



Weather Forecast Office
Phoenix, AZ
Friday, April 21

NWS Aviation Support During Super Bowl LVII and Waste Management Phoenix Open

Sean Benedict
Lead Meteorologist
Aviation Program Manager
NWS Phoenix

Super Bowl LVII



**State Farm Stadium
Glendale, AZ
February 12, 2023**

Waste Management Phoenix Open



**TPC Scottsdale
Scottsdale, AZ
February 9-12, 2023**



Super Bowl LVII



- One of the most viewed and celebrated sporting events in the world
 - Thousands-upon-thousands travel to the host city to attend the game **and/or** to partake in the festivities



Waste Management Phoenix Open



- Routinely one of the highest attended professional sporting events in the world
 - **200,000+** spectators is common for Saturday (Round 3)



DSS Planning & Execution

Other Support

Jan 25/ Feb 1/ Feb 8, 2023
-WFO PSR updates weather forecast matrix for PHX Operations Division

Feb 13-14, 2023
-Departure Mon & Tue
-PHX AEOC Deployment

Feb 22, 2023
-PHX SB57 AAR

Mar 3, 2023
-NWS SB57 & WMPO AAR

Feb 3, 2023
-CWSU ZAB/WFO PSR Aviation Support Briefings Begin

Feb 9-12, 2023
-SB57 & WMPO
-Team Charters Arrive
-PHX AEOC Deployment

Feb 5, 2023
-Team Arrivals at PHX

Jan 26, 2023
-Temp TAFs Go Live

Jan 18, 2023
-PHX SB57 Prep TTX

Dec 27, 2022
-Temp TAFs Practice Begins

Nov 22, 2022
-PHX SB57 Planning Meetings Begin

Aug 2022
-WFO PSR Temp TAF Meetings with GEU & GYR

Aug 2022
-Temp TAF Approvals

Mar 2022
-NWS Monthly Planning Meetings Begin
-Local RWG Meetings Begin

Timeline of Events

Temporary Terminal Aerodrome Forecasts (TAF)

KGYR - Phoenix-Goodyear Airport

KGEU - Glendale Municipal Airport

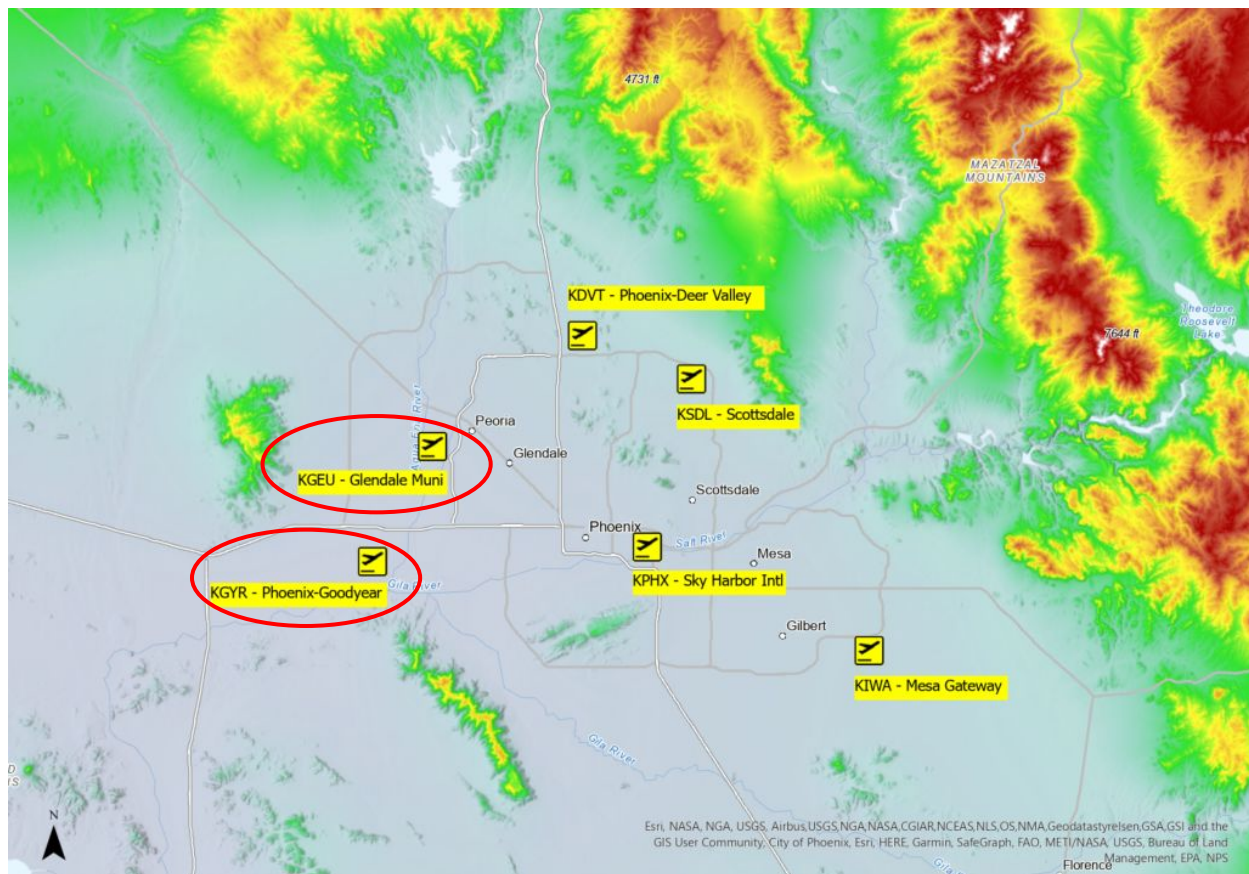
Routine Forecast Times: 00Z, 06Z, 12Z, 18Z

Practice Period: 18Z 12/27/22 - 12Z 1/26/23

Live Period: 18Z 1/26/23 - 00Z 2/14/23

Setup Process Involved

- Working with WRAM to submit a Request for Change form
- Gathering airport minimum thresholds and other pertinent information (tower hours, weather station info, runway config and switchpoints, etc.)
- Setting up AvnFPS in AWIPS
 - Added TAFs to afos2awips.txt and ensured TAFs were not excluded from WAN transmission

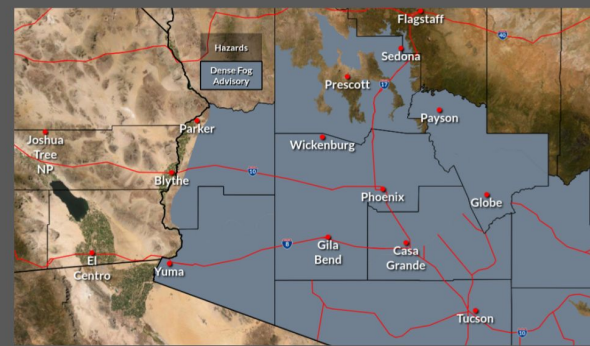


PHX SB57 Planning Tabletop Exercise

January 18, 2023



Dense Fog Advisory



Areas affected: Southern Arizona



National Weather Service · Phoenix, AZ
weather.gov/phoenix
Updated: Early Morning Day 1




🕒 Timing

- 2 AM - 10 AM Day 1

📍 Location(s)

- Most of Southern Arizona, including the Phoenix Metro Area

Impacts

-  Reduced visibilities ($\leq 1/4$ mi)
-  Travel delays/slowness possible
-  Extended period of significant aviation impacts (delays, diversions, reduced AAR)

- Planning/response for/to different kinds of incidents, including a weather scenario (dense fog)
- Hosted and led by the City of Phoenix Aviation Department in the AEOC at Sky Harbor



DSS Planning & Execution

Weather Forecast Office
Phoenix, AZ
Friday, April 21

Aviation Email Weather Briefings February 3-12, 2023

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

Risk Levels	Little to None	Minor	Moderate	Major	Extreme
-------------	----------------	-------	----------	-------	---------

- 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)
- Utilizes Western Region Weather Risk Outlook (WRO)

Phoenix TRACON (P50)

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

WRO Impact Legend - Aviation

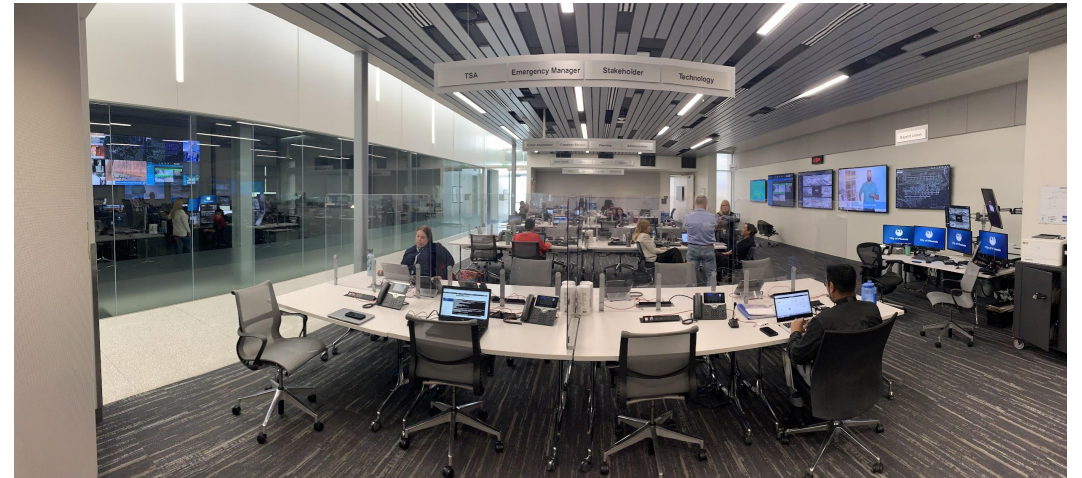
Hazard	Little to None	Minor	Moderate	Major	Extreme
TS - Thunderstorm Probability	<10%	10-33%	33-66%	66-90%	>90%
CIG - Ceiling (hundreds of feet)	>055 (VFR/VMC)	>030 - 055 (VFR/VMC)	010 - 030 (MVFR)	005 - <010 (IFR/IMC)	< 005 (LIFR)
VIS - Visibility (mi)	>10 sm (VFR)	>5 - 10 sm (VFR)	>3 - 5 sm (MVFR)	>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

PHX AEOC Deployment February 12-13, 2023



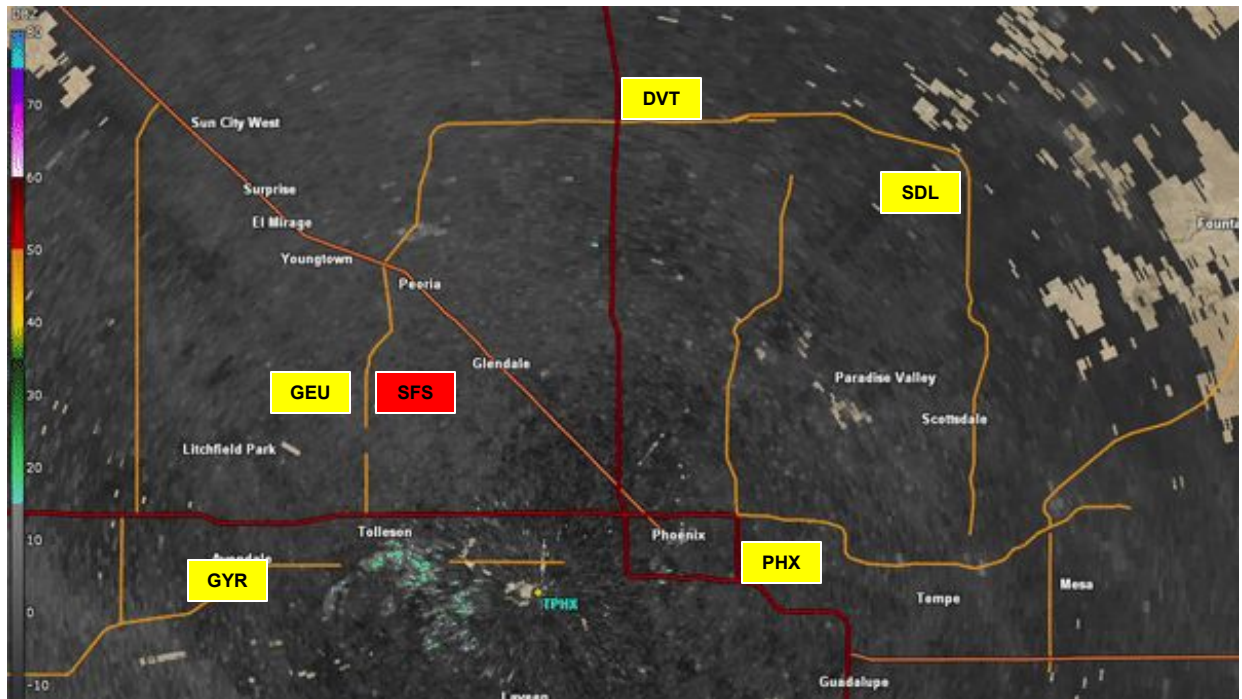
AEOC activation (times in MST):

- 2/12 1600-2400 (PSR deployed 1600-2000)
- 2/13 0400-2400 (PSR deployed 0400-1630)
- 2/14 0400-1200



- Hourly round-table updates
- Virtual support through WebEx while not deployed
- Updates posted to WebEOC
- Activity logged with ICS-214 form
- Utilized AWIPS In The Cloud

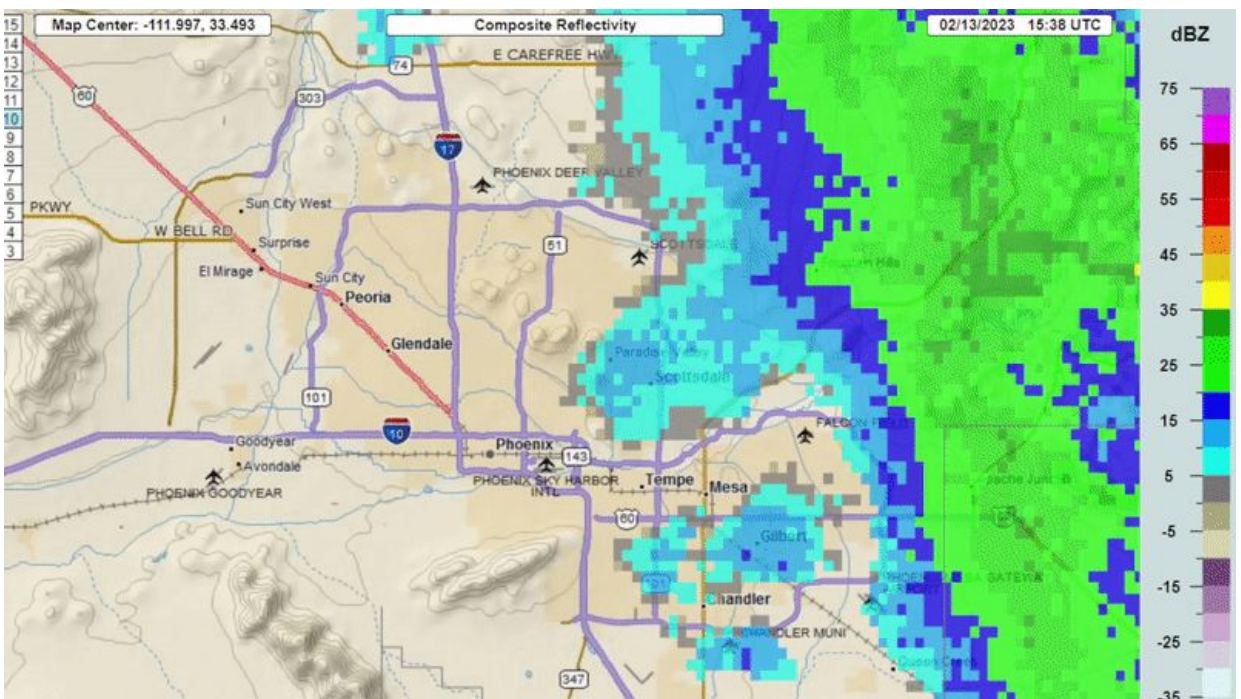
Super Bowl Sunday



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

- SFS = State Farm Stadium

Departure Monday



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

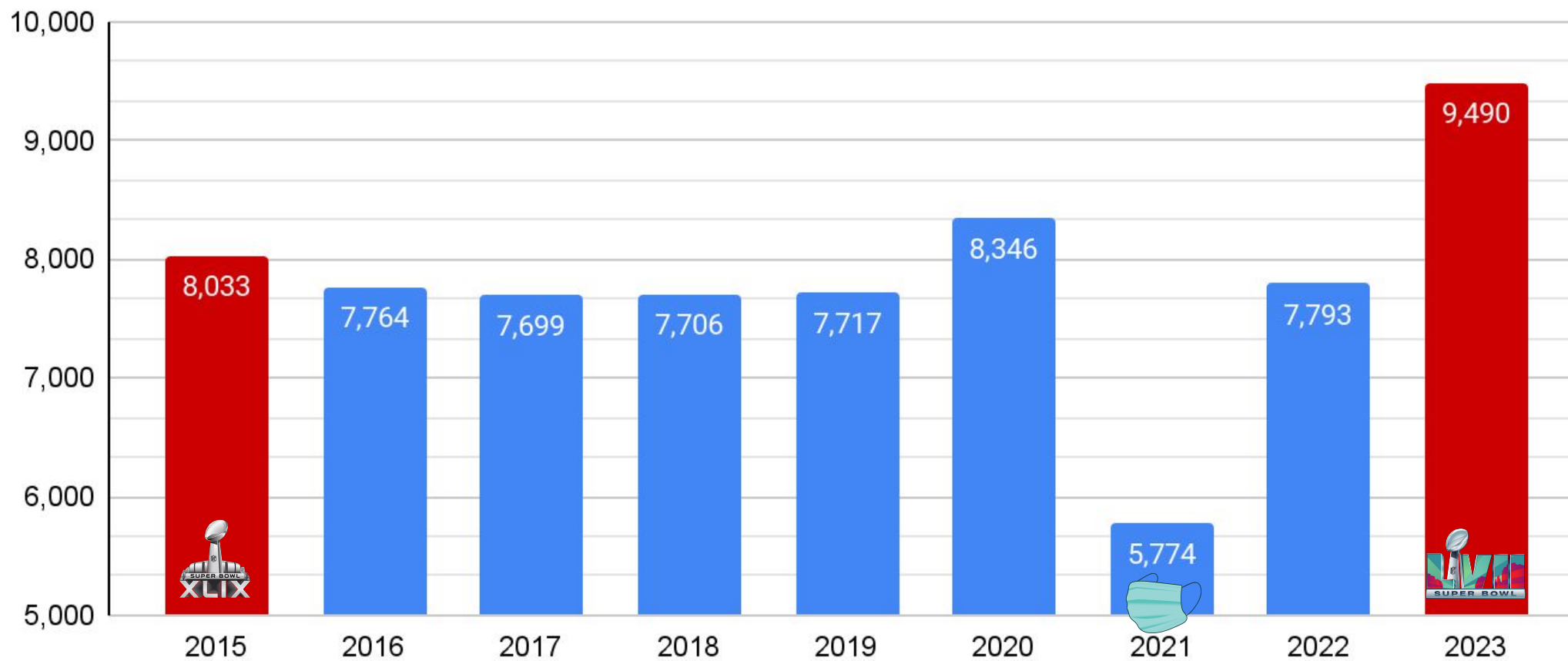
- 3-5K ft CIGs, lightning flashes, small hail
- Brief Ground Stops at DVT & FFZ and Ground Delays at PHX & SDL due to low CIGs



By the numbers

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

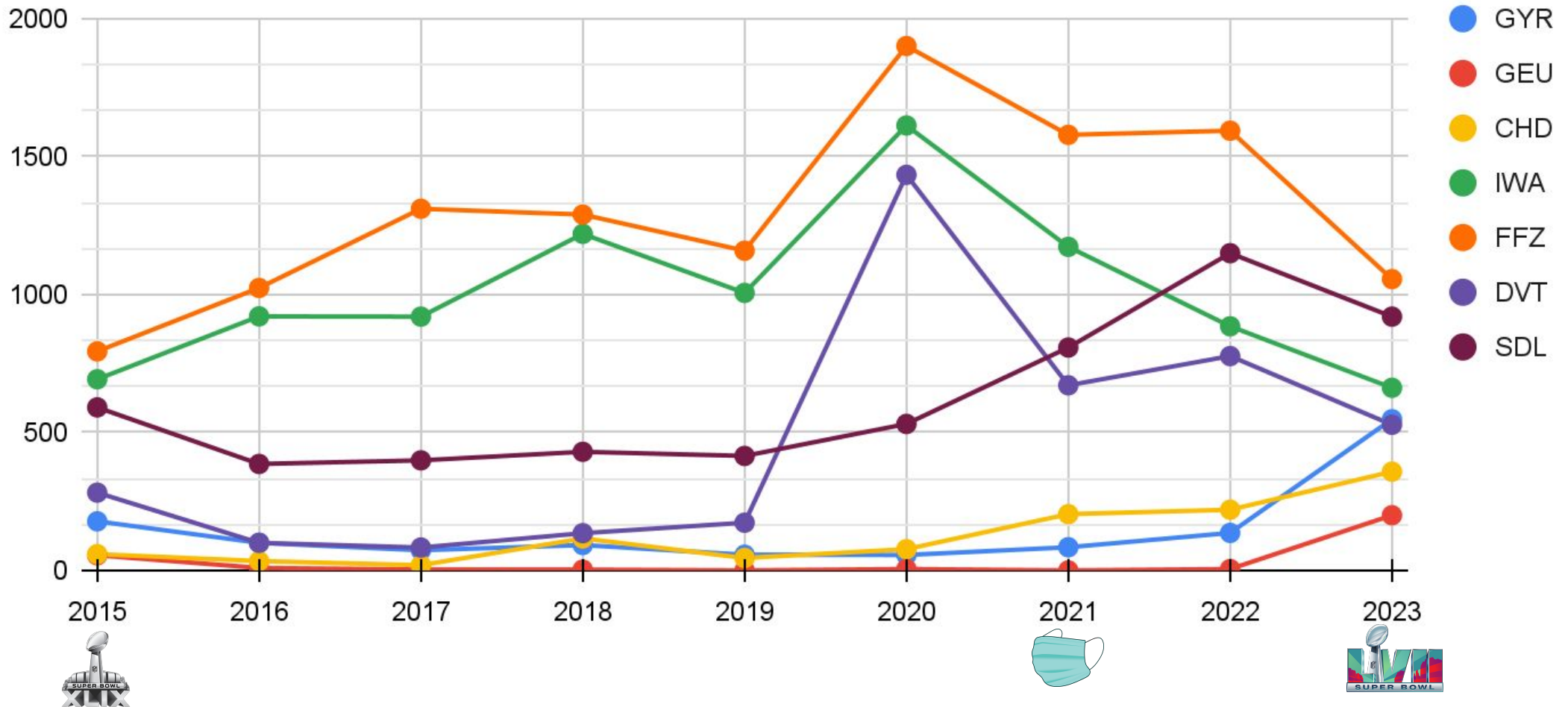
Airport Operations from Wednesday Before SB/WMPO through Tuesday After SB/WMPO



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

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

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





PHX

2/13/2023

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: 1,200 takeoffs & landings

GROUND TRANSPORTATION

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



PHX's Busiest Day Ever

[Press Release](#)

~6 AM MST - 2 PM MST

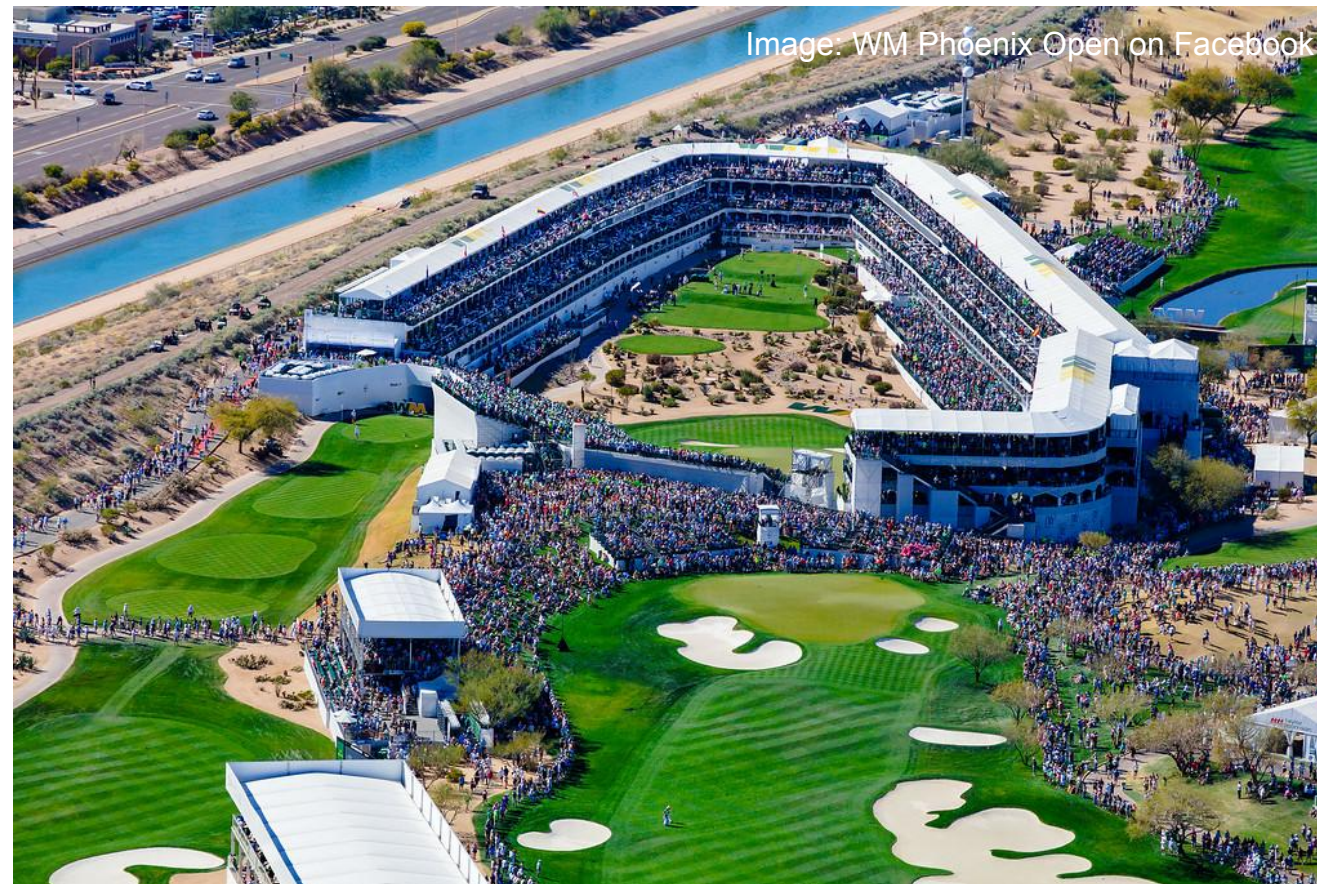


Other Airports:

- 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

WMPO Attendance Numbers

- Monday (Practice): ~50,000
 - Tuesday (Practice): ~100,000
 - Wednesday (Pro-Am): ~150,000
 - Thursday (Round 1): ~200,000
 - Friday (Round 2): ~250,000
 - Saturday (Round 3): ~400,000*
 - Sunday (Final Round): ~150,000
-
- Event Total: ~1.275 mil



**One of the highest attended, if not the highest, single-day sporting event all time worldwide*



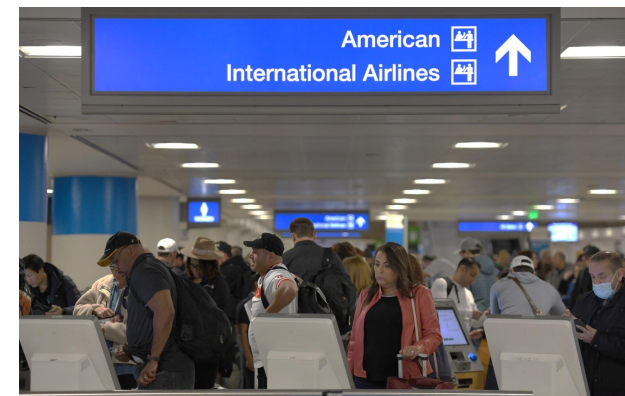
After Action Review

Weather Forecast Office
Phoenix, AZ
Friday, April 21

Phoenix Aviation Department Super Bowl AAR

February 22, 2023

- All reviews from different PHX aviation departments and supporting agencies/stakeholders were **positive**
- All seemed to go **smoothly** on each of the key days, Team Arrivals (2/5), Charters (2/9), Gameday (2/12), Departure Monday (2/13), & Departure Tuesday (2/14), including at other CoP airports, GYR and DVT
- 3 visiting LAS employees, passed along **high praise and kudos** to the PHX team for how well executed and organized operations were
- Overall, operations were **well planned, organized, coordinated, communicated, and executed**





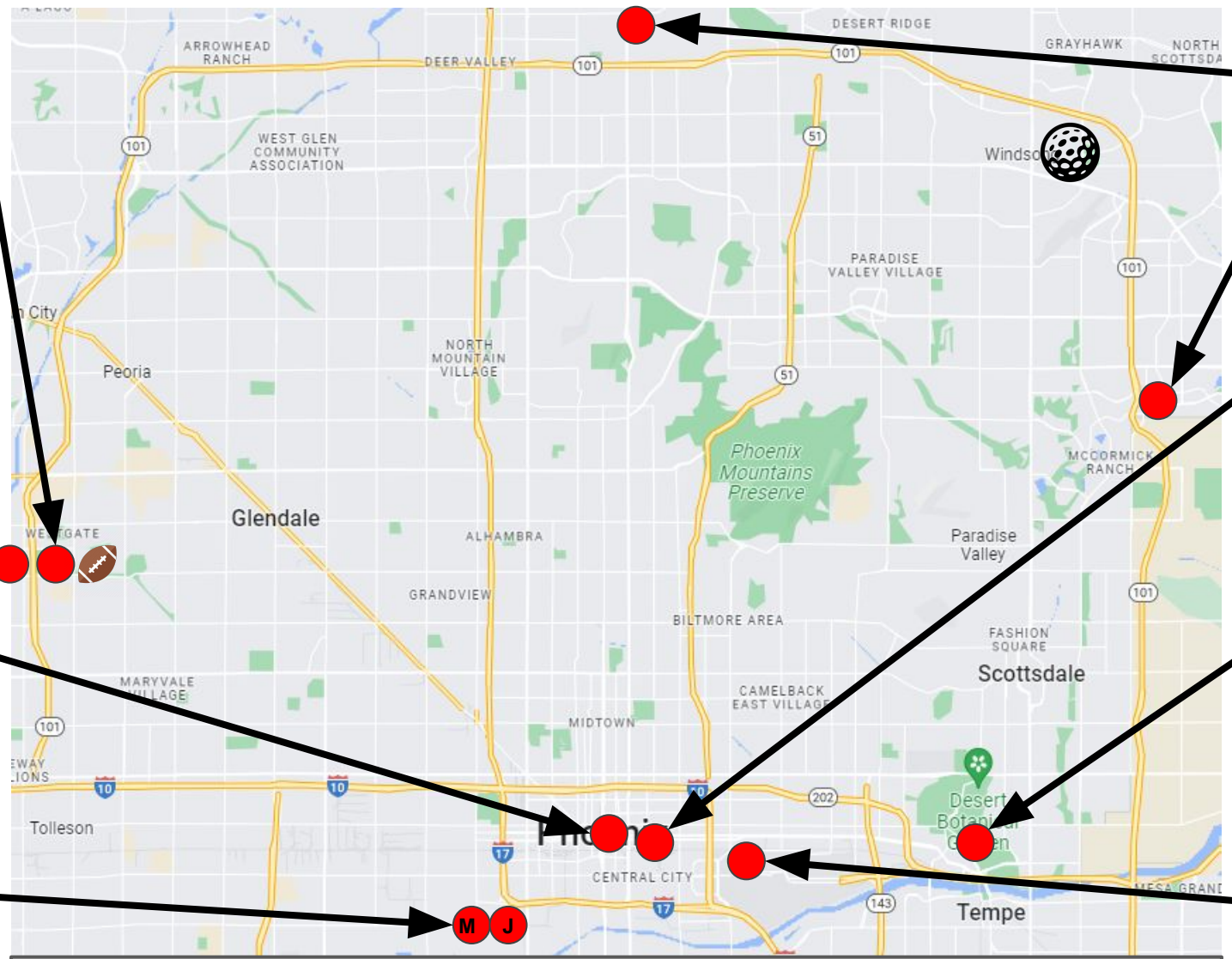
Other DSS & Activities

SBCC (Game Day @ SF Stadium)
Feb 12
2 Meteorologists

Glendale EOC
Feb 11-12
1 Meteorologist

SB Command Center (Pre-Game)
Feb 3-12
4 Meteorologists

MACC & Phoenix EOC
Feb 3-13
2 Meteorologists
Joint Information Center (JIC)
Feb 4-12
1 Meteorologist



FBI Intelligence Ops Center
Feb 4-12
2 Meteorologists

Scottsdale EOC
Feb 6-12
1 Meteorologist

CoP Tactical Ops Center
Feb 9-12
2 Meteorologists

WFO Phoenix Operations
Feb 3-13
*10 Local Meteorologists
*2 Additional Meteorologists
1 Hydrologist
2 Electronic Technicians
1 Electronic Systems Analyst
1 Admin Support Assistant
1 Pathways Student

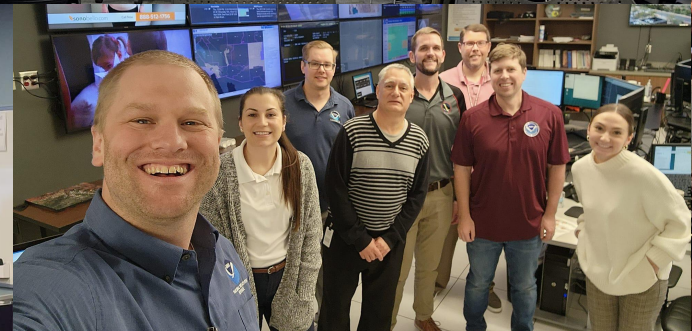
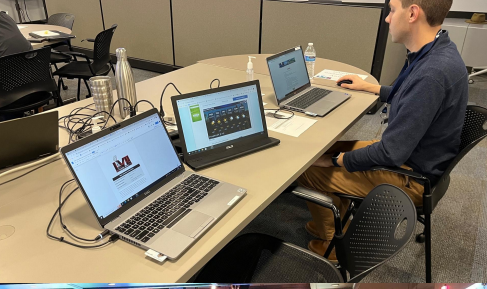
Sky Harbor Airport EOC (AEOC)
Feb 12-13
1 Meteorologist

*A couple of the Local Meteorologists also deployed and the 2 Additional Meteorologists were former WFO Phoenix meteorologists that came back, from their new offices, to help.



Other DSS & Activities

Weather Forecast Office
Phoenix, AZ
Friday, April 21





Acronyms

AAR - After Action Review/Report
AAR - Airport Arrival Rate
AEOC - Airport Emergency Operations Center
AvnFPS - Aviation Forecast Preparation System
AWIPS - Advanced Weather Interactive Processing System
CHD - Chandler Municipal Airport
CIG - Ceiling
CoP - City of Phoenix
CWSU - Center Weather Service Unit
DSS - Decision Support Services
DVT - Phoenix Deer Valley Airport
EOC - Emergency Operations Center
FAA - Federal Aviation Administration
FBI - Federal Bureau of Investigation
FFZ - Falcon Field Airport
GEU - Glendale Municipal Airport
GYR - Phoenix-Goodyear Airport
ICS - Incident Command System
IWA - Phoenix-Mesa Gateway Airport

JIC - Joint Information Center
LAS - Harry Reid International Airport (Las Vegas, NV)
MACC - Multi-Agency Coordination Center
NWS - National Weather Service
PHX - Phoenix Sky Harbor International Airport
PSR - WFO Phoenix
RWG - Resource Working Group
SB57 - Super Bowl LVII
SBCC - Super Bowl Command Center
SDL - Scottsdale Airport
TAF - Terminal Aerodrome Forecast
TRACON - Terminal Radar Approach Control Facility
TTX - Tabletop Exercise
WAN - Wide Area Network
WFO - Weather Forecast Office
WMPO - Waste Management Phoenix Open
WR - Western Region
WRAM - Western Region Aviation Meteorologist
WRO - Weather Risk Outlook
ZAB - CWSU Albuquerque



Questions?



Sean Benedict

NWS Phoenix

Lead Meteorologist | Aviation Program Manager

Email: sean.benedict@noaa.gov



weather.gov/phoenix

