Snow and Ice Control Plan

Waukegan National Airport
2018 - 2019

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Phase #1: Pre- and Post-Winter Season Topics

Chapter 1. Pre-Season Actions

1.1 Airport Preparation

a) Airport Management Meetings

The Airport General Manager will typically initiate a meeting during the month of October to discuss equipment and material inventory, repair needs, staffing, budget, training, previous years issue's, and any other topics associate with snow and ice control and its plan.

b) Personnel Training

All Airport Maintenance personnel receive annual, recurrent snow removal training. All training for airport personnel is conducted by Maintenance Supervisor. Training shall consist of knowledge of snow equipment, snow removal procedures, airfield layout, and any changes to any of the above.

c) Equipment Preparation

60 days prior to snow season the airport maintenance staff will inspect and prepare each piece of snow removal equipment. Required fluids, replacement parts, and snow removal equipment components will be inventoried and stockpiled.

The airports Bowmonk AFM2 and a Vericom RFM400X friction meters will be calibrated, updated, and certified annually during the summer months before the snow season begins.

1.2 Snow and Ice Control Committee (SICC) Meetings.

The Airport has developed a Snow and Ice Control Committee (SICC) to provide feedback and make recommendations to snow and ice removal operations and Snow and Ice Control Plan (SICP) updates at Waukegan National Airport. The SICC is chaired by the Airport General Manager and includes all airport maintenance staff, Tower Chief, a representative from Signature Aviation, WCAF and tenants, Baxter, Skill Aviation, and Stick & Rudder. All other tenants are invited to participate.

The following topics should be discussed in the SICC:

- Airport Clearing Operations Discussion Topics
  - Areas Designated as Priority I area, any new airfield infrastructure
  - Clearing operations and follow-up airfield assessments
  - Potentials for pilot or vehicular runway incursions or incidents
  - Staff requirements and qualifications (training)
  - Streamline decision making process
  - Response time to keep runways, taxiways and ramp areas operational
  - Communication, terminology, frequencies, and procedures
  - Monitoring and updating of runway surface conditions
  - Issuance of NOTAMS and dissemination to ensure timely notification
  - Equipment inventory
  - Status of procurement contracts, including storage of materials
  - Validation of deicer certification letters from vendors
  - Procedures for storm water runoff mitigation

Chapter 2. Post-Event/Season Actions

2.1 Post Event.

After each snow event, airport management may host a meeting and invite the Control Tower Chief to discuss any issues that have arisen from the event.

All members of the SICC will be encouraged to provide feedback to airport management before, during or following each snow event. After a significant event or a challenging operation, a separate SICC meeting will be held.

2.2 Post Season.

After each snow season a SICC meeting will be held, typically in May to review the snow season issues and recommendations for changes. The same topics as pre-season should be reviewed.

Actions items include: Maintenance - Inspect and repair equipment, replace sweeper heads and or plow blades. Operations – calibrate friction testers. Airport Management - Update SICP.

Phase #2: Winter Storm Actions and Procedures

Chapter 3. Snow Removal Action Criteria

3.1 Activating Snow Removal Personnel.

Waukegan National Airport employs 4 maintenance personnel that are on call for all snow removal activities. During the regular working hours (0700 – 1530) when braking action on the runways is deteriorating, the Maintenance Supervisor shall make visual inspections every 30 minutes and report to the General Manager who will make a determination of action, if any, should be taken to improve conditions. For off hours (1530 – 2330), Airport Security will do the same, and advise the General Manager and or Maintenance Supervisor about conditions. The Control Tower is also encouraged to contact the General Manager when conditions degrade.

a) Triggers for Initiating Snow Removal Operations

Snow removal operations will begin when:

Precipitation Depth in Inches

Slush - ½”
Wet Snow - ½”
Dry Snow - 1”
Ice or Freezing Rain - Any

These measurements are typical for aircraft operating at this airport.

Snow removal operations will begin when contaminants begin accumulating on pavement surfaces. Snow operations will commence when the depth of snow reaches 1 inch, or braking action degrades below medium. Snow removal will continue until completed except for after Control Tower hours of 2000, when snow crews will work until 2200, or a time determined by the General Manager as conditions and needs warrant. Arrangements can be made with the General Manager for aircraft arriving or departing after or before normal hours (0700 – 1530). A 12 hour advanced notification to the General Manger is required to provide for snow removal priorities for aircraft arriving or departing during off hours.

3.2 Personnel Responsible.

Maintenance is responsible for all snow removal priorities. Airport Management is responsible for all schedules of snow removal priorities.

3.3 Snow Control Center (SCC).

The SCC shall be the Maintenance Supervisor's vehicle or Snow 1 during all snow events.

At a minimum, the SCC will perform the following functions:

- Managing snow clearing operations.
- Serving as the prime source for initiating FICONS, Closures, Openings, etc.
- Informing ATCT, Air Carriers, Air Taxis, and other users of airport conditions.
- Issuing of NOTAMs.

3.4 Airfield Clearing Priorities.

Snow and or ice removal shall begin on the primary (instrument) runway and its associated taxiways. As necessary, a plow will begin removal operations on the main road and parking lots. The snow removal effort shall continue on the highest priority areas until completed, then move on to the next level of priority.

a) Priority 1

Runway 5-23, taxiways Alpha, Bravo, Delta, and Baxter's half of Charlie. Crossover's A-1 thru A-8, and FBO entrances M1, M2, and M3.

b) Priority 2

Runway 14-32, east half of Charlie, Foxtrot, Red Hangars, taxi lanes E3 and E4. Crossovers B1thru B3, C1, thru C3, Glide slope and Fire department access road.

c) Priority 3

Sierra taxiway, S1 thru S3, the appropriate taxiways to hangars, and parking lots.

3.5 Airfield Clearance Times.

On an average snow that has stopped, Waukegan National Airport normally can have the entire airfield priorities mentioned above cleared of a 2 inch snow fall in about 5 hours.

Waukegan National Airport shall use table 1-2, (page 10) to determine clearance times. NOTE – UGN conducts more than 40,000 operations annually.

Table 1-2. Clearance Times for Non-Commercial Service Airports

Annual Airplane Operations (includes cargo operations)	*Clearance Time[1] (hour)*
40,000 or more	*2*
10,000 – but less than 40,000	*3*
6,000 – but less than 10,000	*4*
Less than 6,000	*6*

General: Although not specifically defined, Non-Commercial Service Airports are airports that are not classified as Commercial Service Airports [see Table 1-1,general note].

Footnote 1: These airports may wish to have sufficient equipment to clear 1 inch (2.54 cm) of falling snow weighing up to 25 lb/ft^3 (400 kg/m^3) from Priority 1 areas within the recommended clearance times.

3.6 Snow Equipment List

Snow 1 – 2011 International 6x4 with 20-foot plow, spreader, and deicer boom system.

Snow 2 – 1988 Idaho Norland snow blower.

Snow 4 – 2001 Oshkosh Series H with 22-foot plow.

Snow 6 – 1995 GMC TopKick. Used for applying pelletized deicer. Able to have a secondary 11-foot plow also.

Snow 7 – 2008 Ford 250 ¾ ton pick-up with 9-foot plow.

Snow 15 – 2009 NewHolland TV 6070 Tractor mounted with snow blower.

Snow 47 – 2001 Oshkosh Series H with 20-foot broom.

Snow 48 – 2002 Oshkosh Series H with 20-foot broom.

3.7 Storage of Snow and Ice Control Equipment.

All snow equipment is stored inside a heated building.

3.8 Definitions.

Airside Urea.

(Otherwise known as “Carbamide”) The approved specifications are SAE AMS 1431, Compound, Solid Runway and Taxiway Deicing/Anti-Icing, and MIL SPEC DOD-U-10866, Technical Urea. Agricultural grade urea that meets any of these specifications, called airside urea, is acceptable.

Approved Chemical.

A chemical, either solid or liquid, that meets a generic SAE or MIL specification.

Ash.

A grayish-white to black solid residue of combustion normally originating from pulverized particulate matter ejected by volcanic eruption.

Compacted Snow.

Snow that has been compressed and consolidated into a solid form that resists further compression such that an airplane will remain on its surface without displacing any of it. If a chunk of compressed snow can be picked up by hand, it will hold together or can be broken into smaller chunks rather that falling away as individual snow particles.

Note: A layer of compacted snow over ice must be reported as compacted snow only.

Example: When operating on the surface, significant rutting or compaction will not occur. Compacted snow may include a mixture of snow and embedded ice; if it is more ice than compacted snow, then it should be reported as either ice or wet ice, as applicable.

Contaminant.

A deposit such as frost, any snow, slush, ice, or water on an aerodrome pavement where the effects could be detrimental to the friction characteristics of the pavement surface.

Contaminated Runway.

For purposes of generating a runway condition code and airplane performance, a runway is considered contaminated when more than 25 percent of the runway surface area (within the reported length and the width being used) is covered by frost, ice, and any depth of snow, slush, or water.

When runway contaminants exist, but overall coverage is 25 percent or less, the contaminants will still be reported. However, a runway condition code will not be generated.

While mud, ash, sand, oil, and rubber are reportable contaminants, there is no associated airplane performance data available and no depth or Runway Condition Code will be reported.

Exception: Rubber is not subject to the 25 percent rule and will be reported as Slippery When Wet when the pavement evaluation/friction deterioration indicates the averaged Mu value on the wet pavement surface is below the Minimum Friction Level classification specified in Table 3-2 of FAA Advisory Circular 150/5320-12.

Dry (Pavement).

Describes a surface that is neither wet nor contaminated.

Dry Runway.

A runway is dry when it is neither wet, nor contaminated. For purposes of condition reporting and airplane performance, a runway can be considered dry when no more than 25 percent of the runway surface area within the reported length and the width being used is covered by:

Visible moisture or dampness, or frost, slush, snow (any type), or ice.

A FICON NOTAM must not be originated for the sole purpose of reporting a dry runway. A dry surface must be reported only when there is need to report conditions on the remainder of the surface.

Dry Snow.

Snow that has insufficient free water to cause it to stick together. This generally occurs at temperatures well below 32° F (0° C). If when making a snowball, it falls apart, the snow is considered dry.

Eutectic Temperature/Composition.

A deicing chemical melts ice by lowering the freezing point. The extent of this freezing point depression depends on the chemical and water in the system. The limit of freezing point depression, equivalent to the lowest temperature that the chemical will melt ice, occurs with a specific amount of chemical. This temperature is called the eutectic temperature, and the amount of chemical is the eutectic composition. Collectively, they are referred to as the eutectic point.

FICON (Field Condition Report).

A Notice to Airmen (NOTAM) generated to reflect Runway Condition Codes, vehicle braking action, and pavement surface conditions on runways, taxiways, and aprons.

Fluid Deicer/Anti-Icers.

The approved specification is SAE AMS 1435, Fluid, Generic Deicing/Anti-icing, Runways and Taxiways.

Frost.

Frost consists of ice crystals formed from airborne moisture that condenses 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.

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 should be considered to have sufficient depth to consider a downgrade of the runway condition code.

Generic Solids.

The approved specification is SAE AMS 1431, Compound, Solid Runway and Taxiway Deicing/Anti-Icing.

Ice.

The solid form of frozen water to include ice that is textured (i.e., rough or scarified ice).

A layer of ice over compacted snow must be reported as ice only.

Layered Contaminant.

A contaminant consisting of two overlapping contaminants. The list of layered contaminants has been identified in the RCAM and include:

- Dry Snow over Compacted Snow
- Wet Snow over Compacted Snow
- Slush over Ice
- Water over Compacted Snow
- Dry Snow over Ice
- Wet Snow over Ice

Mud.

Wet, sticky, soft earth material.

Multiple Contaminants.

A combination of contaminants (as identified in the RCAM) observed on paved surfaces. When reporting multiple contaminants, only the two most prevalent / hazardous contaminants are reported. When reporting on runways, up to two contaminant types may be reported for each runway third. The reported contaminants may consist of a single and layered contaminant, two single contaminants, or two layered contaminants. The reporting of “multiple contaminants” represent contaminants which are located adjacent to each other, not to be confused with a “layered contaminant” which is overlapping. For example:

- Single contaminant and Layered contaminant.
  'Wet' and 'Wet Snow over Compacted Snow'

- Single contaminant and Single contaminant.
  'Wet Snow' and 'Slush'

- Layered contaminant and Layered contaminant.
  'Dry Snow over Compacted Snow' and 'Dry Snow over Ice'

Oil.

A viscous liquid, derived from petroleum or synthetic material, especially for use as a fuel or lubricant.

Runway (Primary and Secondary).

Primary.

Runway(s) being actively used or expected to be used under the existing or anticipated adverse meteorological conditions, where the majority of the takeoff and landing operations will take place.

Secondary.

Runway(s) that supports a primary runway and is less operationally critical. Takeoff and landing operations on such a runway are generally less frequent than on a primary runway. Snow removal operations on these secondary runways should not occur until Priority 1 surfaces are satisfactorily cleared and serviceable.

Runway Condition Assessment Matrix (RCAM).

The tool by which an airport operator will assess a runway surface when contaminants are present.

Runway Condition Code (RwyCC).

Runway Condition Codes describe runway conditions based on defined contaminants for each runway third. Use of RwyCCs harmonizes with ICAO Annex 14, providing a standardized "shorthand" format (E.g.: 4/3/2) for reporting. RwyCC (which replaced Mu values) are used by pilots to determine landing performance calculations.

Sand.

A sedimentary material, finer than a granule and coarser than silt.

Slush.

Snow that has water content exceeding a freely drained condition such that it takes on fluid properties (e.g., flowing and splashing). Water will drain from slush when a handful is picked up. This type of water-saturated snow will be displaced with a splatter by a heel and toe slap-down motion against the ground.

Slush over Ice.

See individual definitions for each contaminant.

Slippery When Wet Runway.

A wet runway where the surface friction characteristics would indicate diminished braking action as compared to a normal wet runway.

Slippery When Wet is only reported when a pavement maintenance evaluation indicates the averaged Mu value on the wet pavement surface is below the Minimum Friction Level classification specified in Table 3-2 of FAA Advisory Circular 150/5320-12. Some contributing factors that can create this condition include: Rubber buildup, groove failures/wear, pavement macro/micro textures.

Water.

The liquid state of water. For purposes of condition reporting and airplane performance, water is greater than 1/8-inch (3mm) in depth.

Wet Runway.

A runway is wet when it is neither dry nor contaminated. For purposes of condition reporting and airplane performance, a runway can be considered wet when more than 25 percent of the runway surface area within the reported length and the width being used is covered by any visible dampness or water that is 1/8-inch or less in depth.

Wet Ice.

Ice that is melting, or ice with a layer of water (any depth) on top.

Wet Snow.

Snow that has grains coated with liquid water, which bonds the mass together, but that has no excess water in the pore spaces. A well-compacted, solid snowball can be made, but water will not squeeze out.

Chapter 4. Snow Clearing Operations and Ice Prevention

4.1 Snow Clearing Principals.

a) Ramp and Terminal

All Terminal Ramps and other Tenant Ramps are normally cleared by their appropriate owners/renters, but as needed the Waukegan Airport will assist when the need arises.

b) Runway and Taxiways

Waukegan Airport snow crew starts out using a staggered formation of plowing and brooming the full length and width, with the plows moving on to open priority associated taxiways after the brooms have established the ability to keep up with the snow fall rate at that time. Priority crossovers are opened as needed along with the priority connecting taxiways and intersections. The lesser priorities are taken care of after the top priorities have been satisfied. A solid deicer, liquid deicer, and treated sand are used alone or in combination when the needs arise.

c) Snowbanks

Snow Bank Height Profiles – See Figure 4-1(page 17). Waukegan Airport generally uses design group V & M.

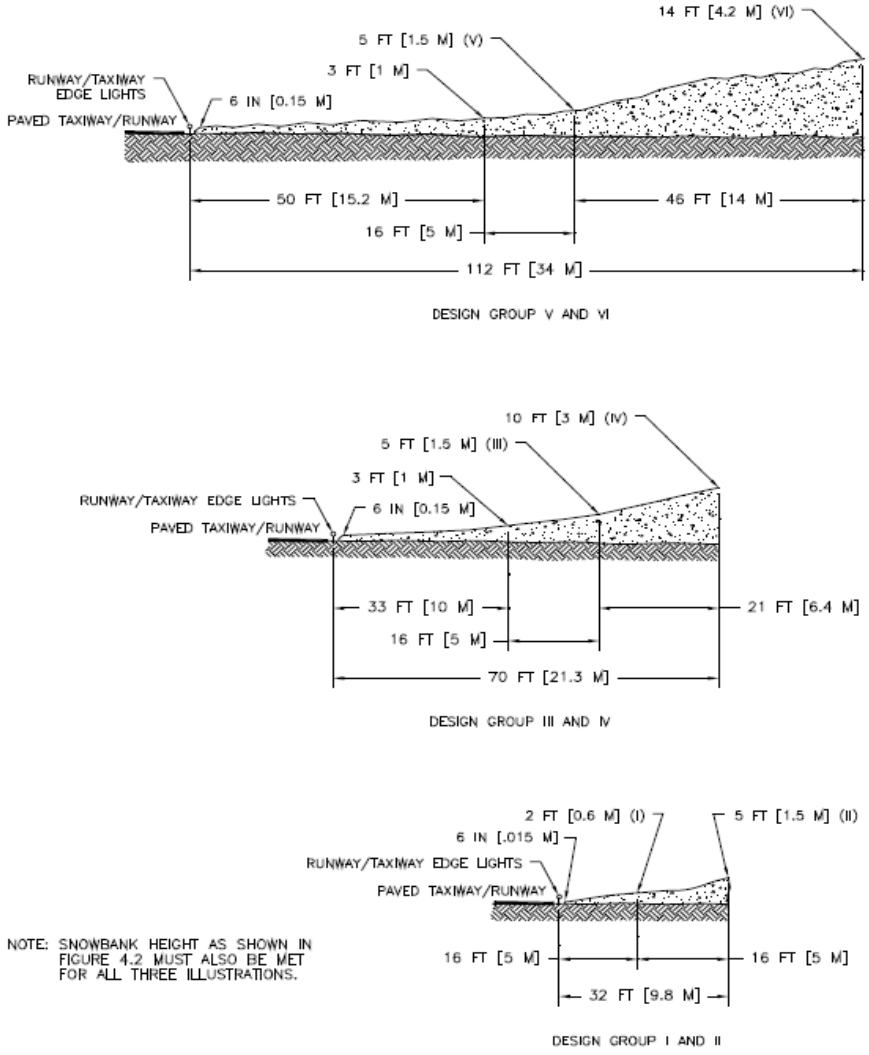
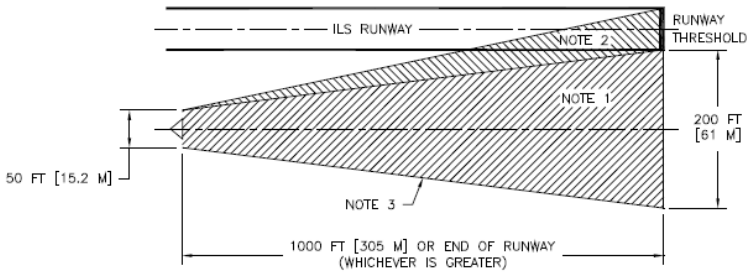


Figure 4-1. Snow Bank Profile Limits Along Edges of Runways and Taxiways with the Airplane Wheels on Full Strength Pavement (see Figure 4-2 guidance)

d) NAVAIDs

When needed, the Waukegan Airport will assist in clearing of snow around critical areas of all NAVAIDs.



NOTES:

1. CATEGORY I GLIDE SLOPE SNOW CLEARANCE AREA.
2. CATEGORY II AND III GLIDE SLOPE SNOW CLEARANCE AREA. THE AREA DEPICTED UNDER NOTE 1 SHALL ALSO BE CLEARED.
3. THE DEPTH OF SNOWBANKS ALONG THE EDGES OF THE CLEARED AREA SHALL BE LESS THEN 2 FEET.

ACTION TAKEN	SNOW DEPTH		
	SBR <6 IN [15 cm] NR. CEGS <18 IN [45 cm]	SBR 6 TO 8 IN [15 TO 20 cm] NR. CEGS 18 TO 24 IN [45 TO 60 cm]	SBR >8 IN [20 cm] NR. CEGS <24 IN [60 cm]
SNOW REMOVAL (SEE ABOVE FIGURE)	REMOVAL NOT REQUIRED RESTORE FULL SERVICE AND CATEGORY.	ILS CATEGORY I REMOVE SNOW 50 FT [15M] WIDE AT MAST WIDENING TO 200 FT [60M] WIDE AT 1000 FT [300M] OR END OF RUNWAY TOWARD MIDDLE AMRKER. ILS CATEGORIES II AND III AS ABOVE PLUS WIDEN THE AREA TO INCLUDE A LINE FROM THE MAST TO THE FAR EDGE OF RUNWAY THRESHOLD.	
NO SNOW REMOVAL	RESTORE FULL SERVICE AND CATEGORY.	ALL CATEGORIES RESTORE TO CATEGORY I SERVICE. CATEGORY D AIRCRAFT MINIMA RAISED TO LOCALIZER ONLY. TYPICAL NOTAM TEXT: "DUE TO SNOW ON THE IXXX (APPROPRIATE IDENTIFER) GLIDE SLOPE, MINIMA TEMPORARILRY RAISED TO LOCALIZER ONLY FOR CATEGORY D AIRCRAFT" IF APPLICABLE, "CATEGORY II NA"* OR "CATEGORY II/III NA".	ALL CATEGORIES APPROACH RESTRICTED TO LOCALIZER ONLY MINIMA. TYPICAL NOTAM TEXT: "DUE TO SNOW ON THE IXXX (APPROPRIATE IDENTIFER) GLIDE SLOPE, MINIMA TEMPORARILRY RAISED TO LOCALIZER ONLY.

* NA (NOT AUTHORIZED)

Figure 4-2. ILS CAT I and CAT II/III Snow Clearance Area Depth Limitations

4.2 Controlling Snow Drifts.

Snow piles are blown with the snow blowers to control drifting, along with plowing of all edges as needed.

4.3 Snow Disposal.

Snow is blown using a snow blower on the airfield side into the airport ground areas. Snow from ramps are hauled, or pushed, out into the ground areas surrounding the ramps. Snow piled at the end of taxi lanes is hauled to ground areas that do not interfere with normal aircraft operations.

4.4 Methods for Ice Control and Removal–Chemicals.

An FAA approved solid deicer and or liquid deicer are applied on 1st priority and Secondary runway surfaces when needed.

4.5 Sand (for the purposes of treating a winter surface).

An FAA approved sand from table 4-3 is pre- wetted with the FAA approved liquid runway deicer before applying to all surfaces when needed.

Table 4-3. Expanded Sand Gradation Standard

Sieve Designation	Percent by Weight Passing
8	100
30	20 - 50
80	0 - 2

4.6 Surface Incident/Runway Incursion Mitigation Procedures.

Past incursions have been and will continue to be reviewed, whenever the need arises, with the Tower Chief. A safety and movement/non-movement meeting schedule is in place and has proven to be effective in helping all users of the airport.

Vehicles will be marked and lighted in accordance with AC 150/2510-5, Painting, Marking and Lighting of Vehicles Used on an Airport.

a) Radio Communication

All snow removal vehicles monitor and use the Waukegan Tower Air frequency (120.05) for snow events during tower operation hours (0600 – 2000). After the tower closes, (2000) all snow vehicles monitor and use the Tower Air Control frequency (120.05). Snow Control Center vehicle (Snow 1), also monitors Chicago Approach frequency (120.55) during that time frame also.

b) Failed Radio Communication

In the event of failed radio communication between the Tower and snow vehicles, the Tower shall use the appropriate light gun signals and or cell phone.

c) Low Visibility and Whiteout Conditions

When these conditions exist, constant updates as requested by the Tower are used for all snow vehicles for exact locations. Snow removal operations shall be discontinued when visibilities make for unsafe operations of snow vehicles.

d) Driver Fatigue

The airport tries to limit fatigue for the snow crew and as a general rule try to conform to a 14 hour day limit providing they have adequate rest in between shifts.

Chapter 5. Surface Assessment and Reporting

Conducting Surface Assessments:

The Maintenance Supervisor will remain aware and monitor all paved surface conditions in order to plan and carry out appropriate maintenance actions in accordance with the Snow and Ice Control plan. The airport strives to maintain a 'no worse than wet' surface condition.

The airport operator in complying with Part 139.339, at a minimum, will utilize the NOTAM system for collection, dissemination and logs of airport information to air carriers, and other airport users.

NOTAMs are issued through NOTAM Manager or by phone to TRICON.

5.1 Conducting Surface Assessments.

Runway conditions are required to be updated any time a change to the runway surface conditions occurs, which could be any of the following:

- Active snow event
- Plowing/ brooming/ deicing/ sanding
- Rapidly rising or falling temperatures
- Rapidly changing conditions

Runway conditions are assessed by the SCC Vehicle during storm events, the General Manager or the Maintenance Department during normal and off hours of operations. The results are communicated directly to the Tower and Airport management.

5.2 Applying the Runway Condition Assessment Matrix (RCAM).

a) Determining Runway Conditions

The Waukegan Airport will determine the contaminant on the runway by the General Manager, Security, or Maintenance during storm events. (See page 22 for Condition Codes and assessment criteria).

Assessment Criteria		Downgrade Assessment Criteria		
Runway Condition Description	**Code**	**Mu (μ) [1]**	**Vehicle Deceleration or Directional Control Observation**	**Pilot Reported Braking Action**
• Dry	6		---	---
• Frost • Wet (Includes Damp and 1/8 inch depth or less of water) ***1/8 inch (3mm) depth or less of:*** • Slush • Dry Snow • Wet Snow	5	40 or Higher	Braking deceleration is normal for the wheel braking effort applied AND directional control is normal.	Good
5° F (-15°C) and Colder outside air temperature: • Compacted Snow	4	39 to 30	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) over Compacted Snow ***Greater than 1/8 inch (3mm) depth of:*** • Dry Snow • Wet Snow ***Warmer than 5° F (-15°C) outside air temperature:*** • Compacted Snow	3		Braking deceleration is noticeably reduced for the wheel braking effort applied OR directional control is noticeably reduced.	Medium
Greater than 1/8 (3mm) inch depth of: • Water • Slush	2	29 to 21	Braking deceleration OR directional control is between Medium and Poor.	Medium to Poor
• Ice [2]	1		Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
• Wet Ice [2] • Slush over Ice • Water over Compacted Snow [2] • Dry Snow or Wet Snow over Ice [2]	0	20 or Lower	Braking deceleration is minimal to non-existent for the wheel braking effort applied OR directional control is uncertain.	Nil

[1] The correlation of the Mu (μ) values with runway conditions and condition codes in the Matrix are only approximate ranges for a generic friction measuring device **and are intended to be used only to downgrade a runway condition code; with the exception of circumstances identified in Note 2.** Airport operators should use their best judgment when using friction measuring devices for downgrade assessments, including their experience with the specific measuring devices used.

[2] In some circumstances, these runway surface conditions may not be as slippery as the runway condition code assigned by the Matrix. The airport operator may issue a higher runway condition code (but no higher than code 3) for each third of the runway if the Mu value for that third of the runway is 40 or greater obtained by a properly operated and calibrated friction measuring device, **and all other observations, judgment, and vehicle braking action support the higher runway condition code. The decision to issue a higher runway condition code than would be called for by the Matrix cannot be based on Mu values alone; all available means of assessing runway slipperiness must be used and must support the higher runway condition code.** This ability to raise the reported runway condition code to a code 1, 2, or 3 can only be applied to those runway conditions listed under codes 0 and 1 in the Matrix.

The airport operator must also continually monitor the runway surface as long as the higher code is in effect to ensure that the runway surface condition does not deteriorate below the assigned code. The extent of monitoring must consider all variables that may affect the runway surface condition, including any precipitation conditions, changing temperatures, effects of wind, frequency of runway use, and type of aircraft using the runway. If sand or other approved runway treatments are used to satisfy the requirements for issuing this higher runway condition code, the continued monitoring program must confirm continued effectiveness of the treatment.

Caution: Temperatures near and above freezing (e.g., at 26.6° F (-3°C) and warmer) may cause contaminants to behave more slippery than indicated by the runway condition code given in the Matrix. At these temperatures, airport operators should exercise a heightened level of runway assessment, and should downgrade the runway condition code if appropriate.

Step 1: Runway Condition Code (RwyCC) Applicability:

If 25 percent or less of the overall runway length and width or cleared width is covered with contaminants, RwyCCs must not be applied, or reported. The airport operator in this case, will simply report the contaminant percentage, type and depth for each third of the runway, to include any associated treatments or improvements.

Or

If the overall runway length and width coverage or cleared width is greater than 25 percent, RwyCCs must be assigned, and reported, informing airplane operators of the contaminant present, and associated codes for each third of the runway. (The reported codes, will serve as a trigger for all airplane operators to conduct a takeoff and/or landing performance assessment).

Step 2: Apply Assessment Criteria

Based on the contaminants observed, the associated RwyCC from the RCAM for each third of the runway will be assigned.

Step 3: Validating Runway Condition Codes

If the observations by the airport operator determine that RwyCCs assigned accurately reflect the runway conditions and performance, no further action is necessary, and the RwyCCs generated may be disseminated.

b) Downgrade Assessment Criteria

When observations indicate a more slippery condition than generated by the RCAM, the airport operator may downgrade the RwyCC(s). When applicable, the downgrade of RwyCCs may be based on friction **(**μ**)** readings, vehicle control or pilot reported braking action or temperature.

NOTE: Temperatures near and above freezing (e.g., at negative 26.6° F (-3° C) and warmer) may cause contaminants to behave more slippery than indicated by the runway condition code given in the RCAM. At these temperatures, airport operators should exercise a heightened awareness of airfield conditions and should downgrade the RwyCC if appropriate.

c) Upgrade Assessment Criteria Based on Friction Assessments.

RwyCCs of 0 or 1 may only be upgraded when the following requirements are met.

1.1 All observations, judgment, and vehicle braking action support the higher RwyCC, and

Mu values of 40 or greater are obtained for the affected third(s) of the runway by a calibrated friction measuring device that is operated within allowable parameters.

This ability to raise the reported RwyCC to no higher than a code 3 can only be applied to those runway conditions listed under code 0 and 1 in the RCAM. (See footnote 2 on the RCAM.)

The airport operator must also continually monitor the runway surface as long as the higher code is in effect to ensure that the runway surface condition does not deteriorate below the assigned code.

1.2 The extent of monitoring must consider all variables that may affect the runway surface condition, including any precipitation conditions, changing temperatures, effects of wind, frequency of runway use, and type of aircraft using the runway.

1.3 If sand or other approved runway 'treatments are used to satisfy the requirements for issuing the higher runway condition code, the monitoring program must confirm continued effectiveness of the treatment.

5.3 Runway Friction Surveys and Equipment.

The Waukegan National Airport uses a FAA approved Bowmonk AFM2, and a Vericom RFM4000X friction meters.

a) Conditions Acceptable to Use Decelerometers or Continuous Friction Measuring Equipment to Conduct Runway Friction Surveys on Frozen Contaminated Surfaces.

The data obtained from such runway friction surveys are only considered to be unreliable when the surface is contaminated under any of the following conditions.

- Ice or wet ice.
- Compacted snow at any depth.
- Dry snow 1 inch or less.
- Wet snow or slush 1/8 inch or less.

b) When to Conduct

Friction surveys will be conducted whenever it is felt that the information will be helpful in the overall snow/ice removal effort. The following guidelines, however, pertain to friction surveys conducted for the benefit of aircraft operations:

- When the central portion of the runway, centered longitudinally along the runway centerline, is contaminated 500 feet or more.
- After any type of snow removal operations or chemical application (including sanding)
- Immediately following any aircraft incident or accident on the runway.

c) How to Conduct

Friction tests are performed on each one third of the runway:

- lateral location from centerline approximately 3 feet
- direction (same direction as arrival aircraft)
- friction tests is completed in one pass
- runway zones, touchdown, midpoint and rollout zones

d) Calibration

The Maintenance Supervisor is responsible for having all friction meters checked and calibrated as recommended by the manufacturers before every snow season.

5.4 Taxiway, Apron, and Holding Bay Assessments.

Assessments to these surfaces will occur when contaminants are present, and whenever a contaminant is present on the surface. Assessments will occur anytime the pavement is worse than wet. Surfaces will be monitored on a regular, continual basis.

5.5 Surface Condition Reporting.

Personnel responsible for implementing the SICP will carefully monitor changing airfield conditions and disseminate information about those conditions via the NOTAM System in a timely manner to airport users.

Runway: Runway condition reports will occur when contaminants are present on a runway surface via the Federal NOTAM System. Condition Reports and RwyCCs will be updated every hour or as necessary whenever conditions change, such as a contaminant type, depth, percentage or treatment/width change.

Taxiway, Apron or Holding Bay: Taxiway, Apron or Holding bay condition reports will occur when contaminants are present on these surfaces via the Federal NOTAM System. NOTAMS will be updated as necessary whenever conditions change, such as a contaminant type, depth, percentage or treatment/width change.

Any time a change to the surface conditions occurs which could be any of the following:

- active snow event
- plowing/brooming/deicing/sanding
- rapidly rising or falling temperatures
- rapidly changing conditions

Runway conditions will be assessed whenever a contaminant is present on any airport runway surface. Responsible parties are the General Manager, Maintenance Supervisor, and Airport Security. All information will be reported to the Control Tower and having a NOTAM issued as well.

The term 'DRY' is used to describe a surface that is neither wet nor contaminated. While a FICON NOTAM is not generated for the sole purpose of reporting a dry runway, a dry surface will be reported when there is need to report conditions on the remainder of the surface. (For example: snow is present on the first two thirds of the runway.)

5.6 Reportable Contaminants without Performance Data.

If present, unable to be removed, and posing no hazard, mud will be reported with a measured depth. Ash, oil, sand, and rubber contaminants will be reported without a measured depth. These contaminants will not generate a RwyCC.

5.7 Slippery When Wet Runway.

For runways where a friction survey (for the purposes of pavement maintenance) indicates the averaged Mu value at 40 mph on the wet pavement surface failed to meet the minimum friction level classification specified in AC 150/5320-12, the airport will report via the NOTAM system a RwyCC of '3' for the entire runway (by thirds: 3/3/3) when the runway is wet.

A runway condition description of 'Slippery When Wet' will be used for this condition.

If it is determined by the airport that a downgrade is necessary, the downgrade will be made to all three runway thirds match (i.e. 3/3/3, 2/2/2, 1/1/1).

The NOTAM will be cancelled when the minimum runway friction level classification has been met or exceeded.

5.8 Requirements for Closures.

Runways receiving a NIL braking (either pilot reported or by assessment by the airport) are unsafe for aircraft operations and will be closed immediately when this unsafe condition exists.

When previous PIREPs have indicated GOOD or MEDIUM braking action, two consecutive POOR PIREPS should be taken as evidence that surface conditions may be deteriorating. If the airport operator has not already instituted its continuous monitoring procedures, an assessment should occur before the next operation. If the airport operator is already continuously monitoring runway conditions, this assessment should occur as soon as air traffic volume allows.

The airport will maintain available airport surfaces in a safe operating condition at all times and provide prompt notifications when areas normally available are less than satisfactorily cleared for safe operations. If a surface (runway, taxiway, apron, lane or holding bay) becomes unsafe due to a NIL (by braking action or assessment) or otherwise unsafe hazard or condition, the surface will be closed until the condition no longer exists and is safe.

5.9 Continuous Monitoring and Deteriorating Conditions.

Under deteriorating conditions, the airport will take all reasonable steps using available equipment and materials that are appropriate for the condition to improve the braking action. If braking action cannot be improved, and the surface is not NIL, the airport will continually monitor the runways, taxiways, aprons and holding bays to ensure braking does not become NIL.

Including but not limited to:

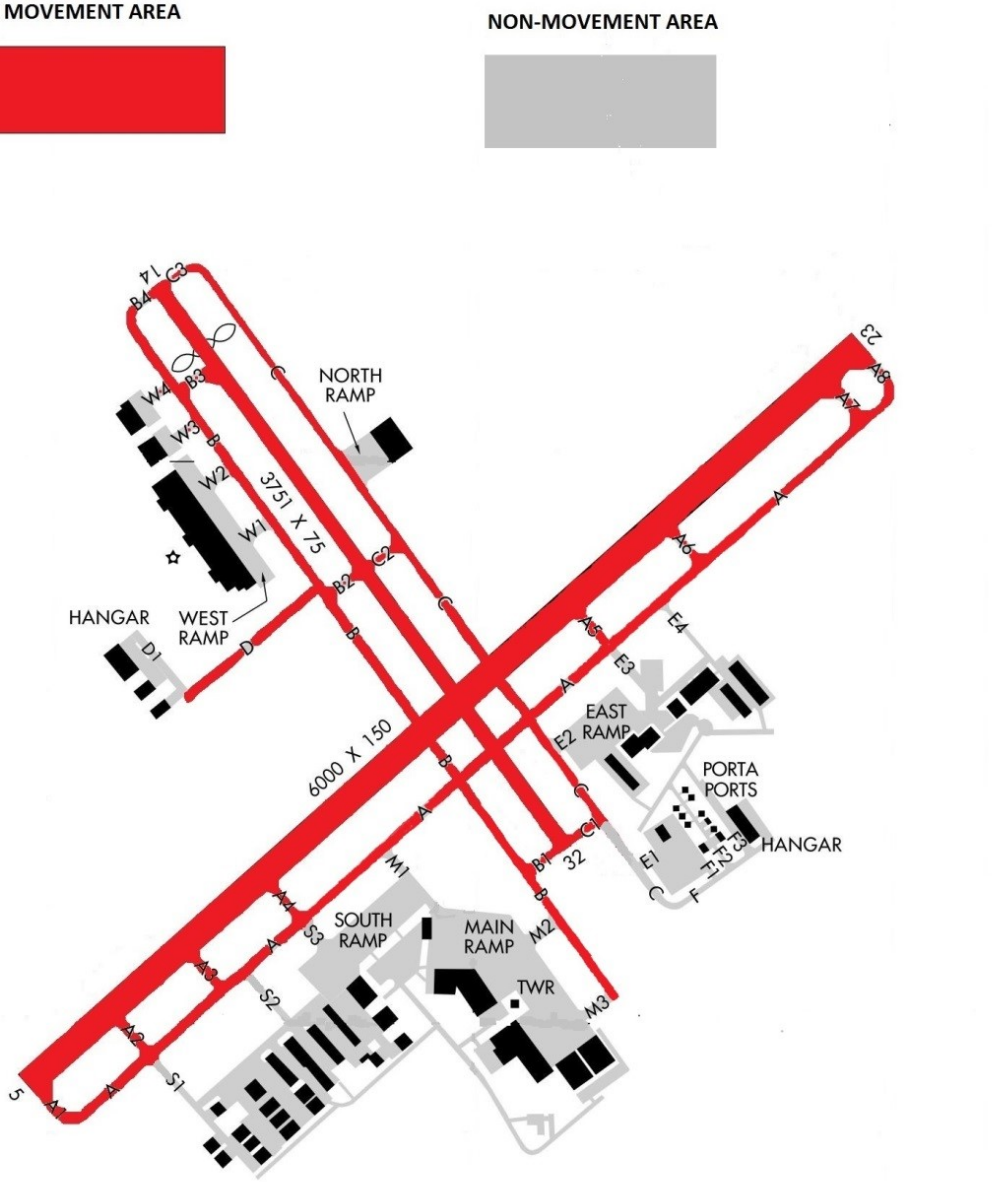
- Frozen or freezing precipitation.
- Falling air or pavement temperatures that may cause a wet runway to freeze.
- Rising air or pavement temperatures that may cause frozen contaminants to melt.
- Removal of abrasives previously applied to the runway due to wind or airplane effects.
- Frozen contaminants blown onto the runway by wind.

5.10 Surface Conditions Not Being Monitored/Reported

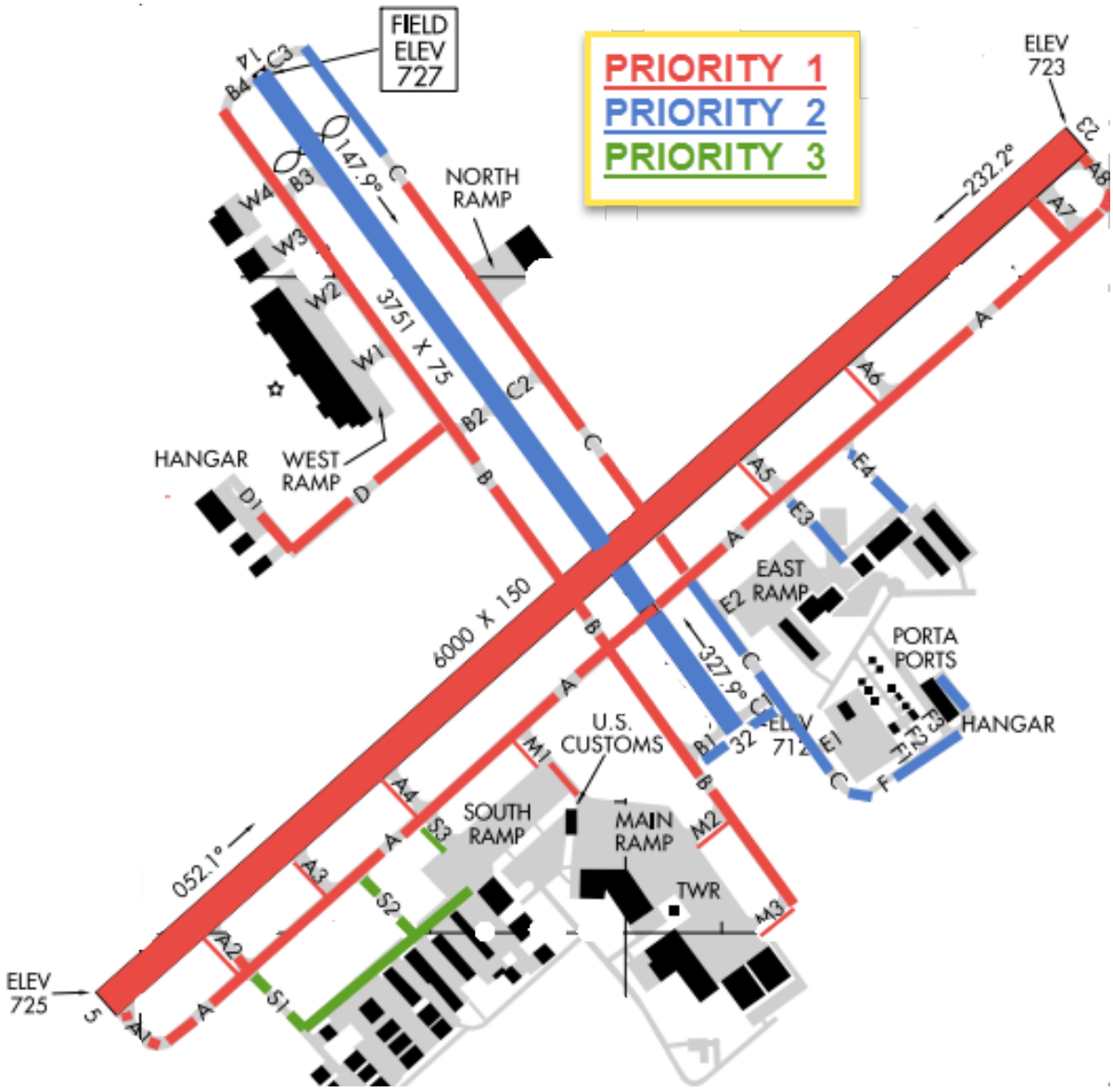
Not Applicable.

Airport Diagram

CHICAGO/ WAUKEGAN RGNL (UGN)
CHICAGO/WAUKEGAN, ILLINOIS



Clearing Priority



Notes