2026 WINTER OPS MANUAL

Summit Fuel Services

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Breslau On

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INTRODUCTION

Snow removal and ice control operations are the major functions conducted at Waterloo Wellington Flight Centre 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:

- Identify priority 1 areas, priority 2 areas and priority 3 areas and describe the winter maintenance operations for each of those areas.
- Document the communication procedures for the conduct of winter maintenance.
- maintenance operations to ensure the safety of persons, other vehicles, and aircraft.
- Document the procedures to minimize the risk of ice control chemicals, other than ice control chemicals from being tracked onto airside.
- Document the lines of authority and organizational relationships with respect to winter maintenance, including contact names and telephone numbers.
- Document how actions undertaken as part of winter maintenance will be coordinated.

AIRPORT WINTER MAINTENANCE PLAN

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 referring to known widths such as plow blades, sweeper brooms or pavement markings.
- CRFI (Canadian runway friction index) - the average of the friction measurements taken on runway surfaces on which freezing or frozen contaminants are present.
- 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 (Red) - an airside area that, based on prevailing winds and operational requirements, is necessary in order to maintain the operational capability of an Flight Centre, and includes the features referred to in paragraph 322.411(1)(a) of the Airport Standards — Airport Winter Maintenance.
- Priority 2 area (Orange) - an airside area that is necessary in order to provide additional ramp 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 (Green) – a ground side area for vehicles and personnel.

- Runway or Taxiway Strip - is an area adjacent to the maneuvering area that must remain clear of all obstacles that are not frangible.
- Sand - 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 - 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.
- AVOP - An Airside Vehicle Operator's Permit authorizing a person to operate a vehicle on all airside areas, at the airport named.

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.

It is the responsibility of the Maintenance Department in conjunction with Line Crew to see that all snow clearing operations are conducted prior to flight operations.

Aircraft Movement Surface Priorities

The aircraft movement surface priority areas for Waterloo Wellington Flight Centre are as follows:

Priority 1 Area

- Apron 2A, including entrance to Hangar 1 & 2
- Apron 1, including entrance to Hangar 7

Priority 2 Area

- Apron 2A along the fence and front of Building 3
- Apron 1 aircraft parking area

Priority 3 Area

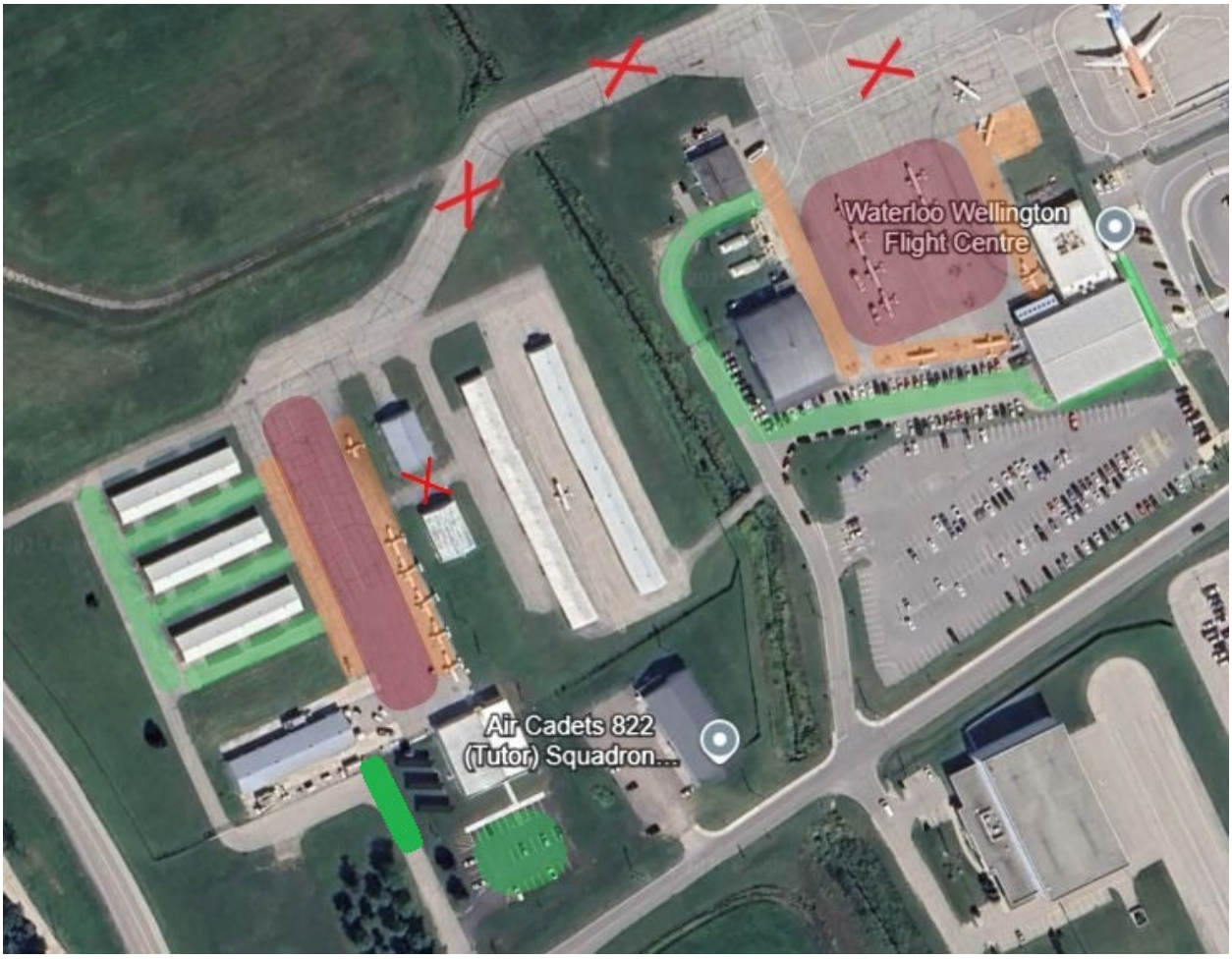
- Groundside parking for vehicles and walkway for building 3

Objectives

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

- keep priority 1 areas clear when flight operations are to become active
- keep priority 2 areas clear to the extent that doing so does not compromise the operator’s ability to keep priority 1 areas clear
- clear priority 3 areas after the winter storm conditions have ended or all other priority areas are clear.

Priority Areas Map



General

Snow removal techniques at Waterloo Wellington Flight Centre combination unit of the Snowblower for edge work near the building and fence, a small Kubota Tractor with plow and snow blower for small arears and a Large Kubota Tractor with a 16ft blade for clearing large areas.

Airfield Lighting

Snow removal around airfield lighting is to be done by the Region of Waterloo airport by grader for the bulk and then hand shoveling near the fixture. Airfield Lighting must be kept clear and be visible and all times, therefore do not push snow into the lighting system or cover them with snow. Any lights that are covered must be cleared by hand or shovel immediately. If the snow has broken the light, you must report to it to Airport Operations.

Ice Control

Ice covered surfaces treated by Summit are to be sand only, any chemical products or combination of products, are handled by the Region of Waterloo Airport personnel only.

Sodium formate & potassium acetate are chemical products used as antiicing 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 as applicable. Windrows are removed using a blower.

Note: Heavy Snow removal equipment will not perform any winter maintenance operation closer than 5 feet to any aircraft. Aircraft parked overnight during snow conditions may have windrows around them.

At no time, may the private snow removal equipment be on an airport movement surfaces including related strips.

Windrows

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.

Solar Farm

The snow by solar farm at building 7 will be removed by Summit to protect the solar panels near the road.

Either tractor can be used but the snow must be back cut when removed.

Do not push snow against the solar panels.



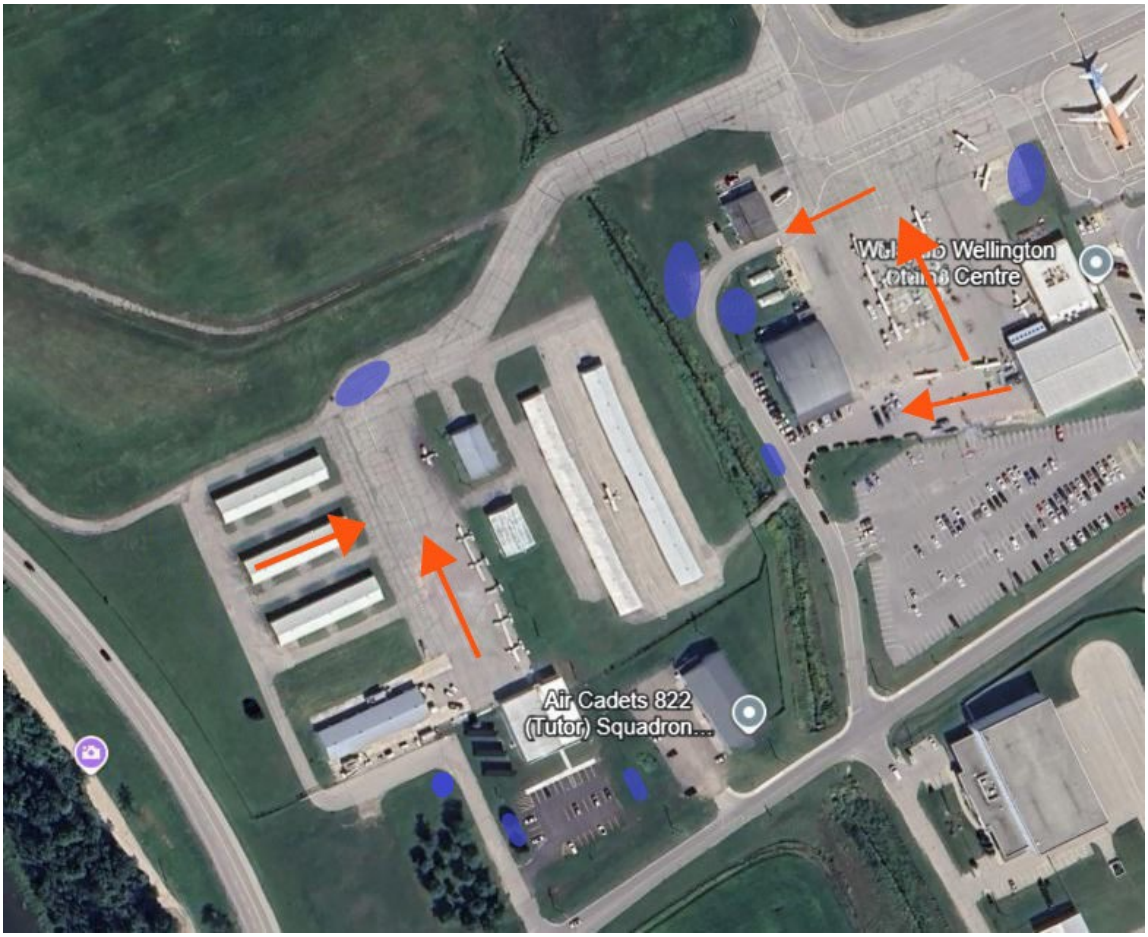
Snow Dumps

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

- On the Asphalt at the bottom of Apron 1 (Do not push on grass)
- Behind Summit Fuels Services Garage
- North of Gate 6B
- Between Apron 2 and 2B (Seminole Pad)
- Opposite the Solar Farm

Gate 6

Gate 6 is now automated so do not push snow against or stack snow near Gate 6.



COMMUNICATION PROCEDURES FOR THE CONDUCT OF WINTER MAINTENANCE

Vehicle operators will monitor and operate on the Ground Frequency 121.8 MHz when on maneuvering areas and inform Ground (Nav Canada) of their maintenance intentions (location, activities, duration, etc.).

Maneuvering areas are defined as the taxiway between Apron 1 and Apron 2.

Aircraft Manoeuvring Area Closure and Opening

The Operators' objective is to maintain priority 1 areas operational during active flying hours. Ongoing weather conditions that continue to deteriorate the movement surface conditions are not grounds for closure of those movement surfaces.

Circumstances for closure of a maneuvering surface could be the operators' inability to maintain ramp areas at or above priority 1 as previously defined in for more than 2 hours. Or closure could be the operators' inability to maintain priority 2 & 3 areas after a storm for more than 4 hours:

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

Closure

If a ramp is to be closed due to surface conditions, the Duty Pilot, (or designate with the assistance of the CFI) shall make the final decision.

Opening

The Duty Pilot, (or designate with the assistance of the CFI) will determine when flying conditions are suitable for operations.

SAFETY PROCEDURES FOR CONTROLLING THE FLOW OF GROUND VEHICLE

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 Nav Canada and operators are required to have a valid Unrestricted AVOP and follow established procedures in the Airport Traffic Directives

CONTROL OF OTHER THAN ICE CHEMICALS BEING TRACKED ONTO AIRSIDE

- Use of salt in the main parking lot and the walkways will be kept to safe minimum.
- 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 # 6 and gate 1 will be swept clean frequently.

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.

ASSESSMENT OF PERSONNEL AND EQUIPMENT

The General Manager will ensure that personnel and equipment are adequate to meet the operational requirements of the Waterloo Wellington Flight Centre Winter Maintenance Plan.

A review of the adequacy of personnel qualifications is conducted annually during the Training Matrix update and every year within the SMS Quality Assurance Program and any time it is required by SMS finding.

- 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

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 to provide this training.

QUALITY CONTROL

De-icer 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.

GROUND ICE CONTROL PRODUCTS

Sodium Formate SF (Granular De-icer)

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

Potassium Acetate KA (Liquid De-icer)

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

Sand

- Applied by spreader or hand at a rate to be determined by Dispatch.
- All sand to be stored inside and kept dry.
- Sand is the only product Summit Fuel uses.

Winter Equipment

Extension Cords



- In good condition
- If damaged, remove from service and get a spare.
- Keep the extension cords off the ground.

GFCI and Testing

- GFCI can easily be tripped during winter.
- Test to see if the outlet is live.



Power Trees

- Make sure all the connections are working, and cords are in good condition.
- Keep Extension cords off the ground.

Snow Brushes

- Used to take most of the snow off of the aircraft.
- Do not use ice scrappers on aircraft.

DeWalt Dragons

- Used to preheat aircraft engines on cold days.
- Keep the temperature low

Anti-Ice “De-Ice” IPA

- Alcohol lowers the freezing temp of the frost/water that remains on the wings, so that it does not refreeze.
- It only lasts about 10 min so only apply when the pilot is ready to start the engine.
- Very flammable.
- It cannot remove ice because it is not heated.
- Keep away from the engine and exhaust.
- Keep away from all plastics.

Booster Carts

- 24v Cessna
- 12V Pipper

Covers Seminole

- Used if we cannot get a Seminole indoors.

SNOW REMOVAL EQUIPMENT

It is the responsibility of the operator to be familiar with the function of all equipment before any snow removal operations. The owner's manual for each tractor is behind the seat in case of any issues

Ariens Snow Blower

- Two Stage snowblower used for clearing snow along fences, close to building and walkways at the front of the main flight centre.
- Has push button start when using extension cord.
- Avoid tie down ropes/straps, extension cords it will damage the auger.



Kubota L Series

Radio Call Sign "Flight centre Tractor 2".



- Diesel 62Hp engine with a 24Hp PTO.
- Used for snow removal with a small forward blade and a PTO driven sr
- Also used during the summer for cutting grass with a towed cutter.
- Avoid tie down ropes, extension cords and the fence, it will damage everything.
- Hydro Static Transmission.

Kubota MX Series

Radio Call Sign "Flight centre Tractor 1".



- Diesel 125 Hp engine with a 108Hp PTO.
- Used for snow removal with a large 16ft forward blade.
- Avoid using the Blade Float function when turning, you will not be able to turn.
- 4X4 can be used for extra traction, and to be used mostly on straight runs.
- REGEN can shut down the tractor when not done properly.
- Clutch operated.
- Big heavy machine can cause a lot of damage.

Sand Spreader

- Retired
- Spread Sand by hand

Phone List

WWFC

Bob Connors		bconnors @wwfc.ca	416-706-2954
Brian Finnerty		bfinnerty@wwfc.ca	519-572-2684
Sean Young	Supervisor	syoung@wwfc.ca	519-614-8862
Summit Fuel Services		operations@summitfuelservices.ca	519-497-8091
Line Crew			226-792-0370

Airport

Administration Office:	519-648-2256
Airport Operations:	519-648-3370
Airport Security:	519-648-2257