King County International Airport
Boeing Field

Preseason Snow Meeting

October 29, 2026

King County International Airport Operations

King County International Airport
Boeing Field

Donald McClendon

Airport Duty Manager

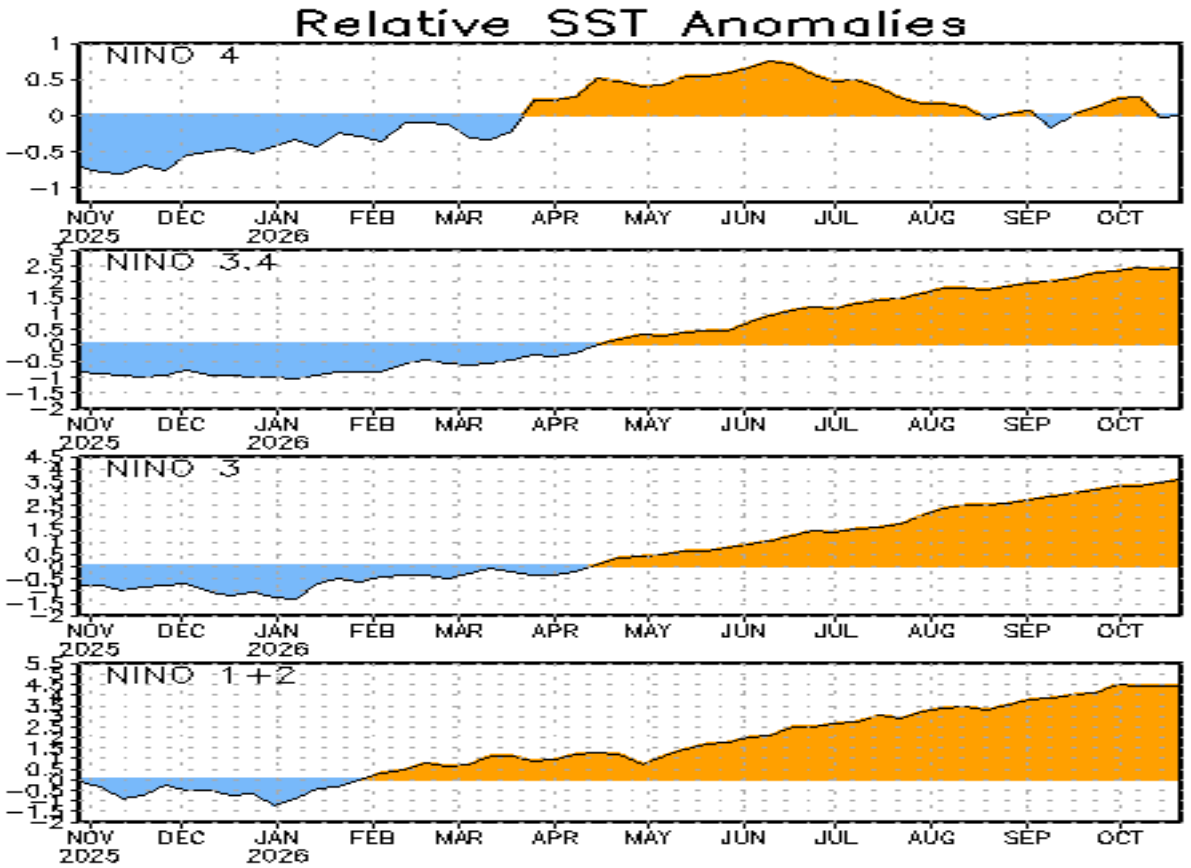
Overview

- 2026 – 2027 Winter Outlook
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- Snow Removal Action Criteria
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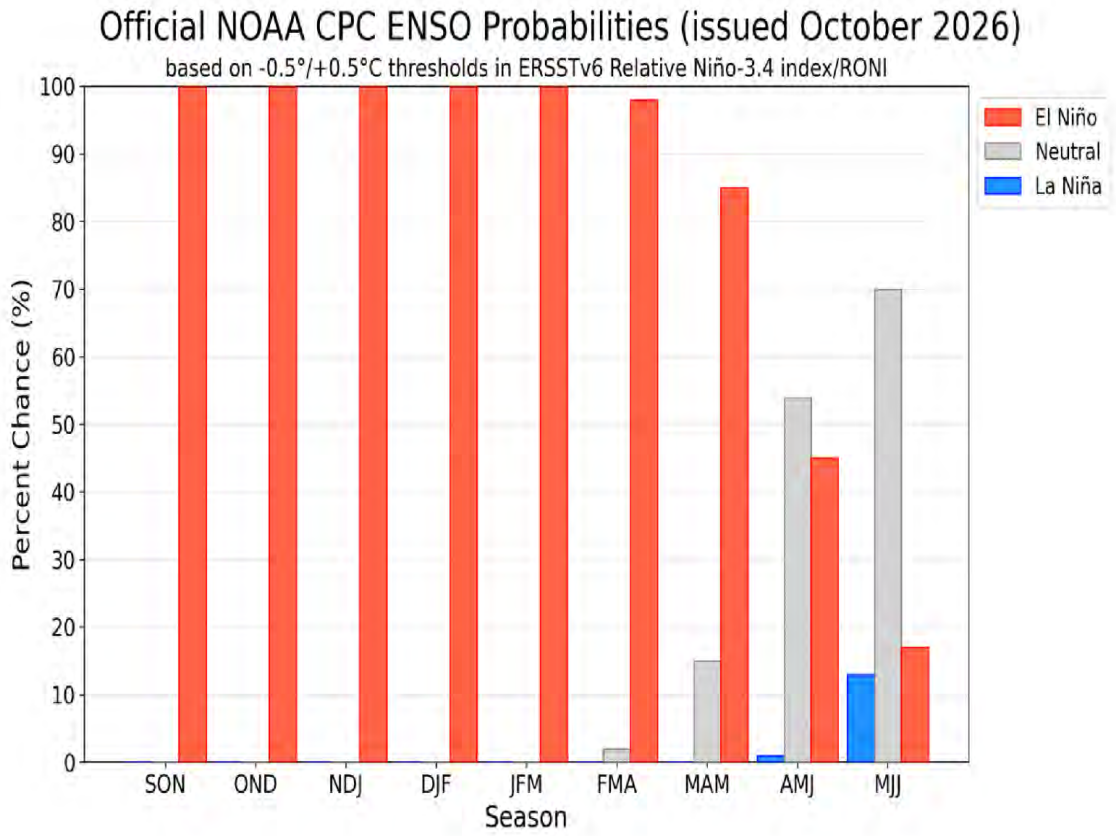
2026 – 2027 Winter Outlook

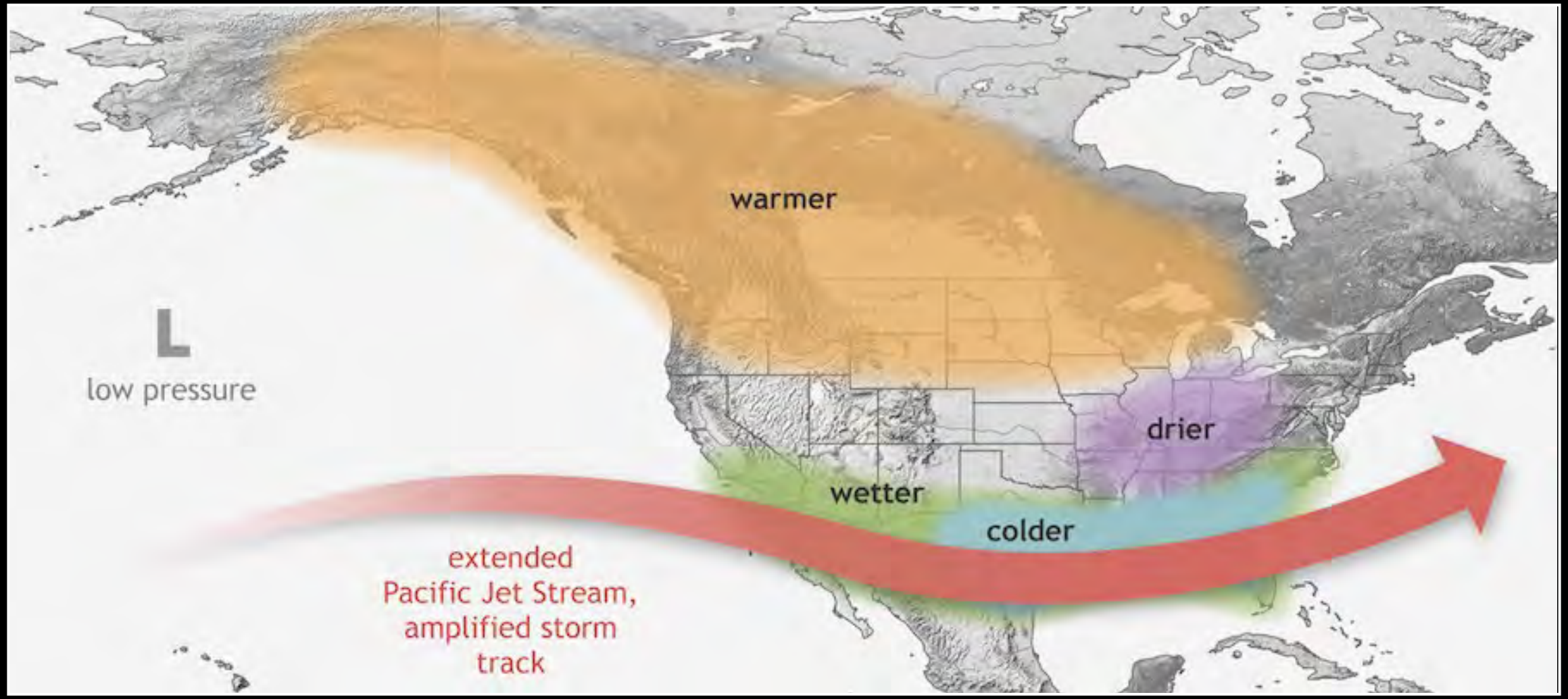
Greater than 95 percent chance for El Nino conditions to emerge in the equatorial Pacific in November-March

Nino Region SST Observations



Probabilities for ENSO Conditions





EL Nino Pattern

Weather Highlights

El Nino Watch – El Nino conditions are favored to develop this fall (90% chance) and persist into the winter season near (100% chance).

Temperature and Precipitation Outlook:

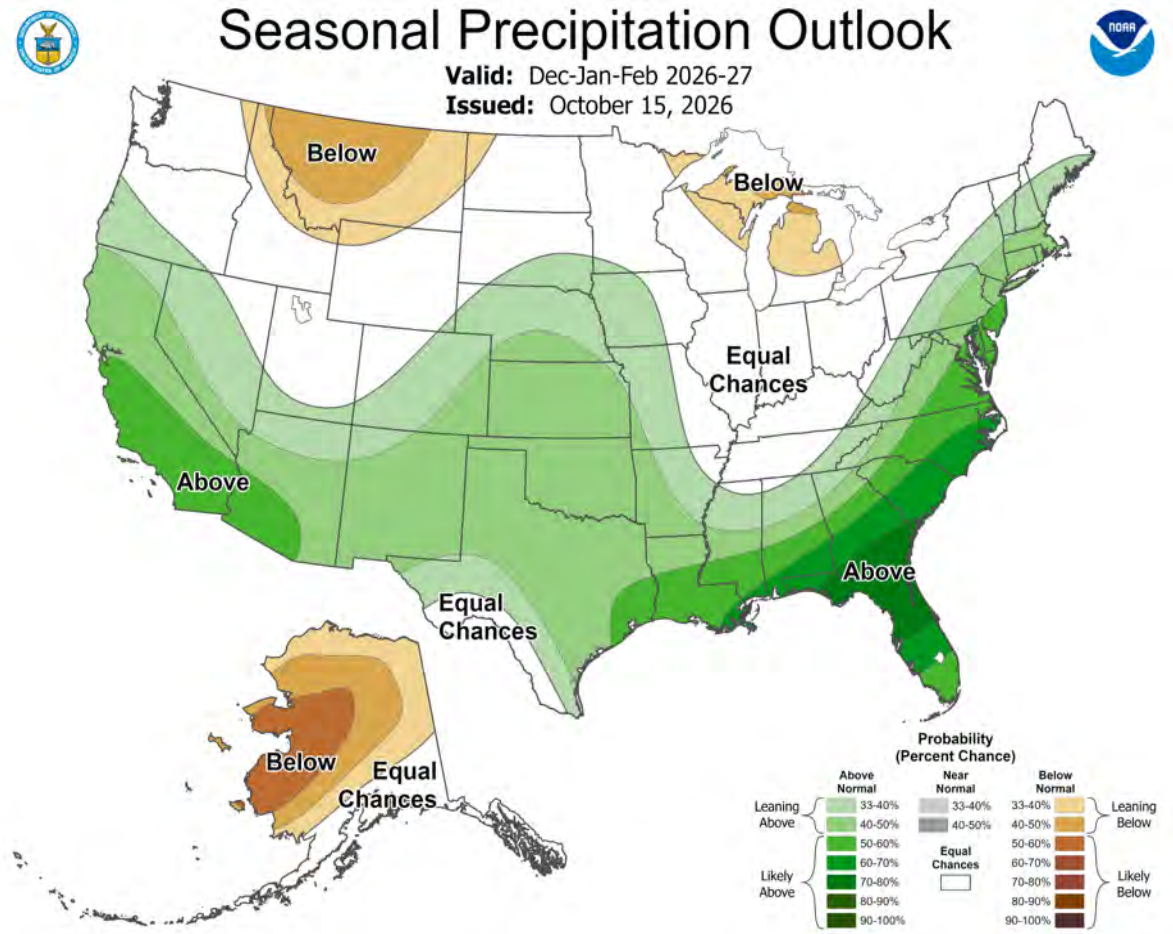
Temperatures = Higher than average (High Confidence)

Precipitation = Drier than normal (High Confidence)

Snow Prediction:

Snow Forecast = Below-Average Overall Snowfall

1 to 4 inches Late Winter Feb - Mar



Pre-Season Actions

- Airport management Meetings
  - *Start in October*
  - *Readiness, materials, repairs, staffing, budget, training….*
- Personnel Training
- Equipment Preparation
- Snow and Ice Control Committee (SICC)



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Pre-Season Actions

- Airport management Meetings
  - *October*
- Personnel Training
  - *Operations, Maintenance, Administration, ARFF*
    - *OPS: CFME, LOA, NOTAM/FICONs, RCAM, SICP*
    - *AFM: Equipment, movement, SICP*
    - *Admin: As needed, SICP*
- Equipment Preparation
- Snow and Ice Control Committee (SICC)



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Pre-Season Actions

- Airport management Meetings
  - *October*
- Personnel Training
- Equipment Preparation
  - Operations, Maintenance, FBO's…
    - *OPS: Equipment calibration*
    - *AFM: Equipment Maint. & supplies*
    - *FBO: Adequate deicing fluid, landside preparedness/contracts*
      - *FAA Approved only for airside; SAE AMS 1431/Solid, SAE AMS 1435/Fluid*
- Snow and Ice Control Committee (SICC)

Pre-Season Actions

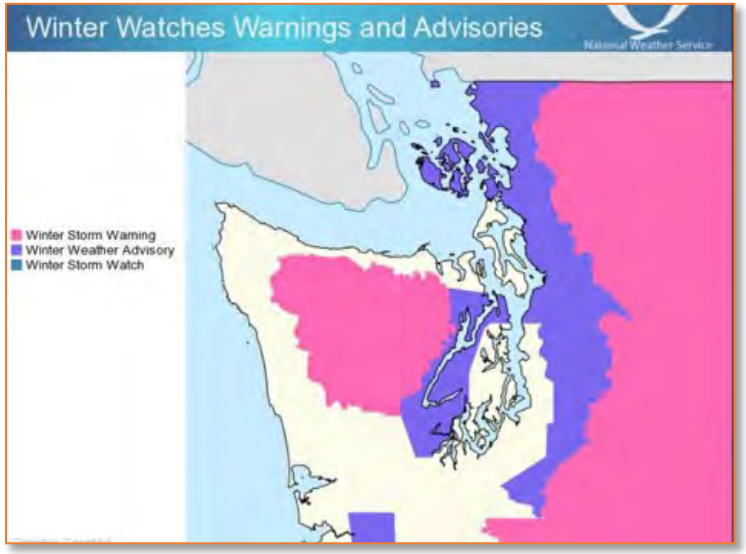
- Airport management Meetings
  - October
- Personnel Training
- Equipment Preparation
- Snow and Ice Control Committee (SICC)
  - Feedback/Recommendations prior to Winter
    - *Chaired by ADM, Airport MGMT, Airport MX, Engineering, FAA*



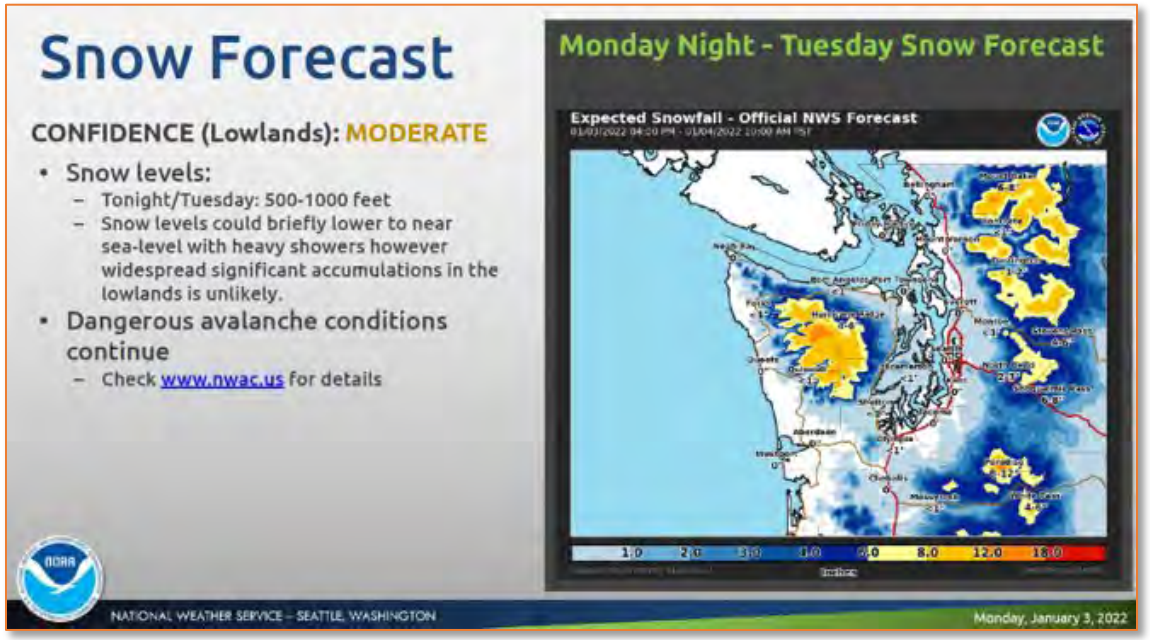
Snow Removal Action Criteria

- Activating Snow Removal Personnel
  - *NWS warning*
  - *Airport enters emergency stage*
  - *Staffing is designated/called out*
  - *Safety briefing*
- Weather Forecasting
- Chain of Command
- Triggers for Initiating Snow Removal
- Personnel Responsible
- Snow Control Center
- Airfield Clearing Priorities
- Airfield Clearing Times

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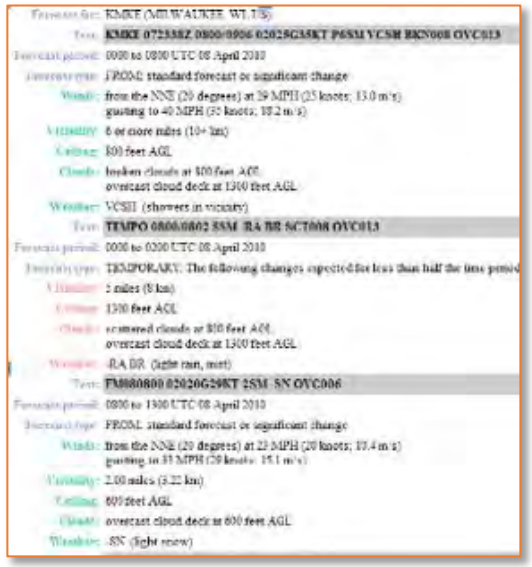
Examples



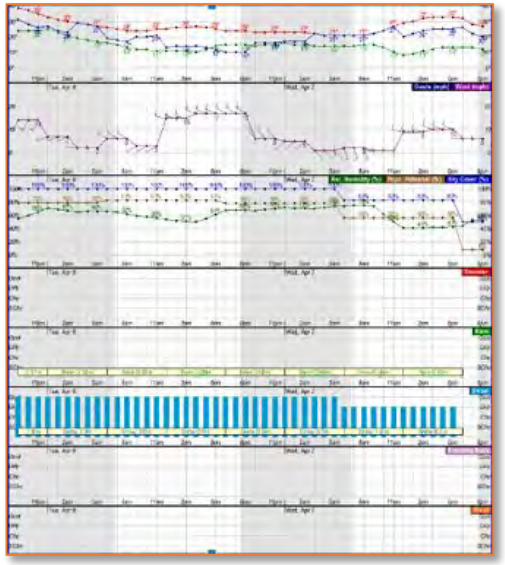
Snow Removal Action Criteria

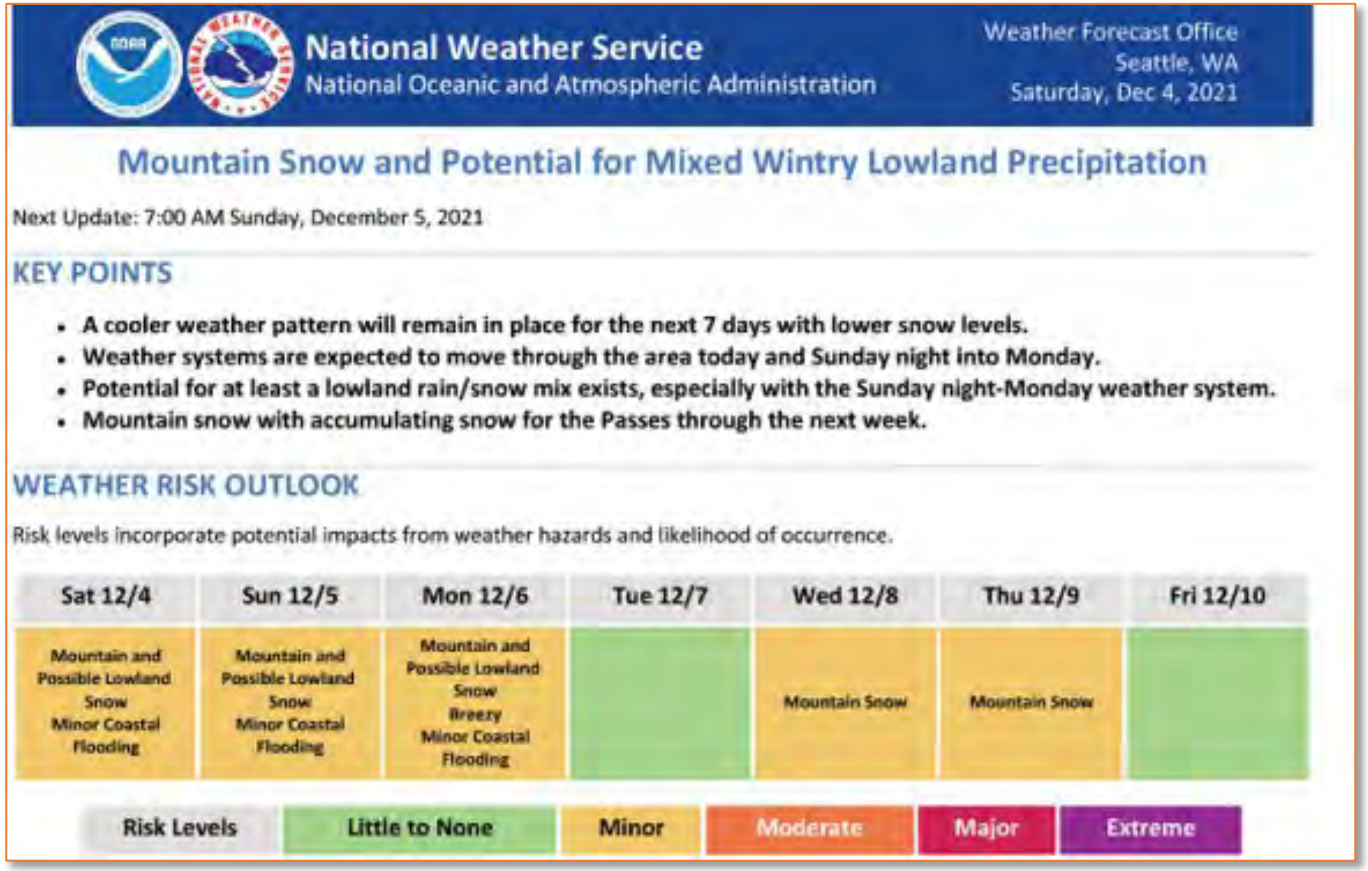
- Activating Snow Removal Personnel
- Weather Forecasting by NOAA
  - *NWS is an agency of NOAA*
  - *24 Hour office in King County/Live briefings*

TAF



Hourly Forecast Breakdown





Examples

Snow Removal Action Criteria

- Activating Snow Removal Personnel
- Weather Forecasting
- Chain of Command
  - *Airport Duty Manager and/or Airport Maintenance Supervisor, Operations Manager, Deputy & Airport Director*
- Triggers for Initiating Snow Removal
- Personnel Responsible
  - *ADM Activate SICP and notify Leadership, MX*
  - *ADM Coordinates w/ATCT for friction testing*
  - *ADM Coordinate staffing for Snow Control Center*
  - *MX Sup coordinate equipment and supply inventory*
  - *Leadership ensure compliance and adherence of established procedures*



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Snow Removal Action Criteria

- Activating Snow Removal Personnel
- Weather Forecasting
- Chain of Command
- Triggers for Initiating Snow Removal
  - *Commence at 1/8th snow accumulation*
  - *Immediately for Ice/FZ rain*
  - *Beforehand for anticipated event*
- Personnel Responsible
- Snow Control Center
- Airfield Clearing Priorities
- Airfield Clearing Times

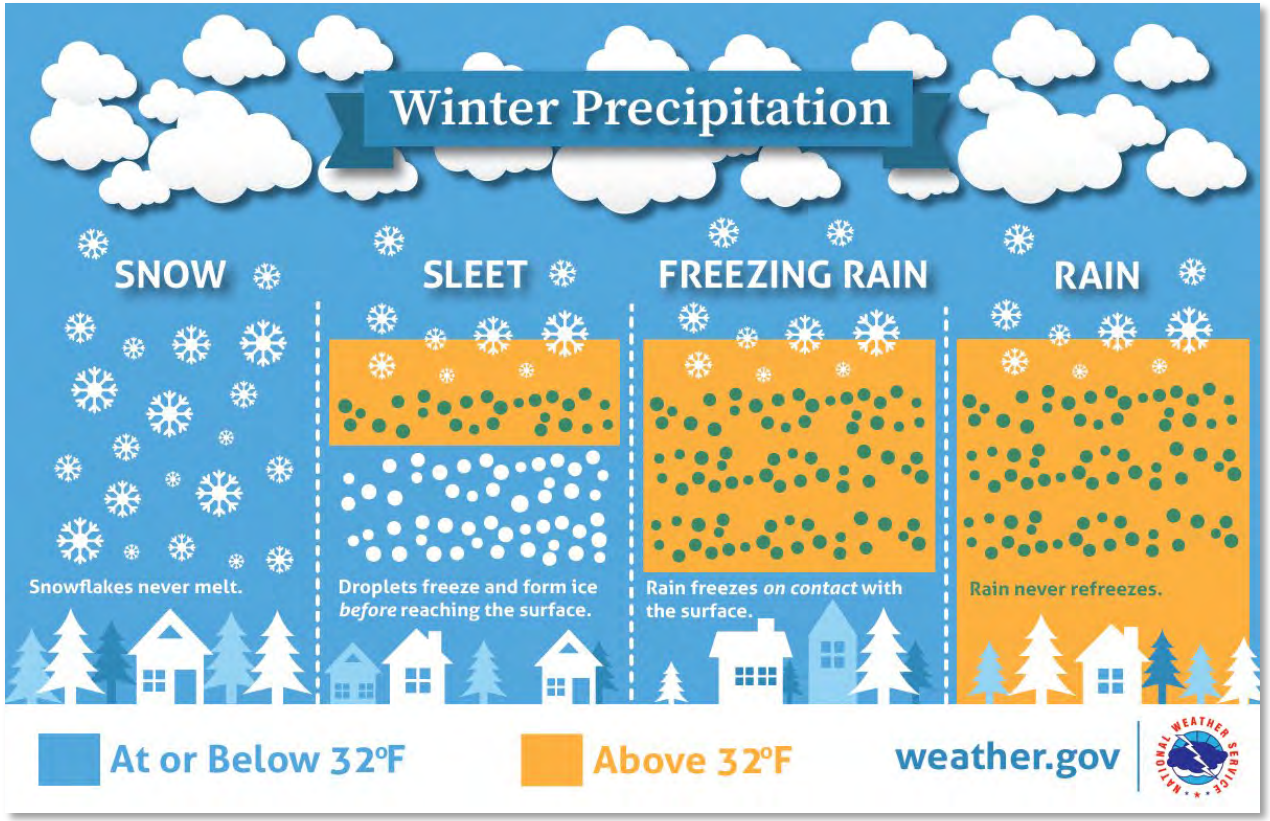
Snow Removal Action Criteria

Slush- Partially melted snow/ice. Water will drain when picked-up

Wet Snow- Well compacted snowball can be made. No water when squeezed.

Dry Snow- Snow will not stick together.

Ice/FZ rain- Ice, previously a liquid solidified by falling surface or air temps. FZ RA- a liquid, freezing upon making contact with surface.



Snow Removal Action Criteria

- Activating Snow Removal Personnel
- Weather Forecasting
- Chain of Command
- Triggers for Initiating Snow Removal
- Personnel Responsible
- Snow Control Center
  - AKA Snow Desk
    - *Normally a secondary ADM or airfield specialist or airport staff*
    - *Gather's all information. Makes notifications. Communication link between all users/staff.*
    - *Coordinates with ATCT during adverse weather conditions requiring runway closures*
- Airfield Clearing Priorities
- Airfield Clearing Times



BFI Airport Operations Center



King County International Airport Boeing Field

Snow Removal Action Criteria

- Activating Snow Removal Personnel
- Weather Forecasting
- Chain of Command
- Triggers for Initiating Snow Removal
- Personnel Responsible
- Snow Control Center
- Airfield Clearing Priorities
  - Priority 1, 2, 3
  - Priority 1 most critical
- Airfield Clearing Times

Airfield Clearing Priorities

King County International Airport Boeing Field



LEGEND

PRIORITY 1	MAIN RUNWAY 14R-32L. TAXIWAY ALPHA - A2 TO A6. TAXIWAY BRAVO - FULL LENGTH. TAXIWAY CONNECTORS A1, A5, B1, B4, B10. TAXILANE A - AIRLIFT NORTHWEST. ARFF STATION AND EMERGENCY ACCESS GATES.
PRIORITY 2	TAXIWAY ALPHA - A1 TO A2 / A6 TO A8. TAXIWAY ALPHA CONNECTORS - A3, A7, AND A8. TAXIWAY BRAVO CONNECTORS - B3, B5, B7, AND B9.
PRIORITY 3	SECONDARY RUNWAY 14L-32R. TAXIWAY CONNECTORS A2, A4, A6, A9, AND B2. MAIN TERMINAL - GATE 3.

Ⓐ ARFF STATION

Ⓒ MAIN TERMINAL - COMMERCIAL SERVICE

Ⓜ MUTUAL AID ACCESS

Snow Removal Action Criteria

- Activating Snow Removal Personnel
- Weather Forecasting
- Chain of Command
- Triggers for Initiating Snow Removal
- Personnel Responsible
- Snow Control Center
- Airfield Clearing Priorities
- Airfield Clearing Times
  - *Per FAA AC 150-5200-30 = 30 min for Priority 1*

Table 1-1. Clearance Times for Commercial Service Airports

Annual Airplane Operations (includes cargo operations)	*Clearance Time[1] (hour)*
40,000 or more	*½*
10,000 – but less than 40,000	*1*
6,000 – but less than 10,000	*1½*
Less than 6,000	*2*

General: Commercial Service Airport means a public-use airport that the U.S. Secretary of Transportation determines has at least 2,500 passenger boardings each year and that receives scheduled passenger airplane service [reference Title 49 United States Code, Section 47102(7)].

Footnote 1: These airports should 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.

BFI Operations 2025 = 99,681

Snow Equipment



MTE



Broom



Liquid Deice



Blower



Plow



CFME



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Snow Clearing and Ice Prevention - Ramps

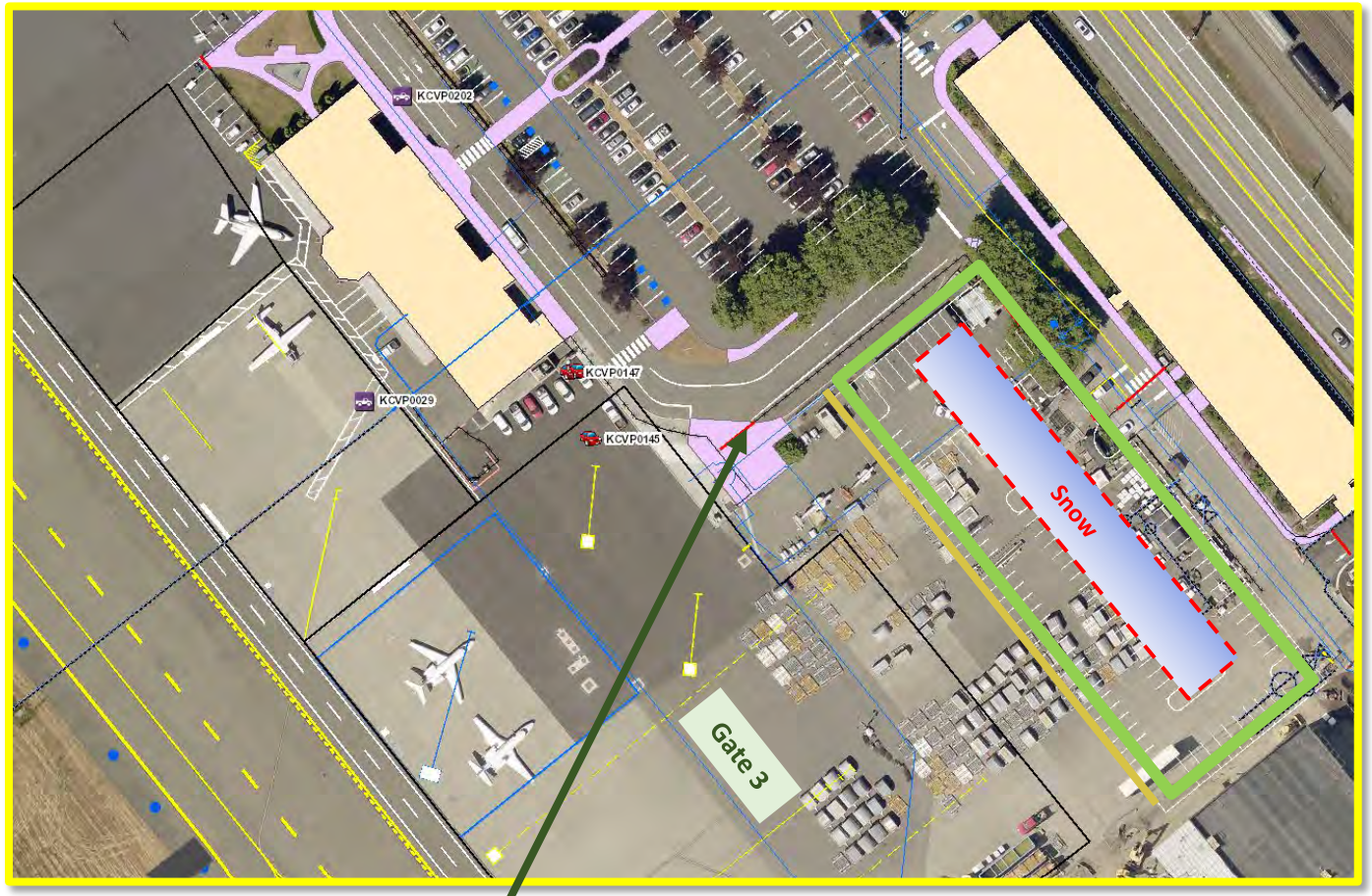
- Airport Ops will coordinate with main terminal tenants
- All other tenants are responsible for removing snow and/or ice from their leased (airside/landside) space and notify airport operations of their plans

Snow Disposal Locations

Main Terminal

- *South-East end near vehicle gate along UPS temporary fence line*





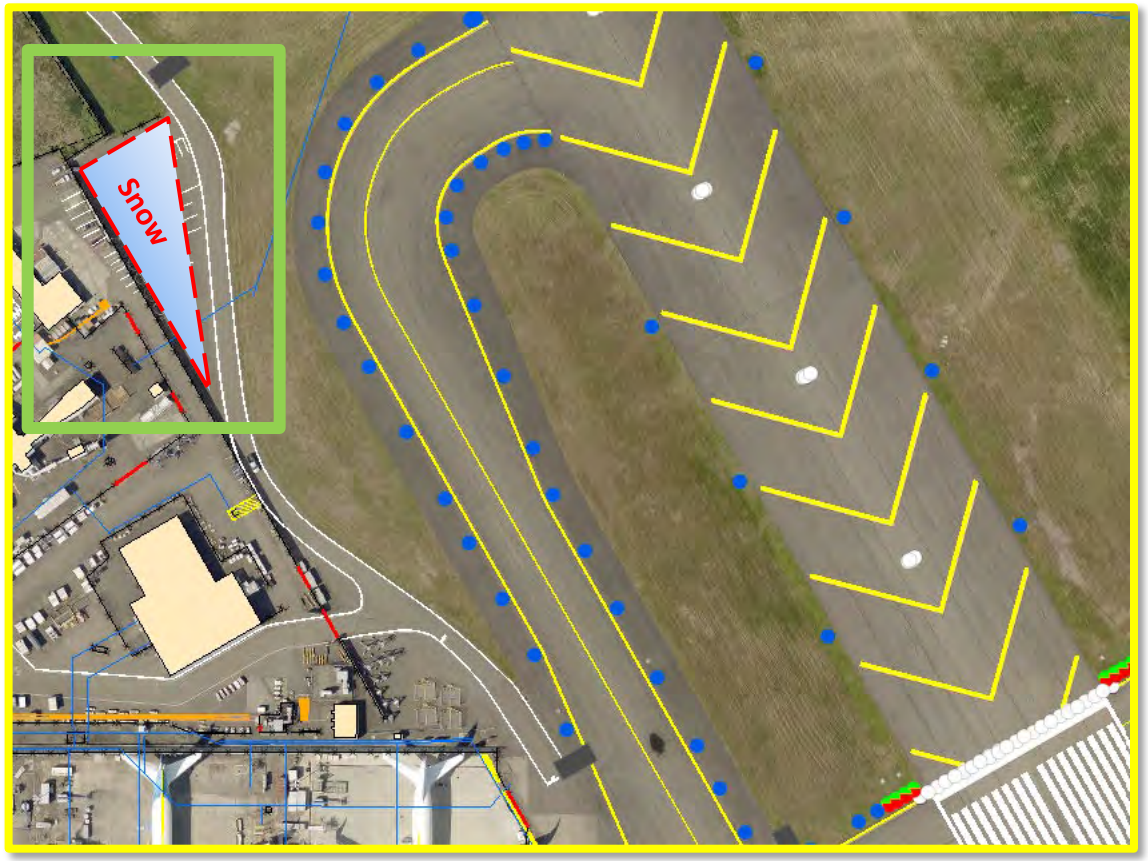
County Vehicle Gate V-17

Snow Disposal Locations

Airfield

- *North of B1 along Boeing Blast fence*
- *North or South Airfield*
    - *Outside of OFA's*



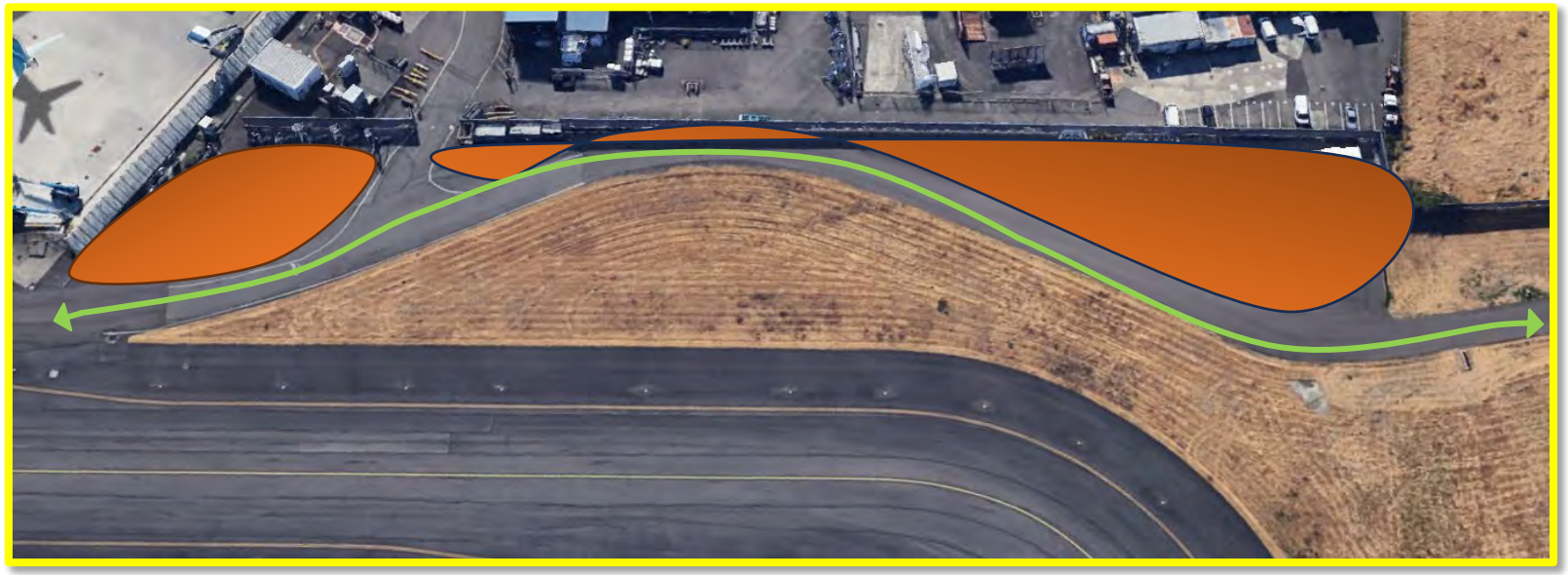


Service Road Restriction

Vehicle service road North of B1

- ***Hot Spots***
- *Limited Space for Snow Equipment transit*
- *Only route for snow equipment*
- *Boeing equipment awareness*





Continuous Surveillance

- Continuous surveillance inspections conducted when contaminate begins to accumulate on movement surfaces
    - *Braking PIREPs, Temps, WX patterns, Friction tests, Self-Inspections…*
    - *Operations/Maintenance assess situation to determine steps for treatment*

- 14R-32L will be cleared 10,000 X 200’ or 150’
- Operations will report conditions throughout the event to include:
    - *Pavement contaminants, snowbanks, windrows, deicer type*
    - *Reports will be updated as conditions change, following each deicing/ anti-icing events, contaminant type*
- Removal efforts will continue until pavement areas, runway signs, edge lights and markings are clear of contaminates

Methods for Surface Ice Control and Removal - Chemicals

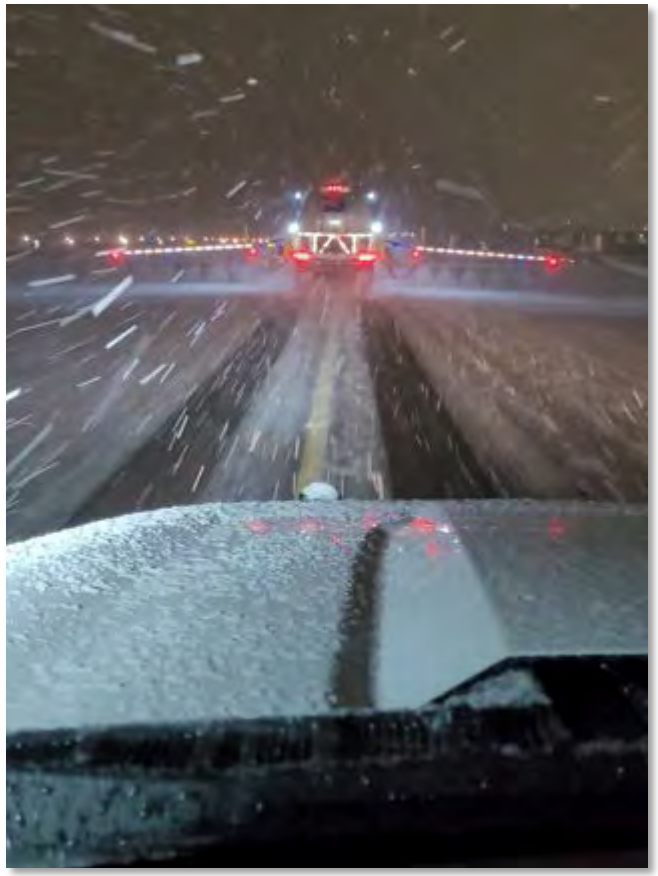
- FAA Approved Liquid and Solid De-Icers on Airside only
  - *Liquid: Potassium Acetate*
  - *Solid: Sodium Formate*
- Applied Before precipitation, during or after mechanical removal.
- Tenants; use **FAA approved** chemicals on **airside** ramps **only**
  - *FAA approved chemicals follow SAE standards*
- **Salt approved for Landside only**



NAAC



E36



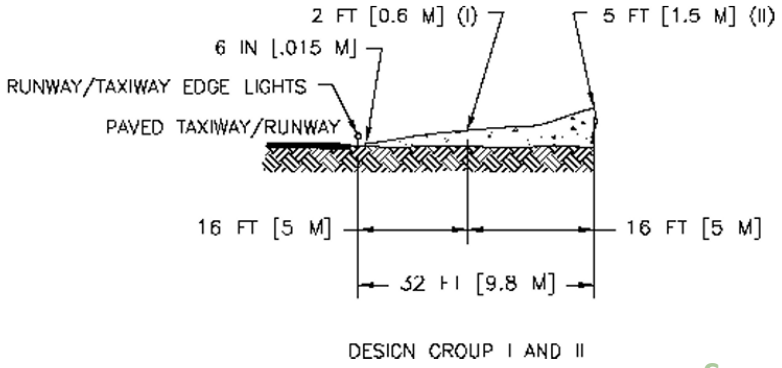


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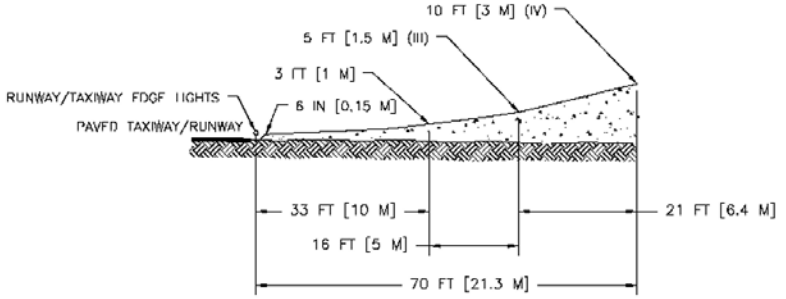
Snow Clearing and Ice Prevention – Snowbanks/ Drifts

- Reported and mitigated as soon as possible
- Those that can't be moved will be kept in accordance with FAA Figure 4-1 and users will be notified by NOTAMs
- Snow Drifts are removed promptly
- Snow Disposal
- NAVAIDS
  - *Visual obscured*
  - *Electronic signal loss/scattering*

Snowbanks/ Drifts FAA Requirements

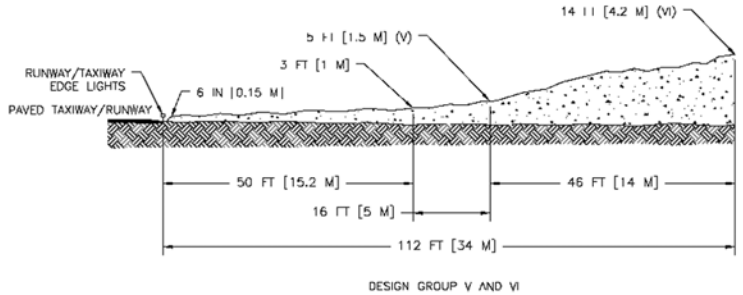


DESIGN GROUP I AND II



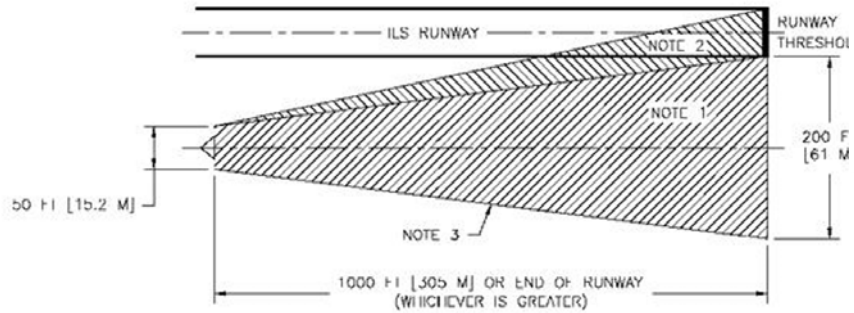
DESIGN GROUP III AND IV

Snowbanks on Runways



DESIGN GROUP V AND VI

ILS snow Clearance



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 MARKER. 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 TEMPORARILY RAISED TO LOCALIZER ONLY FOR CATEGORY D AIRCRAFT" IF APPLICABLE, "CAILGORY 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 TEMPORARILY RAISED TO LOCALIZER ONLY.

* NA (NOT AUTHORIZED)



King County International Airport Boeing Field

Surface Incident/ Runway Incursion Mitigation Procedures

- All personnel required to complete airport driver training
  - *Reviewed pre-season*
- Tabletop exercise conducted prior to snow season to simulate procedures/practices
- All vehicles equipped with an airfield map
- Vehicles marked/lighted in accordance with AC150-2510-5
- Airport Operations and/or Maintenance coordinate with ATCT
  - *All vehicles will ensure functional VHF radios*
- Failed Radio Communication Training
- Low Visibility and Whiteout Conditions
  - *Extreme Caution/ Suspend*
- Driver Fatigue
  - *2X 12 hour shifts*

NOTAMS/FICONS

NOTAM. Notice to Air Missions (previously notice to airmen)

- Issued to broadcast the status of a surface such as CLOSED, RESTRICTION, UNSAFE, NON-STANDARD, WORK IN PROGRESS ETC.
- BFI 01/001 BFI RWY 14R/32L CLOSED 2209011400-2209011500
  - Long term for utility runway (14L-32R)/Priority 2/3 surfaces
  - Short term for main runway (14R-32L)

FICON. Field Condition

- Issued to report surface contaminants on runways, taxiways, and apron/ramps
- BFI 01/002 BFI RWY 14R FICON 5/5/5 100 PCT 1/8IN DRY SN OBS AT 2209011500-2209021500
- BFI 01/003 BFI RWY 14R FICON 5/5/5 100 PCT 1/8IN DRY SNOW DEICED SOLID 2209011500-22090121500
- Only runway FICONs have RCCs (runway condition codes) but require < 25% SFC contaminant
  - Can be read in reverse for opposite direction approaches
- Closed surfaces do not have FICONS.

- NOTAMs can be grouped ie TWY A2, A3, A5 CLSD
- NOTAMS/FICONS issued in Zulu Time. Seattle is currently 7 hours behind Zulu ie 1400Z = 0700am Local
- We strive to maintain ‘no worse than wet’ condition

Surface Assessment and Reporting Conducting Surface Assessments

Volvo xc60 ASTF CFME

- Full length of runway
- Direction of Landing runway
- Speed up to 40 MPH
- 10’ from the centerline

Only valid under the following conditions;

Runway contaminated more than 25%
Ice or wet ice at any depth
Compacted snow at any depth
Dry snow less than 1 inch
Wet snow or slush 1/8th inch or less



Surface Assessment and Reporting Runway Condition Assessment Matrix (RCAM)

King County International Airport Boeing Field

Important Definitions

RCC

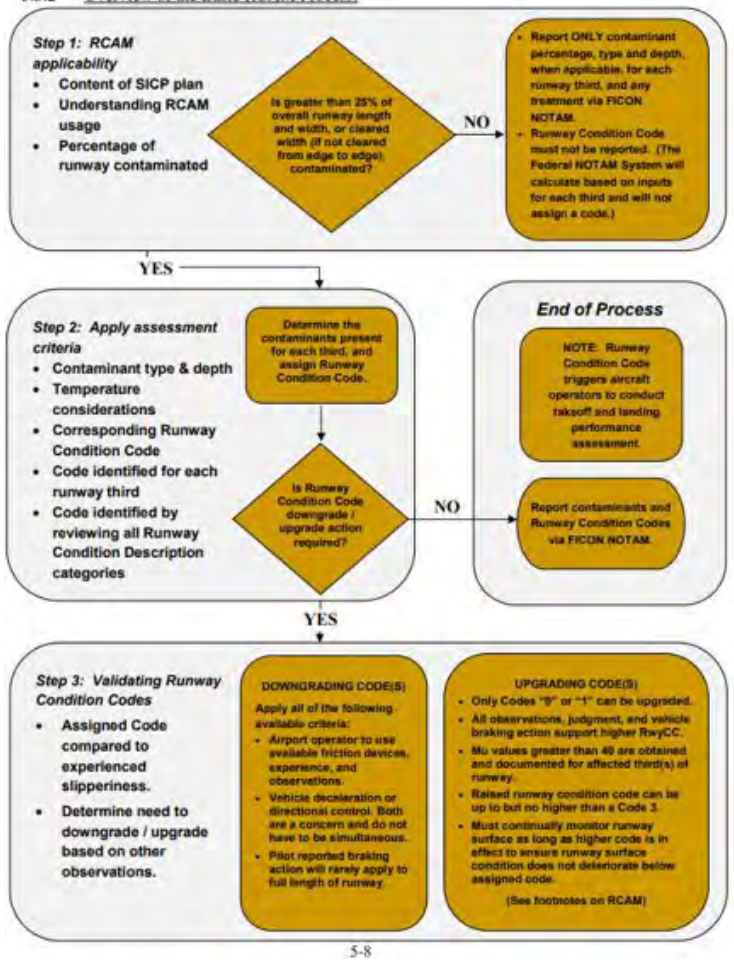
Friction Values (Mu)

PRBA

Table 5-2. Runway Condition Assessment Matrix (RCAM) *(for Airport Operator Use Only)*

Assessment Criteria		Downgrade Assessment Criteria		
Runway Condition Description	Code	Mu (μ) [1]	Vehicle Deceleration or Directional Control Observation	Pilot Reported Braking Action
• Dry	6	40 or Higher	---	---
• 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	39 to 30	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	29 to 21	Braking deceleration is significantly reduced for the wheel braking effort applied OR directional control is significantly reduced.	Poor
• Wet Ice [2] • Slush over Ice [2] • 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

5.3.2 Overview of the Basic RCAM Process.



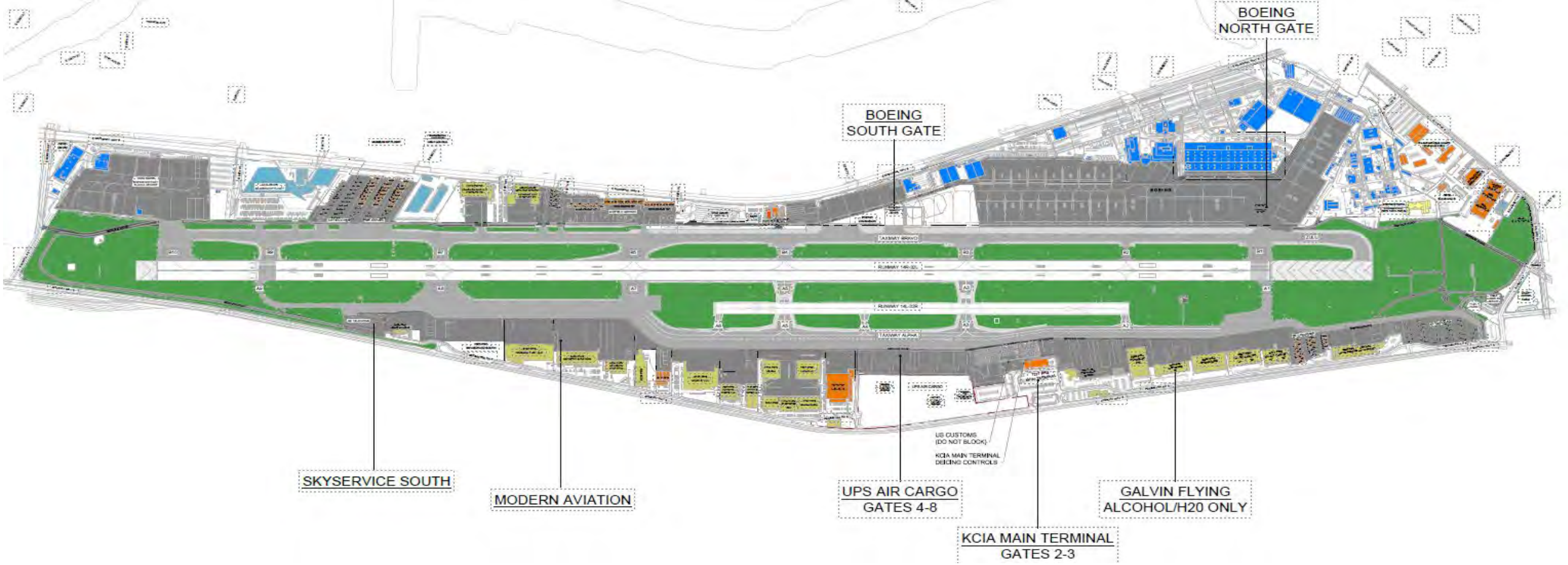
5-8



King County International Airport Boeing Field

Surface Assessment and Reporting Pilot Reported Braking Action (PIREP)

- Provided by pilots for other pilots
  - Good
  - Good to Medium
  - Medium
  - Medium to Poor
  - Poor
    - *Two Poor reports after a Good/Medium, conduct assessment*
  - Nil:
    - *By Pilot or Airport Ops, closes surface automatically*
  - ½” Slush or 2” Dry Snow closes RWY



Aircraft Deicing

King County
International Airport
Boeing Field

- KCIA gates 2-3 are a first come first serve basis
  - *Do not block Customs Blue Box*
- Reminder; KCIA must collect the total number of gallons used of aircraft deicer

Aircraft Deicing KCIA Gate 3

- Prior to de-icing on Gates 2-3, the user must ensure the de-ice bypass valve is in Sewer Mode.
- User will look for a GREEN BEACON light illuminated at the corner of the Main Terminal Building.
  - If the beacon is RED, user will NOT de-ice until Operations is contacted to switch the system.







Post Event/ Season Actions

- **After each significant snow event**
  - 4th Quarter (Oct-Dec)
  - 1st Quarter (Jan-Mar)
- **During Snow season**



King County International Airport Boeing Field

Questions?

- Airport Operations/Snow Desk
  - Tel; 206-296-7334 -24HR
    - Alt 206-915-1415
  - Email; airportops@kingcounty.gov
  - Presentation available on KCIA's web page *under Info for Tenants -> Inclement Weather Operations*
- NOTAM/FICON
  - Notams.faim.faa.gov/notamsearch
  - ATIS 127.75
  - ASOS 206-763-6904
- FBO sponsored airfield webcam
  - www.wasar.org/webcams/