Northwest Regional Airport
Terrace-Kitimat

TERRACE-KITIMAT AIRPORT SOCIETY
WINTER MAINTENANCE PLAN

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Manual Distribution and Amendment Procedures
(CAR 302.411(j)(k))

Winter Maintenance Plan amendments will be issued as required. The Manager of Operations will be responsible to maintain the program/manual, ensuring the content is accurate, up to date and meets all regulatory requirements. Each amendment page shall record the appropriate amendment number and date in the footer. The Record of Amendments and List of Effective Pages (LEP) will be updated accordingly.

A controlled electronic copy will be updated in the Company Library. A copy of this plan will be distributed to applicable airport tenants and made available to the Minister upon request. It is the responsibility of the individual manual holders to insert all amendments issued to them in a timely manner and ensure that all manual pages are consistent with the LEP. Any discrepancy between the LEP and the content of this manual must be brought to the attention of the Manager of Operations.

Record of Amendments

The below Record of Amendments log will be updated with all amendments. The log will include the amendment number and the date of amendment.

Amendment #	Date of Amendment	Date Entered into Manual	Entered in Manual By
Original-2017	01-Sep-17	Incorporated	
#01-2018	19-Sep-18	Incorporated	
#01-2019	01-Sep-19	Incorporated	
#02-2019	08-Nov-19	Incorporated	
#01-2020	01-Sep-20	Incorporated	
#01-2021	18-Jan-21	Incorporated	
#02-2021	24-Sep-21	Incorporated	
#01-2022	20-Sep-22	Incorporated	
#01-2023	30-Sep-23	Incorporated	
#01-2024	13-Sep-24	Incorporated	

Winter Maintenance Plan Reviews

The Northwest Regional Airport Terrace-Kitimat (NWRA) will do a review of our Winter Maintenance Plan annually. (CAR 302.410(2); CAR 302.411(j))

As per CAR 302.410(1)(a)(3), YXT consults with representative sample of air operators that use the airport. All air carriers servicing YXT are also invited to an annual review of the WMP, and any feedback will be taken into consideration and the plan amended accordingly.

Documentation of consultations is located on the company server under N:_Company Manuals & Programs\NWRA Winter Maintenance Plan\Winter Maintenance Consultations. (CAR 302.410(4)(b))

Record of Reviews

The below Record of Reviews log will be updated with all reviews. The log will include the date of review, who performed the review and whether an amendment is recommended. It will also include the date the next review is required.

Date of Review	Reviewed By	Recommended Amendment	Next Review Due By
01-Sep-17	Carman Hendry, Sonya Gill, Kevin Seaton	Original-2017	01-Oct-18
19-Sep-18	Carman Hendry, Dave Kumpolt, Sonya Gill, Kevin Seaton	#01-2018	01-Oct-19
21-Aug-19	Carman Hendry, Sonya Gill, Jeff Hull, Kevin Seaton	#01-2019	01-Oct-20
06-Jul-20/ 03-Sep-20	Sonya Gill, Kevin Seaton, Jeff Hull, Carman Hendry, Dave Kumpolt	#01-2020	01-Oct-21
18-Jan-21	Sonya Gill, Carman Hendry, Dave Kumpolt, Jeff Hull	#01-2021	01-Feb-22
24-Sep-21	Sonya Gill, Jeff Hull, Carman Hendry	#02-2021	01-Oct-22
08-Feb-22/ 20-Sep-22	Sonya Gill, Kevin Seaton	#01-2022	20-Sep-22
23-Sep-23	Sonya Gill	#01-2023	30-Sep-23
11-Sep-24	Sonya Gill, Ben Godden	#01-2024	01-Oct-25

1.0 Introduction

The NWRA Winter Maintenance Plan has been developed to minimize the effects of winter conditions and establish procedures to prevent or eliminate hazardous conditions in order to maintain safe aircraft operations.

The safety and overall effectiveness of the program is optimized through the close communication and cooperation of all involved parties.

The NWRA Winter Maintenance Plan is in accordance with:

- TP 312 5th Edition Section 9.1.2.3;
- TC Aeronautical Information Manual (TP 14371E) (2024-1), AGA 1.1.3, 1.1.4, AIR 1.6;
- CARs 302.401-302.419 Division IV – Airport Winter Maintenance;
- Airport Standards 322.401-322.418 Division IV – Airport Winter Maintenance;
- Nav Canada's Canadian NOTAM Operating Procedures Version 8.0, Section 8;
- Transport Canada Advisory Circular 300-005 Issue 07;
- Transport Canada Advisory Circular 300-019 Issue 02;
- Transport Canada Advisory Circular 302-014 Issue 02; and
- Transport Canada Advisory Circular 302-026 Issue 01.

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2.0 Organizational Structure for Winter Maintenance
(CAR 302.411(g)(h))

2.1 Structure

To ensure safety and co-ordination of all actions undertaken as part of the winter maintenance plan, NWRA ensures a Chargehand is assigned for all shifts/maintenance hours during winter operations from November 1st through March 31st.

The chargehand reports directly to the NWRA Supervisor of Operations and the Manager of Operations, who are delegated responsibility to maintain both groundside and airside safety and maintenance by the Airport General Manager.

2.2 Contact Numbers

Chargehand/Operations	Cell 250.615.7636
Supervisor of Operations, Ben Godden	Cell 250.615.3830
Manager of Operations, Sonya Gill	Cell 250.615.7125
Manager of Airport Development, Jeff Hull	Cell 250.635.0332
Manager of Air Terminal Services, Brandie Correia	Cell 250.641.3943
Airport General Manager, Carman Hendry	Cell 250.631.7808

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3.0 Communications

It is imperative that there is consistent and clear communication to ensure smooth winter operations.

All NWRA crew communications during an operational shift are normally relayed verbally through company radios, company landline, company cell phones or person to person. Other pertinent information may be relayed via emails, morning/afternoon meeting minutes, memos, or standard operating guidelines. (Standard 322.411(2)).

3.1 Radio Communications

(CAR 302.411(c); Standard 322.411(2)(a)(b)(c))

Communication with company personnel (truck to truck) is on Channel #1 – Frequency 460.750 UHF, Channel #2 – Frequency 460.1625 or Channel #3 – Frequency 465.750 UHF (Repeater).

Communication with FSS over radio is on Frequency 122.6 MF.

Communication during hours of operation when FSS is closed is on radio Frequency 122.0 VHF. This is called Silent Hours. See Section 3.1.1 for details.

The efficient use of radio depends to a large extent on the method of speaking and on the articulation of the operator. As the distinctive sounds of consonants are liable to become blurred in the transmission of speech and as words of similar length containing the same vowel sounds are apt to sound alike, special care is necessary to ensure their proper pronunciation.

When using radio communication, the operator should speak all words plainly and clearly to prevent words from running together. Avoid any tendency to shout, accent syllables, or to speak too rapidly.

It is expected that radio communications will be kept to the point and professional. The International Phonetic Alphabet should be used, when needed, to avoid confusion when transmitting difficult or unusual words. Standard number pronunciations are also used.

All applicable NWRA personnel receive training on Radio Communications before being issued an AVOP.

3.1.1 Silent Hours

Silent Hours is when the local FSS operation is closed. During Silent hours ground operations (and aircraft) accessing maneuvering surfaces conduct a blind broadcast prior to entering taxiway Alpha, Bravo, Runway 15/33, and Runway 03/21 on MF 122.0.

If a NOTAM is required, it will be requested through contact with the NOTAM office in Kamloops at 250.376.6278

3.1.1.1 Radio Procedures

When there is no advisory service available at YXT the following procedures for vehicles entering and exiting maneuvering areas shall be in effect.

- Before proceeding onto a maneuvering area, the operator shall hold short and visually check for arriving and/or departing aircraft.
- Prior to entering or changing location on the manoeuvring area, the operator shall broadcast position and intentions on the mandatory frequency (122.0)
- When on the manoeuvring area the operator will advise pilots of their position and intentions; and
- The operator will give way to traffic on the manoeuvring area.

The driver of the radio equipped vehicle or equipment shall maintain a continuous listening watch on the appropriate frequency when on the movement area and monitor Frequency 122.0.

Once 200 feet off the maneuvering area, the operator shall state they are off that area. Vehicle operators will interpret a low pass by an aircraft as a signal to leave the runway immediately. If a vehicle is working on the runway when an aircraft calls, they will respond to the aircraft.

3.2 NWRA Chargehand

All tenant communications should be relayed through the NWRA Operations Cell 250.615.7636. The chargehand will have the operations cell and ensure the appropriate personnel are notified.

3.3 Airline to Airport Staff Flight Notification Requirements

It is imperative that airline staff notify the maintenance department via cell phone of all aircraft that are not arriving or departing at their scheduled time. The number to call for flight notification or operational issues is the Operations Cell 250.615.7636.

3.4 Nav Canada/FSS
(CAR 302.411(e))

Terrace FSS maintains vehicle control on all maneuvering areas and the appropriate radio communications/requests must be made prior to commencing any winter maintenance (as per normal protocol).

3.4.1 NOTAMs
(CAR 302.411((d))

In the event winter conditions, that might be hazardous to aircraft operations or affect the use of the movement areas and facilities used to provide service relating to aeronautics, are in place, a NOTAM will be published as notification.

Normally, NOTAMs will be emailed or faxed to Kamloops FIC for publishing.

NWRA maintenance personnel are familiar with how to issue a NOTAM. All NOTAMs must be reviewed and approved in advance by the Supervisor of Operations or Manager of Operations. NOTAMs such as RSC NOTAMs are issued directly through the Tracr system and can be done by any AOS staff that are responsible for runway reporting.

3.4.1.1 Voice NOTAMs

Voice NOTAMs are used to notify of unplanned situations that are dynamic in nature, of short duration, and confined to a localized area. In these cases, the information is not distributed by a normal NOTAM or AIP Supplement but is made available to our local FSS for relay via radio communications, as it is impractical to disseminate the information using a normal NOTAM.

It is important that NOTAMs are distributed by normal NOTAM to the maximum extent possible.

Therefore, the following criteria must be met before a Voice NOTAM can be disseminated:

a) The duration of the Voice NOTAM is anticipated to be less than one hour.
b) An extension to the original Voice NOTAM's duration must not exceed one hour.
c) The total duration (including any revisions) of the Voice NOTAM must not exceed two hours.

If any of the above criteria is not met, the information must be disseminated using a normal NOTAM. In addition, a Voice NOTAM cannot be used to extend the duration of a normally disseminated NOTAM.

3.4.1.2 RSC NOTAMs

An RSC NOTAM is a special series NOTAM notifying the presence of hazardous conditions due to contaminants on runways by means of a special format.

Each RSC NOTAM includes a valid Runway Surface Condition (RSC) for all runways where winter maintenance is provided. The RSC NOTAM provides information describing runway surface conditions including the Runway Condition Codes (RWYCC), runway surface descriptions and the Canadian Runway Friction Index (CRFI). RWYCC, runway surface descriptions and CRFI all contain critical information for aircraft operations on contaminated surfaces.

YXT will be reporting RSC conditions for Runway 15/33 by thirds and will be reporting CRFI in thirds. Runway 03/21 will be closed during winter months (via NOTAM), with no winter maintenance. NWRA may, at its discretion, open runway 03/21 at any time. Any change in status for runway 03/21 will be communicated via NOTAM.

The aerodrome authority is responsible for providing runway surface conditions and quantitative friction information (if applicable) to NAV CANADA. The information can be input directly at the site using an authorized web-based application or an authorized automated system, communicated in a written format using the Aircraft Movement Surface Condition Report & Canadian Runway Friction Index (AMSCR/CRFI) form available from Transport Canada, NAV CANADA (or a similar paper or electronic format), or communicated verbally.

Infrequent reports or updates may be provided verbally to FSS without a requirement for a formal agreement.

If an RSC NOTAM needs to be cancelled before the NOTAM End Time, the aerodrome operator is responsible for cancelling the RSC NOTAM.

NAV CANADA is responsible for formatting and distributing all RSC NOTAM as received from the responsible aerodrome authority. (Canadian NOTAM Operating Procedures)

For more information on NOTAM procedures, you can review Airports Operations Manual (AOM) Appendix G or the Canadian NOTAM Operating Procedures Manual.

3.4.1.2.1 RSC NOTAM Reporting at YXT

RSC NOTAMs (including any CRFI) will be reported directly from YXT electronically via the Tracr system to Nav Canada NOTAM Entry System (NES). The Tracr system is located in Staff 60.

NES provides airports with a means to directly input Aircraft Movement Surface Condition Reports (AMSCRs) into Nav Canadas Aeronautical Data Management System to create and distribute RSC NOTAMs. This facilitates the delivery of vital information to pilots and reduces opportunities for input errors.

The electronic submission is issued in a prompt manner to ensure it gets to aircraft operators. These reports include all the elements required for an AMSCR. (AC 300-005(05)).

Verbal updates of the runway condition will be relayed to Terrace FSS via radio communication when necessary or between reports.

In the event of a computer malfunction paper reports will be sent to Kamloops NOTAM Office by fax or email when time permits. Paper AMSCR reports are available for YXT operators in the “Staff 60 Binder”, saved electronically on the company server under
S:_NWRA Company Library\A_NWRA Manuals & Programs\Staff #60 Binder\5.0 - AMSCR\AMSCR Form. (AC 300-005(07)).

3.5 YXT Winter Maintenance Measures & Consultation

As per CAR 302.406(1), each year, before the start of winter maintenance operations, the operator of an airport shall

a) consult a representative sample of the air operators that use the airport about the intended level of winter maintenance and keep a record of the consultations;
   To accomplish this, YXT annually emails a representative sample of air operators to determine the runway width required for their aircraft. Records of these emails are electronically stored on the company server. YXT also hosts an annual meeting prior to the winter season, which includes a review of the Winter Maintenance Plan and any recent amendments, with all operators.
b) provide the aeronautical information publications provider with information, for publication in the Canada Flight Supplement, about the level of winter maintenance;
   YXT annually submits our winter maintenance level of service and hours, and we adjust them as necessary via a NOTAM.
c) include information in the airport operations manual about the level of winter maintenance.
   YXT references this Winter Maintenance Plan in the YXT AOM Sections 1.2.1, 1.2.3, 1.4.1, 1.6, 3.2.2, 3.3.1 and 3.3.3.

YXT uses AMSCRs to report the surface conditions of all movement areas, with the exception of areas closed for winter operations (such as Runway 03/21) and forwards the AMSCRs to Nav Canada. (CAR 302.406(2))

3.6 After Hours Runway Surface Condition Reports

For afterhours RSC Reports, CRFI or snow/ice control please call the Manager of Operations at 250.615.7125. If there is no response, please call the following staff in the order listed in Section 2.2.

3.7 After Hours Safety and Security Issues

For any afterhours safety or security issues or concerns please contact the following:

Security Official on Call	Cell 250.641.3943
Manager of Operations, Sonya Gill	Cell 250.615.7125
Supervisor of Operations, Ben Godden	Cell 250.615.3830
Manager of Airport Development, Jeff Hull	Cell 250.635.0332
Airport General Manager, Carman Hendry	Cell 250.631.7808

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4.0 Priority Areas

Both Airside and Groundside areas are to be maintained simultaneously, to ensure passenger safety from the parking lots to the terminal building.

NWRA personnel ensure daily inspections are made on the movement areas at the commencement of each shift and as necessary to identify significant changes in runway surface conditions until the end of the winter maintenance hours published in the Canadian Flight Supplement (CFS), Nav Canada publication.

When conducting winter maintenance operations, it is expected this maintenance plan will be followed, ensuring priority areas are cleared in order of priority.

4.1 Airside

4.1.1 Priority One

Priority 1 (One) area means an airside area that, based on prevailing winds or operational requirements, is necessary to maintain the operational capability of an airport. (CAR 302.401)

Priority One areas maintained during winter storm conditions: (CAR 302.411(a)(b); Standard 322.411(1)(a); CAR 302.412(1)(a))

- Full Length of Runway 15/33
- Runway 15/33 center 100 feet *
- Taxiway A
- 500 ft. equipment holding area on Runway 03/21
- Apron 1, Cargo
- Baggage belt area
- PAPI, Runway Edge Lights & ODALS, as required
- Visibility and legibility of mandatory signs associated with the primary runway and taxiways
- Localizer/Glidepath areas (as airport maintenance staff determines necessary, as per agreement with Nav Canada)

* Note as per communications from scheduled and charter airlines, a minimum of center 100 feet clear for the Q-400 & 737 aircraft.

When unable to remove contaminants from a priority area in accordance with this plan, it will be published in an RSC NOTAM or regular NOTAM. The NOTAM shall be stored with any additional information on the surrounding circumstances for a minimum of two years. (CAR 302.12(2)(3))

4.1.2 Priority Two

Priority 2 (Two) area means an airside area that is necessary to provide additional runway availability should wind conditions or operational requirements change. (CAR 302.401)
YXT closes Runway 03/21 during winter months.

Priority Two areas maintained to an extent that doing so does not compromise the ability to keep

Priority 1 areas operational. (CAR 302.411(a)(b); Standard 322.411(1)(b); CAR 302.412()1)(b))

- Taxiway B, including the controlled and uncontrolled portions
- End of Runway 03 – Aircraft ERP Isolation Area (Airport Grid Map I16/I17)
- End of Runway 21 – Aircraft ERP Isolation Area (Airport Grid Map N12)
- Visibility of mandatory signs associated with the Taxiway B

When unable to remove contaminants from a priority area in accordance with this plan, it may be published in a NOTAM. The NOTAM shall be stored with any additional information on the surrounding circumstances for a minimum of two years. (CAR 302.12(2)(3))

4.1.3 Priority Three

Priority 3 (Three) area means an airside area that is not priority 1 area or priority 2 area. (CAR 302.401)

Priority Three areas maintained after the winter storm has ended. (CAR 302.411(a)(b); Standard 322.411(1)(c); CAR 302.412(1)(c))

- Pre-threshold areas to ensure not exceeding 1.25% slope (as per CAR 322.418 Diagram I & II)
- Runway and Taxiway shoulder areas on the primary runway and taxiway maximum 12 inches for 50 feet (which exceeds the requirements in the diagrams)
- Apron shoulder areas maximum 12 inches for 50 feet
- Remaining airside signage and lights
- West & East Service roads and gates
- Localizer and glidepath roads
- Nav Canada access roads cleared on request.
- Vehicle lane maintained on 03/21 for maintenance vehicles access
- Center 1000 feet of 03/21 for helicopter traffic (upon request of helicopter companies)
- Apron 2 (as needed)

When unable to remove contaminants from a priority area in accordance with this plan, it may be published in a NOTAM. The NOTAM shall be stored with any additional information on the surrounding circumstances for a minimum of two years. (CAR 302.12(2)(3))

NOTE 1: Successive hours or days of snowfall may result in significant delays in performing winter maintenance on a priority 3 area – as the equipment may be busy clearing priority 1 & 2 areas. This is acceptable as long as it is in accordance with the winter maintenance plan. If this type of delay results in the applicable snowbank slope limitations being exceeded, we will indicate this through NOTAM.

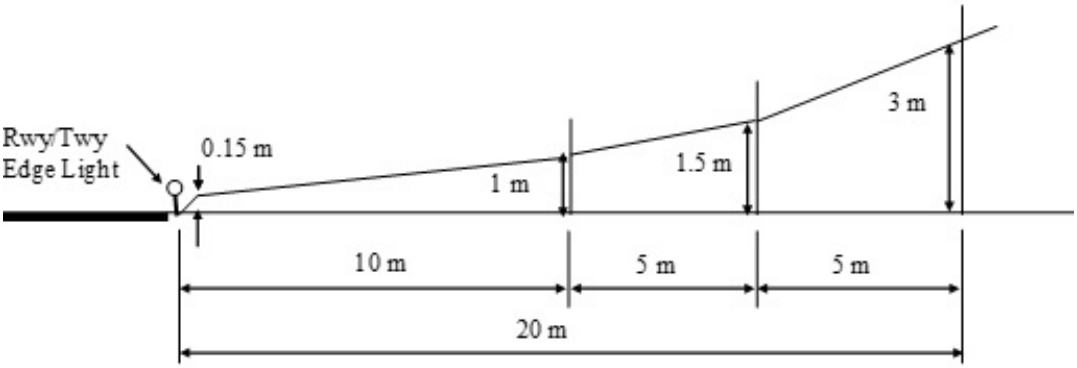
NOTE 2: Where ground conditions in a priority 3 area (i.e. unfrozen ground) prevent equipment from operating and this results in the snow bank slope limits being exceeded, we will indicate this through NOTAM. If and when the ground will support snow removal equipment, maintenance will resume in accordance with the winter maintenance plan.

4.1.4 Snow Accumulations on or Adjacent to Threshold Areas
(CAR 302.413; Standard 322.413)

The expectation is to not permit snow to accumulate in a manner that interferes with the operation of aeroplanes, in the case of pre-threshold areas:

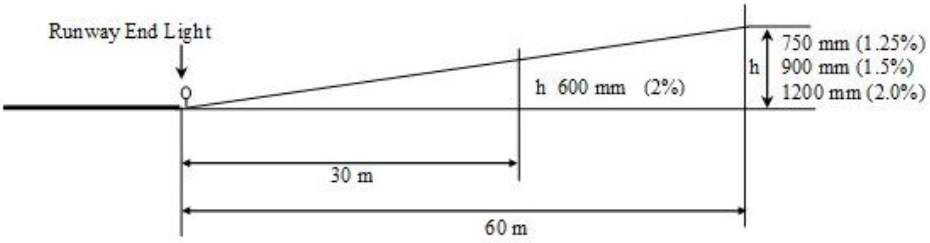
a) Width – the width of the runway plus the profile outlined in Diagram I;
b) Length – the distance from the end of the runway established in accordance with Diagram II, 60m; and
c) Slope – the height of snow, ice, or any other object not to exceed a plane having an upward slope established in accordance with Diagram II of 1.25%.

Diagram I – Maximum height of snow profile beyond runway and taxiway edge lights



AGN IIIA, IIIB and IV

Diagram II - Maximum snow accumulation beyond runway end lights on the pre threshold area



Note 1: Runway Length (m) — Max. Snow Accumulation Slope (%)
1800 and up — 1.25
1200 to 1799 — 1.5
below 1200 — 2.0

Note 2: Length beyond runway, along extended runway centerline
(a) 30 m for non-instrument runways less than 800 m in length
(b) 60 m for all other runways

Note 3: "h" means height.

4.1.5 Snow Accumulations Adjacent to Runway and Taxiways
(CAR 302.414; Standard 322.414)

The expectation is to not permit snow to accumulate in a manner that interferes with the operation of aeroplanes, in the case of runway and taxiway shoulder areas in accordance with Diagram I (shown in Section 4.14)

4.2 Groundside

4.2.1 Priority One

Priority One areas maintained throughout a storm:

- Entrance road (Max Neubacher Way)
- Terminal Building ring road
- Staff Parking
- Short-term parking lot
- Corporate parking lot
- Bus parking lot
- Groundside Sidewalks & Walkways (included in Walkway Snow Removal Contract)
- Long-term parking lot (ensure enough parking stalls are open for departing passengers)
- Gate 1 & 2, Cargo Area
- Bristol Side West
- Bristol Side East (a pathway to allow ambulance to EFC for medi-vac)
- Access path from CSB Gate 23 to Taxiway A (CAR Standard 322.411(1)(a)(vi)

4.2.2 Priority Two

Priority Two areas maintained after a storm:

- Bristol Road East (remaining)
- Upper Parking Lot

4.2.3 Priority Three

Priority Three areas maintained after a storm:

- Entrance road edges
- Bristol road edges
- Old Powerhouse & Well Access Road
- Groundside snow piles
- Fire hydrants
- Car Rental parking lot (needs to be coordinated with car rental companies)
- Clearing the top of the Long-Term Parking Gate/Ticket Machine islands

4.2.4 Groundside Snow Clearing Priorities Map

4.2.5 Walkway Snow Removal Contract

It is the Contractor's responsibility to monitor and maintain the airside and groundside snow removal areas to the specified requirements.

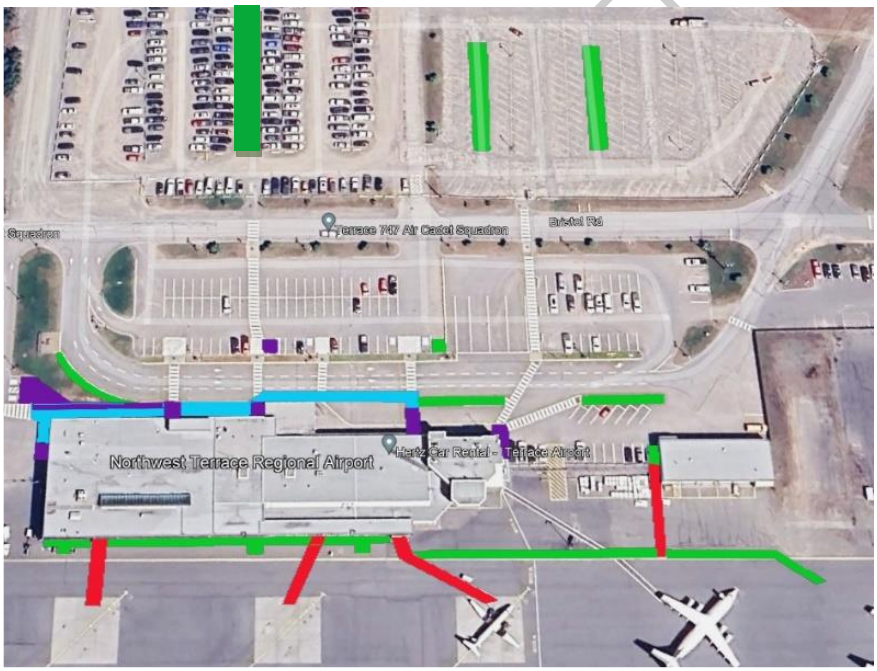
Airside walkways will be checked prior to every arriving and departing passenger flight. They will be checked with enough time to have the walkways cleared of snow and/or de-iced before the airplane reaches its assigned operations stand on the apron.

Groundside walkways and sidewalks will be checked prior to every arriving and departing passenger flight. They will be checked with enough time to have the walkways cleared of snow and/or de-iced before passengers start arriving at the terminal.

NOTE: It is still the airline's responsibility, as per CAR Standard 725.40(1), for the safe movement of passengers to and from the aeroplane.

4.2.5.1 Walkway Snow Removal Contract Map

This map outlines the areas that will be maintained and their priority.
NOTE: Stands 1-4 are maintained by the Walkway Snow Removal Contractor. Stands 5 & 6 will be the responsibility of the charter terminal provider.



Priority of Work to Be Done:
Priority #1 – Groundside Entrances, Cargo Door Entry, Short-Term Lot Ticket Booth
Priority #2 – Airside Walkways
Priority #3 – Groundside Walkways
Priority #4 – Groundside Island Walkways, Long-Term Lot Covered Walkways, Smoking Booth

NOTE: Although Groundside areas colored purple is Priority (as passengers arrive to check-in earlier than aircraft, the contractor will move to airside, when necessary, before aircraft arrives.

See the Winter Walkway Snow Removal Contract (App. B of contract) for more information.

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5.0 Snow Removal & Ice Control Procedures
(CAR 302.411(h)(i))

Movement area surfaces will be maintained in a condition so as to provide good friction characteristics and low rolling resistance to the extent that environmental conditions allow. Snow, slush, ice, standing water and other contaminants will be removed as rapidly and completely as possible to minimize accumulation.

5.1 Training
(CAR 302.418(1)(2)(3)(4))

All personnel with duties associated with this Winter Maintenance Plan will receive training for winter maintenance duties and on matters set out in CAR Standard 322.418. For more detail on training refer to the NWRA Safety Management Systems (SMS) Manual, Section 4.1. This section refers to the NWRA Training Matrix, which is located in the SMS Toolbox 18.1. The matrix identifies:

- Individual Positions – required training;
- Frequency of training – initial, annual, recurrent or update training as required.

All winter maintenance operators receive Initial training and annual training, each year and thereafter, prior to the winter season. Annual training includes a review of this manual and any recent amendments.

Winter Chargehands are delegated responsibility to maintain both groundside and airside safety and maintenance on a day-to-day basis. Those assigned this responsibility have been trained and demonstrate a good understanding of the YXT Winter Maintenance program. The chargehands meet annually, prior to the winter season, for an Annual Chargehand Refresher Review/Training.

Those assigned Runway Inspection duties will receive specific training for this, which will be competency based, including both a written and practical examination.

NWRA keeps copies of training records for each person who receives any training on our Winter Maintenance program or under CAR 302.418. Records are kept on file for a minimum of five years. (CAR 302.419)

5.2 Access to Maneuvering Area

Vehicle operators will access each maneuvering area by requesting permission from the flight service station. Only vehicle operators with the appropriate AVOP and radio license are authorized to access airside maneuvering areas.

5.3 Apron Management

For details on control of flow of ground vehicles during winter maintenance and other areas of apron management not discussed in the Winter Maintenance Plan, please refer to the NWRA Apron Management Plan, as these procedures remain in effect at all times throughout the year.

5.4 Winter Maintenance Services for Navigational Aids

Nav Canada has an agreement with NWRA via the Airside Services and Facilities Agreement (ASFA). This agreement outlines that NWRA takes care of any snow removal in the localizer and glidepath areas. The ASFA is located in the Airport Operations Manual (AOM) Appendix H.

5.5 Contract Areas

The following areas are looked after by a contractor and airport staff during hours of operation. They are cleaned on an as required basis. See Section 4.2.5 for further details.

- ATB walkways and entrances groundside
- ATB walkways and entrances airside
- Aircraft Operations Stands
- Ticket Booth
- Smoking Booth
- Long-term parking covered walkways

5.6 Airside

Snow removal airside is accomplished using plow trucks with runway sweepers. Windrows will be removed using self-propelled snow blowers.

Snow removal in the localizer & glidepath areas will be performed, using guidelines provided by Nav Canada, as per Section 5.4. Annual training is received from Nav Canada for these areas.

5.6.1 Airside Chemicals

(CAR 302.407(1)(a)(b); CAR 302.415(1)(a)(b); Standard 322.415(1)(a) and TP 312 5th 9.1.2.3(a))

Ice control chemicals are applied to airside movement areas as part of airfield pavement winter maintenance operations. The use of ice control chemicals is an essential activity in maintaining safe winter operations.

Ice control chemicals are used in different modes as follows:

(a) deicing – the chemical is applied on ice that has already formed on the pavement to weaken the ice-pavement bond so that the material can be removed by mechanical means;
(b) anti-icing – the chemical is applied in advance of, or at the same time as, ice formation on the pavement to prevent, or reduce, the formation of a strong bond between ice and the pavement.

NWRA will only use, on movement areas, ice control chemicals that have properties meeting the most current applicable Society of Automotive Engineers (SAE) Aerospace Materials Specifications.

NWRA uses multiple types of winter de-icer to maintain ice-free walking and driving surfaces both airside and groundside.

5.6.1.1 Urea Prohibited

Urea is not to be used on NWRA property (either airside or groundside). Any tenant or lease area must abide by this and must ensure they receive documentation of airport approval for any product they will be using airside or groundside for snow removal.

5.6.1.2 Sodium Formate

Sodium Format is non-Corrosive to aircraft, used in dry pellet form. It remains active at a lower temperature, has better holdover properties and is more environmentally friendly than Urea. Sodium Formate contains no hazardous materials with occupational limits although it can be a skin and eye irritant. Proper PPE should be used when handling. Safety Data Sheets are available on request or can be found online.

Sodium Formate is used on all airside surfaces and on walkways that cross between airside and groundside. This includes both east and west ends of the ATB on sidewalks that extend the full width of the building.

Sodium Formate will be available on the Apron in a large wooden dry box that will be refilled as required. Multiple buckets are located airside and groundside on the east and west end of the ATB that are clearly marked “Sodium Formate” and can be refilled from the airside dry box under the overhang.

Any containers that are unmarked or the labels have fallen off must be taken out of service until the labels are replaced.

5.6.1.3 Potassium Acetate

Potassium Acetate is used as a de-icing agent both alone and in combination with Sodium Formate. Potassium Acetate is often used when ice buildup becomes too heavy for the Sodium Formate to act as quickly as needed. In certain circumstances Potassium Acetate can also be applied prior to weather events to prevent certain contaminants from bonding to the surface. Potassium Acetate is applied on airside with a spreader and truck.

Small hand pumped spray bottles are located under the baggage overhang or in the mini garage. These spray bottles are marked “Potassium Acetate”. This is an expensive product and should only be used as required. It must be put down with adequate lead time as it needs time to react in order to melt the ice.

5.6.2 Airside Sand
(CAR 302.407(2)(a)(b); CAR 302.415(2)(a)(b); Standard 322.415(2)(a)(b)(c)(d))

Starting the 2024-25 winter season, NWRA will include the use of sand as part of its airside ice control measures. This is a new addition to the winter maintenance strategy and is aimed at improving traction on critical movement areas during icy conditions.

NWRA will only use sand for airport movement areas that meet the following criteria:

(a) be an abrasive material for airside ice control consisting of either crushed angular mineral aggregate or natural sand;
(b) be free from chlorides and corrosive materials, clays, debris, cementation, organic matter and other non-friction material;
(c) not be softer than and including 3.5 up to and including 7 on the Mohs hardness scale; and
(d) be of a granular size that falls within the following parameters:

Sieve Size (U.S. Standard)	Percent Passing by Weight (%)
No. 4 (4.75 mm)	100
No. 80 (0.180 mm)	0 to 2

NWRA will remove sand from movement areas, with the exception of gravel runways, as soon as

(a) the sand is no longer required to provide more friction for aircraft and service vehicles; and
(b) there are no higher operational priorities.

While the use of ice control chemicals will remain the primary method for maintaining safe airside conditions during winter operations, the application of sand will be strictly limited. Sand will only be used when necessary to enhance traction, particularly in situations where ice control chemicals alone are insufficient to ensure safety.

The decision to use sand must be made with the pre-approval of the Supervisor of Operations or designate, who will assess the specific conditions and determine if sand application is warranted. This approach ensures that the use of sand is controlled and minimized.

5.6.3 Anti/De-icing Procedures

Ice control is accomplished by the application of Sodium Formate, and/or a liquid Potassium Acetate as an anti-ice agent to prevent ice forming or as a deicer to melt ice already formed on the runway, followed by sweeping as required.

5.7 Groundside

Under normal conditions a loader with a reversible plow will be used on the roads and parking lots. Snow is piled in the corners of the parking lots for removal to a snow dump area when time permits.

Sand and/or chemical will be spread in the parking lots and crosswalks “when and where possible” and roadways if ice has already formed.

To minimize the risk of ice control chemicals, other than ice control chemicals that meet SAE specifications, will only be spread on Max Neubacher and Bristol Road. Floor mats are used in entrances and terminal to remove chemical for footwear.

5.7.1 Groundside Chemicals

5.7.1.1 Ice Melt

Ice Melt is used strictly groundside as it is highly corrosive to metal components of aircraft and must be kept from being tracked to any airside areas either by foot traffic or by vehicles. (CAR 302.411(f))

It is therefore only used on the north facing sidewalks and walkways of the terminal. Bags of ice melt are located in the small garage on the west end of the ATB and a hand spreader is used to spread it over iced areas. It must not be permitted to contaminate spreaders used for sodium formate.

Ice melt buckets are clearly marked “ICE MELT”.

5.7.1.2 Sand

Large quantities of sand are used during winter months to provide traction over slippery icy surfaces on groundside.

The small garage on the west end of the ATB has a bin that contains sand for the winter snow contractor to use as needed. Heavy duty hand spreaders are used by the snow contractor to distribute sand along sidewalks and walkways. Sand is also available groundside around the terminal in buckets labelled “SAND”.

NWRA staff will refill the sand box with a bobcat loader upon request by the winter snow contractor. NWRA staff use a sand truck to spread sand along roadways, walkways, and parking areas.

Sand is also spread by the cargo ramp at the west end of the ATB and on the groundside surfaces in front of the gates. Sand trucks are not to be taken through the gates.

The only exception for groundside sand being used airside is around the CSB shop area. Sand may be applied through the CSB gate, in front of the shop area and around the fuel pumps. Sand application will end at the west side of the CSB AFF Hall. Sand is not to be applied beyond this point or in front of the AFF doors. This is to prevent any sand from being tracked out onto the taxiway. (CAR 302.411(f))

5.8 Runway Surface Conditions (RSC) Reporting

5.8.1 Definitions

AMSCR / Aircraft Movement Surface Condition Report	Means a report that details the surface conditions of all movement areas at an airport including runways and taxiways. (CAR 302.401; AC 300-019(02))
Below Freezing	Refers to air temperature equal to or less than the freezing point of water (0 degree Celsius). (CAR Standard 322.401; AC 300-019(02))
Cleared Width	Means the narrowest portion of the runway width that has been cleared of loose contaminants. (CAR Standard 322.401; AC 300-019(02))
Compacted Snow	Means snow that has been compressed into a solid mass such that aeroplane tires, at operating pressures and loadings, will run on the surface without significant further compaction or rutting of the surface. (CAR Standard 322.401; AC 300-019(02))
Contaminant	Means material that collects on a surface, including standing water, slush, snow, compacted snow, ice, frost, sand, and ice control chemicals. (CAR 302.401; AC 300-019(02))
Contaminated Runway	A runway is contaminated when a significant portion of the runway surface area (whether in isolated areas or not) within the length and width being used is covered by one or more of the following substances: compacted snow, dry snow, frost, ice, slush, standing water, wet ice, or wet snow. (AC 300-019(02))
CRFI / Canadian Runway Friction Index	Means the average of the friction measurements taken on runway surfaces on which freezing or frozen contaminants are present. (CAR 302.401; AC 300-019(02))
Dry	Means a surface condition that is free of visible moisture and has no observed contaminants. (CAR Standard 322.401; AC 300-019(02))
Dry Snow	Means snow that does not contain sufficient water to allow the crystals to stick together or bond to a surface. (Dry snow, when compressed, falls apart, and a snowball cannot readily be made from it.) (AC 300-019(02))
Frost	Means ice crystals formed from airborne moisture on a surface whose temperature is below freezing. Frost differs from ice in that the frost crystals grow independently and therefore have a more granular texture. (CAR Standard 322.401; AC 300-019(02)) NOTE: Heavy frost that has noticeable depth may have friction qualities similar to ice and downgrading the runway condition code accordingly should be considered. If driving a vehicle over the frost does not result in tire tracks down to bare pavement, the frost may be of sufficient depth to consider a downgrade of the runway condition code.
Ice	Means water that has frozen on a surface and includes the condition commonly known as black ice as well as the condition in which compacted snow has turned into a polished ice surface. (AC 300-019(02); AC 302-014(02))
Ice Control Chemicals	Means chemicals used to prevent ice formation, to prevent ice from bonding to a surface or to break up or melt ice on a surface. (CAR 302.401; AC 300-019(02); AC 302-014(02)

Percentage Coverage	Means the estimated amount of a condition or contaminant present on the surface of the runway. (AC 300-019(02))
Percentage Coverage of Contaminant	Means the estimated amount of contaminant present on the surface of the runway and reported as a percentage (%) of the assessed surface. (CAR Standard 322.401)
Remaining Width	Means the un-cleared portion of the runway. (See cleared width.) (AC 300-019(02))
RSC / Runway Surface Condition	Means the portion of the AMSCR which reports the surface condition of the runway. (CAR Standard 322.401)
Runway Condition Assessment Matrix (RCAM)	Means a matrix allowing for the assessment of runway condition code from a set of observed runway surface condition(s). (AC 300-019(02))
Runway Condition Code (RWYCC)	Means a number describing the runway surface condition. (AC 300-019(02))
Sand	Means small particles of crushed angular mineral aggregates or natural sand material used to improve runway surface friction levels. (CAR 302.401; AC 300-019(02))
Significant Change	Means a material change to the runway surface condition which may impact the operational performance of the surface. Significant changes can include: changes in type of contaminant, such as from dry snow to wet snow; measurable changes in depth of contaminant; following the application or removal of sand or chemicals; following snow removal or sweeping; changes in conditions caused by rapid increases or decreases in temperature. (CAR Standard 322.401; AC 300-019(02))
Slippery When Wet Runway	Means a wet runway where the surface friction characteristics of the runway have been determined to be degraded. (AC 300-019(02))
Slush	Means partially melted snow or ice, with a high-water content, from which water readily flows. (Slush will spatter if stepped on forcefully, and water will drain from slush when a handful is picked up.) (CAR 302.401; AC 300-019(02))
Snowbank	Means a heap or mound of snow created mechanically that is higher than the surrounding snow cover, and is located: (i) next to or on the edge of a runway or taxiway; and/or (ii) next to or on the edge of the cleared area of a runway or taxiway NOTE: 'Snowbank' is used to describe accumulations which will remain over longer time periods; see 'Windrow' for shorter-term accumulations, such as those resulting from clearing operations in progress. (AC 300-019(02))
Snow Drift	A heap or mound of snow created by action of the wind. (AC 300-019(02))
Standing Water	Means water having a depth of more than 3mm (1/8 inch). (CAR Standard 322.401; AC 300-019(02))
Take-off and Landing Performance Assessment (TALPA)	Means a method of reporting runway conditions (which relates to aeroplane performance), developed by the US FAA, which is intended to reduce the risk of runway excursions.

Take-off and Landing Performance Assessment (TALPA)	Means a method of reporting runway conditions (which relates to aeroplane performance), developed by the US FAA, which is intended to reduce the risk of runway excursions.
Wet	Means a surface condition where there is any visible dampness or water up to and including 3mm (1/8 inch) deep. (CAR Standard 322.401; AC 300-019(02))
Wet Ice	Means ice with water on top of it or ice that is melting. (CAR Standard 322.401; AC 300-019(02))
Wet Snow	Means snow that will stick together when compressed but will not readily allow water to flow from it if squeezed. (Wet snow contains enough water to be able to make a well-compacted, solid snowball, but water will not squeeze out.) (CAR 302.401; AC 300-019(02))
Windrow	Means a ridge of material, such as snow or gravel, created by airside maintenance equipment Note: A windrow is typically temporary in nature, having been formed during clearing operations with the intent of subsequent removal in the near-term (either ploughed/swept to the runway edge). (CAR Standard 322.401; AC 300-019(02))

Where possible standard phrases will be used to describe runway conditions, such as, but not limited to:

- Winter Maintenance in Progress
- Conditions Deteriorating Rapidly
- Residual Ice Control Chemical Present
- Runway Markings Obscured

5.8.2 Global Reporting Format (GRF)
(AC 300-019(2))

Effective August 12, 2021, Transport Canada implemented the Global Reporting Format (GRF). The Canadian implementation of GRF is based on the Take-off and Landing Performance Assessment (TALPA) methodology which was developed by the United States Federal Aviation Administration (FAA).

The philosophy of the GRF is that the airport operator assesses the runway surface conditions whenever water, snow, slush, ice, or frost is present on an operational runway. From this assessment, a runway condition code (RWYCC) and a description of the runway surface are reported, which can be used by the flight crew for aeroplane performance calculations. This format, based on the type, depth and coverage of contaminants, is the best assessment of the runway surface condition by the airport operator. All other pertinent information should also be taken into consideration. When changes in conditions occur, they should be reported without delay.

The RWYCC reflects the expected braking capability as a function of the surface conditions. With this information, the flight crews can derive, from the performance information provided by the aeroplane manufacturer, the landing distance of an aeroplane under the existing conditions. When an RWYCC is not provided, pilots reference the reported runway surface description (condition or type and depth of contaminant) to determine expected landing performance.

Flight crews utilize the reported runway surface description (condition or type and depth of contaminant) when determining their aeroplane's expected take-off performance.

Runway 15/33 will be reported in thirds due to its length of 7497'.

Normally, Runway 03/21 will be closed during the winter months by NOTAM and will not be maintained. If, for some reason, the runway is opened and maintained, it will be reported using the full length as it is only 5371' (under 6000').

The Global Reporting Format (GRF) is an internationally accepted concept which utilizes a consistent method to report runway surface conditions. The GRF consists of five fundamental elements:

a) Aircraft Movement Surface Condition Report (AMSCR) and Runway Surface Condition (RSC) NOTAM;
b) Runway condition assessment matrix (RCAM);
c) Runway condition code (RWYCC);
d) Runway surface conditions; and
e) Runway surface descriptions.

5.8.3 Aircraft Movement Surface Condition Report (AMSCR) and Runway Surface Condition (RSC) NOTAM

Consistent with the principles of the GRF, the AMSCR and RSC NOTAM have been specially designed to align with the aeroplane performance information (based on TALPA methods) which is used by pilots.

As per CAR 302.417(1)(a)(b), NWRA shall inspect movement areas and prepare AMSCRs in accordance with CAR Standard 322.417 and include a CRFI in each AMSCR, if required. NWRA will report contaminants on all aircraft movement surfaces using an AMSCR.

When conducting movement area inspections and reporting the surface conditions, the airport shall meet the following requirements:

a) conduct daily inspections of the movement areas at the commencement and as necessary to identify significant changes in runway surface conditions until the end of AMSCR hours published in the Canada Flight Supplement;
b) when contaminants are present on a movement area, make available the AMSCR during the published AMSCR hours as follows:
    i. at the commencement of published AMSCR hours,
    ii. a minimum of once every eight hours thereafter,
    iii. when a significant change* in a runway surface condition occurs,
    iv. following every accident or incident in which winter conditions may have been a factor, and
    v. whenever the cleared width of the runway falls below full width.
c) use the form "Airport Movement Surface Condition Report & Canadian Runway Friction Index" or an electronic format required by the aeronautical information services provider that includes all of the elements of an AMSCR;
d) provide an AMSCR with the Runway Surface Condition (RSC) data section completed for each CRFI measurement provided;
e) identify, in the remarks column of the form or the remark section of the approved electronic format, the time of day that this report is valid to and that this report is the final report for the period; and
f) the validity period of an AMSCR shall not exceed the published operating hours for the airport unless the surface conditions are being monitored.

NOTE:

- The "Remarks" column on the form is used to record maintenance activities (plowing, sweeping, etc.); or any unusual contamination conditions, such as a specific contaminant location that cannot otherwise be recorded in other specific AMSCR columns.
- The approximate maximum height and width and the location of windrows within the manoeuvring area is specified in the "Remarks" column of the form.

* A significant changes includes:

a) Any change in the RWYCC;
b) Any change in CRFI of 0.05 or more;
c) Any change in the contaminant type;
d) Any change of 20% or more in the reportable contaminant coverage;
e) Any change in contaminant depth as described in the table below; and
f) Any other information, which according to assessment techniques, is considered to be significant. For example, following the application of chemicals; following snow removal or sweeping; changes in conditions caused by rapid increases or decreases in temperature.

Contaminant	Valid depth values to be reported (minimum depth/assessed value)	Significant change
STANDING WATER	1/4 inch, then assessed value	1/8 inch
SLUSH	1/8 inch, then assessed value	1/8 inch
WET SNOW	1/8 inch, then assessed value	1/4 inch
DRY SNOW	1/8 inch, then assessed value 3/4 inch	1/8 inch

The above effectively results in a maximum validity for an RSC NOTAM of 8 hours. YXT will submit a new AMSCR that results in a new RSC NOTAM at least every 8 within the published operating hours.

For the purpose of Nav Canada database, Nav Canada will consider an RSC NOTAM to have a maximum validity of 24 hours and will cancel the RSC NOTAM after 24 hours and remove it from the system.

NOTE: The absence of an RSC NOTAM in no way indicates that runway conditions are acceptable for operations. (TC AIM AIR 1.6.5 Version: March 21, 2024)

Ongoing snow removal and ice control, which merely maintains the runway operational status will be reported verbally and followed up with an electronic report at the end of each snow clearing activity.

5.8.3.1 Direction of Report

(AC 300-019(2) Section 5.2)

When runway condition information is reported for each third of the runway, the RSC NOTAM will include two reports; one for each runway direction (i.e. RSC RWY 15 and RSC RWY 33). This provides information to pilots which is oriented in their direction of flight.

When runway condition information is reported by full runway length (i.e. not in thirds), the NOTAM will provide a single report for the runway pair, as per the previous practice (e.g. RSC RWY 03/21).

Only one AMSCR per runway pair will be completed (e.g. RWY 15/33), regardless of whether or not the NOTAM will present this information by:

a) runway thirds (with two reports; one for each runway direction); or
b) full runway length (with a single report for the runway pair).

5.8.3.2 Reporting by Runway Thirds

(AC 300-019(2) Section 5.3)

The decision whether or not to report by runway thirds or by full runway length should be made in consultation with the airport/aerodrome users. To minimize confusion, the reporting methodology needs to remain consistent within the season. YXT will report Runway 15/33 in thirds and all airlines servicing YXT have been consulted.

As outlined in Section 5.8.2., Runway 03/21 is closed during the winter months by NOTAM and will not be maintained. If for some reason, the runway is opened and maintained it will be reported using the full length and not in thirds.

When runway condition information is reported in thirds a RWYCC is to be reported. Conversely, if the runway condition information reported by full runway length, then the RWYCC will not be reported.

CRFI reports will also be provided in thirds, details are outlined in Section 5.8.5.

5.8.4 Runway Condition Assessment Matrix (RCAM)

(AC 300-019(2) Section 6.0; 6.1)

The RCAM is used to determine a runway condition code from a set of observed runway surface condition(s).

The Runway Condition Assessment Matrix (RCAM) (shown on next page) is the method used to determine a preliminary Runway Condition Code (RWYCC) for each runway third, whenever water, snow, slush, ice, or frost is present on the runway surface.

5.8.4.1 Matrix (RCAM)

Assessment Criteria		Downgrade Assessment Criteria (Control/Braking Assessment Criteria)		
Runway Surface Description	**RWYCC**	**CRFI Range**	**Vehicle Deceleration or Directional Control Observation**	**Pilot Braking Action**
• DRY	6	0.40 or higher	-	-
• FROST • WET (The runway surface is covered by any visible dampness or water up to and including 1/8 **inch** (3 mm) depth) **Up to and including 1/8 inch (3 mm) depth:** • SLUSH • DRY SNOW • WET SNOW	5		Braking deceleration is normal for the wheel braking applied AND directional control is normal	GOOD
-15°C and Colder outside air temperature: • COMPACTED SNOW	4	0.39 to 0.35	Braking deceleration OR directional control is between Good and Medium	GOOD TO MEDIUM
• SLIPPERY (WHEN) WET (wet runway) • DRY SNOW or WET SNOW (Any depth) ON TOP OF COMPACTED SNOW **Greater than 1/8 inch (3 mm) depth:** • DRY SNOW • WET SNOW **Warmer than -15°C outside air temperature:** • COMPACTED SNOW	3	0.34 to 0.30	Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced	MEDIUM
Greater than 1/8 inch (3 mm) depth: • STANDING WATER • SLUSH	2	0.29 to 0.20	Braking deceleration OR directional control is between Medium and Poor	MEDIUM TO POOR
• ICE	1	0.19 or lower	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced	POOR
• WET ICE • SLUSH ON TOP OF ICE • WATER ON TOP OF COMPACTED SNOW • DRY SNOW or WET SNOW ON TOP OF ICE	0		Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain	LESS THAN POOR / NIL

5.8.4.2 Assessment Criteria

(AC 300-019(2) Section 6.2)

The **Assessment Criteria** section of the RCAM consists of a Runway Surface Description and a Runway Condition Code. The Runway Surface Descriptions in each category are linked to the corresponding Runway Condition Code based on their effect on aeroplane braking performance.

5.8.4.3 Runway Surface Description

(AC 300-019(2) Section 6.3)

The **Runway Surface Description** column of the RCAM lists:

a) the contaminants on the runway (e.g. slush, dry snow, wet snow, etc.); and
b) runway surface conditions if a runway is dry, wet, or slippery when wet.

These runway surface descriptions are directly correlated to aeroplane landing performance and are listed in order of slipperiness (i.e. from least slippery to most slippery).

There are four defined runway surface conditions:

a) Dry runway;
b) Wet runway;
c) Slippery when wet runway; and
d) Contaminated runway.

The runway surface conditions are further sub-divided into runway surface descriptions, which describe the specific details of a runway surface.

The runway surface descriptions, including depth and temperature (when applicable), are used to determine the preliminary RWYCC

5.8.4.3.1 Runway Surface Descriptors

(AC 300-019(2) Section 5.4, CAR 322.417(4))

The following terminology must be used when describing the runway surface conditions or each third of the runway in an ASMCR:

- compacted snow;
- dry;
- dry snow;
- dry snow on top of compacted snow;
- dry snow on top of ice,;
- frost;
- ice;
- slippery when wet;
- slush;
- slush on top of ice;
- standing water;
- water on top of compacted snow;
- wet;
- wet ice;
- wet snow;
- wet snow on top of compacted snow; and
- wet snow on top of ice.

The number of runway surface descriptions that may be reported for each runway third is limited to two.

The conditions on the uncleared portion of the runway (i.e. remaining width) will continue to be reported by full runway length (i.e. not by runway thirds). Only one type of surface condition and corresponding depth, will be reported for the un-cleared width of the runway, where applicable. When the depth is variable, only one value may be entered and this should be the maximum depth. The remarks section may be used to report a range of values for depth.
NOTE: Remaining Width (area) is unfit for aeroplane operations.

5.8.4.3.2 Percent Coverage

(AC 300-019(2) Section 5.5)

The percent coverage is reported using the increments listed in the following table. If the assessed percent coverage is between increments, it will be rounded up as indicated.

Where some sections of the runway or sections of a runway third are not wet or contaminated (i.e. are DRY), the reported runway conditions and contaminants are not required to add up to 100%.

Percent Coverage Increments

Assessed Percent Coverage	Reported Percent Coverage
1 - 10	10 PCT
11 – 20	20 PCT
21 – 25	25 PCT
26 – 30	30 PCT
31 – 40	40 PCT
41 – 50	50 PCT
51 – 60	60 PCT
61 – 70	70 PCT
71 – 75	75 PCT
76 – 80	80 PCT
81 – 90	90 PCT
91- 100	100 PCT

5.8.4.3.3 Depth Assessments

AC 300-019(2) Section 5.6

Contaminant depths will continue to be reported in inches and fractions of inches, as noted below.

Contaminant Depth Increments

Assessed Depth	Reported Depth
1/8 inch or less	1/8IN
> 1/8 inch to and including 1/4 inch	1/4IN
> 1/4 inch to and including 1/2 inch	1/2IN
> 1/2 inch to and including 3/4 inch	3/4IN
> 3/4 inch to and including 1 inch	1IN
> 1 inch to and including 1 ½ inches	1 1/2IN
> 1 ½ inch to and including 2 inches	2IN

At depths greater than two inches, the depth is rounded up and reported as the nearest whole number (e.g. an actual depth of two and a half inches is reported as 3IN).

When the depth of contaminant(s) is variable:

a) the maximum depth will be entered; and
b) the remarks section may be used to report a range of values for depth.
c) Contaminant depths will be reported for:
    i. STANDING WATER;
    ii. SLUSH;
    iii. DRY SNOW;
    iv. WET SNOW; and
    v. Combinations of contaminants where a loose contaminant (DRY SNOW, WET SNOW, SLUSH or STANDING WATER) overlies a hard contaminant (COMPACTED SNOW or ICE). In these cases, the depth of the loose contaminant is to be reported.

For STANDING WATER, 1/4 inch is the minimum depth which can be reported. When the water depth is 1/8 inch or less, the runway is reported to be WET.

5.8.4.3.4 DRY Runways Surface Conditions
(AC 300-019(2) Section 5.7(3))

"DRY" runway surface condition will be reported:

a) when there is need to report wet or contaminated conditions on the remainder of the surface. This would be the case when a runway third(s) is 100% DRY and:
    i. there are contaminants in other runway third(s), or
    ii. the other runway third(s) is wet; or
b) the cleared width is less than the published width and the cleared portion of the runway is 100% DRY;
c) when a significant change has occurred. For example, when a runway third(s) reported as RWYCC 5 is now RWYCC 6.

5.8.4.3.5 WET Runways
(AC 300-019(2) Section 5.8)

"WET" conditions will be reported when associated with winter contaminants. Additionally, when a runway has been treated with chemicals to mitigate a specific contaminant and the resulting surface is now "WET," this condition is also to be reported.

YXT does not report WET runway conditions outside of winter operations between April 1 to October 31. Winter operations are between November 1 and March 31.

5.8.4.4 Other Reported Runway Condition Information
(AC 300-019(2) Section 8.0)

Other reported runway condition information includes:

a) Treatments applied to the runway surface;
b) Snow drifts, windrows, or snowbanks on the runway;

c) Other localized conditions;
d) Snowbanks adjacent to the runway; and
e) Runway remarks.

5.8.4.4.1 Treatments

Treatments applied to the runway surface are reported using the term Chemically Treated. The time that the treatment was applied may also be listed but is not mandatory.

5.8.4.4.2 Snow Drifts, Windrows, or Snowbanks on the Runway

This information is reported using the term "SNOW DRIFTS," "WINDROWS" or "SNOWBANKS" as applicable.

The maximum snow drift, windrow or snowbank height is to be reported in feet and/or inches, as applicable.

The location of a windrow or snowbank is reported:
a) as a distance from the nearest threshold in 100 foot increments;
b) by indicating the distance, to the nearest foot, from: the runway edges, the edge of the cleared width or the runway centerline; or
c) with reference to an intersecting runway.

Reporting the location of a snow drift is optional since there may be numerous snow drifts, and may be reported:
a) as a distance from the nearest threshold in 100 foot increments;
b) by indicating the distance, to the nearest foot, from: the runway edges, the edge of the cleared width or the runway centerline; or
c) with reference to an intersecting runway.

When describing a snow drift, windrow or snowbank that is to one side of the centreline or the runway edge, the four cardinal points (North, South, East, or West) or four intercardinal (ordinal) points (Northeast, Southeast, Southwest, or Northwest) are to be used.

5.8.4.4.3 Other Localized Conditions

Localized conditions that reduce the friction locally should be reported by indicating the distance in feet from the nearest threshold (in 100 foot increments).

These localized conditions, are separate and distinct from the runway surface conditions that serve as assessment criteria in the RCAM; they include:
a) ice patches,
b) compacted snow patches, and
c) standing water patches.

Any other localized conditions not itemized above are to be described in the Runway remarks of the AMSCR.

5.8.4.4.4 Snowbanks Adjacent to the Runway

The presence of a runway snowbank, its height (in inches and/or feet) and its distance (in feet) from outside the runway edge is to be reported.

When the height of snowbanks vary, the highest value should be reported.

When the distances from the outer edges vary, the least distance from the runway edge should be reported.

5.8.4.4.5 Runway Remarks

This section is used to record maintenance activities (plowing, sweeping, etc.) or any unusual contamination conditions such as a contaminant location that is not otherwise be recorded. Runway remarks serve to capture any other operationally significant information related to a given runway, which is not otherwise described. These remarks serve an important function by enhancing situational awareness.

Examples include, but are not necessarily limited to:

a) CLEARING/SWEEPING IN PROGRESS; and
b) CONDITIONS CHANGING RAPIDLY

As previously noted, if a RWYCC has been downgraded or upgraded, this information needs to be included in the runway remarks as follows:

a) RWYCC DOWNGRADED; or
b) RWYCC UPGRADED.

The next scheduled time of observation is included in general remarks where applicable.

Runway remarks need to be kept brief and concise, to ensure that only important safety information is conveyed.

5.8.4.5 Runway Condition Code (RWYCC)

(AC 300-019(2) Section 6.4)

The Runway Condition Codes (Format: X/X/X) represent the runway condition description based on defined terms and increments. Use of these codes can be used as part by pilots to determine landing performance parameters.

A preliminary RWYCC is determined using the RCAM based on type and depth of contaminant(s) and outside air temperature (where applicable); or the runway condition, when the runway is dry, wet, or slippery when wet. The preliminary RWYCC must be confirmed, downgraded, or upgraded.

In the event the full width of the runway is not cleared, the runway condition code will be determined based on the contaminants present in the cleared portion of the runway (typically center 100 feet).

NOTE: When available, the runway surface temperature should be used.

CAUTION: At temperatures near and above freezing (i.e. at -3°C and warmer), the runway surface condition may be more slippery than indicated by the preliminary RWYCC determined with reference to the RCAM assessment criteria. At these temperatures, vigilance will be exercised, and the inspector should downgrade the runway condition code if deemed appropriate.

CAUTION: Heavy frost that has noticeable depth may have friction qualities similar to ice and downgrading the runway condition code accordingly should be considered. If driving a vehicle over the frost does not result in tire tracks exposing bare pavement, the frost should be considered to have sufficient depth to consider a downgrade of the runway condition code.

5.8.4.6 CRFI in the RCAM

(AC 300-019(2) Section 6.5)

CRFI is a valuable tool which provides an objective measure of the runway friction that will allow the airport or aerodrome operator to:

a) validate the preliminary RWYCCs determined through the use of the RCAM,
b) downgrade the RWYCC, when appropriate, and
c) upgrade the RWYCC, when appropriate.

An approximate range of CRFI values correspond to various RWYCCs. These CRFI ranges are used to downgrade a RWYCC.

Note: Due the variability of conditions these CRFI ranges may span more than one RWYCC.

In contrast, a specific minimum CRFI value – as opposed to a range of CRFI values – is required to upgrade a RWYCC.

5.8.4.7 RWYCC Downgrade Assessment Criteria

(AC 300-019(2) Section 6.6; 6.7)

The runway inspector should consider downgrading a RWYCC when CRFI measurements (if available), vehicle deceleration or directional control observations, pilot report(s), local knowledge and/or other information reveal that the runway surface is more slippery than the preliminary RWYCC indicated.

The runway inspector should exercise vigilance and downgrade the RWYCC when appropriate – so that flight crews are provided with a RWYCC that best reflects the actual slipperiness of the runway.

Subject to the limitations for the use of a decelerometer to measure CRFI (see Section 5.8.3), the runway inspector should utilize CRFI readings, when available, to assess slipperiness of the runway.

Pilot reports (PIREP) may also provide useful information. These reports may relate to the specific sections of the runway in which wheel braking was applied and should be considered for the applicable runway third.

When previous pilot braking action reports have indicated GOOD or MEDIUM braking action, two consecutive pilot braking action reports of POOR indicates that surface conditions may be deteriorating. In this situation, the runway inspector should conduct a runway assessment prior to the next aircraft operation.

When one pilot report of runway braking action of LESS THAN POOR (or NIL) is received:

a) the information should be disseminated;
b) a new assessment should be made; and
c) the suspension of aircraft operations on that runway should be considered.

Note: If considered appropriate, maintenance activities may be performed simultaneously or before a new assessment is made.

YXT has a verbal agreement with our local FSS, that any pilot report of Poor or Less than Poor braking action will be immediately relayed to our winter operations crew. Upon this notification, another runway inspection will be completed.

Vehicle control or deceleration observations are another source of useful information. As with pilot reports, vehicle control or deceleration observations may relate to specific sections of the runway and will be considered for the applicable runway third.

When a RWYCC has been downgraded this information needs to be included in the runway remarks.

5.8.4.8 RWYCC Upgrade Assessment Criteria

(AC 300-019(2) Section 6.8)

Under very cold conditions, typically below -15^{o}C, frozen contaminants may exhibit a higher degree of friction than indicated in the RCAM. In these circumstances, upgrading the RWYCC may be possible.

A preliminary RWYCC of 2, 3, 4 or 5 cannot be upgraded.

The runway inspector may only upgrade a preliminary RWYCC of 0 or 1 up to but no higher than a RWYCC of 3, when all the following requirements are met:

a) CRFI values of 0.35 or greater are obtained for the affected third(s) of the runway (subject to limitations for the use of a decelerometer to measure CRFI;

All other observations support a higher RWYCC as judged by a trained person; and

b) When a RWYCC of 0 or 1 is upgraded, the runway surface must be assessed frequently during the period the higher RWYCC is in effect to ensure the runway surface condition does not deteriorate below the assigned code.

Note: Any process that transfers heat to the surface may make the runway more slippery. Heat sources can come from the aircraft tires, engine exhaust/thrust reverse, atmospheric conditions, and precipitation. Runway treatments can also temporarily result in more slippery conditions.

CAUTION: Variables to be considered include, but are not limited to:

a) Any precipitation conditions;
b) Changing temperatures;
c) Effects of wind;
d) Frequency of runway use; and
e) Type of aircraft using the runway.

When a RWYCC has been upgraded this information needs to be included in the runway remarks.

5.8.5 Friction Measurements – Canadian Runway Friction Index (CRFI)

(Standard 322.416(1)(2)(a)(b)(3)(a)(4)(a)(c)(5)(a)(b); AC 300-019(2) Section 9.0)

CRFI provides an objective measurement of runway slipperiness. Subject to known limitations, CRFI plays an important role in allowing airport and aerodrome operators to confirm, downgrade or upgrade the preliminary RWYCC.

As per CAR 302.416(1), YXT shall:

a) carry out the measurements for the purposes of determining CRFIs in accordance with 322.416 Airport Standards-Airport Winter Maintenance;
b) provide the CRFIs to the ground station in accordance with 322.411(2) of those standards; and
c) maintain the accuracy of the equipment referred to in section 322.416 of those standards with that section.

The procedures for YXT to carry out the above are as outlined below.

To determine a CRFI, YXT calculates the rate of deceleration using a decelerometer. A decelerometer is a spot measuring device used to measure the rate of deceleration of a test vehicle during braking on an airport surface such as a runway or taxiway.

The Decelerometer is mounted as per CAR Standard 322.416(6). It is operated, maintained, and calibrated in accordance with the manufacturer's instructions. The maintenance department maintains records of annual calibration.

The decelerometer should report the following information:

- the test date and time;
- the test location including:
  - the name or designator of the airport; and
  - runway designator;
- identification of the operator;
- friction measured for each test in recorded order; and
- the average friction over a section selected by the operator. The average friction should be calculated using all values measured within the section selected by the operator.

The decelerometer will be used to obtain measurements of the rate of deceleration at intervals not greater than 300m within 10m and on both sides of the runway centerline at that distance from the centerline where the majority of aeroplane operations take place. Friction measurements are taken at the interval and position stated above starting on one side of centerline for the entire length of the runway. On the return trip the friction measurements for the other side of centerline are obtained. Friction measurements are generally started at the 15 end of the runway, but starting friction measurements at the 33 end of the runway is also acceptable. A minimum of 15 minutes on the runway is required to complete a valid friction measurement.

As per CAR 302.416(1), YXT shall report CRFI based on the criteria for a runway greater than or equal to 1829m, in accordance with the following requirements: (Standard 322416 (4)(a))

a) the measurements for each third of the runway length, shall be averaged to obtain a CRFI reading for each third of the runway length,
b) CRFI readings shall be reported for each third of the runway length,
c) the runway thirds shall be referred to in the direction of the runway end in use:
   i. Touchdown,
   ii. Midpoint, and
   iii. Rollout;

Note: For example: for runway 15, CRFI readings would be reported as: CRFI value/CRFI value/CRFI value (touchdown /midpoint/rollout).

A CRFI **shall be provided** when the area within 10 meters of either side of centerline, for any one-third section of the length of the runway, of the runway, has more than 25% of its surface contaminated, **only** with respect to the following: runway conditions:

a) ice;
b) wet ice consisting of a thin film of water on ice;
c) compacted snow;
d) slush on ice;
e) dry snow not exceeding 2.5 centimeters (1 inch) in depth;
f) deicing chemical solution or sand on ice; or
g) frost.

If significant patches of contaminants cause lower readings than the average, their distance from the threshold of one end of the runway shall be reported in the remarks section of the AMSCR.

CRFI **shall not be included in an AMSCR** when any of the following runway surface conditions are present:

a) the runway surface is wet with but there is no contaminant;
b) on the runway surface there is a layer of slush but no other contamination;
c) on the runway surface there is wet snow that, when stepped on or driven on, splatters, turns to slush or results in the presence of visible water; or
d) on the runway surface there is dry snow or wet snow that exceeds 2.5 cm (1 inch) in depth.

Partial CRFI readings or CRFI's requested in the above conditions will NOT be given.

There will be no winter maintenance on Runway 03/21 (with the exception of areas noted in Section 4.2 for AFF, Equipment and ERP Aircraft Isolation Area).

5.8.6 Taxiway and Apron Information

Where contaminants are present on taxiways and aprons that may be of “operational significance” to aircrews, the runway inspector will include these conditions in the report.

Due to the lower speed at which aircraft move on taxiways and aprons, the originator should take care to only include the information that has an impact on safety and normal operations, such as the risk of becoming stuck, losing control on a slippery surface, or damaging the aircraft.

Only one type of surface condition and corresponding depth, if applicable, should be reported for taxiways and aprons. The percentage of contaminants is not to be reported.

Taxiway and apron information can include but is not limited to:

a) type of contaminant and depth,
b) qualitative friction (e.g. “BRAKING ACTION POOR”),
c) presence of snow drifts, windrows, and snowbanks, and
d) presence of treatments.

6.0 Aircraft Parking on the Apron Stands Overnight

Aprons need to be cleaned during snow events and anti or de-icing materials need to be dispersed onto the stand and in the walkways for enplaning and deplaning.

During the winter month's aircraft overnighting must be relocated off of the aircraft stand to a parking area.

Between November 1 and March 31, if the airlines require their aircraft to remain on the stand overnight, it is the Airline Ground Handlers responsibility to contact the NWRA Chargehand on the operations cell phone 250.615.7636 during operations hours only and ask to keep the aircraft on the stand overnight. If there is no response from the winter shift chargehand, the aircraft must be relocated to the South-East corner apron parking. This decision is solely at the discretion of NWRA.

Failure to move the aircraft will result in the airline being charged $100 and the cost of cleaning the apron after the aircraft has departed. (NWRA Apron Management Plan)

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7.0 Call Out Requirements / Snow Removal & Operational Issues

Our hours of operation are: (subject to change, based on flight schedules)
Any aircraft outside of these published hours will incur overtime charges.

This is the anticipated operations schedule for the 2024-25 winter season. This schedule is subject to change. Use published NOTAMs for the most up to date hours.

November 1-30, 2024
Mon-Sun 04:00 to 23:00 local

December 1, 2024
Sun 04:00 to 16:30 local

December 2-20, 2024
Sat-Mon 08:00 to 16:30 local
Tue-Fri 08:00 to 20:30 local

December 21--27, 2024
Sat-Wed 08:00 to 16:30 local
Thu-Fri 08:00 to 20:30 local

December 28, 2024 – January 5, 2025
Sat-Mon 08:00 to 16:30 local
Tue-Fri 08:00 to 20:30 local

January 6, 2025
Mon-Sun 08:00 to 23:00 local

January 7 – March 31, 2025
Mon-Sun 04:00 to 23:00 local

Any work performed outside of published hours of operation will be at the request of the aircraft pilot/company and will be on a cost recovery basis. We require a minimum of two hours prior notice for snow/ice control.

*** For late scheduled passenger aircraft ONLY, any work performed outside of operational hours will be charged on a cost recovery basis for crew costs only as long as **30 minutes prior notice is given to the winter shift chargehand** via the Operations Cell 250.615.7636.

See Section 2.0 on Communication for after-hours contact information.

This is done so that we can have the Priority One areas ready for use approx. 30 minutes prior to the first departing flight each day.

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