR	M	2500.00	SqFt
52	RAVELING	L	2000.00	SqFt
52	RAVELING	M	1000.00	SqFt

Sample Number: 270 **Type:** R **Area:** 5000.00 SqFt **PCI:** 22

41	ALLIGATOR CR	H	30.00	SqFt
48	L & T CR	L	220.00	Ft
52	RAVELING	M	2500.00	SqFt
52	RAVELING	H	1000.00	SqFt

Sample Number: 280 **Type:** R **Area:** 2700.00 SqFt **PCI:** 25

48	L & T CR	L	82.00	Ft
52	RAVELING	M	2500.00	SqFt
52	RAVELING	H	200.00	SqFt

Sample Number: 290 **Type:** R **Area:** 2700.00 SqFt **PCI:** 26

41	ALLIGATOR CR	L	40.00	SqFt
48	L & T CR	L	73.00	Ft
52	RAVELING	M	2500.00	SqFt
52	RAVELING	H	100.00	SqFt

Sample Number: 300 **Type:** R **Area:** 2700.00 SqFt **PCI:** 16

41	ALLIGATOR CR	L	50.00	SqFt
41	ALLIGATOR CR	M	80.00	SqFt
41	ALLIGATOR CR	H	10.00	SqFt
52	RAVELING	M	2000.00	SqFt
52	RAVELING	H	300.00	SqFt

Sample Number: 310 **Type:** R **Area:** 2700.00 SqFt **PCI:** 41

48	L & T CR	L	97.00	Ft
52	RAVELING	M	400.00	SqFt
52	RAVELING	H	220.00	SqFt

Sample Number: 320 **Type:** R **Area:** 2700.00 SqFt **PCI:** 48

41	ALLIGATOR CR	M	50.00	SqFt
48	L & T CR	L	152.00	Ft
48	L & T CR	M	20.00	Ft
52	RAVELING	L	2500.00	SqFt

Sample Number: 330 **Type:** R **Area:** 2700.00 SqFt **PCI:** 42

41	ALLIGATOR CR	M	60.00	SqFt
48	L & T CR	L	67.00	Ft
48	L & T CR	M	15.00	Ft
52	RAVELING	L	2000.00	SqFt
52	RAVELING	H	10.00	SqFt

Sample Number: 340 **Type:** R **Area:** 2700.00 SqFt **PCI:** 66

41	ALLIGATOR CR	L	30.00	SqFt
48	L & T CR	L	214.00	Ft
48	L & T CR	M	55.00	Ft

Sample Number: 350 **Type:** R **Area:** 2700.00 SqFt **PCI:** 48

41	ALLIGATOR CR	L	10.00	SqFt
48	L & T CR	L	134.00	Ft
52	RAVELING	M	1000.00	SqFt
52	RAVELING	H	50.00	SqFt

Network: LOR **Name:** Loring International Airport

Branch: RY119 **Name:** Runway 1-19 **Use:** RUNWAY **Area:** 3,630,000 SqFt

Section: 004 of 6 **From:** a **To:** b **Last Const.:** 2/15/1952

Surface: AC **Family:** 2019 MAINE AC RW-TW **Zone:** **Category:** **Rank:** P

Area: 2,020,000 SqFt **Length:** 10,100 Ft **Width:** 200 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 404 **Surveyed:** 18

Conditions: **PCI:** 61

Sample Number: 1014 **Type:** R **Area:** 5000.00 SqFt **PCI:** 57

48	L & T CR	L	707.00	Ft
48	L & T CR	M	45.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 544 **Type:** R **Area:** 5000.00 SqFt **PCI:** 62

48	L & T CR	L	228.00	Ft
48	L & T CR	M	297.00	Ft
52	RAVELING	L	1000.00	SqFt

Sample Number: 574 **Type:** R **Area:** 5000.00 SqFt **PCI:** 65

41	ALLIGATOR CR	L	10.00	SqFt
47	JT REF. CR	L	245.00	Ft
47	JT REF. CR	M	142.00	Ft
52	RAVELING	L	150.00	SqFt

Sample Number: 594 **Type:** R **Area:** 5000.00 SqFt **PCI:** 65

48	L & T CR	L	362.00	Ft
48	L & T CR	M	239.00	Ft
52	RAVELING	L	150.00	SqFt

Sample Number: 614 **Type:** R **Area:** 5000.00 SqFt **PCI:** 62

48	L & T CR	L	483.00	Ft
48	L & T CR	M	162.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 634 **Type:** R **Area:** 5000.00 SqFt **PCI:** 65

48	L & T CR	L	382.00	Ft
48	L & T CR	M	143.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 654 **Type:** R **Area:** 5000.00 SqFt **PCI:** 58

48	L & T CR	L	650.00	Ft
48	L & T CR	M	115.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 674 **Type:** R **Area:** 5000.00 SqFt **PCI:** 69

48	L & T CR	L	425.00	Ft
48	L & T CR	M	55.00	Ft
52	RAVELING	L	150.00	SqFt
52	RAVELING	L	1000.00	SqFt

Sample Number: 694 **Type:** R **Area:** 5000.00 SqFt **PCI:** 61

48	L & T CR	L	557.00	Ft
48	L & T CR	M	8.00	Ft
52	RAVELING	L	2000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 704 **Type:** R **Area:** 5000.00 SqFt **PCI:** 66

48	L & T CR	L	334.00	Ft
48	L & T CR	M	148.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 834 **Type:** R **Area:** 5000.00 SqFt **PCI:** 59

48	L & T CR	L	608.00	Ft
48	L & T CR	M	11.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 864 **Type:** R **Area:** 5000.00 SqFt **PCI:** 62

48	L & T CR	L	502.00	Ft
48	L & T CR	M	136.00	Ft
52	RAVELING	L	1000.00	SqFt

Branch:	RY119		**Name:**	Runway 1-19		**Use:**	RUNWAY	**Area:**	3,630,000 SqFt
52	RAVELING	M	150.00	SqFt					
Sample Number:	884	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	58	
48	L & T CR	L	677.00	Ft					
48	L & T CR	M	71.00	Ft					
52	RAVELING	L	1000.00	SqFt					
52	RAVELING	M	150.00	SqFt					
Sample Number:	904	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	60	
48	L & T CR	L	573.00	Ft					
48	L & T CR	M	30.00	Ft					
52	RAVELING	L	1000.00	SqFt					
52	RAVELING	M	150.00	SqFt					
Sample Number:	924	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	56	
48	L & T CR	L	787.00	Ft					
48	L & T CR	M	7.00	Ft					
52	RAVELING	L	1000.00	SqFt					
52	RAVELING	M	150.00	SqFt					
Sample Number:	944	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	51	
48	L & T CR	L	818.00	Ft					
48	L & T CR	M	7.00	Ft					
52	RAVELING	L	1000.00	SqFt					
52	RAVELING	M	200.00	SqFt					
52	RAVELING	H	50.00	SqFt					
Sample Number:	964	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	59	
48	L & T CR	L	596.00	Ft					
48	L & T CR	M	73.00	Ft					
52	RAVELING	L	1000.00	SqFt					
52	RAVELING	M	150.00	SqFt					
Sample Number:	984	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	59	
48	L & T CR	L	311.00	Ft					
48	L & T CR	M	251.00	Ft					
52	RAVELING	L	500.00	SqFt					
52	RAVELING	M	180.00	SqFt					

Network: LOR **Name:** Loring International Airport

Branch: RY119 **Name:** Runway 1-19 **Use:** RUNWAY **Area:** 3,630,000 SqFt

Section: 006 of 6 **From:** a **To:** b **Last Const.:** 2/15/1956

Surface: PCC **Family:** 2019 MAINE PCC **Zone:** **Category:** **Rank:** P

Area: 200,000 SqFt **Length:** 1,000 Ft **Width:** 200 Ft

Slabs: 320 **Slab Length:** 25 Ft **Slab Width:** 25 Ft **Joint Length:** 14,800 Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 20 **Surveyed:** 7

Conditions: **PCI:** 35

Sample Number: 1022 **Type:** R **Area:** 16.00 Slabs **PCI:** 46

62	CORNER BREAK	M	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
65	JT SEAL DMG	H	16.00	Slabs
75	CORNER SPALL	M	1.00	Slabs

Sample Number: 1024 **Type:** R **Area:** 16.00 Slabs **PCI:** 50

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs

Sample Number: 1028 **Type:** R **Area:** 16.00 Slabs **PCI:** 19

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs
70	SCALING	M	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs

Sample Number: 1030 **Type:** R **Area:** 16.00 Slabs **PCI:** 25

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	H	1.00	Slabs

Sample Number: 724 **Type:** R **Area:** 16.00 Slabs **PCI:** 41

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs

Sample Number: 726 **Type:** R **Area:** 16.00 Slabs **PCI:** 29

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs
73	SHRINKAGE CR	N	1.00	Slabs

Sample Number: 728 **Type:** R **Area:** 16.00 Slabs **PCI:** 36

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs

Network: LOR **Name:** Loring International Airport

Branch: RY119 **Name:** Runway 1-19 **Use:** RUNWAY **Area:** 3,630,000 SqFt

Section: 002 of 6 **From:** a **To:** b **Last Const.:** 2/15/1956

Surface: PCC **Family:** 2019 MAINE PCC **Zone:** **Category:** **Rank:** P

Area: 200,000 SqFt **Length:** 1,000 Ft **Width:** 200 Ft

Slabs: 320 **Slab Length:** 25 Ft **Slab Width:** 25 Ft **Joint Length:** 14,800 Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 20 **Surveyed:** 7

Conditions: **PCI:** 34

Sample Number: 501 **Type:** R **Area:** 16.00 Slabs **PCI:** 17

62	CORNER BREAK	L	1.00	Slabs
63	LINEAR CR	L	7.00	Slabs
63	LINEAR CR	M	4.00	Slabs
63	LINEAR CR	H	4.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs
66	SMALL PATCH	M	2.00	Slabs
67	LARGE PATCH	M	1.00	Slabs
73	SHRINKAGE CR	N	1.00	Slabs
74	JOINT SPALL	H	1.00	Slabs
75	CORNER SPALL	H	1.00	Slabs

Sample Number: 503 **Type:** R **Area:** 16.00 Slabs **PCI:** 24

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
64	DURABIL. CR	L	1.00	Slabs
64	DURABIL. CR	L	1.00	Slabs
65	JT SEAL DMG	L	16.00	Slabs
66	SMALL PATCH	H	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs
75	CORNER SPALL	M	1.00	Slabs
75	CORNER SPALL	M	1.00	Slabs

Sample Number: 507 **Type:** R **Area:** 16.00 Slabs **PCI:** 41

62	CORNER BREAK	L	1.00	Slabs
62	CORNER BREAK	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
64	DURABIL. CR	L	1.00	Slabs
65	JT SEAL DMG	L	16.00	Slabs

Sample Number: 803 **Type:** R **Area:** 16.00 Slabs **PCI:** 52

62	CORNER BREAK	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
64	DURABIL. CR	L	1.00	Slabs
65	JT SEAL DMG	L	16.00	Slabs
75	CORNER SPALL	H	1.00	Slabs

Sample Number: 805 **Type:** R **Area:** 16.00 Slabs **PCI:** 44

62	CORNER BREAK	L	1.00	Slabs
62	CORNER BREAK	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
64	DURABIL. CR	L	1.00	Slabs
65	JT SEAL DMG	L	16.00	Slabs

Sample Number: 807 **Type:** R **Area:** 16.00 Slabs **PCI:** 24

62	CORNER BREAK	L	1.00	Slabs
62	CORNER BREAK	L	1.00	Slabs
62	CORNER BREAK	M	1.00	Slabs
62	CORNER BREAK	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs
70	SCALING	L	1.00	Slabs

Sample Number: 809 **Type:** R **Area:** 16.00 Slabs **PCI:** 33

62	CORNER BREAK	L	1.00	Slabs
62	CORNER BREAK	L	1.00	Slabs
62	CORNER BREAK	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
64	DURABIL. CR	L	1.00	Slabs
64	DURABIL. CR	L	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs
70	SCALING	L	1.00	Slabs
70	SCALING	M	1.00	Slabs

Network: LOR **Name:** Loring International Airport

Branch: RY119 **Name:** Runway 1-19 **Use:** RUNWAY **Area:** 3,630,000 SqFt

Section: 001 of 6 **From:** a **To:** b **Last Const.:** 1/15/1955

Surface: PCC **Family:** 2019 MAINE PCC **Zone:** **Category:** **Rank:** P

Area: 100,000 SqFt **Length:** 1,000 Ft **Width:** 100 Ft

Slabs: 160 **Slab Length:** 25 Ft **Slab Width:** 25 Ft **Joint Length:** 6,900 Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 10 **Surveyed:** 5

Conditions: **PCI:** 29

Sample Number: 101 **Type:** R **Area:** 16.00 Slabs **PCI:** 43

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
64	DURABIL. CR	L	1.00	Slabs
66	SMALL PATCH	L	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs

Sample Number: 103 **Type:** R **Area:** 16.00 Slabs **PCI:** 23

62	CORNER BREAK	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs

Sample Number: 105 **Type:** R **Area:** 16.00 Slabs **PCI:** 22

62	CORNER BREAK	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	H	1.00	Slabs
64	DURABIL. CR	L	1.00	Slabs
64	DURABIL. CR	L	1.00	Slabs
64	DURABIL. CR	M	1.00	Slabs
64	DURABIL. CR	M	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs
66	SMALL PATCH	L	1.00	Slabs
66	SMALL PATCH	M	1.00	Slabs
66	SMALL PATCH	M	1.00	Slabs
66	SMALL PATCH	M	1.00	Slabs
74	JOINT SPALL	M	1.00	Slabs
74	JOINT SPALL	M	1.00	Slabs
74	JOINT SPALL	H	1.00	Slabs
75	CORNER SPALL	H	1.00	Slabs

Sample Number: 107 **Type:** R **Area:** 16.00 Slabs **PCI:** 14

63	LINEAR CR	L	1.00	Slabs

Network: LOR **Name:** Loring International Airport

Branch: RY119 **Name:** Runway 1-19 **Use:** RUNWAY **Area:** 3,630,000 SqFt

Section: 004 of 6 **From:** a **To:** b **Last Const.:** 2/15/1952

Surface: AC **Family:** 2019 MAINE AC RW-TW **Zone:** **Category:** **Rank:** P

Area: 2,020,000 SqFt **Length:** 10,100 Ft **Width:** 200 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 404 **Surveyed:** 18

Conditions: **PCI:** 61

Sample Number: 1014 **Type:** R **Area:** 5000.00 SqFt **PCI:** 57

48	L & T CR	L	707.00	Ft
48	L & T CR	M	45.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 544 **Type:** R **Area:** 5000.00 SqFt **PCI:** 62

48	L & T CR	L	228.00	Ft
48	L & T CR	M	297.00	Ft
52	RAVELING	L	1000.00	SqFt

Sample Number: 574 **Type:** R **Area:** 5000.00 SqFt **PCI:** 65

41	ALLIGATOR CR	L	10.00	SqFt
47	JT REF. CR	L	245.00	Ft
47	JT REF. CR	M	142.00	Ft
52	RAVELING	L	150.00	SqFt

Sample Number: 594 **Type:** R **Area:** 5000.00 SqFt **PCI:** 65

48	L & T CR	L	362.00	Ft
48	L & T CR	M	239.00	Ft
52	RAVELING	L	150.00	SqFt

Sample Number: 614 **Type:** R **Area:** 5000.00 SqFt **PCI:** 62

48	L & T CR	L	483.00	Ft
48	L & T CR	M	162.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 634 **Type:** R **Area:** 5000.00 SqFt **PCI:** 65

48	L & T CR	L	382.00	Ft
48	L & T CR	M	143.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 654 **Type:** R **Area:** 5000.00 SqFt **PCI:** 58

48	L & T CR	L	650.00	Ft
48	L & T CR	M	115.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 674 **Type:** R **Area:** 5000.00 SqFt **PCI:** 69

48	L & T CR	L	425.00	Ft
48	L & T CR	M	55.00	Ft
52	RAVELING	L	150.00	SqFt
52	RAVELING	L	1000.00	SqFt

Sample Number: 694 **Type:** R **Area:** 5000.00 SqFt **PCI:** 61

48	L & T CR	L	557.00	Ft
48	L & T CR	M	8.00	Ft
52	RAVELING	L	2000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 704 **Type:** R **Area:** 5000.00 SqFt **PCI:** 66

48	L & T CR	L	334.00	Ft
48	L & T CR	M	148.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 834 **Type:** R **Area:** 5000.00 SqFt **PCI:** 59

48	L & T CR	L	608.00	Ft
48	L & T CR	M	11.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 864 **Type:** R **Area:** 5000.00 SqFt **PCI:** 62

48	L & T CR	L	502.00	Ft
48	L & T CR	M	136.00	Ft
52	RAVELING	L	1000.00	SqFt

Branch:	RY119		**Name:**	Runway 1-19		**Use:**	RUNWAY	**Area:**	3,630,000 SqFt
52	RAVELING	M	150.00	SqFt					
Sample Number:	884	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	58	
48	L & T CR	L	677.00	Ft					
48	L & T CR	M	71.00	Ft					
52	RAVELING	L	1000.00	SqFt					
52	RAVELING	M	150.00	SqFt					
Sample Number:	904	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	60	
48	L & T CR	L	573.00	Ft					
48	L & T CR	M	30.00	Ft					
52	RAVELING	L	1000.00	SqFt					
52	RAVELING	M	150.00	SqFt					
Sample Number:	924	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	56	
48	L & T CR	L	787.00	Ft					
48	L & T CR	M	7.00	Ft					
52	RAVELING	L	1000.00	SqFt					
52	RAVELING	M	150.00	SqFt					
Sample Number:	944	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	51	
48	L & T CR	L	818.00	Ft					
48	L & T CR	M	7.00	Ft					
52	RAVELING	L	1000.00	SqFt					
52	RAVELING	M	200.00	SqFt					
52	RAVELING	H	50.00	SqFt					
Sample Number:	964	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	59	
48	L & T CR	L	596.00	Ft					
48	L & T CR	M	73.00	Ft					
52	RAVELING	L	1000.00	SqFt					
52	RAVELING	M	150.00	SqFt					
Sample Number:	984	**Type:**	R	**Area:**	5000.00 SqFt		**PCI:**	59	
48	L & T CR	L	311.00	Ft					
48	L & T CR	M	251.00	Ft					
52	RAVELING	L	500.00	SqFt					
52	RAVELING	M	180.00	SqFt					

Network: LOR **Name:** Loring International Airport

Branch: RY119 **Name:** Runway 1-19 **Use:** RUNWAY **Area:** 3,630,000 SqFt

Section: 006 of 6 **From:** a **To:** b **Last Const.:** 2/15/1956

Surface: PCC **Family:** 2019 MAINE PCC **Zone:** **Category:** **Rank:** P

Area: 200,000 SqFt **Length:** 1,000 Ft **Width:** 200 Ft

Slabs: 320 **Slab Length:** 25 Ft **Slab Width:** 25 Ft **Joint Length:** 14,800 Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 20 **Surveyed:** 7

Conditions: **PCI:** 35

Sample Number: 1022 **Type:** R **Area:** 16.00 Slabs **PCI:** 46

62	CORNER BREAK	M	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
65	JT SEAL DMG	H	16.00	Slabs
75	CORNER SPALL	M	1.00	Slabs

Sample Number: 1024 **Type:** R **Area:** 16.00 Slabs **PCI:** 50

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs

Sample Number: 1028 **Type:** R **Area:** 16.00 Slabs **PCI:** 19

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
63	LINEAR CR	M	1.00	Slabs
65	JT SEAL DMG	M	16.00	Slabs
70	SCALING	M	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	L	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs
72	SHAT. SLAB	M	1.00	Slabs

Sample Number: 1030 **Type:** R **Area:** 16.00 Slabs **PCI:** 25

63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs
63	LINEAR CR	L	1.00	Slabs

Network: LOR **Name:** Loring International Airport

Branch: RY119 **Name:** Runway 1-19 **Use:** RUNWAY **Area:** 3,630,000 SqFt

Section: 003 of 6 **From:** a **To:** b **Last Const.:** 1/15/1952

Surface: AC **Family:** 2019 MAINE AC RW-TW **Zone:** **Category:** **Rank:** P

Area: 1,010,000 SqFt **Length:** 10,100 Ft **Width:** 100 Ft

Slabs: **Slab Length:** Ft **Slab Width:** Ft **Joint Length:** Ft

Shoulder: **Street Type:** **Grade:** 0 **Lanes:** 0

Last Insp. Date: 10/9/2018 **TotalSamples:** 202 **Surveyed:** 19

Conditions: **PCI:** 63

Sample Number: 120 **Type:** A **Area:** 5000.00 SqFt **PCI:** 54

48	L & T CR	L	346.00	Ft
48	L & T CR	M	23.00	Ft
52	RAVELING	L	2000.00	SqFt
52	RAVELING	M	760.00	SqFt
54	SHOVING	L	500.00	SqFt

Sample Number: 134 **Type:** R **Area:** 5000.00 SqFt **PCI:** 65

48	L & T CR	L	470.00	Ft
48	L & T CR	M	81.00	Ft
52	RAVELING	L	3000.00	SqFt

Sample Number: 144 **Type:** R **Area:** 5000.00 SqFt **PCI:** 63

48	L & T CR	L	263.00	Ft
48	L & T CR	M	185.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	120.00	SqFt

Sample Number: 164 **Type:** R **Area:** 5000.00 SqFt **PCI:** 63

41	ALLIGATOR CR	L	25.00	SqFt
48	L & T CR	L	297.00	Ft
48	L & T CR	M	190.00	Ft
52	RAVELING	M	150.00	SqFt

Sample Number: 174 **Type:** R **Area:** 5000.00 SqFt **PCI:** 63

41	ALLIGATOR CR	L	30.00	SqFt
48	L & T CR	L	318.00	Ft
48	L & T CR	M	182.00	Ft
52	RAVELING	M	150.00	SqFt

Sample Number: 184 **Type:** R **Area:** 5000.00 SqFt **PCI:** 58

41	ALLIGATOR CR	L	20.00	SqFt
48	L & T CR	L	460.00	Ft
48	L & T CR	M	132.00	Ft
52	RAVELING	L	2000.00	SqFt
52	RAVELING	M	75.00	SqFt

Sample Number: 194 **Type:** R **Area:** 5000.00 SqFt **PCI:** 56

41	ALLIGATOR CR	L	40.00	SqFt
48	L & T CR	L	445.00	Ft
48	L & T CR	M	170.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	12.00	SqFt

Sample Number: 204 **Type:** R **Area:** 5000.00 SqFt **PCI:** 65

48	L & T CR	L	345.00	Ft
48	L & T CR	M	157.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	24.00	SqFt

Sample Number: 214 **Type:** R **Area:** 5000.00 SqFt **PCI:** 64

41	ALLIGATOR CR	L	14.00	SqFt
48	L & T CR	L	332.00	Ft
48	L & T CR	M	171.00	Ft
52	RAVELING	M	100.00	SqFt

Sample Number: 224 **Type:** R **Area:** 5000.00 SqFt **PCI:** 62

48	L & T CR	L	246.00	Ft
48	L & T CR	M	205.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number: 234 **Type:** R **Area:** 5000.00 SqFt **PCI:** 65

48	L & T CR	L	380.00	Ft
48	L & T CR	M	147.00	Ft
52	RAVELING	L	1000.00	SqFt
52	RAVELING	M	150.00	SqFt

Sample Number:	244	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	67
48	L & T CR	L	341.00	Ft			
48	L & T CR	M	69.00	Ft			
52	RAVELING	L	1000.00	SqFt			
52	RAVELING	M	150.00	SqFt			
Sample Number:	254	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	60
41	ALLIGATOR CR	L	10.00	SqFt			
48	L & T CR	L	247.00	Ft			
48	L & T CR	M	159.00	Ft			
52	RAVELING	L	1000.00	SqFt			
52	RAVELING	M	100.00	SqFt			
Sample Number:	264	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	58
41	ALLIGATOR CR	L	20.00	SqFt			
48	L & T CR	L	272.00	Ft			
48	L & T CR	M	181.00	Ft			
52	RAVELING	L	1000.00	SqFt			
52	RAVELING	M	20.00	SqFt			
Sample Number:	274	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	59
41	ALLIGATOR CR	L	40.00	SqFt			
48	L & T CR	L	294.00	Ft			
48	L & T CR	M	251.00	Ft			
52	RAVELING	L	1000.00	SqFt			
Sample Number:	284	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	65
48	L & T CR	L	387.00	Ft			
48	L & T CR	M	104.00	Ft			
52	RAVELING	L	500.00	SqFt			
52	RAVELING	M	60.00	SqFt			
Sample Number:	294	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	59
48	L & T CR	L	251.00	Ft			
48	L & T CR	M	248.00	Ft			
52	RAVELING	L	1000.00	SqFt			
52	RAVELING	M	120.00	SqFt			
Sample Number:	304	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	64
48	L & T CR	L	184.00	Ft			
48	L & T CR	M	172.00	Ft			
52	RAVELING	L	1000.00	SqFt			
52	RAVELING	M	150.00	SqFt			
Sample Number:	314	**Type:**	R	**Area:**	5000.00 SqFt	**PCI:**	68
48	L & T CR	L	293.00	Ft			
48	L & T CR	M	18.00	Ft			
52	RAVELING	L	1500.00	SqFt			
52	RAVELING	M	130.00	SqFt			

Appendix D: Distress Identification

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This appendix lists and describes distress types most commonly identified during the PCI inspections of Maine airports. Note that the pictures provided in this appendix are for illustration purposes and do not necessarily reflect the conditions or pavements at this airport. Descriptions and measurement inspection criteria are provided herein.

Flexible (Asphalt) Pavement Distress

Example of Longitudinal and Transverse Cracking (L&T cracking)

Longitudinal and transverse cracks are caused by pavement aging, by construction, and by subsurface movement. Aging occurs as pavement loses some of its components to the atmosphere and becomes more brittle. Consistent application of pavement sealcoats can help to prevent the occurrence of age related cracks. Cracks will also develop along poorly constructed paving lane joints. Ensuring that joints are made when both sides are still hot, and near the same temperature, is one of the best ways to mitigate this potential problem. Seasonal movement caused by changes in moisture content or temperature differences can also cause pavement cracks. Asphalt pavement placed over a PCC pavement or cement stabilized base course may evidence reflective cracking from the underlying material. Longitudinal and transverse cracks are not caused by wheel loads, although traffic may worsen their condition.

Low severity longitudinal and transverse cracks are less than ¼ inch wide, or if sealed with suitable filler material in satisfactory condition can be any width, less than 3 inches, if they are not spalled. Maintenance usually is not indicated for low-severity cracking. Moderately spalled cracks and cracks wider than ¼ inch which are not satisfactorily sealed are at medium severity. Medium-severity cracks should be sealed with a high-quality crack filling material. Severely spalled cracks and cracks wider than 3 inches are at high severity. High-severity L&T cracks normally require patching.

Example of Block Cracking

Block cracking is longitudinal and transverse cracking that has established a pattern of blocks ranging in size from 1ft x 1ft to 10ft x 10ft. This distress typically happens in older asphalt pavements and is an indication that the bituminous binder has lost most of its flexibility. The severity determination is basically determined by the crack width criteria defined for longitudinal and transverse cracking. Crack sealing typically is used to repair block cracking; however, the amount of required sealant can be extensive due to the high density of cracks.

Example of Alligator Cracking

Alligator (or fatigue) cracks are a series of interconnected load-related cracks caused by fatigue of the asphalt surface. Alligator cracking is a significant structural distress and develops only in places subject to traffic loads. These cracks typically initiate at the bottom of the asphalt layer (where tensile strains

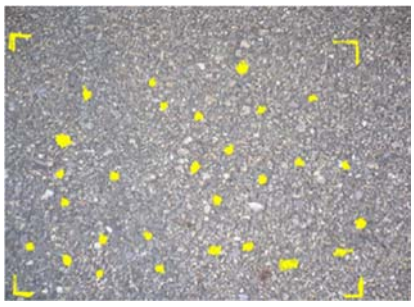
are highest) and propagate upward - so once a fatigue crack is visible, significant damage has already occurred.

At low severity, alligator cracks are evidenced by a series of parallel hairline cracks (usually in a wheel path). Further traffic and deterioration leads to the interconnection of these cracks. Medium severity alligator cracking is a well-defined pattern of interconnected cracks, some spalling may be present. High severity alligator cracks have lost aggregate interlock between adjacent pieces, the cracks may be severely spalled with FOD potential, and most likely the pieces will move freely under traffic. Alligator cracking is a structural failure and cannot be repaired with sealant, the proper repair is full-depth patching.

Example of Raveling/Weathering

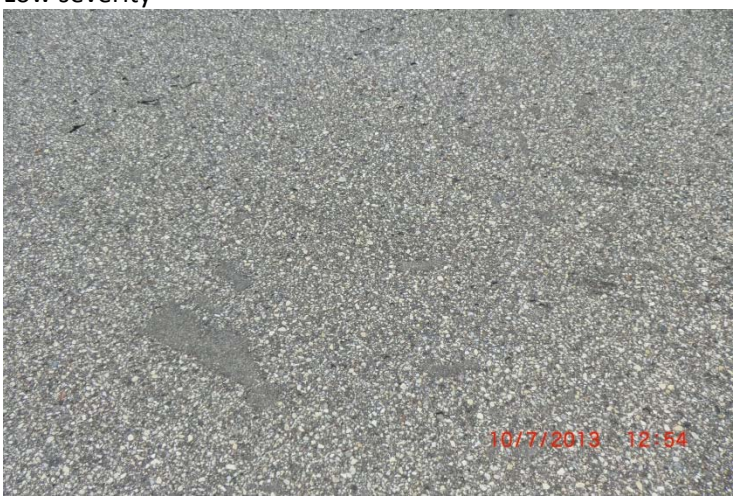
Raveling and weathering are the wearing away of the pavement surface. Raveling is the condition where the mid- to large size aggregates are becoming dislodged; weathering is when the fine aggregate wears away exposing the edges of the larger aggregate. These distresses are usually evident over large areas and may occur together (pictured above) or separately. Raveling and weathering may indicate that the asphalt binder has hardened significantly.

Raveling – At low severity, the number of missing coarse aggregates (> 3/8 inch) is between 5-20 missing/yd^2, medium severity (pictured below where the missing coarse aggregates have been dotted with yellow paint) is 21-40 missing/yd^2, and high severity is > 40 missing/yd^2.



Weathering – At low severity, the coarse aggregate is slightly exposed due to the wearing away of the fine aggregate. At medium severity, the coarse aggregate is exposed up to ¼ the width of the longest side. At high severity, the coarse is exposed greater than ¼ the width of the longest side.

Low severity



Medium severity

High severity

Example of Patching

Patched areas are defined when a portion of the original pavement is replaced with a material intended as a semi-permanent repair. A patch is documented as a defect because it is considered a break in the integrity of the pavement structure. Patches are constructed for a variety of reasons including utility repairs, correcting grade issues, and addressing a defect in the original pavement.
The severity level of patches is determined by the amount of distress (i.e. cracking, depression, weathering/raveling, etc.) occurring within the limits of the patched area.

Example of Rutting

Ruts are localized, load related, areas of pavement having elevations lower than the surrounding sections. Rutting is due to base and subgrade consolidation, caused by excessive wheel loads or poor compaction. Ruts indicate structural failure, and can cause hydroplaning. At low severity, ruts have an

average depth of ¼ to ½ inches. At medium severity, ruts have an average depth of ½ to 1 inch. High severity, ruts have an average depth greater than 1 inch.
Full-depth patching is the appropriate repair for ruts.

Rigid (Concrete) Pavement Distress

Example of Longitudinal, Transverse, and Diagonal Cracking

LTD cracking is most often a result of externally applied loads and/or constrained temperature deformations. External loads cause LTD cracking through flexure. Temperature changes on restrained slabs will result in stresses due to friction or curling. When any of these stresses exceed the strength of the slab, cracking will occur. LTD cracking is recorded at low, medium, or high severity, depending on the width of crack opening and degree of deterioration. At low severity, the crack is less than 1/8th inch wide with little spalling and no corrective action is indicated. At medium severity, LTD cracks can be up to 1 inch wide with moderate spalling, and should be repaired and sealed using procedures similar to joint sealing. At high severity, cracks exceed 1 inch in width and may be severely spalled. High-severity LTD cracking is evidence of serious load failure of the slab, and correction may require patching or slab replacement. If the distress occurs in several adjacent slabs at medium or high severity, major rehabilitation of that pavement area is indicated.

When a slab is divided by LTD cracks into four or more pieces, the slab is said to be "divided" or "shattered." Shattered slab is a separate distress category and is indicative of significant structural failure as the slab loses its ability to distribute loads to subgrade and further slab deterioration can be expected. Shattered slabs are rated in three severities, with slab replacement recommended for medium and high severities.

Example of Shrinkage Cracking

Shrinkage cracks are small, nonworking (no spalling along edge) cracks that are visible at the surface but do not penetrate through the full depth of concrete. Shrinkage cracks most commonly occur shortly after construction due to concrete shrinkage during the curing process. Shrinkage cracks are usually so small that they are not visible until staining or material loss at crack edges begins to take place. Shrinkage cracks do not represent a structural weakness, and no corrective action is prescribed.

Example of Joint and Corner Spalling

Spalls at slab joints and corners are caused by excessive internal stress in the pavement. Spalls occur when these stresses exceed the shear strength of the concrete. Spalling usually results from thermal expansion during warm or hot weather. As slabs expand, they push against one another at joints. If the joints are filled with incompressibles, such as sand, or if adjacent slabs offset slightly, stresses can become severe, causing spalls. Spalling can be reduced significantly by conscientious maintenance of joint sealant.

Spall repair requires patching. The extent and severity of spalling on a pavement surface suggests appropriate action. For example, at low severity, spalled concrete remains securely in place in the slab. A low-severity spall should be monitored closely for further deterioration and should be patched when

spalled particles become loose in place, or at the next scheduled patching activity in the section. Medium- and high-severity spalls should be repaired immediately to prevent the incidence of FOD. If the pavement can be restored to serviceable condition, spalls should be carefully patched for long-term service. If the pavement is beyond repair, temporary patching should be considered to control FOD.

Example of Durability Cracking

Durability cracking (D-cracking) is caused by environmental factors, the most common of which is freezing/thawing. It usually appears as a pattern of hairline cracks running parallel to a joint or crack, or in a corner, where water tends to collect. This type of cracking eventually leads to disintegration of the pavement, creating FOD potential. At low severity, D-cracking is evident, but no disintegration has occurred. As the distress advances to medium severity, the distress pattern is evident over a significant area of the slab, and some disintegration and FOD potential exists. High severity durability cracking is evidenced by extensive cracking with loose and missing pieces and significant FOD potential.

Example of Joint Seal Damage

Joint seal damage is recorded at three severities: low, medium, and high. When joint sealant is in perfect condition (no damage), it is not a distress. At low severity, at least 10 percent of the sealant is debonded but still in contact with the joint edges (i.e., joint sealant is in serviceable condition but should

be monitored for evidence of more serious failure). Medium-severity joint seal damage is recorded when at least 10 percent of the sealant has visible gaps smaller than 1/8th inch and is an indicator that replacement should be programmed as soon as is practicable. In the meantime, aggressive inspection and sustaining maintenance is recommended to minimize subsurface damage from moisture penetration. At high severity, visible gaps exceed 1/8th inch and the amount and degree of joint seal damage is such that repair is no longer feasible. The only appropriate corrective action is sealant replacement.

On serviceable pavement, deteriorated joint sealant should be repaired or replaced to preserve pavement and subgrade integrity and prolong service life. The issue is not so clear-cut with unserviceable pavement. Pavement that can be restored to serviceable condition by maintenance activities such as patching and joint seal repair, or by slab replacement, should be so maintained as long as the process is cost-effective. However, when age and condition preclude economical return to serviceable condition by such means, joint seal repair would no longer be cost-effective and should be suspended except for an interim maintenance program to control FOD potential.

Joint sealant can stop the evidence of pumping (water forced to surface through joints and cracks) but will not correct the cause (voids under pavement).

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Appendix E: Maintenance Policies

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Table E1. Localized maintenance policy for asphalt surfaces.

Distress type	Distress severity	Maintenance treatment
Alligator cracking	Low	Monitor
	Medium	Patching - AC Deep
	High	Patching - AC Deep
Bleeding	N/A	Monitor
Block cracking	Low	Monitor
	Medium	Crack Sealing - AC
	High	Crack Sealing - AC
Corrugation	Low	Monitor
	Medium	Patching - AC Shallow
	High	Patching – AC Shallow
Depression	Low	Monitor
	Medium	Patching - AC Shallow
	High	Patching - AC Shallow
Jet blast	N/A	Monitor
Joint reflection cracking	Low	Monitor
	Medium	Crack Sealing - AC
	High	Crack Sealing - AC
Longitudinal & transverse cracking (L&T cracking)	Low	Monitor
	Medium	Crack Sealing - AC
	High	Crack Sealing - AC
Oil spillage	N/A	Patching - AC Shallow
Patching	Low	Monitor
	Medium	Patching - AC Shallow
	High	Patching - AC Shallow
Polished aggregate	N/A	Monitor
Raveling	Low	Surface Treatment
	Medium	Surface Treatment
	High	Patching - AC Shallow
Rutting	Low	Monitor
	Medium	Patching - AC Deep
	High	Patching - AC Deep
Shoving	Low	Monitor
	Medium	Patching - AC Shallow
	High	Patching - AC Shallow
Slippage cracking	N/A	Patching - AC Shallow
Swelling	Low	Monitor
	Medium	Patching - AC Shallow
	High	Patching - AC Shallow
Weathering	Low	Monitor
	Medium	Surface Treatment
	High	Surface Treatment

Table E2. Localized maintenance policy for PCC surfaces.

Distress type	Distress severity	Maintenance treatment
Blow up	Low	Slab Replacement - PCC
	Medium	Slab Replacement - PCC
	High	Slab Replacement - PCC
Corner break	Low	Monitor
	Medium	Patching - PCC Full Depth
	High	Patching - PCC Full Depth
Linear cracking	Low	Monitor
	Medium	Crack Sealing - PCC
	High	Slab Replacement - PCC
Durability cracking	Low	Monitor
	Medium	Patching - PCC Full Depth
	High	Slab Replacement - PCC
Joint seal damage	Low	Monitor
	Medium	Joint Seal (Localized)
	High	Joint Seal (Localized)
Small patch	Low	Monitor
	Medium	Monitor
	High	Patching - PCC Full Depth
Large patch	Low	Monitor
	Medium	Monitor
	High	Patching - PCC Full Depth
Popouts	N/A	Monitor
Pumping	N/A	Monitor
Scaling	Low	Monitor
	Medium	Monitor
	High	Slab Replacement - PCC
Faulting	Low	Monitor
	Medium	Monitor
	High	Grinding (Localized)
Shattered slab	Low	Monitor
	Medium	Slab Replacement - PCC
	High	Slab Replacement - PCC
Shrinkage cracking	N/A	Monitor
Joint spall	Low	Monitor
	Medium	Patching - PCC Partial Depth
	High	Patching - PCC Partial Depth
Corner spall	Low	Monitor
	Medium	Patching - PCC Partial Depth
	High	Patching - PCC Partial Depth
ASR	Low	Monitor
	Medium	Slab Replacement - PCC
	High	Slab Replacement - PCC

Appendix F: Maintenance Repair Guidelines

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General Comments

Ongoing inspections are the cornerstone of a maintenance management program. Crack sealing prevents surface water from entering the pavement structure and helps prevent the introduction of incompressible material into the paving joints and cracks, reducing the chances for spalls and further pavement deterioration.

Preservation of a pavement system will require a combination of preventive, sustaining, and restorative maintenance repairs. Preventive maintenance is primarily an inspection program, sustaining maintenance is an ongoing maintenance function, whose purpose is to seal newly formed cracks in areas where the sealant is in otherwise satisfactory condition. Restorative repairs are major work items, often performed under contract that typically involve complete removal and replacement of existing sealant.

Maintenance Activities

Flexible (Asphalt) Pavement

Longitudinal and transverse (L&T) cracks at medium severity (>¼" wide) should be filled with a good quality crack filler material. High-severity cracks must normally be patched. Cracks rated at low severity may be narrow-unsealed cracks or sealed cracks up to 3 inches wide. The PCI procedure does not distinguish between narrow unfilled cracks and wider filled cracks. When 25 percent or more of total crack quantity is at medium or high severity, a restorative program becomes cost-effective. When medium- or high-severity cracking constitutes less than 25 percent of the total, sustaining maintenance is usually more cost-effective.

Medium- and high-severity existing patches should be replaced with new patches. Small areas (usually less than 100 square feet per patch) of alligator cracking and rutting at medium and high severity may also be repaired by patching. Larger patches should be considered if equipment can be made available to accomplish the work. Patching to repair up to 10 percent of the surface of a pavement section that is otherwise serviceable can result in significant cost savings as compared to rehabilitation of the entire section.

PCC (Concrete) Pavement

Joint seal damage at medium and high severity should be repaired. If medium- and high-severity damage is limited to less than about 25 percent of total joint length, sustaining maintenance is recommended. If medium and high-severity damage exceeds about 25 percent of the total joint length, joint sealant should be removed and replaced under a restorative repair project.

Longitudinal/transverse/diagonal (LTD) cracks at low and medium severity should be considered for sealing as part of the joint sealing project. High-severity LTD cracks require sealing, patching, or slab replacement, depending on the extent of deterioration.

Small patches are most often placed to repair medium- and high-severity spalls or to replace deteriorated older patches. Restorative small patches are typically partial depth repairs, usually to load transfer steel. Large patches and corner breaks at medium and high severity should be repaired by full-depth large patches.

High-severity LTD cracks and shattered slabs are candidates for patching and slab replacement. Low-severity shattered slabs can be left in place pending further deterioration.

Pavement Failure

Before maintenance and repairs are attempted, it helps to have an understanding of the way pavement performs and deteriorates.

Environmental/Age-Related Deterioration

Seasonal temperature changes cause expansion and contraction of the pavement materials, causing the pavement to move up to 1 foot per 1,000 feet. Much of this movement can be witnessed as the opening and closing of existing transverse cracks.

The pavement thickness and type of subgrade plays a large role in the formation and spacing interval of transverse cracks. If the subgrade material is smooth or rounded, the pavement surface will move relatively freely, the transverse cracks will usually be spaced far apart (>60 feet). If the subgrade material is rough or angular the pavement surface will not move freely and transverse cracks will be spaced more closely (<40 feet). The distance between transverse cracks will also depend on the pavement thickness, as a thicker pavement can resist cracking for longer lengths, but around 50 feet is typical for general aviation airport pavements.

Age related distress deals with the pavement oxidation or loss of volatile components to the atmosphere. An oxidized pavement becomes more brittle with time. Surface treatments and seal coats are designed, in part, to provide a protective barrier and prevent this type of oxidation.

Materials Related Deterioration

Subsurface water can have the greatest impact on pavement deterioration. A wet subgrade greatly reduces the ability of a pavement to support wheel loads, and the results often show up as rutting and cracking. The fine materials in a wet base can be pumped up through the cracks and eventually result in a loss of subgrade support. This loss of support can be evidenced as corner breaks and faulting. Moisture inside a pavement system expands when it freezes; creating stresses that push and tear at the pavement. The following thaw cycles will leave voids in the pavement structure that enable further rutting and breaking. Repeated freeze/thaw cycles will eventually cause pavement to disintegrate. One of the best ways to assure pavement longevity is to provide drainage and keep the subgrade dry.

Aggregate is the biggest component of any pavement structure, and it is the contact between the aggregate particles that actually transfers the load and provides the strength. Aggregate durability and shape are major factors affecting pavement performance. Durability is the ability of the aggregate to perform satisfactorily over time and resist the detrimental effect of nature. Sharp, well-angled aggregate that interlock, compact densely, and resists movement are the most desirable.

Air Voids

Well-distributed interconnected air voids allow escape paths for freezing water and generally reduce susceptibility to freeze/thaw damage. In PCC pavements, closely spaced interconnected air voids provide the greatest degree of protection.

Asphalt pavements, on the other hand, only tolerate air voids as necessary. Air voids allow for expansion of the asphalt binder, but also allow water penetration into the pavement. Interconnected air voids are undesirable here because the voids allow air to penetrate the asphalt layers and oxidize the binder. As air voids increase, durability and flexibility decrease, but stability and skid resistance increase. Asphalt pavements should be designed and compacted so that air voids are not interconnected. The air voids should allow only for the expansion of the asphalt and aggregate without bleeding, and air voids should be kept low enough to prevent water and air from penetrating the asphalt layers.

Binders

Regardless of whether the pavement is asphalt or concrete, the binder material is mixed with the aggregate to coat all particles with a thin film. An asphalt coating allows the pavement to be flexible and still resist large movements. Durability of the asphalt pavement is increased by a thicker film because it is more resistant to age hardening; however, too thick of a film and the asphalt acts like a lubricant, promoting ruts, shoving, and bleeding. Specifications control aggregate and binder mix quantities, but each mix should be customized for materials available locally.

With a concrete pavement, the aggregate supports the load, but the cement binder interlocks with the aggregate to inhibit all movement. Hydration is the term for the chemical reaction of portland cement with water, and in the hydration process, dry cement particles react with water, to form gels, and then crystals, that grow and bond with the aggregate to form a rigid interlocking structure. Hydration can continue for years, but much of the ultimate strength will be reached within 28 days. Hydration is a sensitive chemical process, and typically, any admixtures used to accelerate the hydration process will reduce durability, and their use should be considered carefully or avoided.

Stress Distribution/Load Related Deterioration

PCC (rigid) and asphalt (flexible) pavements differ in the way loads are distributed. A concrete slab resists bending and transfers loads evenly, an asphalt pavement is designed to bend, and gradually spreads loads over wider areas. Rutting is a subgrade failure caused by a compressive yielding of the subgrade.

Load-related cracks can start at the top or bottom of a pavement section. In asphalt sections, load-related (fatigue) cracks start at the bottom. If a load-related crack reaches the surface, it usually indicates significant structural deficiency. In PCC pavement, corner breaks are caused by top tension, and the crack propagates downward. Mid-slab LTD cracks are examples of bottom tension.

Spalls can be caused by either wheel loads or environmental factors, anytime there is movement between adjacent slabs. If a small rock is allowed into a joint, a differential movement between adjacent slabs can cause a spall. Spalling can be minimized by keeping joint and crack sealant intact.

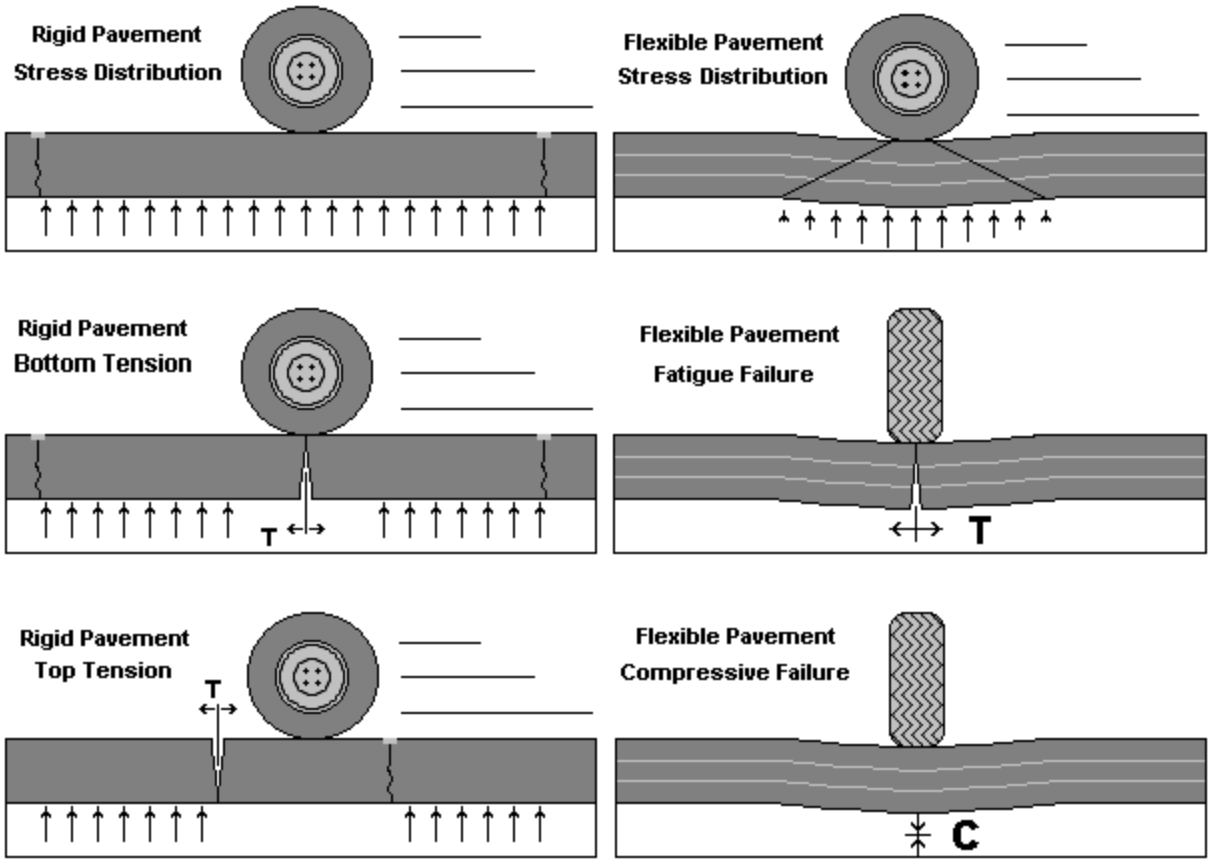

Figure 10. Pavement failure.

Points to Remember

Pavement wears out.

The longer a pavement remains in service, the greater the effort needed to keep it in service. A good maintenance and repair program will increase service life significantly, but cannot be expected to extend service life indefinitely.

Pavement moves.

Pavement moves in response to temperature changes. Transverse cracks can vary from nearly closed in the summer to open an inch or more in winter. This movement cannot be prevented. It must be understood and provided for during design and construction. The changing crack widths will dictate the reservoir size required for sealant. Measure cracks at their widest and narrowest states, then prepare adequate (½ - 1½ inch) sealant reservoirs for crack sealing projects.

Longitudinal joints and cracks are important.

The most important reason for sealing cracks is to deny surface water access to the pavement and subgrade. Most water drains from centerline to shoulders. Longitudinal cracks, which run parallel to the centerline provide the greatest potential to divert water into the pavement structure, and must be sealed.

Sealing is not always the best answer.

The FAA maximum allowable open trench width on aircraft movement areas is three-inches; therefore, any crack wider than three-inches should be patched. A severe spall or a crack that has settled below the pavement elevation indicates a failure. If the pavement has disintegrated to the point that aggregate interlock is lost, sealant alone will not be sufficient, and patching should be considered.

Maintenance and repairs must be done correctly.

To achieve optimum results from repairs, proper preparation, use of quality materials, and proper application are essential. Any shortcuts will reduce the quality and effectiveness of the repairs. A rule of thumb is that proper maintenance will last twice as long as an unprepared area. Good maintenance takes time and deserves high-quality materials.

Schedule maintenance and repair activities carefully.

Any pavement defect can be corrected. Concentrate on repairs that are cost-effective, operationally important, and that extend service life. Some surface blemishes can be ignored safely, and many structural problems are beyond economical correction. When future rehabilitation is imminent, maintenance activities should be limited to only those that ensure continued safety and minimize foreign object damage (FOD) potential.

Equipment

Many excellent pavement repair and sealing products are available. Specialized tools and equipment help ensure quality repairs. This section reviews equipment compatible with airport needs.

Air Compressor

Used to remove sand and debris from prepared cracks and joints, the compressor should have a sustained capacity of 120 cubic feet per minute with a nozzle velocity of 100 psi. Trailer-mounted compressors typically have capacities in this range.

Concrete Saw

A saw capable of making a minimum 3-inch deep cut is required. The saw should be capable of making cuts in asphalt or concrete. Gasoline-powered 5-25 hp wheel mounted saws typically are preferred for this type of work, but electric and pneumatic tools are also available.

Heating Kettle

Applying sealant is the most time-consuming operation, and a sealing machine with heating and pressure application capabilities is a critical item in a sealing program. The capacity of the sealing equipment dictates the rate at which a crew progresses. For large sealing projects, a minimum 100 gallons/per hour sustained capacity is recommended. The unit should be a double boiler type, with mechanical agitators or continuous recirculation.

Router

A concrete saw can be used to prepare joints, but for random cracking, a mechanical router with a vertical impact mechanism is preferred. When cracks are being routed, this activity will dictate speed of the crew. Crack routers in the 25hp range are commonly used and are available from a variety of manufacturers.

Sand Cleaner

A sand blaster helps to clean loose particles and dust from prepared cracks. The unit must have sufficient force to expose fresh, vital pavement to bond with sealant and patching materials.

Vibratory Roller or Plate Compactor

Required to properly compact plant mixed and packaged patching materials. Small rollers are best for pothole type applications, plate compactors are best for large areas.

Other Equipment

Other general use equipment that can be helpful in a maintenance program includes bucket loaders, dump trucks, water tanks, and a power sweeper unit.

Materials

Pavement repair materials are constantly being introduced and improved. This section provides information on products compatible with airport needs.

Joint and Crack Sealer

Hot poured, pressure injected, polymeric rubberized asphalt sealant meeting ASTM D3405 specifications is suitable for most joint and crack sealing requirements. This product is relatively inexpensive, durable, and suitable for both PCC and asphalt pavements. Other, more expensive, hot applied sealants that promise longer life are being developed for specialty applications, and twin component cold applied sealants, similar to URASEAL 200, have also been used with success. Contact your local distributor.

Flexible Pavement Patch

Long-term patches should be made with a high-quality plant mixed hot asphalt having a ¾-inch maximum aggregate size and meeting FAA P401, or highest quality highway specifications. High-performance plant mixed cold patching products that can be stockpiled on-site have been developed. Low-quality packaged materials available from local hardware type stores should be avoided and only be used for temporary patches that maintain safety and service.

PCC Pavement Patch

Permanent patches in PCC pavement should be made with a minimum 6-bag mix of hi-early air-entrained cement with 1-inch maximum size aggregate. Concrete should have zero slump and a coarse texture. As with asphalt patches, low-quality packaged materials should only be used as temporary patches to maintain safety and service until a more permanent repair can be made.

Techniques

Crack Sealing

- Cracks over ¼ inches wide should be sealed. Cracks wider than 3 inches should be patched.
- Sealant depth above the backer rope should be equal to the width of the reservoir, or as recommended by the manufacturer.
- Routed cracks should be sand blasted, to prepare the vertical edges for bonding with the sealant. Clean cracks with compressed air prior to sealing.
- Backing material should always be placed into the cracks. Commercial products are available, and several sizes of rope should always be available to accommodate various crack sizes.
- Apply sealant after placing the backer rope. Follow the manufacturer's instructions. Sealant should be applied to within ¼ inch of the pavement surface.
- The final activity is to clean the surrounding pavement areas. A vacuum sweeper works well for this. Allow the sealant time to set, before using a broom.

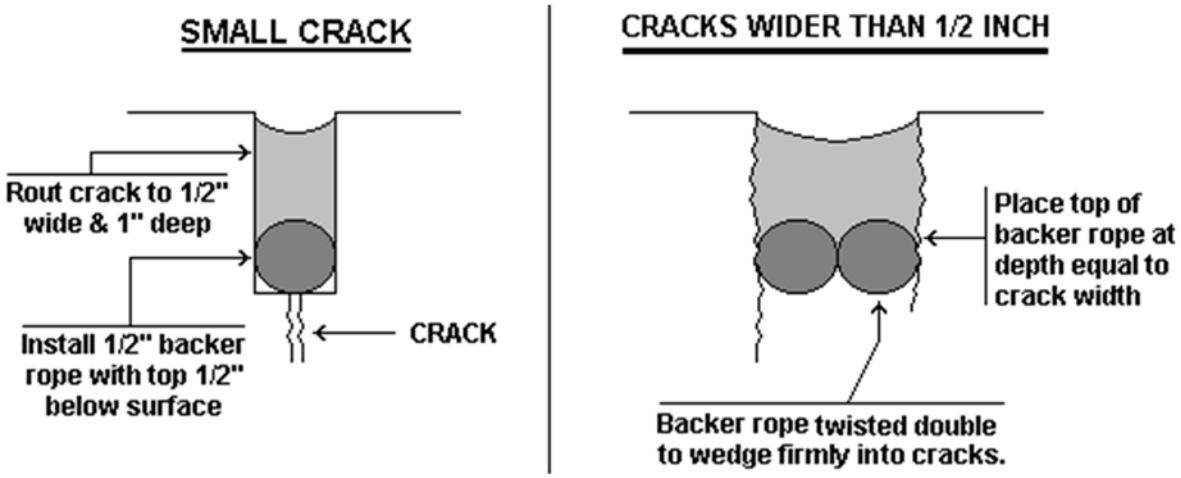

Figure 11. Crack sealing.

Note:
This crack sealing technique is meticulous in its design and procedure. It has a proven record of performance. Using backer rope forces the sealant into a predictable shape—narrow in the center and wide on the sides. This sealant profile allows the sealant to firmly bond with the vertical edges, yet stretch easily with pavement movement. In an effort to minimize labor requirements and reduce crack-sealing costs, an alternative procedure, the overband technique, is presented on the following page. This procedure can produce good results for up to 5 years.

Always remember that, within reasonable limits, thinner sealant material will stretch more easily with the pavement movement, and stay bonded longer.

Asphalt Pavement Crack Repair

Cracks wider than 3 inches should be patched. Cracks with secondary cracking and vertical movement should also be patched. Failed existing patches should be replaced. Crack repair can also repair small areas of alligator cracking and rutting. Crack repair differs from sealant in that it restores load-bearing capacity. Therefore, it must be constructed carefully to distribute stresses evenly and perform as an integral piece of the surrounding pavement. The crack repair must be wide enough to ensure that it bonds to fresh, vital pavement on all sides, and deep enough to reach fresh underlying layers, but never less than 3 inches.

- Examine the distressed area and mark the crack repair outline. This examination may require a pick or chisel to test the pavement integrity in and around the distressed area.
- The crack repair area should be cut out with a vertical saw cut not less than 3 inches deep.
- The enclosed pavement should then be removed, leaving the vertical sawed edges undamaged and providing a relatively even, flat floor at the appropriate depth.
- The sides and bottom should be sand cleaned and blown out with compressed air
- The sides and bottom should then be painted with a rapid curing asphalt tack coat. The tack coat may be sprayed on or applied with a brush or rag. Care should be taken to achieve complete coverage without allowing excess material to “pool” on the bottom.
- Allow tack coat to cure (about 2 to 4 hours) until it reaches a gummy consistency, which readily retains the impression of a fingerprint.
- Place hot mixed asphalt concrete evenly and mound slightly above surrounding pavement. Allow approximately ¼ inch of compaction for each inch of patch depth.
- Compact in place with vibratory roller or plate compactor. Asphalt concrete should not be compacted in layers greater than 6 inches. If crack repair depth is greater than 6 inches, asphalt concrete should be placed and compacted in successive layers.
- In deep, narrow cracks such as at joint reflective cracks, a sand asphalt mix may be required in lower layers to allow movement and prevent bridging the adjacent slabs.
- Considerable judgment is required in placing the asphalt concrete to achieve a fully compacted crack repair without creating a bump or depression. The ¼ inch per inch factor is a rule of thumb. Actual compression will vary with the mix. Experimentation and experience are required to achieve optimum results.

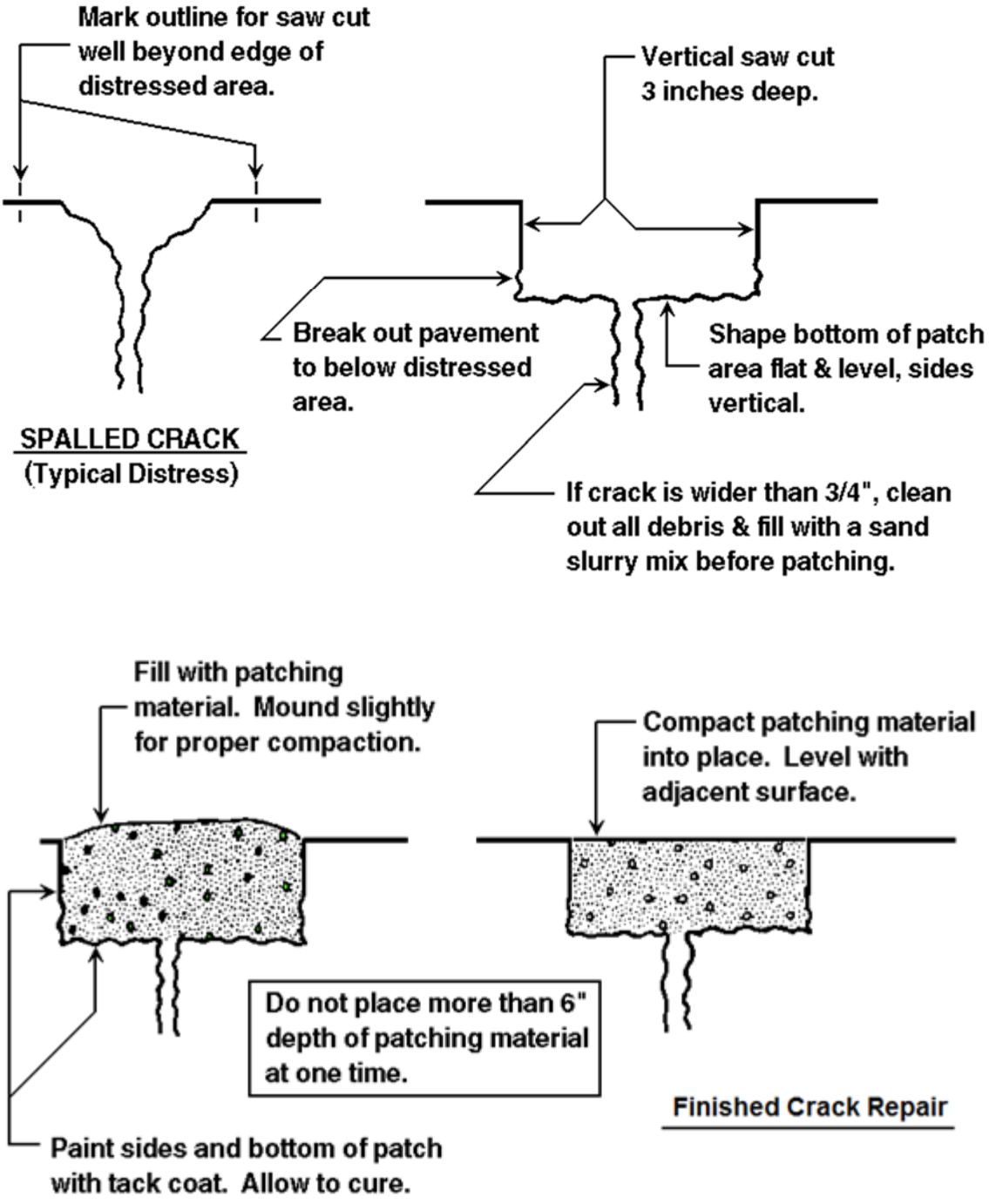

Figure 12. AC crack repair.

Patching (Asphalt Pavement)

Cracks wider than 3 inches should be patched. Cracks with secondary cracking and vertical movement should also be patched. Failed existing patches should be replaced. Patching can also repair small areas of alligator cracking and rutting. A patch differs from sealant in that it restores load-bearing capacity. Therefore, it must be constructed carefully to distribute stresses evenly and perform as an integral piece of the surrounding pavement. The patch must be wide enough to ensure that it bonds to fresh, vital pavement on all sides, and deep enough to reach fresh underlying layers, but never less than 3 inches.

- Examine the distressed area and mark the patch outline. This examination may require a pick or chisel to test the pavement integrity in and around the distressed area.
- The patch area should be cut out with a vertical saw cut not less than 3 inches deep.
- The enclosed pavement should then be removed, leaving the vertical sawed edges undamaged and providing a relatively even, flat floor at the appropriate depth.
- The sides and bottom should be sand cleaned and blown out with compressed air
- The sides and bottom should then be painted with a rapid curing asphalt tack coat. The tack coat may be sprayed on or applied with a brush or rag. Care should be taken to achieve complete coverage without allowing excess material to "pool" on the bottom.
- Allow tack coat to cure (about 2 to 4 hours) until it reaches a gummy consistency, which readily retains the impression of a fingerprint.
- Place hot mixed asphalt concrete evenly and mound slightly above surrounding pavement. Allow approximately ¼ inch of compaction for each inch of patch depth.
- Compact in place with vibratory roller or plate compactor. Asphalt concrete should not be compacted in layers greater than 6 inches. If patch depth is greater than 6 inches, asphalt concrete should be placed and compacted in successive layers.
- In deep, narrow patches such as at joint reflective cracks, a sand asphalt mix may be required in lower layers to allow movement and prevent bridging the adjacent slabs.
- Considerable judgment is required in placing the asphalt concrete to achieve a fully compacted patch without creating a bump or depression. The ¼ inch per inch factor is a rule of thumb. Actual compression will vary with the mix. Experimentation and experience are required to achieve optimum results.

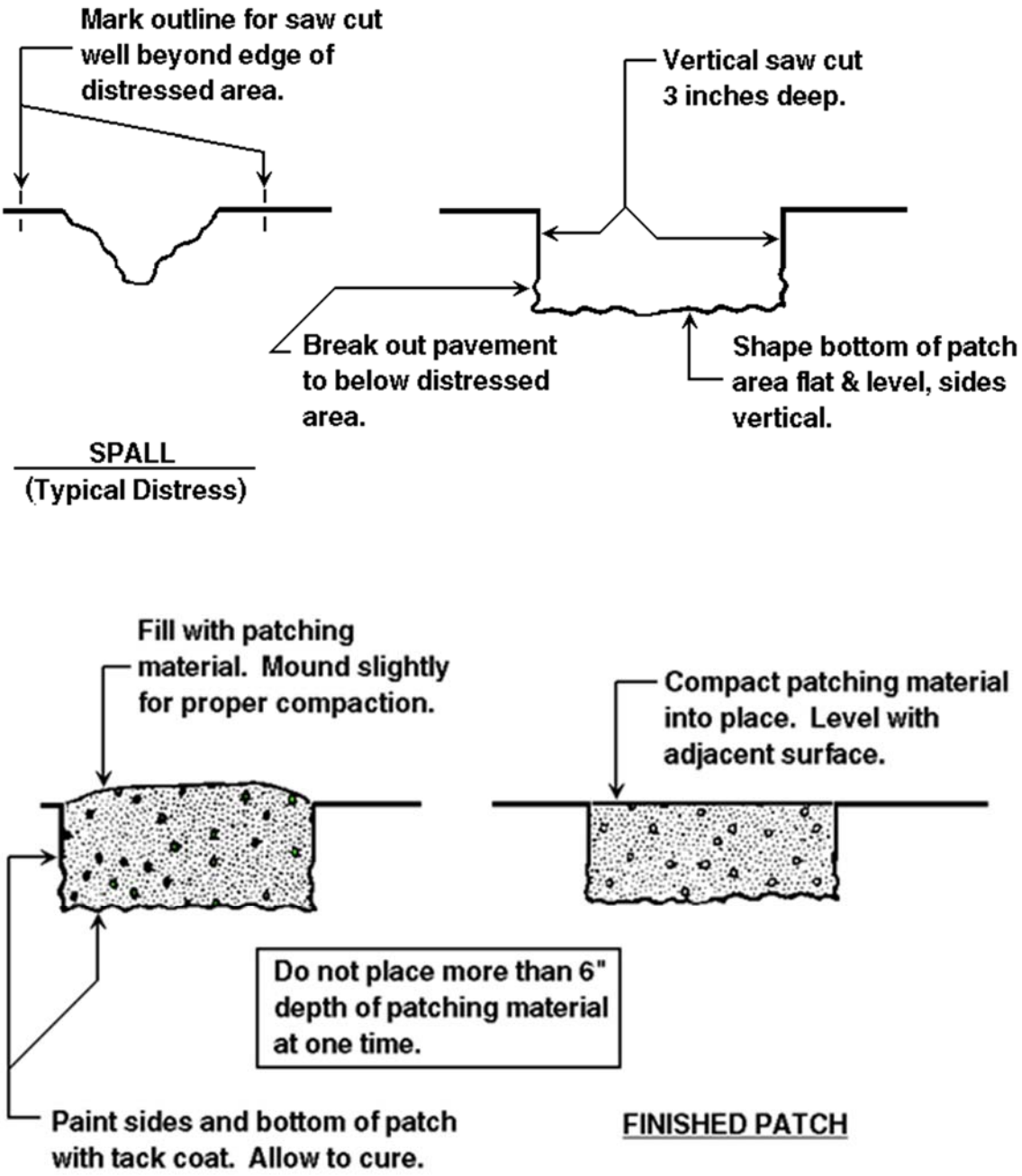

Figure 13. AC patch.

Patching (PCC)

The technique outlined here simulates a thin bonded PCC overlay. This procedure has been proven in service throughout the country.

- Examine the distressed area and mark the patch outline. This examination may require a pick or chisel to test pavement integrity in and around the distressed area.
- Saw cut the area to a depth of 2 inches. The enclosed area is then chipped or jack hammered to solid pavement, but not less than a 2-inch nominal depth.
- The sides and bottom are sand cleaned and air-blasted to expose vital, clean concrete.
- A 25 percent solution of muriatic acid is applied to all exposed surfaces within the patch.
- The muriatic acid solution is thoroughly flushed from the patch area with water.
- Compressed air is used to remove excess water from the area, but exposed concrete must be maintained in a moist condition.
- The sides and bottom of the area are then coated with approximately a 1/16-inch layer of cement grout applied at the consistency of paste. The grout acts as an adhesive to bond the fresh concrete to existing concrete.
- If the patch is adjacent to joints, the continuity of the joint must be maintained by placing inserts approximately the shape of the desired joint against the wall of the patch.
- Before concrete grout begins to dry, concrete is placed in the patch area and is compacted into position with hand tampers or a vibrating plate tamper.
- When the patch has been struck to the proper slope and elevation, a surface texture is applied to approximate the texture of adjacent pavement.
- Joint edges may be edged slightly to remove sharp edges. The patch should be covered with polyethylene or sprayed with a curing compound.
- Clean the surrounding pavement before concrete spillover has a chance to set up.
- The patch may be open to traffic in 72 hours.

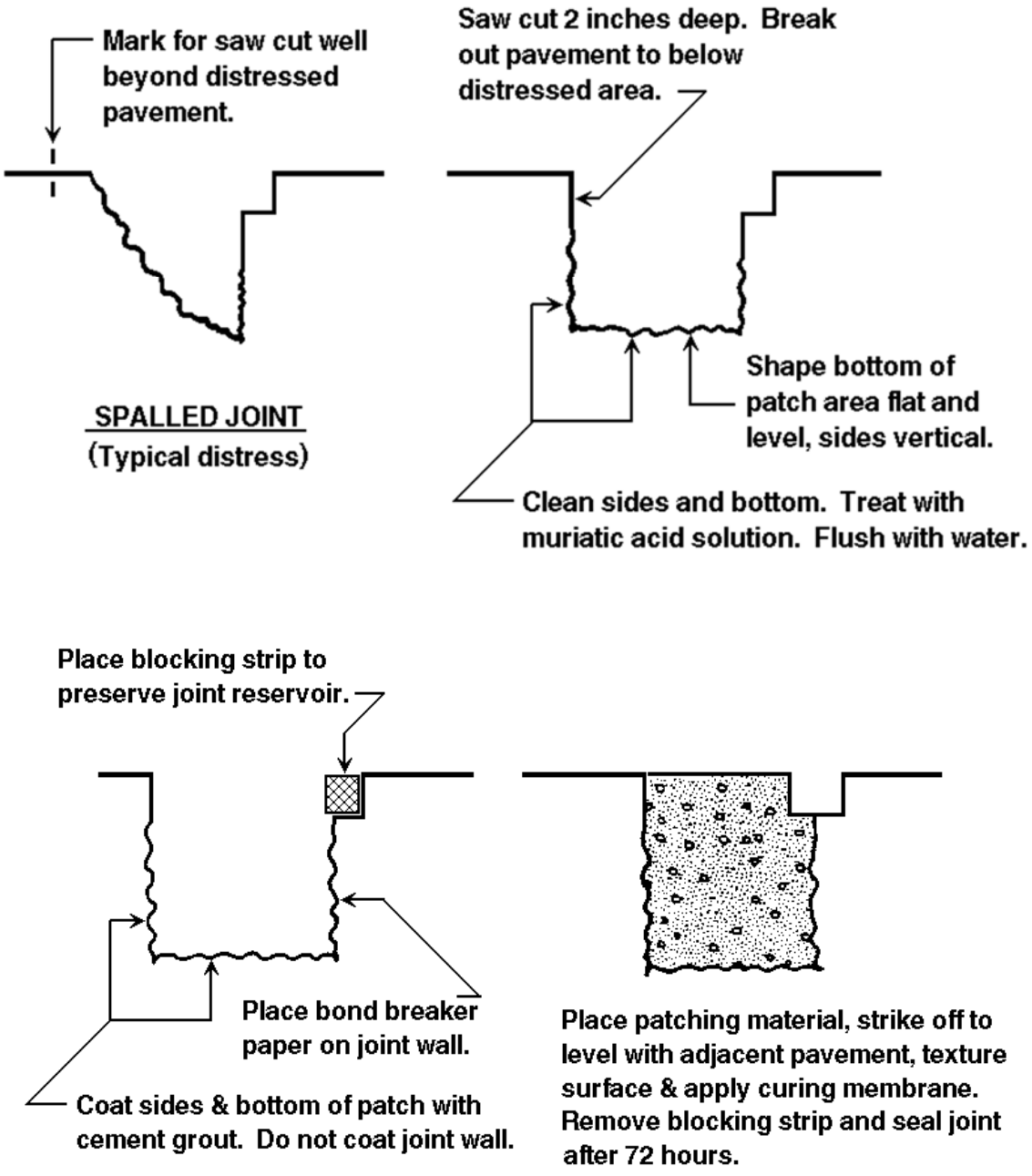

Figure 14. PCC patch.

Joint Repair (PCC)

Seal joints in PCC pavement when existing sealant has deteriorated to a degree that allows water and incompressibles to enter the joint. Hairline cracks are not yet candidates for sealing.

- Rout a reservoir for the sealant. Sealant reservoir should be ½ inch wide and 1 inch deep.
- For cracks wider than ½ inch, the reservoir should be ¼ inch wider than the crack. Depth should be such that sealant above the backer rope is at most equal to reservoir width, or as recommended by manufacturer.
- Routed cracks should be sand cleaned, using fine sand at reduced pressure. Proper cleaning will expose fresh, vital pavement on the vertical crack edge.
- Immediately prior to sealing, cracks should be cleaned with compressed air. Ensure that all sand, debris, and incompressibles are removed from the crack. A small hand-held hook or plowing tool may be needed to dislodge some particles. Water cleaning is not recommended, simply because the drying time delays the sealing operation.
- After cleaning with compressed air, a backing material should be placed into the crack. The backer rope may be any compressible substance compatible with bituminous sealant material that will wedge into cracks at a designated depth and support the sealant. Several sizes should be immediately available in the field to accommodate various crack sizes.
- Sealant should be pressure applied with a wand type applicator to within ¼ inch of the pavement surface. Follow the equipment manufacturer's instructions.
- The final activity is to clean the surrounding pavement area. A vacuum sweeper works well. Brooms should not be used until the sealant has taken an initial set.

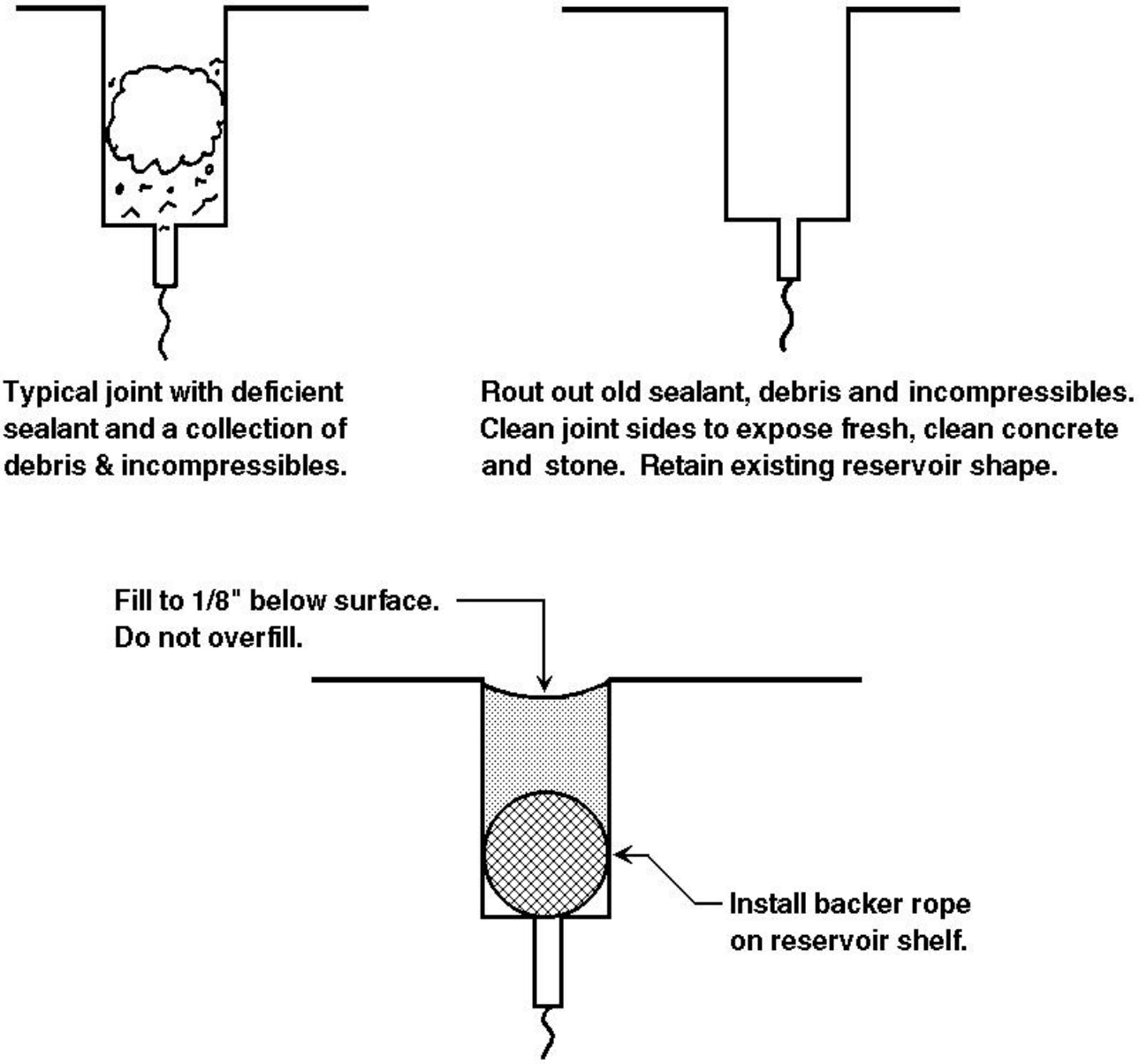

Figure 15. PCC joint/crack repair.

Table 13. Maintenance and “drive by” inspection log.

Inspection Date	Inspector	Pavement location (branch/section)	Change in condition (new distress type, increased quantity or severity)	Maintenance performed since last inspection