

# Aviation IDSS During Emergency Response and Partner Exercises

*HPAWS 2023*

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National Weather Service Western Region Headquarters

Regional Operations Center (ROC)

Salt Lake City, UT

# Impact-Based Decision Support Services - IDSS

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Developed during impactful weather events and exercises to provide valuable information to support emergency response and preparedness efforts to local, regional and national partners.

Expanded role in preparation, response, and recovery efforts during significant weather events as well as high profile public events that often draw a significant public attendance.

Utilized by both aviation and non-aviation users.

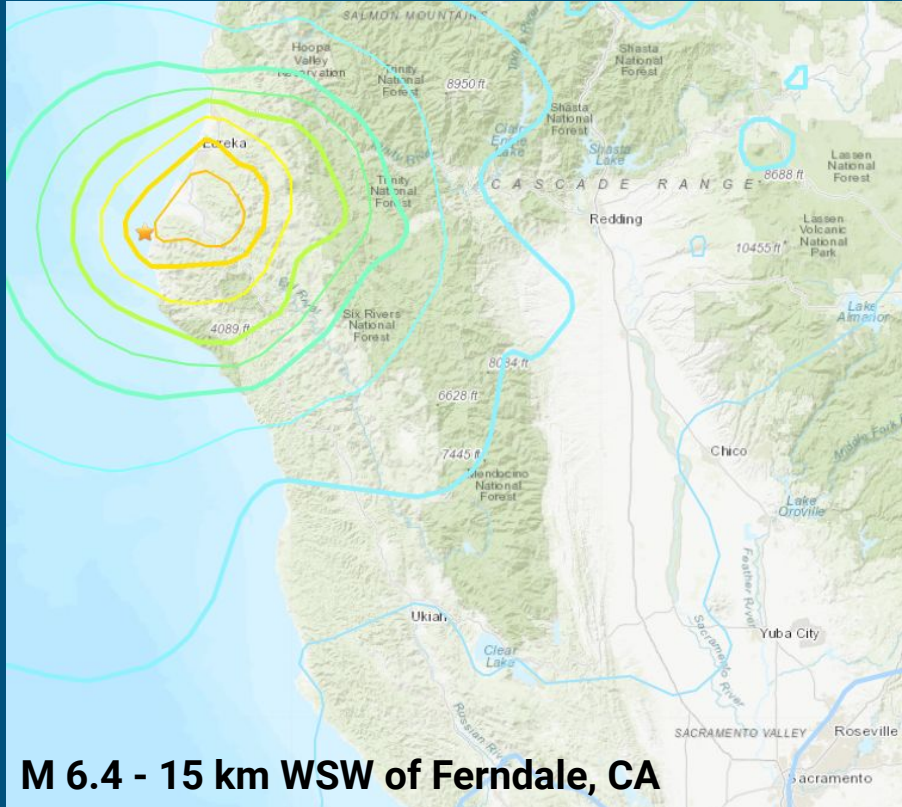
# What is Aviation-Based IDSS?

## *Examples*

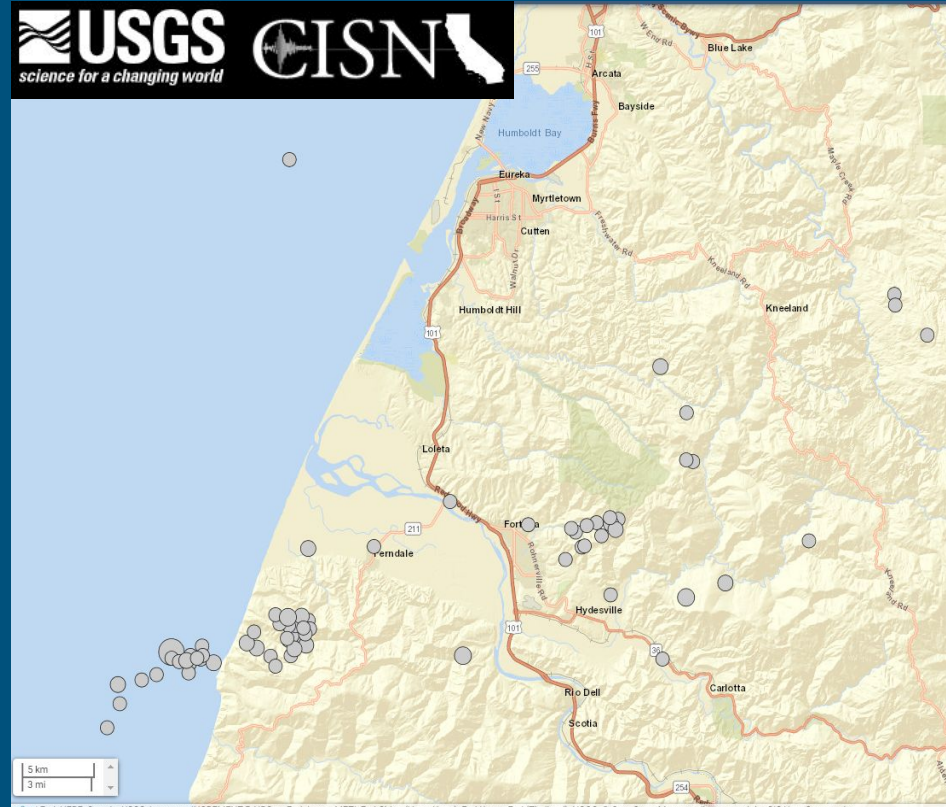
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- December 2022 earthquake in northwestern California
- December 2022 - January 2023 (ish) Atmospheric River flooding recovery and situational awareness efforts in central California
- 2023 Super Bowl and Waste Management Phoenix Open (Arizona)
- Western Region Burn Disaster Consortium

# December 20, 2022 Earthquake in NW CA



**M 6.4 - 15 km WSW of Ferndale, CA**



# December 2022 Earthquake in northwestern CA (Humboldt County)

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Immediate support requested from the State of California Governor's Office of Emergency Services Situation Cell, State Warning Center, and State Operations Center (SOC), totaling 8-10 briefings per day for over a week, with extended daily weather support ongoing *into June 2023*

***“For aviation operations, low-level wind shear will become a big issue through Monday afternoon and night with ceilings dropping to between 900 and 1500 feet with visibility in the 2 to 4 mile range, locally lower during periods of heavy rainfall Monday evening into Tuesday morning.”***

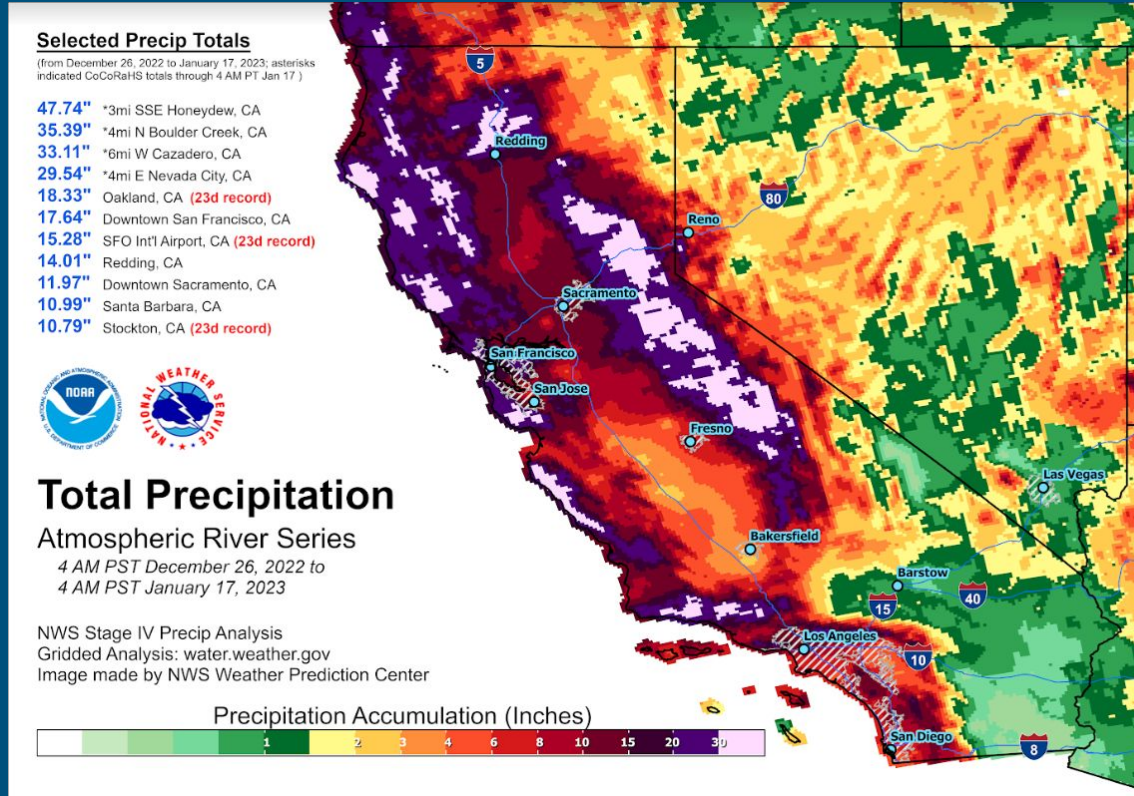
**Potential Aviation Impacts:** Drone Operations, aerial surveillance, SAR and evaluation of potentially inaccessible roadways/bridges

# Atmospheric River Dec 2022 - Jan 2023

A series of strong storms produced widespread heavy rain and heavy mountain snow as well as strong winds across much of California.

## Potential Aviation Impacts:

- Drone Operations
- Aerial surveillance of flooding
- Search and Rescue Operations
- Inaccessible roadways/bridges





# Atmospheric River Dec 2022 - Jan 2023

- Partners to Support:
  - California Governor's Office of Emergency Services (Cal OES) Warning Center
  - California State Operations Center (SOC)
  - US Army Reserve 76th Operational Readiness Group (76th ORC)
  - United States Coast Guard (USCG)
  - FEMA/CA JFO



# Atmospheric River Dec 2022 - Jan 2023

- How?
  - Briefings (written & verbal)
  - Social Media Content
  - Press Conferences
  - On-Demand Briefings



Regional Operations Center  
Western Region  
Tuesday, January 17

- **Salt Lake City (KSLC) and Hill Air Force Base (HIF):**
  - Scattered snow showers through Tuesday evening, with periods of ceilings below 2500 feet and visibility below 3 miles.
  - Ceilings of 4000-5000 continue into Wednesday.
  - Northwest winds 5-15 mph continue
- **Livermore, CA (KLVK)**
  - No significant impacts with only high clouds
- **En-route from Utah to Bay Area through Tuesday evening**
  - IFR conditions and mountains obscured in Utah, with IFR conditions and mountain obscuration continuing over the southern Sierra in California.
  - Icing expected for Utah and central/southern Nevada with a freezing level from the surface to 3000 ft.





# 2023 Super Bowl & Waste Management Phoenix Open



**Potential Aviation Impacts** from a significant increase in commercial, private and GA traffic for multiple large events

*Credit: Sean Benedict, Lead Meteorologist,  
Aviation Program Manager, NWS Phoenix*

# 2023 Super Bowl & Waste Management Phoenix Open TAFs & Briefing Timeline

August 2022	December 2022	January 2023	February 3 - 5	February 9 - 12	February 13 - 14
<p><b>Temp TAF Approvals</b></p> <p>Meetings with Glendale Municipal Airport and Phoenix -Goodyear Airport. Gathering airport minimum thresholds and other pertinent information (tower hours, weather station info, runway config and switchpoints, etc.)</p>	<p><b>Temp TAFs Practice Begins</b></p> <p>Routine Forecast Times: 00Z, 06Z, 12Z, 18Z</p> <p>Practice Period: 18Z 12/27/22 - 12Z 1/26/23</p>	<p><b>Tabletop Exercise (TTX) &amp; Temp TAFs go Live!</b></p> <p>TTX Hosted and led by the City of Phoenix Aviation Department in the AEOC at Sky Harbor.</p> <p>Planning/response for/to different kinds of incidents, including a weather scenario (dense fog)</p>	<p><b>CWSU Albuquerque &amp; WFO Phoenix Aviation Support Briefings Begin</b></p> <p><b>Team Arrivals at PHX</b></p> 	<p><b>Team Charters Arrive</b></p>	<p><b>Departure Days</b></p> 

*Credit: Sean Benedict, Lead Meteorologist, Aviation Program Manager, NWS Phoenix*

# 2023 Super Bowl & Waste Management Phoenix Open

## Aviation Email Weather Briefings - February 3 - 12

- Collaboration between CWSU Albuquerque & WFO Phoenix
- Impact-based weather forecasts 5 Phoenix-area airports and Phoenix TRACON
- Sent daily to aviation partners (FAA, airport managers, etc.)


**National Weather Service**  
 National Oceanic and Atmospheric Administration

Center Weather Service Unit  
 Albuquerque, NM  
 Saturday, Feb 11, 2023

### Super Bowl 57 and Waste Management Open Aviation Weather Impacts








A storm system in southern CA on Sunday will move eastward across AZ on Monday. Another storm will move into northern AZ on Tuesday. VFR conditions will prevail across AZ on Sunday with winds from the southeast to south at 6-12 KT with a few gusts possible in the 15-25 KT range, especially in the afternoon. There is an increasing chance for low VFR ceilings across the entire area Monday morning and afternoon. Light to moderate icing is expected areawide on Monday. Chances for an isolated thunderstorm in the PHX region are very low on Monday though widely isolated showers will likely move across the valley. Thunderstorm chances to the north and south of the PHX region will be in the 10-33 percent range Monday morning through the late afternoon. Lighter winds are expected on Monday with speeds generally below 12 KT. Winds will ramp up on Tuesday across the entire area with southwest winds 15-25 KT and gusts 25-40 KT. IFR visibilities in snow showers, low VFR ceilings and light to moderate icing are possible on Tuesday north of the PHX region. Moderate turbulence is expected throughout the forecast period from Sunday through Tuesday.

### WEATHER RISK OUTLOOK

Risk levels incorporate potential impacts from weather hazards and likelihood of occurrence. (See Explanation [here](#).)

	Sun 2/12	Mon 2/13	Tue 2/14
Scottsdale Airport (SDL)	Wind LLWS	CIG VIS Wind	Wind CIG
Phoenix Airport (PHX)	Wind LLWS	CIG VIS Wind	Wind CIG
Deer Valley Airport (DVT)	Wind LLWS	CIG VIS Wind	Wind CIG
Glendale Airport (GEU)	Wind LLWS	CIG VIS Wind	Wind CIG
Goodyear Airport (GYR)	Wind LLWS	CIG VIS Wind	Wind CIG
Phoenix TRACON (P50)	TURB Wind LLWS	TURB CIG TS ICG	TURB Wind ICG CIG

#### Phoenix TRACON (P50)

 ICG	<ul style="list-style-type: none"> <li>• Sunday: None</li> <li>• Monday: LGT-MOD FZLVL-FL220; FZLVL from SFC-060</li> <li>• Tuesday, North of PHX Region: LGT-MOD FZLVL-FL180; FZLVL</li> </ul>
 TURB	<ul style="list-style-type: none"> <li>• Sunday: MOD FL180-FL450</li> <li>• Sunday, After 1400 MST: MOD BLW FL180</li> <li>• Monday: MOD BLW FL450</li> <li>• Tuesday: MOD BLW FL180</li> <li>• Tuesday: LGT-MOD FL180-FL400</li> </ul>
 Wind	<ul style="list-style-type: none"> <li>• Sunday: SE/S 6-12 KT GUSTS 15-25 KT</li> <li>• Monday: S/W 6-12 KT</li> <li>• Tuesday: SSW/SW 15-25 KT GUSTS 25-40 KT</li> </ul>
 CIG	<ul style="list-style-type: none"> <li>• Sunday: &gt;055</li> <li>• Monday: &gt;025-055</li> <li>• Tuesday, North of PHX Region: &gt;025-050</li> <li>• Tuesday, PHX Region &amp; South of PHX Region: &gt;055</li> </ul>
 Thunderstorms	<ul style="list-style-type: none"> <li>• Sunday: None</li> <li>• Monday, North &amp; South of PHX Region: 10%-33%</li> <li>• Monday, PHX Region: &lt;10%</li> <li>• Tuesday: &lt;10%</li> </ul>
 LLWS	<ul style="list-style-type: none"> <li>• Sunday, 0600-1000: 10-19KT SFC-020</li> <li>• Monday, 0600-1000: &lt;10 KT SFC-020</li> <li>• Tuesday, 0600-1000: &lt;10 KT SFC-020</li> </ul>
 VIS	<ul style="list-style-type: none"> <li>• Sunday: 10 SM (VFR)</li> <li>• Monday, North &amp; South of PHX Region: 3-5SM in Rain Showers</li> <li>• Monday, PHX Region: 5-10 SM (VFR)</li> <li>• Tuesday, North of PHX Region: 1-3 SM in Snow Showers</li> <li>• Tuesday, PHX Region &amp; South of PHX Region: 10SM (VFR)</li> </ul>

#### WRO Impact Legend - Aviation

Hazard	Little to None	Minor	Moderate	Major	Extreme
TS - Thunderstorm Probability	<10%	10-33%	33-66%	66-90%	>90%
CIG - Ceiling (hundreds of feet)	>055 (VFR/VMC)	>030 - 055 (VFR/VMC)	010 - 030 (MVFR)	005 - <010 (IFR/IMC)	< 005 (LIFR)
VIS - Visibility (mi)	>10 sm (VFR)	>5 - 10 sm (VFR)	>3 - 5 sm (MVFR)	>1 - 3 sm (IFR)	<1 sm (LIFR)
Wind - (kt)	wind < 8 kt gusts <15 kt	wind 8-14 kt gusts 15-24 kt	wind 15-19 kt gusts 25-34 kt	wind 20-30 kt gusts 35-50 kt	wind >30 kt gusts >50 kt
TURB - Turbulence	None	Light	Moderate	Severe	Extreme
ICG - Icing	None	Trace	Light	Moderate	Heavy/Severe
LLWS	<10 kt	10-19 kts	20-29 kts	30-39 kts	>40 kts

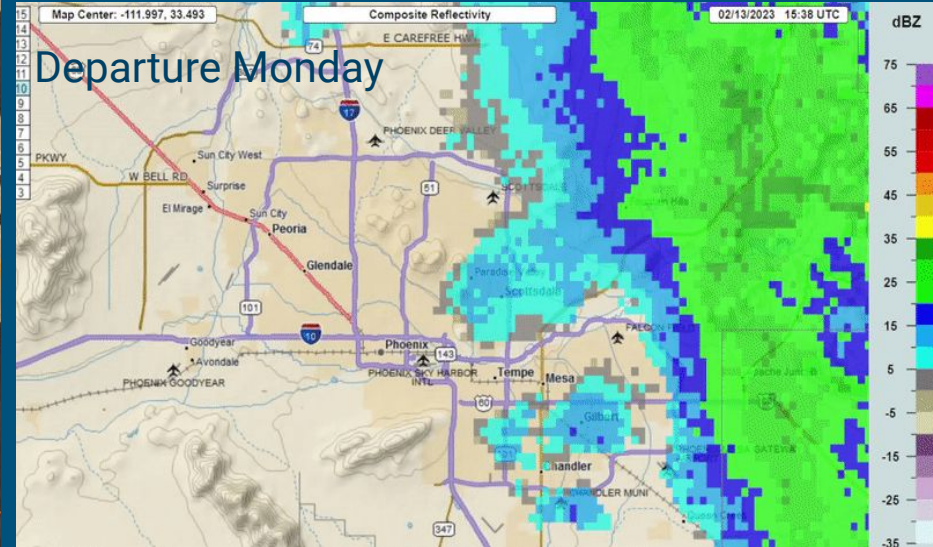
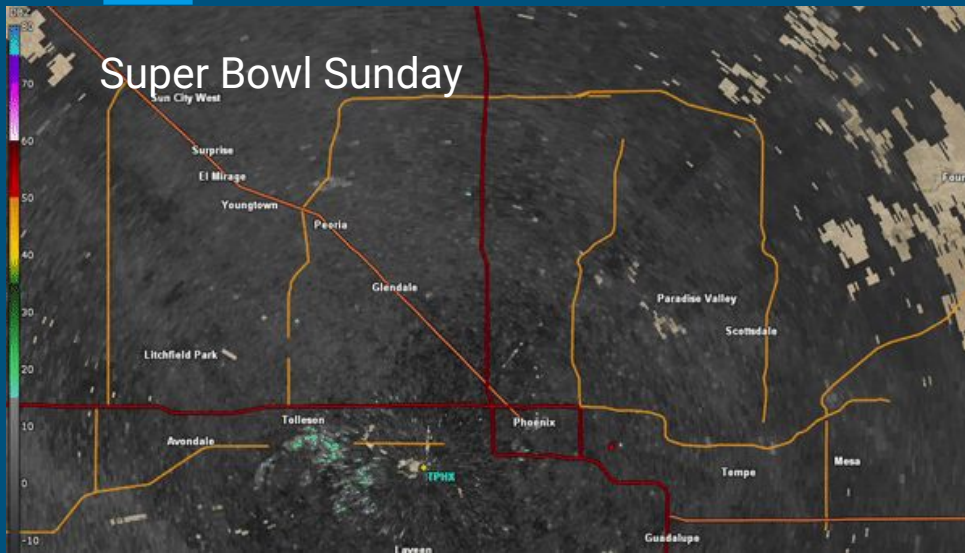
Risk Levels	Little to None	Minor	Moderate	Major	Extreme
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*Credit: Sean Benedict, Lead Meteorologist, Aviation Program Manager, NWS Phoenix*



# 2023 Super Bowl & Waste Management Open

## *Weather Impacts*



A moisture boundary moved through between 1630 - 1800 MST with wind gusts up to 30-35 kts

Scattered convective showers spread across the metro from late morning through the afternoon.

- 3-5K ft CIGs, lightning flashes, small hail
- Brief Ground Stops at DVT & FFZ and Ground Delays at PHX & SDL due to low CIGs

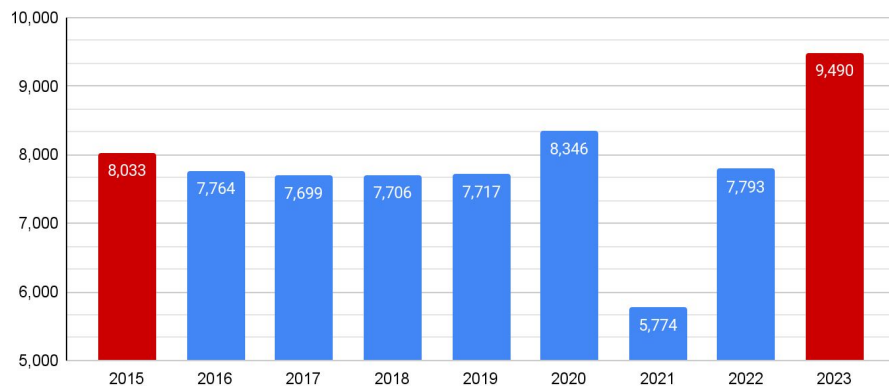
*Credit: Sean Benedict, Lead Meteorologist, Aviation Program Manager, NWS Phoenix*

# 2023 Super Bowl & Waste Management Phoenix Open

## *By the Numbers*

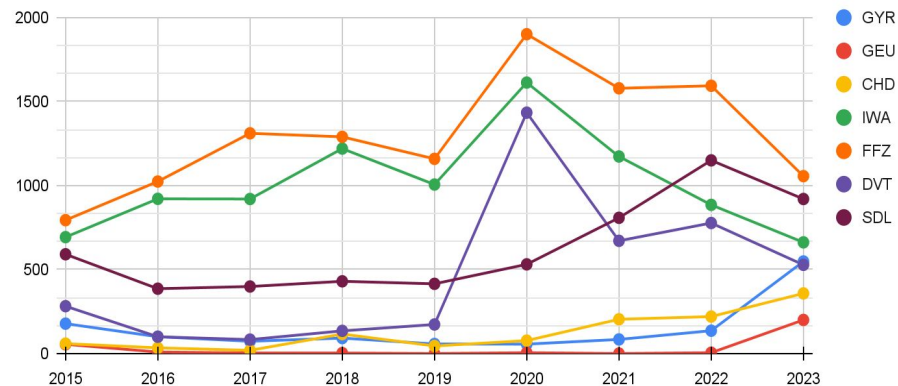
### Air Carrier (>60 seats) & Air Taxi (<60 seats) Totals - PHX

Airport Operations from Wednesday Before SB/WMPPO through Tuesday After SB/WMPPO



### Air Carrier (60+ seats) & Air Taxi (<60 seats) Totals - Phoenix Area Airports

Airport Operations from Wednesday Before SB/WMPPO through Tuesday After SB/WMPPO



Data source: \*Air Traffic Activity System (ATADS) using  
FAA Operations Network (OPSNET)

Credit: Sean Benedict, Lead Meteorologist,  
Aviation Program Manager, NWS Phoenix

# 2023 Super Bowl & Waste Management Phoenix Open *Departure Monday, February 13 - Busiest Day Ever!*



## PASSENGERS

200,000+ passengers  
47,206 bags checked  
2,132 bags used Early  
Bag Check



Avg. Day: 120,000+ passengers

## OPERATIONS

1,691 takeoffs & landings  
313 business/corporate  
flights  
12 charter operations



Avg. Day: 120,000+ passengers

## GROUND TRANSPORTATION

Nearly 50,000 PHX Sky  
Train riders  
23,657 rideshare  
operations  
1,367 taxi operations



## Press Release

Other Airports:

- DVT - 91 Operations,
- GYR - 137 Operations
- SDL - Managed 490 corporate jets in <24 hrs (mostly departures); 780 transient/visiting jets lined the ramps end to end Thursday-Monday



*Credit: Sean Benedict, Lead Meteorologist,  
Aviation Program Manager, NWS Phoenix*



# Western Region Burn Disaster Consortium (WRBDC)

The WRBDC may be activated during or following a catastrophic disaster which causes a large amount of burn patients

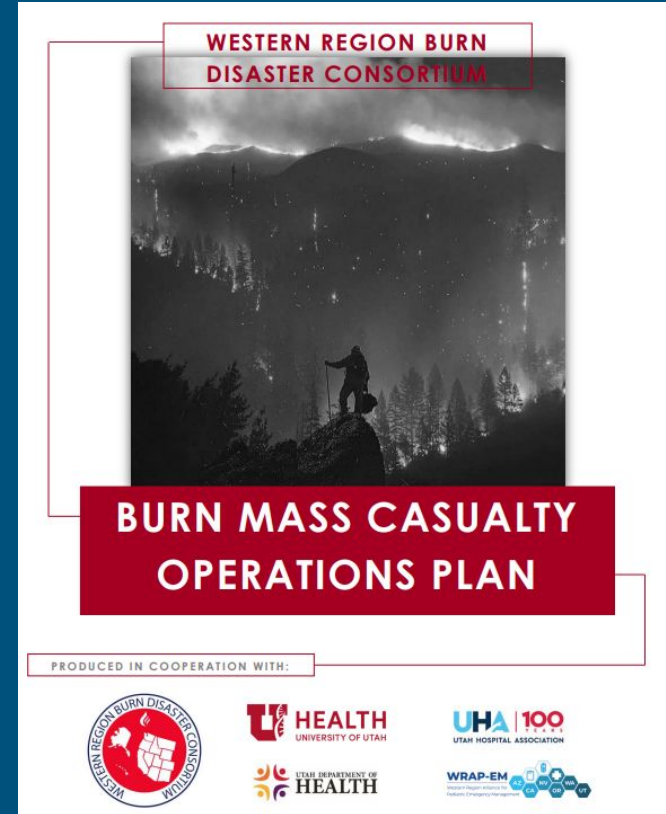
WRBDC Unified Command would likely run out of Salt Lake City, UT

The Unified Command would support emergency responders to route burn patients to appropriate burn centers with available beds across multiple states.

Patients would be transported by ground or air transportation.

[WRBDC Burn Mass Casualty Operations Plan \(burncare.org\)](http://burncare.org)

*NWS Liaison: Julie Malingowski, WR Regional Response and Preparedness Specialist*



# Western Region Burn Disaster Consortium (WRBDC)

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The facility or agency arranging air or ground transportation should coordinate with the NWS for current or future weather conditions.

Information can be provided for local and on-route forecast conditions, including wind speed, temperature, pressure and inclement weather.

Extreme high temperatures and elevation (i.e., launching or landing in summer months in St. George, Utah, and Las Vegas, NV) may be impossible for some aircraft.



*NWS Liaison: Julie Malingowski, Regional Response and Preparedness Specialist*

The NWS can provide expanded **aviation weather IDSS in preparation, response, and recovery efforts during significant weather events as well as high profile public events** that often draw a significant public attendance to support emergency response and preparedness efforts to local, regional and national partners.

**Sarah Rogowski, Emergency Response Specialist**  
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