



Airport Winter Maintenance Plan

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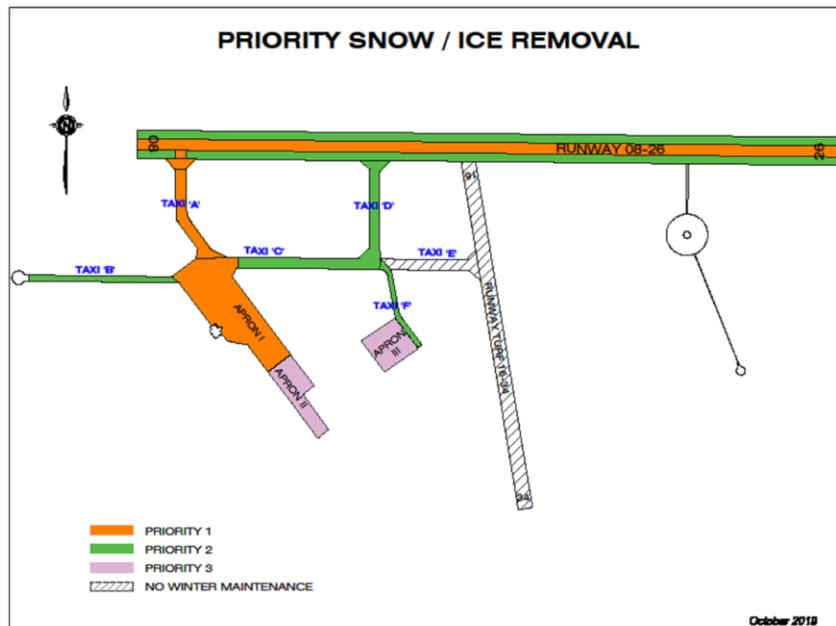


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AWMP Review Sign-Off Sheet

1. AMENDMENT CONTROL & REVIEW PROCEDURES

1.1 Amendment Procedures

The Airport Manager is responsible for the development, issuance and control of amendments to this manual. Once reviewed by the SMS committee, amendments will be properly inserted by the organization indicated on the distribution list. All manual holders will be responsible for the safe custody and maintenance of their manual.

Within thirty days of issue of an amendment, confirmation will be provided to the Airport Manager that the required amendment action has been accomplished by the return of the amendment control page, signed and dated by the individual amending the manual.

- (a) Each page will show the amendment number and date at the bottom.
- (b) When the manual is in need of amendment from an annual review, copies will be sent out to the SMS Committee, which has representative sample of air operators, at least one month prior to the winter season.
- (C) All amendments will be shown by providing a vertical black line in the margin where changes in paragraphs or wording are made.

AIRPORT WINTER MAINTENANCE PLAN -YPA

RECORD OF AMENDMENTS

No.	Date of Issue	Changes Made	Entered By
1	Oct-17-19	4.2 Aircraft Movement Surface Priorities 9.1 Contact Information Appendix A	Corey

Corrigenda

Minor changes (ie. phone numbers, typos) can be accommodated by "pen and ink" amendments without SMS committee review. Distribution of the changes will be the same as above and a record of these changes will be recorded in the corrigenda in the same format as the Record of Amendments.

CORRIGENDA

No.	Date of Issue	Date Entered	Entered By

LIST OF MANUAL HOLDERS

No.	Title	Address	Telephone & Fax No.'s
Master	Airport Manager	181 Veterans Way Prince Albert, SK	Tel: (306) 953-4966 Fax: (306) 765-4026
1	Transport Canada, Inspector	1100-9700 Jasper Avenue Edmonton, AB	Tel: (403) 292-5213 Fax: NA
2	NAV Canada, YPA - FSS	188a Veterans Way Prince Albert, SK	Tel: (306) 765-8800 Fax: (306) 765-8803
3	West Wind Aviation, SMS Manager	3A Hanger Road J.G. Diefenbaker Airport Saskatoon, SK	Tel: (306) 668-0226 Fax: NA
4	Transwest Air, SMS Manager	PO Box 100 Prince Albert, SK	Tel: (306) 764-1404 Fax: NA
5	RCMP Air Services, NCO	125 - 32nd St W Prince Albert, SK	Tel: (306) 765-5564 Fax: (306) 765-5565
6	Sask. Air Ambulance Chief Pilot	17 Wayne Hicks Ln, Saskatoon, SK	1 888-782-8247

1.2 Periodic Review and Amendment of the Plan

The Winter Maintenance Plan – the Airport Manager will review, and amended if required, this manual;

- before every winter season;
- if implementing new products equipment or maintenance procedures;
- each time the operator fails to clear a priority area in accordance with the plan, and;
- if any regulatory requirements change.

This document is assessed for its required content against the Canadian Aviation Regulations amendments sections from the 302.400's series.

The Winter Maintenance Plan - YPA will be submitted to a representative sample of the airport users from the SMS Committee for review and comments.

All airport stakeholders are invited to provide comment on the Winter Maintenance Plan, and to submit suggestions for improved efficiency of the winter operation. Questions and comments can be referred directly to the Airport Manager and/or can be raised at the Safety Management Committee Meetings where issues pertaining to snow removal and ice control are reviewed.

2. INTRODUCTION

Snow removal and ice control operations are the major functions conducted at Prince Albert Airport during the winter season. This plan is completed in accordance with Transport Canada standards, recommendations and industry practices.

The snow clearing plan of action is intended to optimize the use of personnel, equipment and materials resources to effectively clear snow and ice from aircraft, vehicle and pedestrian movement areas to provide safe, serviceable operation by airport users.

Snow removal and ice control refers to all actions taken to reduce and/or eliminate the potentially hazardous effects of snow and ice contamination on movement surfaces. Snow and ice control activities include either, or a combination of, plowing, sweeping, blowing, sanding and de-icing of movement surfaces. The ultimate objective of these activities is to remove pavement surface contaminants, which could adversely affect aircraft and vehicular performance.

This document establishes the following:

- (a) Identify priority 1 areas, priority 2 areas and priority 3 areas and describe the winter maintenance operations for each of those areas;
- (b) Document the communication procedures for the conduct of winter maintenance;
- (c) Document the procedures for the publication of a NOTAM in the event of winter conditions that might be hazardous to aircraft operations or affect the use of movement areas and facilities used to provide services relating to aeronautics;
- (d) Document the safety procedures for controlling the flow of ground vehicles during winter maintenance operations in order to ensure the safety of persons, other vehicles and aircraft;
- (e) Document the procedures to minimize the risk of ice control chemicals, other than approved ice control chemicals from being tracked onto airside;
- (f) Document the lines of authority and organizational relationships with respect to winter maintenance, including contact names and telephone numbers;
- (g) Document how actions undertaken as part of winter maintenance will be coordinated;
- (h) Document the arrangements for snow clearance;
- (i) Document the process and procedures for the periodic review and amendment of the plan;
- (j) Document the administrative procedure for the distribution of the plan and amendments to it; and,

3. DEFINITIONS

Aircraft - any machine capable of deriving support in the atmosphere from the reactions of the air.

Airport - an aerodrome in respect of which a Canadian aviation document issued pursuant to the Aeronautics Act is in force

Airport Manager - the person in charge of an airport or the authorized representative of that person.

Airside - that area of an airport intended to be used for activities related to aircraft operations and to which public access is normally restricted; all areas inside the airport perimeter fence or airside building security barrier which is marked with “Restricted Area” signs, as defined in the aerodrome security regulations.

AMSCR or Aircraft Movement Surface Condition Report means a report that details the surface conditions of all movement areas at an airport, including runways and taxiways.

Apron - that part of an airport, other than the maneuvering area, intended to accommodate the loading and unloading of passengers and cargo, the refueling, servicing, maintenance and parking of aircraft and the movement of aircraft, vehicles and pedestrians to allow execution of those functions

Contaminant means material that collects on a surface, including standing water, slush, snow, compacted snow, ice, frost, sand, and ice control chemicals.

Cleared Width: The narrowest portion of the runway width which has been cleared of contaminants and can be estimated by making reference to known widths such as plow blades, sweeper brooms or pavement markings.

CRFI or Canadian runway friction index means the average of the friction measurements taken on runway surfaces on which freezing or frozen contaminants are present.

Flight Service Station (FSS) –a NavCanada operated facility from which aeronautical information and related aviation support services are provided to aircraft including airport and vehicle advisory services for designated uncontrolled airports.

Groundside - that area of an airport not intended to be used for activities related to aircraft operations and to which the public normally has unrestricted access; the portion of an airport that is publicly accessible.

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.

Maneuvering Area - that part of an airport ordinarily used for the take-off and landing of aircraft and for the movement of aircraft associated with taxiing, but does not include the apron.

Movement Area - that part of an aerodrome intended to be used for the surface movement of aircraft and includes the maneuvering areas and aprons.

Priority 1 area means an airside area that, based on prevailing winds and operational requirements, is necessary in order to maintain the operational capability of an airport, and includes the features referred to in paragraph 322.411(1)(a) of the Airport Standards — Airport Winter Maintenance.

Priority 2 area means an airside area that is necessary in order to provide additional runway availability should wind conditions or operational requirements change, and includes the features referred to in paragraph 322.411(1)(b) of the Airport Standards — Airport Winter Maintenance.

Priority 3 area means an airside area that is not a priority 1 area or a priority 2 area, and includes the features referred to in paragraph 322.411(1)(c) of the Airport Standards — Airport Winter Maintenance.

Runway or Taxiway Strip is an area adjacent to the maneuvering area that must remain clear of all obstacles that are not frangible.

Sand means small particles of crushed angular mineral aggregates or natural sand material meeting the specifications in AC 302-013 used to improve runway surface friction levels.

Snow Bank means A ridge of snow that can vary in height and width and is created as snow falls off the outer edge of the plow or sweeper with its location off of the maneuvering surface as specified in the AMSCR Remarks column

Traffic - all traffic on the maneuverable area of an airport and or all aircraft flying in the vicinity of the airport.

Unrestricted AVOP - An Airside Vehicle Operator's Permit authorizing a person to operate a vehicle on all airside areas, at the airport named.

Windrow: A ridge of snow that can vary in height and width and is created as snow falls off the outer edge of the plow or sweeper. The height and width is reported as the approximate maximum height with its location within the maneuvering surface as specified in the AMSCR Remarks column

YPA – is the ICAO designator for the airport identification of the Prince Albert Airport.

4. LEVELS OF SERVICE

The basic objective of snow removal and ice control is to ensure that safe and efficient aircraft, vehicle and pedestrian movement surfaces exist in accordance with the desired level of service. The term “snow removal and ice control” includes all action taken to reduce and/or eliminate the effects of snow and ice on airport operations.

The processes and procedures of this manual are in effect during the published winter maintenance operations hours, regardless of the existence of winter contaminants. Winter contaminants that occur outside of the published times will be addressed as is reasonably practicable for the staffing, equipment and products may be available at that time.

- Published in the CFS; Nov-1 to Apr-30 11-2230Z Mon-Fri which is 5:00am to 4:30pm local.

Prince Albert Airport will endeavor to provide winter maintenance on outside these published hours as follows;

- Saturday & Sunday; AMSCR at 1400Z (8am), winter maintenance as required for Priority 1 areas only,
- Statutory holidays; AMSCR at 1100Z (5am), winter maintenance as required for Priority 1 areas only,
- All other times outside the published operating times will require two(2) hours prior notice and may require a fee for the requested service.

4.2 Aircraft Movement Surface Priorities

The aircraft movement surface priority areas for Prince Albert Airport are as follows:

Priority 1 Area,

- 1) the full length of the primary runway 08-26,
- 2) the width of 23m of the primary runway 08-26 required to support the operational requirement of the aircraft movements at the airport during a storm,
- 3) taxiway Alfa, including entrance and exit access areas, to accommodate traffic to and from the primary runway 08-26,
- 4) de-icing pads or areas, including entrance and exit access to accommodate traffic to the primary runway 08-26 and from the Apron I,
- 5) Apron I areas necessary to accommodate aircraft traffic, passengers and cargo,
- 6) access roads, groundside and airside, to accommodate the movement of emergency vehicles to the runway, taxiways and apron areas referred to in this paragraph including the designated Medevac area on Apron I, (Veterans Way Gate #1 to Highway 55)
- 7) visibility of lights installed as visual aids,
- 8) visibility and legibility of signs, and
- 9) the areas adjacent to the approach aids, including glide path site, that require the removal of snow in order to maintain the signal integrity of the approach aid and as agreed to by the airport operator and owner/operator of the approach aid;

Priority 2 area,

- 1) remaining taxiways, including entrance and exit access areas, to accommodate traffic to and from runway 08-26,
 - a. With the following priority; (1) Charlie, Delta (2) Bravo (3) Foxtrot
- 2) visibility of lights installed as visual aids,
- 3) visibility and legibility of signs, and

Priority 3 area,

- 1) remaining areas,
 - a. Apron II and Apron III
 - b. runway and taxiway shoulder areas,
 - c. apron shoulder areas,
 - d. airside service roads, including access roads to approaches, emergency vehicle and personnel gates,
 - e. remaining airside signage and lights.

16-34 & Echo; NO WINTER MAINTENANCE no AMSCR reporting.

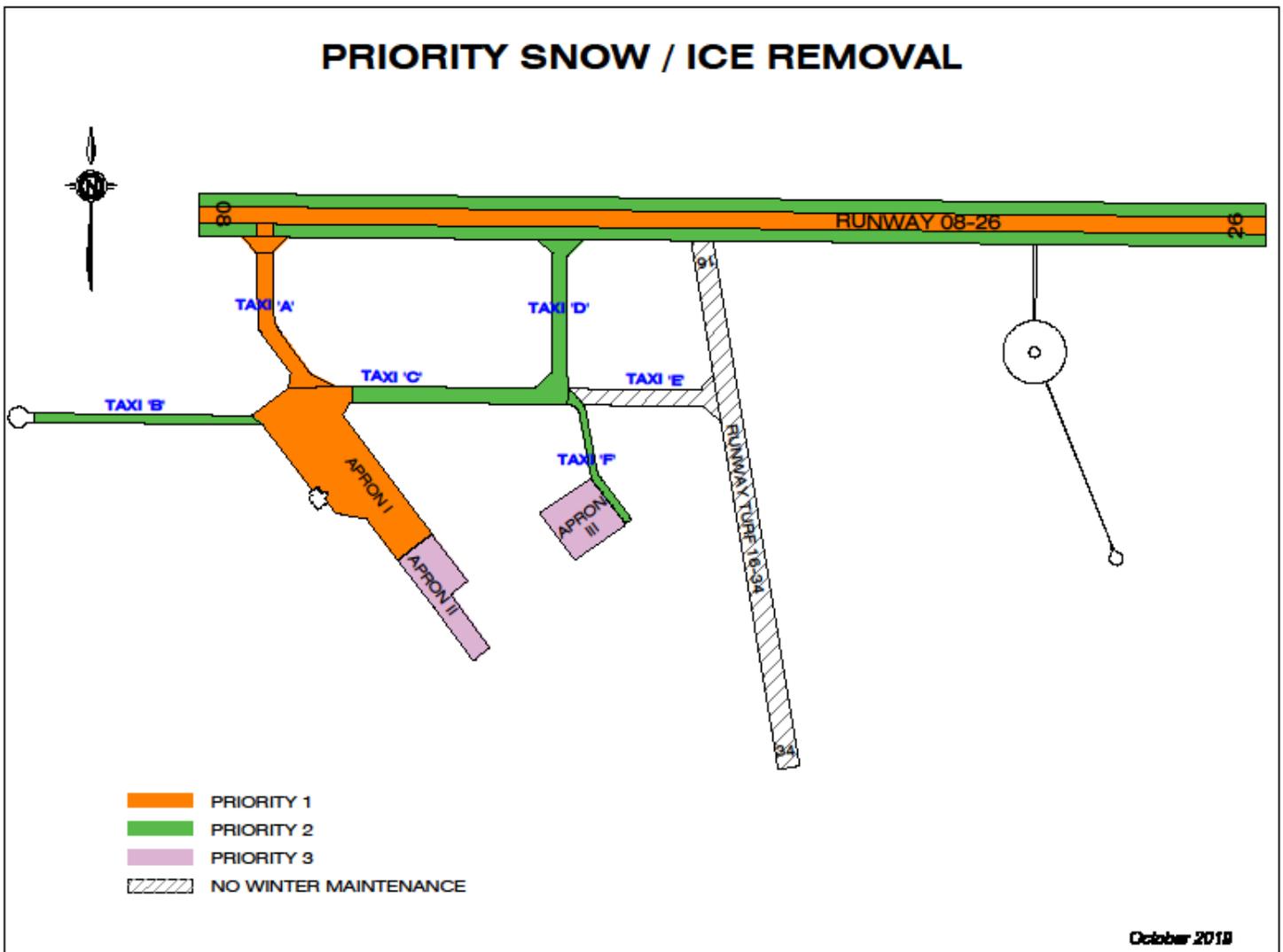
The maximum depth of snow accumulation before clearing is required, during scheduled hours of service, is set out as follows:

- priority I areas – 2.0 cm.
- priority II areas – 2.0 cm
- priority III areas – 10.00 cm

The objectives of the airport operator to operate the airport during winter storm conditions are as follows:

- keep priority 1 areas clear at all times;
- keep priority 2 areas clear to the extent that doing so does not compromise the operator's ability to keep priority 1 areas clear; and
- clear priority 3 areas after the winter storm conditions have ended.

Priority Areas Map



Note:

The intent at all times during snow storms will be to clear the priority 1 areas to the maximum possible to maintain schedule air traffic and Medevac service. The Guidelines to Accommodate Scheduled Traffic are in Appendix G.

It is recognized that maintaining full width may not be possible because of the site fixed resources or during severe storms. It is important to note that as cleared widths are reduced, the appropriate surface condition reports and NOTAMs are issued to advise pilots of these changing conditions.

As it is impossible to include all circumstances in this plan, a successful operation depends on the co-operation, initiative and sound judgment of all personnel involved.

Pedestrian walkway areas in airside of the terminal are the responsibility of the Airlines staff as indicated in the terminal lease agreement. Terminal groundside sidewalks are cleared by the contracted Janitorial Staff.

This manual does not fully address the snow removal of many groundside areas as it is not regulated by Transport Canada. The City of Prince Albert priority system will dictate snow removal priorities on groundside areas. At no time will a groundside area, other than Priority #1, take precedence over airport staff completing airside winter maintenance. Streets Department staff can be brought in to address groundside snow clearing.

Groundside Priority;

1. Veterans Way from Highway #55 to Gate #1/Medevac area on Apron I
2. Veterans Way to the Terminal and Flight Service Station
3. Public and long term parking lots
4. Other public roadways

4.3 Snow Removal and Ice Control Procedures

General

Snow removal techniques at Prince Albert Airport combination unit of the plow truck, sweeper and blower. This has proven to be the most efficient and cost-effective method of snow removal.

Airfield Lighting

Snow removal from around airfield lighting is done by grader between the lights for the bulk and then hand shoveling near the fixture. Mobile equipment is used for removal behind the lighting fixtures during priority III stage of operations.

Ice Control

Ice covered surfaces are treated with runway sand, sodium acetate and potassium acetate or a combination of these products. Because of the potential damage runway sand may cause aircraft engines, even though it is controlled in size, its use is to be kept to a minimum. Sodium formate & potassium acetate are chemical products used as anti-icing and/or de-icing agents. These products vary in their effectiveness under various surfaces temperatures. These products are non-corrosive to aircraft metals. Sand and anti/de-icing chemicals are spread at minimal amounts to be effective under the given conditions. The materials are swept away as soon as practical after being used on the movement areas. Chemical residue or sand is reported on the AMSCR when present.

Aircraft Parked on Apron

Snow is removed from the apron(s) using a plow, sweeper or loader as applicable. Windrows are removed using a blower. Blowing is the most cost effective method and is used wherever possible.

Note: Snow removal equipment will not perform any winter maintenance operation closer than 10feet (3m) to any aircraft. Aircraft parked overnight during snow conditions may have windrows around them. The pilot will have to request snow removal from the airport staff. Snow removal will only be performed under the pilots' direct observation and may require a charge out fee.

Private Aprons; snow and ice removal on leased land is not the responsibility of the airport to remove. Snow removed from these areas must remain on the leased property. At no time, may the private snow removal equipment be on an airport movement surfaces including related strips.

Windrows

During snow removal operations;

- Windrow heights should not exceed 36 inches (91 cm), in height on edges of manoeuvring areas, due to the danger to aircraft wings/propellers.
- Windrow heights should not exceed 2 inches (5 cm), in height across manoeuvring areas, due to the danger to aircraft wheel/brake freezing.

Snow Bank Removal

Snow accumulations outside the lights are routinely cleared as part of the priority three clearance plan. Snow banks that have been identified outside the regular removal program are prioritized and cleared to grade a distance from the edge of the pavement of:

- Runway side 15 meters (50 feet);
- Runway end 60 meters (200 feet); and
- Apron edge 15 meters (50 feet) or as far as obstructions will allow.

If possible the cleared edge should be tapered.

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Historic snow depths in Prince Albert have proven that these distances are adequate to maintain clearance.

Maximum Snow Accumulation Slope (%) in Pre-threshold Area and Beside Runways and Taxiways

Information on the maximum allowable snow accumulations in in pre-threshold areas and beside runways and taxiways is contained in *Appendix C* of this manual. The procedures used for inspection and maintaining snow accumulations are contained in *SOP #13 (Appendix H)*.

Snow Dumps

Snow which has been cleared from movement area, strips or ILS areas, is dumped in locations which least interfere with airport operations and facilitate good drainage during melting. Snow dumps are situated at the following locations:

- West of Lot 6 (198 Veterans Way).
- West and South of the FEC. (Maximum 8 feet high)
- East of the Glide path between Runway 08-26, Taxiways C & D. (Maximum 8 feet high)
- South of Apron III

YPA- Snow Dump Areas



05/09/2018 - 06/05/2018

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Snow Removal Around ILS Instruments

When this work needs to be completed the airport maintenance crew will call FSS directly and the FSS in turn will notify the Technical Operations Coordinators (TOC) who in turn approves the work to proceed, will shut down the instruments and will have the NOTAM issued. FSS will communicate back the approval and NOTAM information to the airport maintenance crew.

YPA

NAVIGATIONAL AID'S VEGETATION and SNOW CLEARING ZONES

GLIDE PATH:

AREA A: Average snow depth not to exceed 40cm. Vegetation does not exceed 30 cm in height
AREA B: Average snow depth not to exceed 40cm. Vegetation does not exceed 30 cm in height
AREA C: Average snow depth not to exceed 1.8m.
AREA D: Natural snow allowed. Snow cleared between the Glide Path and the runway threshold must not be deposited in this area.
AREA E: Snow depth must not exceed 1.8m. Snow banks must be tapered with a maximum angle of 50 degrees relative to the ground.
AREA F: Natural snow allowed. Dumped snow higher than 2.4m must be tapered with a maximum angle of 6 degrees (1m per 10m) relative to 2.4 m.

Note 1: Snow cleared from the runway or Taxiway deposited in the Glide Path Clearing zones.
 Note 2: Snow banks on the edge of the cleared area between the Glide Path and the runway threshold must be tapered with a maximum angle of 50 degrees relative to ground.

NORMARC/WILCOX (LOC) LOCALIZER

AREA C: The zone delimited by the front of the Array and the runway end. Snow tolerance of 0.75 meters. Vegetation does not exceed 50cm in height.
AREA D: The zone at the back of the Array that needs to be cleared. Snow tolerance of 1.00 meter.
AREA E: Snow naturally accumulating can be tolerated and snow removal is not required in this area. This area cannot be used as a dumping site for snow cleared from the runway or any other area. However, if there is a road in this area, snow removal is permitted to allow access.

Note 1: Snow banks on the edge of the cleared area between the Localizer and the runway stop end must be tapered with a maximum angle of 50 degrees relative to ground. Height of the snow bank should be limited to the height of the array.

YPA

CAT 1 ILS CRITICAL AREAS

Permission Requirements Per Area:

FSS Control		RPA area
		Sensitive area
5 hr notice to FSS NOTAM		Critical area
		Field Monitor Critical area

NOTE:

- Runway Protected Area (RPA)** must be kept clear of all vehicles, obstacles and personnel during Aircraft operations. The RPA overlaps some ILS areas and requires separate permission to occupy.
- The Field Monitor Critical Area** where no objects are permitted during all Glide Path operation: this includes people and vehicles
- The Critical Area** is an area where vehicles, including aircraft, are not permitted during all Glide Path operations. This area is protected because the presence of vehicles and/or aircraft inside its boundaries would likely cause unacceptable disturbance to the Glide Path signal.
- The Sensitive Area** is the area extending beyond the critical area where the parking and or movement of aircraft (and very large objects such as heavy construction equipment) is not permitted. This area must be controlled to prevent the possibility of unacceptable interference to the Glide Path signal during Glide Path operation.

5 COMMUNICATION PROCEDURES FOR THE CONDUCT OF WINTER MAINTENANCE

Vehicle operators will monitor and operate on the MF 122.6 MHz when on maneuvering areas, and inform FSS (broadcast) of their maintenance intentions (location, activities, duration, etc).

During published winter maintenance hours;

- Crew Observation and AMSCR-CRFI reporting every (8 hours with a minimum of 2 during published hours) or more frequently depending on weather and maintenance operations. (Reference AC-302-017) Appendix A
- FSS will call crew (on channel 122.6 or phone 953-4966) if there are any known safety hazards, lighting or communication failures or sever weather forecasts per the APOA. (Appendix D)

After Published winter maintenance hours;

- FSS will call the crew via the Duty Forman at **961-6190**, if the following conditions are observed;
 - When there has been a snowfall of 1 inch or more and/or high winds causing drifting of 6 inches or more;
 - Known or Forecast Freezing precipitation or considerable frost build-up;
 - Suspicion of wildlife or other intrusion airside;
 - Any other condition/situation that the FSS feels could impact the safe operation of Prince Albert Airport.
- The Duty Forman is the Primary contact after hours. This phone is always on duty from 5pm to 8am weekdays and all day on weekends and statutory holidays.

Process;

- Duty Forman takes FSS call
- Duty Foreman calls crew by seniority, then APM or Designate.
- If no answer, the Duty Foreman is to try to address the issue if capable.
- If not capable to perform the task, will at least observe the condition and will repeat the call out list.
- After hours Call Backs to perform Checks and or Maintenance;
 - FFS will advise the Pilot requesting the Checks and Maintenance that there may be the fee associated or confirm that it is an emergency aircraft (medivac, police emergency etc.) Call out charges can be found by calling the Airport Operator, on the YPA website and Appendix E.
 - FSS should relay to the pilot that the Airport Operator requires two (2) hours' notice, if the pilot wishes maintenance.

5.1 Aircraft Manoeuvring Area Closure and Opening

The Airport Operators' objective is to maintain priority 1 areas operational during published operating hours. Ongoing weather conditions that continue to deteriorate the movement surface conditions are not grounds for closure of those movement surfaces. Continued reporting of the changing movement surfaces conditions as per SOP #13 (Appendix H) procedures will be followed. Pilots will determine if the runway and other movement surface are acceptable for their operation based on the AMSCR/CFRI data and their operating procedures.

Circumstances for closure of a maneuvering surface could be the operators' inability to maintain runway 08-26 at or above 0.2 CRFI & priority 1 areas cleared for use, as defined in Section 4, for more than 2 hours. Or closure could be the operators' inability to maintain priority 2 & 3 areas after a storm for more than 8 hours:

- due to extreme weather conditions that do not allow for safe maintenance activity, or;
- equipment, deicing product or staffing shortages.

Closure

If a runway/taxiway is to be closed due to surface conditions, the Airport Manager, (or designate with the assistance of airport maintenance personnel) shall make the final decision. A NOTAM describing the closure must be issued.

Opening

The Airport Manager, (or designate with the assistance of airport maintenance personnel) will determine when surfaces may be returned to service. The NOTAM issued closing the movement surface must be cancelled.

Special Note;

Snowmaking activities at the Kinsmen Ski Hill can create reduced visibilities that affects operations at the Prince Albert Airport (CYPA), Appendix F is the procedure in place to address this potential operational impact.

6 PROCEDURES FOR THE PUBLICATION OF A NOTAM

Reporting procedures will comply with all Transport Canada requirements and the data entry will follow the Canadian NOTAM Procedures Manual Section 7 NOTAMJ.

The ACMSCR with CRFI report will be entered into the Snowiz system via Tracr II or iPad or Computer. The crew undertaking the inspection and testing has the Tracr II system, installed in the primary inspection vehicle, during the observation and testing to expedite reporting. However if using the iPad or computer the report must be printed in the office before another report is submitted.

If the mobile connection fails, the data will be entered into Snowiz on the office computer as soon as is reasonably possible.

If the computerized systems fail, the data will be entered onto the AMSCR Report form and faxed (204)984-3997 or phoned (866)541-4103 into the FIC.

If all above methods fail, the data will be provided to the FSS and the FSS will enter the data into SNOWiz or report the conditions from the paper report as required.

Also, to satisfy a pilot's urgent requirement and/or to facilitate manoeuvring area maintenance, Verbal updates from the airport operator of a full AMSCR can be provided to Flight Services via radio or telephone to update pilots. These report are not necessarily entered into the Snowiz system but should be documented by the operator as soon as possible.

NOTAMS are only valid for 8 hour or if conditions have changed significantly. Reports older than 8 hours that remain on the Snowiz system are not considered valid.

The operator should cancel the current AMSCR if;

- Conditions have changed and air traffic will not allow you to inspect and report,
- FSS has notified the airport operator of changed conditions and inspection is not able to commence immediately.
- The AMSCR has expired and the next report is not anticipated to be done until the next day
 - Add in the clearing operations comments “Conditions Are No Longer Being Monitored” & “Next scheduled report TIME DATE”

7 SAFETY PROCEDURES FOR CONTROLLING THE FLOW OF GROUND VEHICLES

All vehicle operators with access to the movement area are required to have a valid Unrestricted - Airside Vehicle Operators Permit (AVOP). All vehicle access on the maneuvering area will be controlled by FSS and operators are required to have a valid Unrestricted AVOP and follow established procedures in the Airport Traffic Directives – AVOP Manual.

Plowing/Sweeping Operations; A maximum of 2 plows will be working on a given surface at one time. They will travel in the same direction during these joint operations.

Deicing activities will commence after fully clearing the runway. Deicing may be applied after the priority 1 area is completely cleared. Deicing and Strip snow removal may be carried out at the same time.

Runway conditions inspections and CRFI testing will be done while the runway is clear of all traffic.

Snow removal in ILS critical Areas will follow the procedures in Section 4.3.

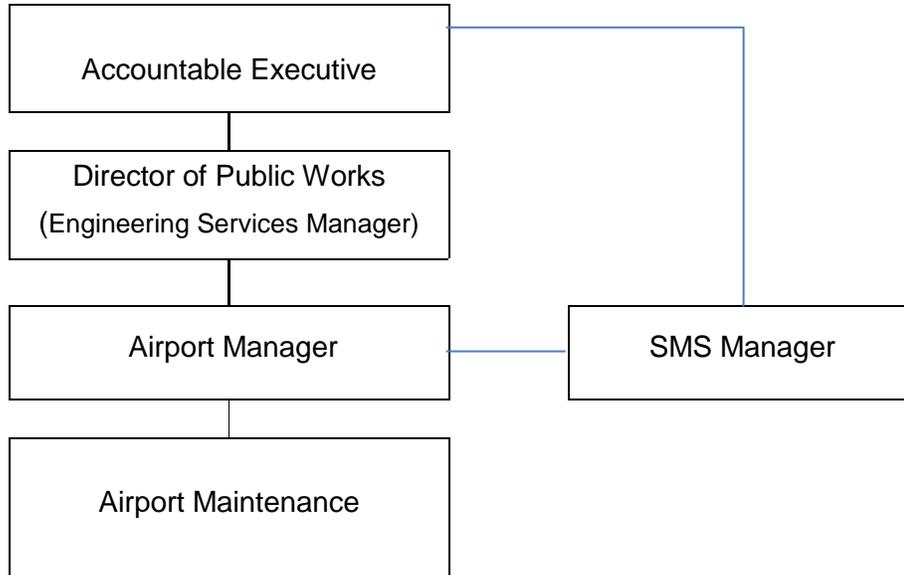
8 CONTROL OF OTHER THAN ICE CHEMICALS BEING TRACKED ONTO AIRSIDE

Procedures for the control of ice control chemical other than the ice control chemicals specified in section 4.5 of t AC 302-013, from being tracked onto airside;

- Only runway ice control chemicals will be applied on the road from the maintenance garage to the aprons.
- Only runway ice control chemicals will be applied on the sidewalks at the terminal.
- Use of salted sand on the roads will be kept to main access roads only.
- Road traffic accessing airside will be kept to an absolute minimum, and restricted to Aprons as much as possible.
- Crew trucks that access public roads will be washed as frequently as possible.
- The entrance to gate #1 will be swept clean frequently.

9 AUTHORITY AND ORGANIZATIONAL RELATIONSHIPS

Organizational Chart



Duties and Responsibilities

ACCOUNTABLE EXECUTIVE (AE)

The AE is the City Manager who is the administrative head of the City of Prince Albert. The Office of the City Manager keeps City Council informed of the operations and affairs of the City as well as ensuring that the decisions and the policy direction set out by City Council are implemented. The Office of the City Manager oversees the strategic plans and annual budgets for the City of Prince Albert. The Office of the City Manager includes Corporate Communications (responsible for the development and management of media and stakeholder communications on behalf of the programs and initiatives of the City of Prince Albert). The AE is responsible for operations or activities authorized under the certificate and accountable on their behalf for meeting the requirements of the Canadian Aviation Regulations.

DIRECTOR OF PUBLIC WORKS

The Director of Public Works, whom reports directly to the City Manager, is responsible for the City landfill, sewage treatment plant, water treatment plant, parking meters, garbage pickup, airport, transit, roadways, sidewalks, underground infrastructure (all pipes) and traffic. This department also manages all of the City's fleet equipment, ensuring that it is repaired and maintained, including police, fire and airport equipment/vehicles.

Note; The Airport Manager is assigned to perform SMS Manager's duties and responsibilities in accordance with CARS 302.505(3).

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AIRPORT MANAGER (APM)

The Airport Manager reports directly to the Director of Public Works. The Airport Manager is responsible for all aspects of the airport operation;

- directing airport maintenance staff, including the SMS Manager, in daily operations,
- establishing and maintaining contractual agreements with users and service providers,
- establishing and maintaining operating and capital budget,
- management of all projects on airport,
- development and maintenance of operation manuals, policies and procedures,
- performs any other role as identified in the operations manuals, ensuring compliance to all applicable regulations and City policies.
- The opening and closing of airport facilities (when necessary)
- During the winter operations environmental awareness and due diligence are practiced and are given high priority. The Airport Manager is responsible for ensuring that the product used to control ice meet the recommended specifications and that they are applied correctly and are removed as soon as possible to limit the overall FOD exposure to aircraft.

AIRFIELD MAINTENANCE

Airport Maintenance report directly to the Airport Manager; and is responsible for maintaining all airfield surfaces, lighting, electrical systems, facilities and mobile equipment in the Airport Operators control. They are responsible for the implementation and related reporting of the Airport Safety Plan including but not limited to the compliance to relevant TP312 standards and practices, Wildlife Management and Winter Maintenance plans. The Airfield Maintenance staff are charged with coordinating surface condition reporting, and liaising with airport users.

The Airfield Maintenance Technicians inspect, measure contaminants and report surface conditions; advises Nav Canada regarding snow removal/ice control status; and controls overall airport snow removal on a given shift. He/she also assumes responsibilities of the Airport Manager during his/her absence and during off hours.

SNOW DESK ***

The Prince Albert Airport does not have a Snow Desk. The Airport Manager and Airfield Maintenance Technicians are all responsible for feeding updated information to Nav Canada for dissemination.

NAVCANADA

Provides ground traffic control, notice of weather conditions and issuance of NOTAM's as per the APOA (Appendix D).

9.1 Contact Information

	Work	Home	Cell
Corey Nygaard (Airport Manager)	953-4966	[REDACTED]	[REDACTED]
Airport Maintenance;	953-4966	[REDACTED]	[REDACTED]
Steve Darchuk	953-4966	[REDACTED]	[REDACTED]
David Nobel	953-4966	[REDACTED]	[REDACTED]
Brenton Frost	953-4966	[REDACTED]	[REDACTED]
Sheldon Anseth (Casual)	953-4966	[REDACTED]	[REDACTED]
Duty Forman		[REDACTED]	[REDACTED]
Jeff DaSilva (Public Works)	953-4909	[REDACTED]	[REDACTED]
Jim Toye (Accountable Executive)	953-4302	[REDACTED]	[REDACTED]
Flight Service Station	[REDACTED]	[REDACTED]	[REDACTED]
Garry Prokop (Supervisor)	[REDACTED]	[REDACTED]	[REDACTED]
Heather Bonnell (Site Manager)	[REDACTED]	[REDACTED]	[REDACTED]

10 ASSESSMENT OF PERSONNEL AND EQUIPMENT

The Airport Manager will ensure that personnel and equipment are adequate to meet the operational requirements of the Prince Albert *Airport Winter Maintenance Plan*.

Current minimum staffing and equipment are: 1 Airport Manager, 2 Airport Maintenance Staff, 1 plow truck, 1 sweeper, 1 blower, 1 deicer truck, 1 loader, 1 staff vehicle and 1 decelerometer, 1 computer to input the AMSCR to Snowiz.

A review of the adequacy of personnel qualifications is conducted annually during the Training Matrix update and also every three years within the SMS Quality Assurance Program and any time it is required by SMS finding. A review of the equipment adequacy to perform the work is done as per the City of Prince Albert's Equipment Inspection / Preventative Maintenance Policies.

Training required for performing all the objectives of this Winter Maintenance Plan:

- Human & Organizational Factors
- SMS indoctrination
- Unrestricted AVOP, Radio License
- Emergency Response Plan - Roles & Responsibilities
- Airfield Inspections (AIM software)
- Winter Maintenance Plan review
- AMSCR – CRFI
- Snowiz & Tracr II software
- NavCanada ILS Maintenance seminar
- City of Prince Albert PME Training

After receiving initial or indoctrination training, all staff receives recurrent and updated training as per the Training Matrix schedule. Additional training may be held throughout the year if deemed appropriate by the Airport Manager. Training can be conducted by the Airport Manager however, depending on the existing level of expertise, it may be necessary to obtain some assistance from external specialists in order to provide this training.

To validate the effectiveness of the training, all participants complete a test to confirm their understanding of the processes. Externally provided training requires;

- a, signed/dated certificate identifying the trainee, provided by the training organization.
- Course curriculum

A copy of the completed test or certificate is kept on file by the Airport Manager and Human Resources department.

Staff training requirements (records retention and recurrent frequency) are listed in a training matrix which is updated annually by the Airport Manager and kept at the Airport Maintenance Garage and Human Resources Department.

11 QUALITY CONTROL**Deicer Products;**

Procurement: the specifications from AC 302.013 (4.5) will be included in the purchase order along with the requirement to supply a Safety Data Sheet and proof the product meets SAE – AMS specifications with the delivery.

Storage: Chemical will be stored in a designated area out of the weather to be kept warm and dry.

Sand Product;

Procurement: the specifications from AC 302.013 (4.6) will be included in the purchase order along with the requirement to supply a sieve analysis from a 3rd party with the delivery.

Storage: Sand will be stored in a designated area out of the weather to be kept warm and dry. If suspected not to be compliant, prior to storage, a representative sample will be taken and compared against the specification and sieve analysis.

AMSCR;

The Airport Manager will review a random selection of AMSCR for accuracy. The printout of the reviewed AMSCR will be signed and dated by the Airport Manager and filed. Any inaccuracies noted will be communicated to the AMSCR issuer in writing. A new AMSCR will be completed, if applicable.

APPENDICES

APPENDIX A

ADVISORY CIRCULARS (hard copies only)

- 302-013
- 300-005
- 300-019 (effective Nov-2020)

APPENDIX B

DEICING PRODUCTS AND PROCEDURES

Products:

Sodium Formate SF (Granular Deicer)

- Effective to -18°C
- More effective at lower temperatures when pre-wetted with a KA
- Primarily used as a deicer, melts snow and ice
- May be used as an anti-icer

De-icing	0 to -5°C	-5 to -10°C	< -10°C
Ice, Packed Snow	10-20 g/m ² 2-4 lbs/1000sq.ft.	20-30 g/m ² 4-6 lbs/1000sq.ft.	30-40 g/m ² 6-8 lbs/1000sq.ft.
Snow, Snowfall	25-35 g/m ² 5-7 lbs/1000sq.ft.	35-45 g/m ² 7-9 lbs/1000sq.ft.	45-55 g/m ² 9-11 lbs/1000sq.ft.
Ice, Freezing Rain	30-40 g/m ² 6-8 lbs/1000sq.ft.	40-50 g/m ² 8-10 lbs/1000sq.ft.	50-60 g/m ² 10-12 lbs/1000sq.ft.

Potassium Acetate KA (Liquid Deicer)

- Freeze point -50°C
- Primarily used as an anti-icer and best applied shortly before freezing precipitation
- May be used as a deicer on frost or thin layers of ice (effective -8°C or warmer)
- Used to pre-wet Safeway SF (solid) or sand

Anti-icing

12-20 L/1000 m² or ~ 0.3 - 0.5 US Gal/1000sq. ft.

De-icing

40-50 L/1000 m² or ~.8 – 1.25 US gallon/1000sq. ft.

Note: KA & SF loses effectiveness as it becomes diluted with melt water.

Runway Sand

Meeting specifications in AC 302-013 (4.6) Sand

Application rate as required to increase RFI.

Procedures:

Sand;

- Applied by spreader at a rate to be determined by maintenance personnel.
- Liquide deicer may be applied at the same time or prior to aid in the adhesion of the sand to the ice.
- Removal of wet sand must be done as soon as possible unless freezing conditions are imminent.

Anti-Icing;

Runway Conditions	Rate g & L / 1000m²
Anti-Icing	15 / 12

- Chemicals can be applied 1-2 hour prior to the anticipated weather.
- KA applied by sprayer at the rates above.
- SF applied by spreader with KA at rates above.
- Combination SF 70% & KA 30% (rate below)

Deicing;

Runway Conditions	Rate g & L / 1000m²
Ice, Packed Snow	20 / 14
Snow	25 / 16
Ice, Freezing Rain	30 / 18

- SF applied by spreader at the rates above.
- SF applied by spreader with KA at rates above.
- Sweeping the brine to the center to keep active deicer on the runway.
- Sweep off all liquid residue after ice is removed.
- Combination SF 70% & KA 30% (rates below)

APPENDIX C

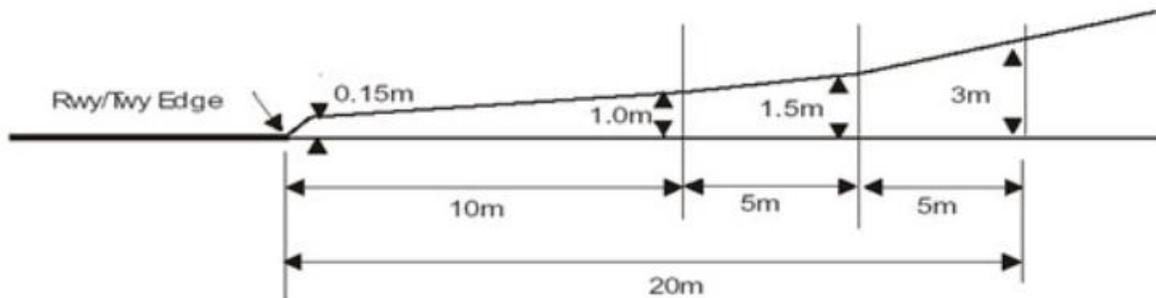
SNOW ACCUMULATION ADJACENT TO A RUNWAY, TAXIWAY, APRON AND PRE-THRESHOLD AREA

Snow Accumulation Profile - Runway And Taxiway Edge

Profile dimensions of snow accumulation adjacent to a runway or taxiway are maintained as indicated below, to ensure that:

For Code C aircraft:

- Beginning at the runway / taxiway edge, the maximum snow depth is 0.15 metres;
- 10 metres from the runway / taxiway edge, the maximum snow depth is 1.0 metres;
- 15 metres from the runway / taxiway edge, the maximum snow depth is 1.5 metres; and,
- 20 metres from the runway / taxiway edge, the maximum snow depth is 3.0 metres.



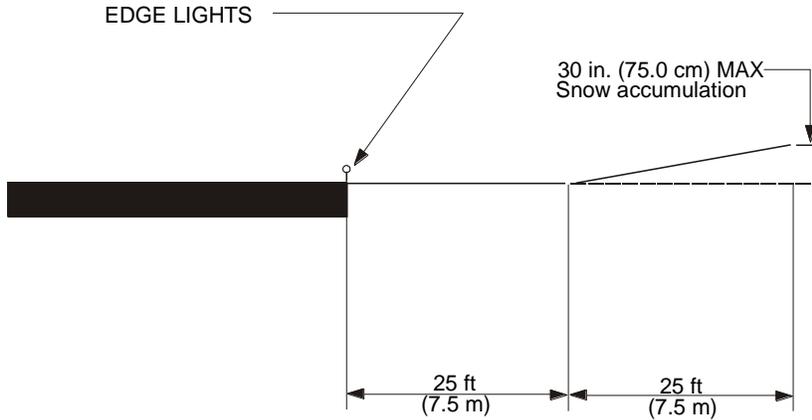
Codes C and D

Note: When conditions do not allow for snow clearing as indicated, a NOTAM will be issued, identifying actual conditions.

Snow Accumulation Profile - Apron Edge

Profile dimensions of snow accumulation adjacent to an apron are maintained as indicated below, to ensure that:

- from the apron edge/edge lights outward for a distance of 25 ft (7.5 m), no snow accumulation (snow is cleared down to grade level) is acceptable; and



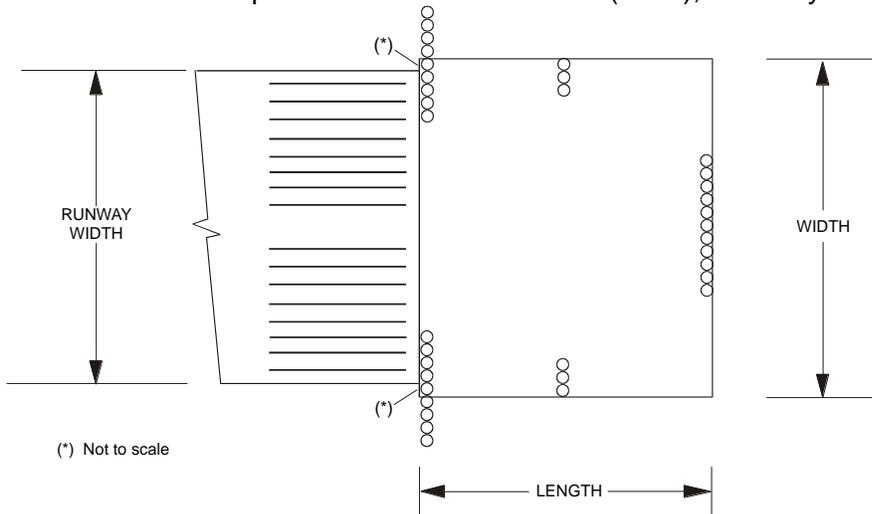
Note: When conditions do not allow for snow clearing as indicated, a NOTAM will be issued, identifying actual conditions.

Snow Accumulation In Pre-Threshold Area

Plan View

The pre-threshold area required to be maintained against excessive snow accumulation consists of a rectangular area measured from the end of the runway surface as follows:

- (a) For a 150 ft (45 m) wide runway the pre-threshold area includes the full 150 ft (45 m) width plus an additional 25 ft (7.5 m) on each side for a total area maintained width of 200 ft (60 m),
- (b) For non-instrument and instrument runways over 800 m in length, the length of the maintained pre-threshold area is 200 ft (60 m), Runway 08-26.



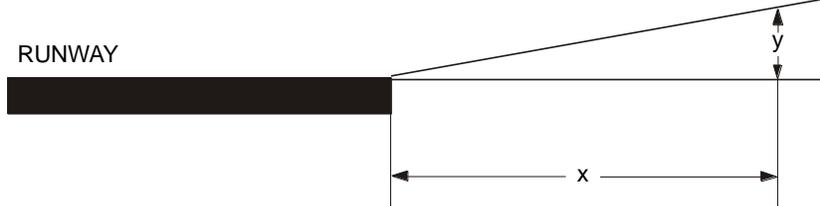
(*) Not to scale

Note: When conditions do not allow for snow clearing as indicated, a NOTAM will be issued, identifying actual conditions.

Profile View

Profile dimensions of snow accumulation on the maintained pre-threshold area are as indicated below, to ensure that:

- (a) Runway 08-26, length of 1524 m, the snow accumulation is either tapered (approximately 1.5%) or grade cleared so that the maximum snow bank height at the end of the clearway does not exceed 3 ft (900mm/90cm).



Reference item (a) above:

$x = 200 \text{ ft (60 m)}$; $y = 3 \text{ ft (900 mm)}$ (1.5%) (Runway 08-26)

Note: When conditions do not allow for snow clearing as indicated, a NOTAM will be issued, identifying actual conditions.



AIRPORT WINTER MAINTENANCE PLAN -YPA

APPENDIX D

APOA (hard copy only)

APPENDIX E

CALL OUT CHARGES

Dependent on Weather / Runway Conditions

The type of maintenance performed is at the airport operator's discretion based on the conditions of the movement surfaces, active/forecasted weather and resources available to make the priority 1 area safe.

PRIORITY 1 & 2 SNOW REMOVAL OPERATIONS				
RESOURCES	Unit Cost per Hour	Estimated Hours per Application	Materials per Application	Total
Operator	\$ 84.00	2.75		\$ 231.00
Plow Truck & Sweeper	\$ 130.00	1.50		\$ 195.00
Grader	\$ 125.00	0.50		\$ 62.50
Snow Blower	\$ 150.00	0.50		\$ 75.00
Loader	\$ 100.00	0.25		\$ 25.00
TOTAL		2.75		\$ 588.50
RFI Check				\$ 90.00
Administration	15%			
PRIORITY 1 DE-ICING OPERATIONS				
RESOURCES	Unit Cost per Hour	Estimated Hours per Application	Materials per Application	Total
Operator	\$ 84.00	0.50		\$ 42.00
Granular De-icer	\$ 90.00	0.50	\$6,000.00	\$6,087.00
Liquid De-icer	\$ 90.00	0.50	\$ 2,750.00	\$2,837.00
Sand	\$ 90.00	0.50	\$ 950.00	\$1,037.00

APPENDIX F

KINSMEN SKI HILL PROCEDURES

Airport Operations Impact

(1) Purpose;

- a) Snowmaking activities at the Kinsmen Ski Hill can create reduced visibilities that affects operations at the Prince Albert Airport (CYPA),
- b) A reduction in visibility to 3nm requires the aircraft to use an instrument IFR approach. A reduction in visibility to less than ½ mile or RVR of 2600 stops all aircraft movements.

(2) The Contractor agrees to abide by all rules established by the CYPA Airport Operator and NAV CANADA as follows:

- a) The Contractor shall provide the Airport Operator and Flight Service Station (FSS), with the snowmaking season schedule; November through to February each year. -20 or colder.
- b) The Contractor shall ensure that they coordinate snowmaking activities with the Airport Operator and FSS,
- c) The contractor shall provide notice to FSS at least one(1) hour before the planned snowmaking and obtain clearance prior to commencement,
- d) The Contractor is required to obtaining the current local weather conditions from the FSS and obtaining regular updates while snowmaking procedures continue,
- e) No snow making will be authorized when the wind direction is inside of the parameters of 260 degrees to 290 degrees,
- f) If the visibility is reduced to 3 nm or upon notice by the FSS, the Contractor must cease all snowmaking immediately,
- g) The contractor shall ensure that they have an emergency contact available at all times during snowmaking,

Contact	Phone No.
Nathan Stregger	[REDACTED]
Adam Balon	[REDACTED]

h) Airport Contact Information;

- 1. FSS [REDACTED]
- 2. Airport Operator (306)953-4966
 Airport Manager;
 - Cell; [REDACTED]
 - Email; [REDACTED]

APPENDIX G

GUIDELINES TO ACCOMMODATE SCHEDULED TRAFFIC

Objective; to have the runway 08-26 ready for landing/takeoff of the airline scheduled traffic.

- Achieve at minimum a CRFI of 0.35 on 23m (75') wide on the full length of 08-26. Issue an AMSCR and (CRFI if applicable) before 6:30am so that airline(s) can plan their flights from YXE to YPA. Have the remainder of the Priority 1 area maintenance completed before the airlines arrival at 7:00am. At a minimum maintain the Priority 1 area for the duration of scheduled flights. To respond to the needs of emergency flights, such as Air Medivacs, as soon as is possible.

**** If the forecast calls for contaminant that would be reasonably expected to require extensive maintenance to achieve the objective or if Flight Services calls to inform the Airport Operator of contaminants that are reportable under the APOA agreement; the maintenance staff will start the maintenance activities at 4am, or sooner as the situation requires, vs. 5am. ****

When a contaminant is on runway 08-26 and the CRFI is contraindicated or <0.3:

5:00am Airfield Inspection items ONLY (Other items can be inspected later)

5:30am AMSCR with possible CRFI issued (*No Later Than*)

5:30am Priority 1 area Snow and or Ice removal

- Make a pass on way to 08-26 in front of ATB and down Taxiway A
- RW 08-26 23m (75') wide full length
- Make a pass on way back from 08-26 down Taxiway A and in front of ATB

6:30am Updated AMSCR with CRFI issued if applicable (*No Later Than*)

- If CRFI is <0.3;
 1. Notify FSS immediately and call APM
 2. Call in a second airport maintenance worker for assistance (use APM or Duty Foreman to do call ins)
 3. Continue maintenance on 08-26 only until contaminants are sufficiently removed
 4. Second staff member to assist in maintenance but priority is on frequent AMSCR inspections , CRFI testing and reporting updates
 5. APM to advise the airlines logistics of maintenance status and plan
 6. APM to call in City Streets Department to plow groundside roads
- If CRFI is >0.3;
 1. Continue to complete Priority 1 area and report updates via iPad or (verbally to FSS, dependent on maintenance operation completion of Priority 1 area are achievable before 7:00am)
 2. Complete maintenance of Priority 2 areas. Issue an AMSCR
 3. Complete all other priority areas as per the Winter Maintenance Plan
 4. Issue updated AMSCR as per the Winter Maintenance Plan

Runway 16-34 & Taxiway E;

- No winter maintenance



AIRPORT WINTER MAINTENANCE PLAN -YPA

- No inspections. Inspections create ruts. If ruts exist, the movement surface must be Closed via NOTAM
- The objective is to keep open for ski plane traffic

If contaminants are present outside winter maintenance/reporting dates, report contaminants on AMSCR as observed from a distance. *Do not drive on E or 16-34 if contaminants exist.*



AIRPORT WINTER MAINTENANCE PLAN -YPA

APPENDIX H

SOP #13 WINTER AIRFIELD INSPECTION PROCEDURES (hard copy only)

