2024 SHAREHOLDERS REPORT

Indianapolis, IN

NWS

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SEVERE WEATHER SUMMARY

Tornado Activity Significantly Above Average

Indiana experienced another active severe weather season in 2024, marked by a substantial increase in tornado activity for the second consecutive year. The state recorded 57 tornadoes, more than double the historical average of approximately 25 annually, and surpassing the 54 tornadoes observed in 2023. Tornadoes occurred on 16 separate days, ranging in intensity from EF0 and EF1 to two significant EF3 events. Tragically, one fatality occurred as a result of the EF3 tornado that impacted Winchester, Indiana on March 14th. Reports of severe thunderstorm wind and hail events also exceeded typical seasonal averages.

Key Severe Weather Events in Central Indiana 2024

- **March 14 Winchester Tornado and Large Hail Event:** An EF3 tornado struck Winchester, Indiana, causing widespread damage to residential and commercial properties and resulting in one fatality. This event also included reports of baseball-sized hail across north-central Indiana
- **May 7 Multi-Hazard Event:** Multiple tornadoes, large hail, and damaging winds were reported across the region
- **May 26 Knox County Tornado:** A tornado was confirmed in Knox County
- **June 25 High Wind Event:** Severe storms brought damaging winds of up to 70 mph
- **June 29 Severe Storms and Landspout:** Damaging winds and a landspout tornado were observed
- **July 9-10 Martin County Tornado and Tropical Cyclone Impact:** A tornado occurred in Martin County, accompanied by heavy rainfall and gusty winds associated with the remnants of Tropical Cyclone Beryl
- **July 15-16 Derecho Event:** A derecho brought widespread 75 mph winds to the region
- **July 29 Hamilton-Madison County Tornado and Severe Storms:** A tornado was reported in the Hamilton-Madison County area, along with other severe storm activity
- **September 22 Delaware County Landspout Tornado:** A landspout tornado was observed in Delaware County

2024

By Sam Lashley

INDIANA HEARTLAND WITNESSES A "TOTAL ECLIPSE" OF COLLABORATION DURING 2024 SOLAR ECLIPSE

The recent total solar eclipse on April 8, 2024, saw an unprecedented level of collaboration among National Weather Service (NWS) offices in Indiana. Six offices – Chicago (LOT), Northern Indiana (IWX), Wilmington (ILN), Louisville (LMK), Paducah (PAH), and Indianapolis (IND) – joined forces to provide comprehensive Impact-Based Decision Support Services (IDSS) across the state.

This collaborative effort involved:

- Joint Operations Plan: A detailed plan was developed, including daily email briefings, live video conferences, and on-site IDSS support at the Indiana State Emergency Operations Center (ISEOC).
- Streamlined Communication: A shared IDSS Briefing packet was created, with each office contributing information specific to their area. This significantly reduced the workload for each office and improved efficiency.
- Focused Briefings: Live webinars were conducted by key offices, minimizing the number of individual briefings required.
- Addressing Unique Challenges: Forecasting cloud cover and identifying optimal viewing locations was a critical focus, considering potential traffic congestion and emergency response needs.

Crowds gathered in downtown Indianapolis ahead of the eclipse

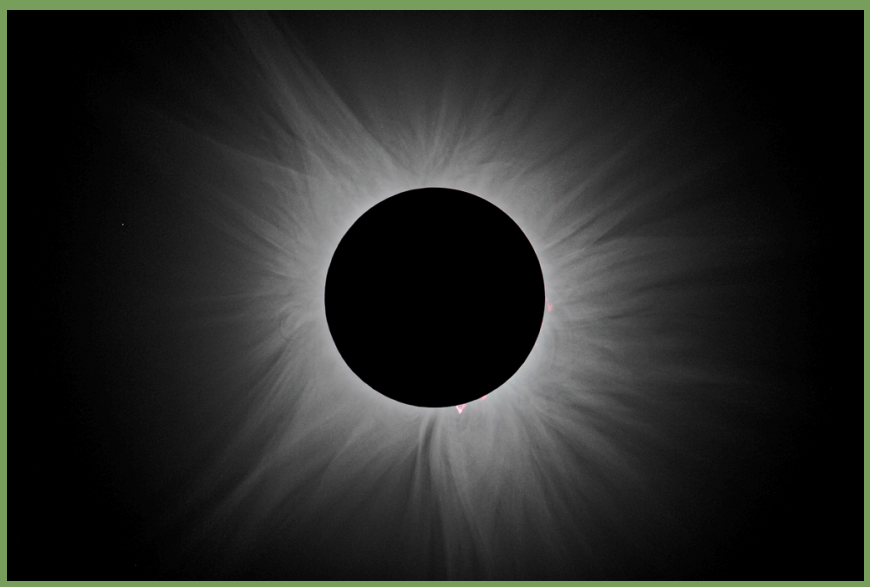
NWS

WCM Sam Lashley monitoring the weather at the Indiana State EOC during the solar eclipse

Positive Feedback: The collaborative effort received high praise from partners. Joel Thacker, Executive Director of the Indiana Department of Homeland Security, expressed his appreciation for the NWS's support and acknowledged the valuable insights gained into cloud forecasting.

Key Takeaways: This successful collaboration demonstrates the power of interagency cooperation in preparing for and responding to significant events. By leveraging shared resources and expertise, the NWS offices in Indiana effectively supported public safety and enhanced the overall experience of the 2024 solar eclipse.

Photo of the 2024 solar eclipse over Indiana by Meteorologist Matt Eckhoff



INDIANAPOLIS 2024 STATS

96°

HIGHEST TEMPERATURE

Occurred on August 30

LOWEST TEMPERATURE

Occurred on January 15

-6°

43.53"

TOTAL PRECIPITATION

The yearly average is 42.63"

INDY WING

CWSU ZID MIC Heather Stanley and FAA ZID District Assistant General Manager Roland Ratliff discuss the importance of the TAF and the impacts to users in air traffic control and beyond.

In October, the first ever Indy Weather Impacts Networking Group (WING) was held and co-hosted by NWS Indianapolis, the Center Weather Service Unit (CWSU) in Indianapolis (ZID), and the Indianapolis Airport Authority (IAA). Indy WING was the result of over a year of planning efforts by a team of NWS and CWSU personnel, led by Meteorologist and IND Aviation co-lead Joseph Nield, and consisting of IND Warning Coordination Meteorologist (WCM) Sam Lashley, Science Operations Officer (SOO) David Beachler, Lead Meteorologist Michael Koch, CWSU ZID Meteorologist-in-Charge (MIC) Heather Stanley, and Meteorologist Felix Garcia. The goal was to expand and strengthen cross-disciplinary partnerships with respect to impactful weather and to be better familiarized with each other's operations, sensitivities to weather impacts, and use of forecasts and other aviation weather information to improve aviation IDSS for Core Partners at Indianapolis International Airport and across central Indiana. Representatives from the major stakeholders presented during the morning session on their respective roles in aviation forecasting and IDSS, whether as a provider or user, and the afternoon was spent going through three short weather phenomena-centric tabletop exercises, with discussions on forecast content, response, and areas for improvement.

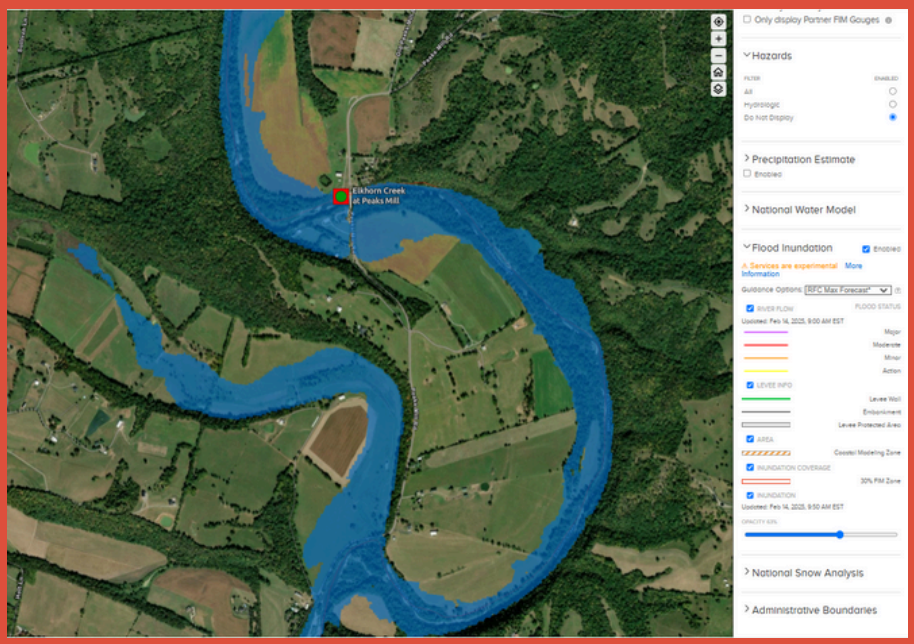
Indy WING brought together NWS meteorologists; meteorologists from private sector partners; federal, state, and local officials such as the Federal Aviation Administration, Indiana State Police, and IAA emergency and public safety operations officials; and public safety officials from surrounding regional airfields. The Indianapolis International Airport is a busy secondary hub for FedEx freighter air traffic, and the CWSU ZID airspace supports 3 of the top 10 cargo airports in the country at Indianapolis International Airport, Cincinnati/Northern Kentucky International Airport, and Louisville Muhammad Ali International Airport.

Earlier in the year, Lead Meteorologist Michael Koch also conducted additional training and outreach to aviation students and pilots across central Indiana in connection with Ivy Tech and Purdue University. Topics taught included how to read terminal aerodrome forecasts (TAFs), meteorological aerodrome reports (METARs), and charted outputs from weather balloon soundings - all of which help pilots and aviation workers navigate weather hazards for flight planning.

By Joe Nield, Kacie Fuson, & Mike Koch

NEW TOOLS FOR HYDRO

While 2024 was a relatively inactive year for flooding in central Indiana, it was an active year for training and education. There were significant changes in hydrology tools available from the NWS in 2024. March saw the official release of the National Water Prediction Service (NWPS, available at water.noaa.gov), the GIS-based replacement for AHPS, which had been in use since the 1990s. At the end of September, NWS Flood Inundation Mapping (FIM) services expanded to include central and southern Indiana as part of the expansion of these experimental services to cover over 30% of the U.S. population. These FIM provide approximate spatial estimates of where the land area is covered in water based on modeled forecast river flows and the latest conditions, and are available on the NWPS. These inundation maps provide detailed, street level information on where and when impacts may occur. NWS Indianapolis participated in several workshops, conferences and training sessions throughout the year to educate our partners about these new and improved services. These training efforts will continue in 2025, and we will provide additional flooding decision support services to emergency management during significant flood events leveraging these inundation maps. For more information on NWPS and FIM services, please visit www.weather.gov/owp/operations.



An example of the dynamic River Forecast Center (RFC) Maximum Forecast FIM, in this case for Elkhorn Creek at Peaks Mill (Kentucky) where moderate flooding was forecast in mid-February 2025

By Crystal Pettet

2024 EXTREMES

56.9°

WARMEST YEAR ON RECORD FOR INDY

The average temperature for 2024 was 56.9°, 3.2° above normal. Records kept since 1872.

57

2ND MOST TORNADOES IN INDIANA

2011 had the most tornadoes with 72. The average number of tornadoes per year is 25. Records kept since 1950.

WARNINGS THROUGHOUT THE YEAR

Between the 6 NWS offices that cover Indiana, a total of 824 warnings were issued throughout 2024. There were 119 Tornado, 413 Severe Thunderstorm, 197 River Flood, 57 Flood or Flash Flood, 7 Winter Storm, 5 Wind Chill, 14 Freeze, 3 Excessive Heat, 6 High Wind, and 3 Red Flag Warnings.

WORKING WITH AT-RISK COMMUNITIES

Many communities across Indiana have been significantly affected by inclement weather events through the years. While weather impacts everybody on a daily basis, some communities experience more adverse economic impacts and struggle to recover from significant weather events than others. In the last few years, Meteorologists at IND have placed an increased emphasis on these at-risk communities across Central Indiana in order to enhance public safety before, during, and after hazardous weather.

On August 1, NWS partnered with Indiana Department of Homeland Security (IDHS) to host a conference focusing on government agencies, businesses, and other organizations who serve Central Indiana's most impacted and at-risk communities to significant weather. Government representatives in attendance included Emergency managers, IDHS, Indiana Department of Transportation (INDOT), Indiana Governor's office, multiple NWS offices, and NWS headquarters. Organizations from the community included those representing people with disabilities, deaf and hard of hearing, red cross, schools, and many other important groups.

As a result of the conference, IND made many new connections as well as started conversations with current and new partners on how to better reach at-risk communities across the state. While any type of inclement weather poses an impact to public safety and these at-risk communities, feedback from the conference revealed that extreme heat and cold resulted in the highest adverse effects for a wide range of organizations and groups. With this in mind, strong partnerships have been formed with healthcare coalitions across Indiana in order to learn more about temperature related illnesses and increase messaging to partners and those most impacted by extreme heat and cold. The local staff receives regular updates from local healthcare coalitions, such as M.E.S.H. Coalition, highlighting where warming and/cooling centers are set up, which can be further messaged to partners and the public. The new NWS Heat Risk tool is being used by Indianapolis meteorologists to highlight days where above average temperatures could pose a risk to public safety and especially for those sensitive to heat.

For 2025, NWS Indianapolis will continue to work with partners across the state to ensure that everyone in Indiana is able to not only access life saving weather information, but also be able to prepare for, remain safe, and recover from any type of hazardous weather quickly.

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