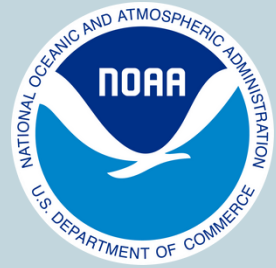


SHAREHOLDERS REPORT 2022



National Weather Service Indianapolis

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WELCOME

By Ted Funk, Meteorologist-in-Charge

Time flies – another year has already concluded! The year 2022 was very eventful at your National Weather Service (NWS) Indianapolis (IND) office. Welcome to our third annual Shareholders Report, where we summarize some of our 2022 activities and other information.

While the COVID pandemic continued in 2022, its lower overall effect allowed us to reintegrate as a staff in our office, while maintaining key remote support at times, and resume many in-person partner meetings and activities. Our dedication to the NWS mission helped us promote effective hazardous weather awareness to the people and communities in the 39 counties in central Indiana we serve.

Operationally, we finalized the reorganization of our main weather hub, as shown in the figure on the next page. We also began updating our conference room to create a modern, vibrant staff training and partner engagement room. We provided many forecasts and decision support information packets for the February 2-3, 2022 and December 23-24, 2022 winter storms and extreme cold. During the warm season, we dealt with several severe weather and tornado events, working with local partners to keep people aware of the storms, but luckily avoided any major tornado outbreaks across our area.

Partner-wise, IND provided onsite support for several events at the Indianapolis Motor Speedway and the Indiana Department of Homeland Security (IDHS) Districts 5-7 full scale communication/power outage exercise. Many requested weather and safety briefings were provided to the state fair, county fairs, festivals, camps, and sporting and academic events. We again held our annual Fall and Spring Partner Workshops virtually, and interacted with Indiana Department of Transportation (INDOT) as part of the Indiana Pathfinders program. We also met with TV meteorologists across central Indiana to discuss services, provided training to many spotters, and began reaching out to underrepresented groups. Warning Coordination Meteorologist (WCM) Sam Lashley attended frequent meetings and worked with our Emergency Management Agencies (EMA) in many counties. He also



planned and led an in-person Integrated Warning Team interactive meeting in December, as attendees from the NWS, EMA, IDHS, media, and others discussed severe weather, winter weather, and decision support topics of interest.

Academically, we began a pilot program at Purdue University where several IND staff members conducted in-person map discussions with meteorology students. In time, we hope to expand this effort to the atmospheric science departments at Ball State and Indiana Universities. IND also conducted safety dialogs with school teachers and administrators, gave talks to promote science and weather awareness in primary through secondary schools, and provided resume and interview advice to students at Indiana University.

Finally, we hired several new people at IND in 2022. Please see the "New Hires in 2022" article on page 5 for more information.

In 2023, our IND team looks forward to another excellent year and to deliver the weather information and support you need and depend on! We have developed a robust local "roadmap" consisting of many tasks and goals meant to challenge ourselves, optimize services, and provide indispensable weather information to our partners and the public.

We greatly value your feedback and whether we are meeting your weather needs. Feel free to contact us at nws.indianapolis@noaa.gov or call our office. Also check out our web and social media presence at weather.gov/ind, facebook.com/NWSIndianapolis, [@NWSIndianapolis \(#INwx\)](https://twitter.com/NWSIndianapolis), and youtube.com/NWSIndianapolis.

Please enjoy our 2022 Shareholders Report! As always, I am grateful to IND meteorologist Kacie Hoover who did a fantastic job assembling this report in a professional manner!

During 2022, we added several new great people at IND, bringing our team to full staffing. First, we hired two “Pathways” student interns (pictured below) from a strong pool of college student applicants. This included Mallory Monaghan from Georgia Tech University, and Jonathan Marcus, a graduate of Florida State University and current graduate student at the University of North Carolina. They both learned quickly at IND and did a fantastic job working full time for us this past summer, and they continue to work intermittently now while completing their academic careers.

Next, we hired three new meteorologists, namely Ohio Valley native Cody Moore from the NWS Juneau, AK office; Greg Melo from the University of Louisiana Monroe with graduate credits from Florida State; and Matt Eckhoff, who spent several years

NEW HIRES IN 2022



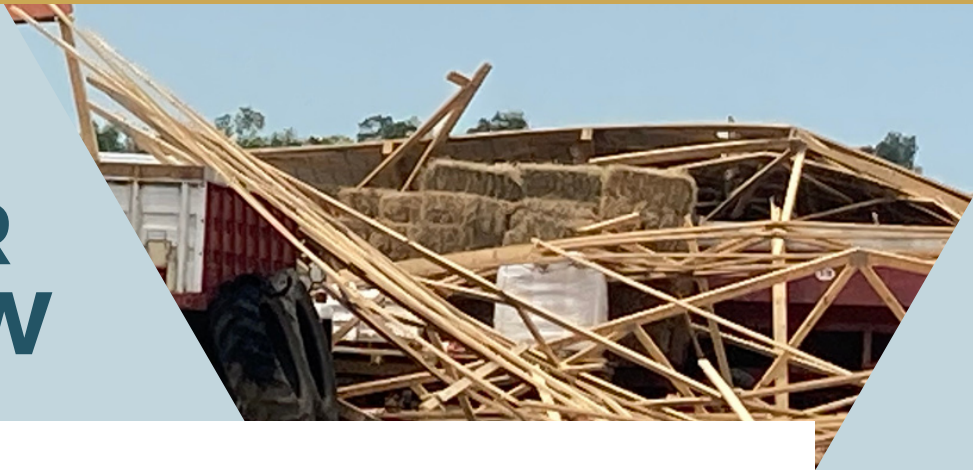
gaining valuable experience working for the Department of Energy's Hanford Site in Washington state. Cody, Greg, and Matt all have done a wonderful job so far at IND!

This past summer, IND also selected a new Information Technology Officer (ITO) in Chris Stumpf, who previously worked as a lead meteorologist at the NWS Milwaukee, WI office. Chris is already making a big difference at IND with his IT and meteorological knowledge.

Finally, Heather Stanley was hired as the new Meteorologist-In-Charge at the NWS's Central Weather Service Unit (CWSU) in Indianapolis (ZID), which provides valuable weather decision support information for the FAA and Indy Center.

by *Alexander McGinnis,*
Forecaster

THE YEAR IN REVIEW



Temperatures, despite anomalous extremes (see next page), were overall near normal for the Indianapolis area in 2022. The bigger story was an overall dry trend which was accelerated by the fifth driest autumn in the 152-year record, which ultimately brought the driest year since 2010 and 2nd driest year since 1999. Indiana state saw a below normal count of tornadoes, yet their concentration within the central Indiana region produced a slightly above-normal frequency for our 39-county area of responsibility.

There were eleven new daily records for temperature, precipitation, and snowfall throughout the year. Significant winter events encompassed both ends of the year including a long-duration rain-to-ice-to-snowstorm through February 2-3 that brought over a foot of snow to several northern counties and a late December arctic outbreak caused a “flash freeze” on December 22. The end of year arctic outbreak caused dangerous extreme wind chills as low as -46°F in Hamilton County, and Indianapolis’ record-tying low maximum temperature of 1°F on December 23, which was the area’s coldest day since February 1996.

Between the snow and cold was an active severe season that saw several

tornado events through April, May, and June. From May 19-21, there were five tornadoes that impacted central Indiana. One of those tornadoes was a cross-state, long-track EF2 tornado on the evening of May 19 that crossed from Illinois into Indiana as an EF1, then it crossed the White River 9 times while tracking for over 14 miles across Knox County. May 21 brought four tornadoes that were spawned within a severe squall line. This system produced brief EF0s in Brown and Johnson Counties, the latter blowing over a church steeple at Camp Atterbury. It also produced two EF1s that hit southern Shelby County, with one skipping across a 13.8-mile track that downed trees and farm buildings (see image above) due to winds as high as 110 mph – the region’s strongest winds of 2022.

Unseasonably high dewpoints in mid-June prompted three consecutive daily record high minimum temperatures as overnight lows only dropped into the mid to upper 70s. The year’s maximum temperature of 99°F on July 5 was the hottest day at Indianapolis since July 2012. An overperforming early-season snowfall on November 12 dropped mainly 1-3” across the region, and 2.7” officially for the Indianapolis area.

Indianapolis Highest Temperature

July 5, 2022

99°

Yearly Average

95°

Indianapolis Lowest Temperature

December 23, 2022

-10°

Yearly Average

-5°

Indianapolis Total Precipitation

2022

34.88"

Yearly Average

43.60"

Indiana Tornado Count

Central Indiana | State of Indiana
2022

11 | 15

Yearly Average

10 | 25

*by Sam Lashley, Warning
Coordination Meteorologist*

PARTNERSHIPS, OUTREACH, & EDUCATION FOR A WEATHER READY NATION



It was another busy year for the National Weather Service Indianapolis office with a full return to "new normal operations." Of course normal today looks considerably different from what we defined as normal pre-pandemic. The NWS has adapted and changed operating procedures over the last few years and we are now better positioned to attend both in-person and virtual meetings while interacting with more partners, schools, organizations and the general public. The staff at IND has worked hard to balance meetings and outreach opportunities between in-person visits and online meetings. This has actually allowed our office to increase the number of interactions with partners by eliminating wasted time driving to and from events when online opportunities exist. A total of 473 different activities were documented in 2022 in which NWS Indianapolis staff participated. These events

included planning meetings with core partners, outreach activities, school talks, office tours, interviews, Skywarn Spotter Training, career fairs, and many others.

NWS Indianapolis works closely with local, state, and federal partners to expand and improve our Impact-based Decision Support Services (IDSS) and public outreach for weather education and safety. A large part of these interactions include attending EMA and IDHS planning and coordination meetings, tabletop and functional exercise planning and participation, invited presentations that include weather safety information or long range outlooks, and county visits to educate and train the public and first responders to be Skywarn weather spotters. For the first time in 10 years, NWS Indianapolis hosted an Integrated Warning Team Workshop to discuss hazardous weather and methods to

improve communication and notification of these hazards. Many of these meetings included city and county EMAs, IDHS, FEMA, local and state Department of Transportation agencies, Indiana Department of Education (IDOE), local law enforcement, fire departments, dispatchers, and amateur radio operators. During the 2022 year, NWS Indianapolis staff actively participated in or presented at 162 external meetings, exercises, partner site visits or Skywarn spotter training.

Staff at NWS Indianapolis also worked with schools across central Indiana to help educate administrators, teachers and students of all ages about weather and weather safety. A combination of in-person and virtual school talks were conducted for 15 classes with a total attendance of just over 1300 students and teachers. Two big events included weather information booths at the Indianapolis J.A. JobSpark career expo and the Celebrate Science Indiana (CSI) Science, Technology, Engineering, and Math (STEM) event. Over 12,000 children attended these two events and NWS Indianapolis staff was able to interact with many and share weather safety information along with career opportunities within the NWS.

Warning Coordination
Meteorologist Sam Lashley

attended the annual IDOE Safety Specialist Academy Conference in Indianapolis and trained nearly 600 school educators and administrators from across the state on the hazards of winter weather. He also provided safety information and resources these specialists could take back to their school districts.

A final component to our outreach and education efforts was conducting interviews with the central Indiana media as well as taking general weather questions and weather information requests. A total of 264 interviews with radio, newspaper, television, and internet outlets from across central Indiana were conducted this past year. Hundreds of emails and social media questions were also answered, but are not officially tallied.

To "provide weather, water and climate data, forecasts, warnings, and impact-based decision support services for the protection of life and property and enhancement of the national economy" remains the NWS mission and the priority of the NWS Indianapolis staff. By building trusted relationships with our core partners and educating the public and future generations about weather hazards, central Indiana and our local communities are better prepared for and ready to respond to dangerous weather when it occurs.

BUILD-A-TAF

by Jonathan Marcus & Mallory Monaghan, Pathways Interns



At NWS forecast offices across the country, one of the duties is to write a terminal aerodrome forecast, or TAF, for various airports within the office's forecast area. TAFs are written specifically for the surface conditions at an airport over the next 24 to 30 hours and are formatted in a way that can be quickly and easily read by pilots and air traffic controllers to ensure safe planning for takeoffs and landings. This past June, four meteorologists from IND hosted a booth at the Wings Over Indy airshow at the Indianapolis Executive Airport. The employees distributed literature regarding weather preparedness and hosted meaningful conversations about general NWS operations. There was also an interactive “Build-A-TAF” display that quickly took off and soared in popularity through the day among aviators and the general public.

Tasked with conducting outreach and education to those in attendance, Pathways meteorologists Jonathan Marcus and Mallory Monaghan created “Build-A-TAF,” where the airshow attendees could try their hand at forecasting aviation weather for the very tarmac they were standing on. The display featured standard aviation forecasting parameters that were placed onto magnets in METAR (meteorological aerodrome reports) code as well as written in plain English for increased accessibility. This allowed participants to create realistic TAFs on a whiteboard as if they themselves were aviation meteorologists.

When participants approached the booth, IND employees guided pilots, parents, and their children through the thought process that goes into a TAF before releasing them to craft their own forecasts. While pilots often read TAFs and can decipher METAR code, most indicated they had never actually learned how an aviation forecast was created. The IND booth was one of the more popular spots on the tarmac that day. In fact, the Build-A-TAF board even had a queue to participate at times, including multiple “future meteorologists” who may have issued their first forecasts at this event!



NEW NWS DIRECTOR RISES FROM THE RANKS

FROM WEATHER.GOV



Ken Graham is the new Director of the NWS and is the Assistant Administrator for Weather Services at NOAA. In this role, Ken is responsible for the day-to-day civilian weather operations for the United States, its territories, adjacent waters, and ocean areas.

Prior to becoming the 17th NWS Director on June 7, 2022, he served as the director of NOAA's National Hurricane Center (NHC), leading the nation through numerous hurricanes, including 30 named storms during the record-breaking 2020 hurricane season. His tireless energy to build effective partnerships at all levels of government and his close work with emergency managers underpin the nation's preparedness ahead of hazardous weather.

Graham is the first NWS director with a vast amount of operational field experience. He worked his way up through the ranks at NWS, mostly in field offices, starting as an intern meteorologist in 1994 at the New Orleans/Baton Rouge weather forecast office. Before his tenure at NHC, he led the New Orleans/Baton Rouge weather forecast office as the Meteorologist-in-Charge (MIC) with responsibility for providing life saving forecasts and warnings to people living in the weather-vulnerable Gulf region. As the MIC, Graham led his team to serve 22 Louisiana parishes and eight Mississippi counties, and directly supported seven separate billion dollar loss weather events since 2008. He implemented innovative IDSS during hurricanes Gustav, Ike, Isaac, and Nate as well as Tropical Storm Cindy, the Baton Rouge Flood of 2016, Mississippi River floods, and several tornado outbreaks. Graham worked to revamp the operational focus to working side-by-side with emergency managers and other decision makers during emergencies and each year, led training and exercise sessions with local, state, and Federal decision makers to prepare for hurricanes. For these efforts, Graham was honored with the Louisiana Governor's Emergency Service Award in 2014. During the Deepwater Horizon oil spill disaster, Graham led the cooperative intergovernmental engagement effort for NWS in the region and sustained Emergency Response Meteorologist deployments for more than five months while issuing more than 4,300 Spot Forecasts. His office received the National Weather Association's Operational Meteorology Award, Department of Commerce Gold Medal for Decision Support Services, and was the National Weather Museum's Meteorologist of the Year for his support during the oil spill.

He also previously served as the Systems Operations Chief at Southern Region Headquarters in Fort Worth, Texas and as the Chief of Meteorological Services at NWS headquarters in Silver Spring, Maryland. He was also the MIC at NWS forecast offices in Corpus Christi, Texas and Birmingham, Alabama.

Graham earned a bachelor's degree in atmospheric science from the University of Arizona and a master's degree in geoscience from Mississippi State University. He was named the 2022 Weatherperson of the Year by the Federal Alliance for Safe Homes and was a 2021 finalist for the Partnership for Public Service's Samuel J. Heyman Service to America Medal.

Graham, a licensed HAM Radio Operator, is a member of the American Meteorological Society, the National Weather Association, and the International Association of Emergency Managers.

by Cody Moore, Forecaster

REACHING UNDERSERVED & VULNERABLE POPULATIONS

In the age of technology, it is easy to assume anyone can access weather forecasts and safety information. However, in a culture where information is largely produced in one language and through various forms of technology, how does one protect themselves from hazardous weather or get weather forecasts when they don't fit into the societal mold? In order to fulfill the agency mission of protecting life and property, the NWS has made it a goal to be able to reach all population groups, including underserved and vulnerable populations.

Locally, at the Weather Forecast Office (WFO) in Indianapolis, we have been working towards reaching various population groups and demographics in order to further fulfill the agency mission. With Spanish being the second most spoken language in the United States, we have realized there is a huge demographic we have neglected to reach. In order to better serve the Latino community throughout Indiana, IND began posting warning information in both Spanish and English on Twitter earlier this year. While this is just a start, having this important information in both languages allows more people to quickly react to warnings and protect themselves from hazardous weather.

Other important groups WFO Indianapolis continues to work towards reaching are the lower income and homeless populations. Over the course

of the year, it has been a learning experience figuring out effective ways to reach these communities. While hazardous weather preparedness graphics are helpful, how does someone stay safe if they don't have a home, a secure shelter, or the financial means to protect themselves? We realized the NWS as a whole needs to come up with new ways of engaging these underserved and vulnerable populations as the current ways of spreading safety information are not tailored towards them. As a start, WFO Indianapolis is working with the Damien Center, an organization that directly works with low income and homeless populations, LGBTQ+ populations, and various demographics. We started by sending graphics to the Damien Center in both English and Spanish that relay weather safety information; however, we quickly realized there are likely more effective ways to reach those groups of people. After talking with those at the organization, a list was put together of all the tangible items they need in order to prepare their customers for the winter. This past Christmas season, we held a donation drive at our office to gather items the Damien Center is in need of, which included weather strips, window insulation film, hand warmers, coats, gloves, and blankets. While there is still more work to be done to better reach these communities, this has been a great start in reaching underserved and vulnerable populations and fulfilling the mission of protecting life and property.

INDIANA CLIMATE SERVICES

by Mike Ryan, Lead Forecaster

NWS Indianapolis continues to be a leader for climate services within the NWS, guiding one of the few statewide teams dedicated to climate services in the country. The state climate team was started in 2012 as a collaboration from all areas of the weather enterprise that serves the Hoosier state with climate needs. The team consists of over 30 members from the 6 NWS offices that cover Indiana, the Midwest Regional Climate Center (MRCC), the state climatologist located at Purdue University, and other state and regional officials such as IDHS, the Indiana Department of Natural Resources (IDNR), and the Agricultural Extension Offices.

The Indiana Climate Services team maintained quarterly conference calls in 2022. Members of our team participated in a Climate Services Workshop in Milwaukee in August, a drought messaging focus group for the Midwest, a visit to expand our partnership with Indiana State University, and several familiarization visits to the MRCC in West Lafayette. Our WCM Sam Lashley led an effort amongst several NWS offices in the eastern Midwest to develop methods to provide decision support for our partners over seasonal and sub-seasonal time periods. Implementation of these efforts will begin in 2023.

The Drought Mitigation team continued to interact regularly throughout 2022 with drier than normal conditions impacting much of the state during the second half of the year. Monthly conference calls, and weekly when needed, were led by the Indiana State Climatologist Office to assess evolution of drought conditions and their potential impacts across the state and to develop specific guidance to share with the National Drought Mitigation Center. NWS Indianapolis is an important part of this team as well, with our Service Hydrologist and Climate Services team members providing specific information on precipitation trends and forecasts that are incorporated into the drought guidance developed each week.

In 2023, ongoing research projects including further development of a statewide Severe Weather Climatology, and studying extreme precipitation trends across the state will continue. We will be involved in an NWS National Climate Services Workshop and a conference focusing on observation networks across the central U.S. in February. Also, our office will assist the MRCC in planning for a state climate summit that will bring many of our climate service partners from around Indiana together this summer in Indianapolis.



HOW LOW DID THE FLOW GO?

*by Crystal Pettet,
Hydrologist*



Summer and Fall 2022 brought abnormally dry and drought conditions to central Indiana. Yellow and brown lawns, dry cracked ground, and field fires became relatively common sights across the area during the fall as precipitation deficits grew amidst warm and often windy conditions. These conditions were not isolated to Indiana, as much of the central U.S. was classified as experiencing drought conditions according to the Drought Monitor. Low levels were seen along the Ohio River that prompted dredging to allow for navigation, and parts of the Mississippi River reached record low levels and produced significant problems for navigation, with parts of the Mississippi actually unnavigable at times. Meanwhile in central Indiana, river and lake levels looked very low as well, prompting many to wonder if any new records were being set locally.

While streamflow levels were very low across the area, no records were set on the mainstem rivers. Many of the records for low flow were set in 1941, with some others set in 1954 and a few other years as well. For a more recent comparison, the table on the next couple of pages show the lowest average daily flow value for mainstem river gauges during 2022 alongside the values recorded during the drought of the summer of 2012. On the upper White at Muncie and Anderson, flow was actually lower than that of 2012, and was the lowest since 2007 at Muncie and 2009 at Anderson. For locations along the Wabash, East Fork White, and lower White, flow was the lowest it had been since 2012, but 2012 was still lower. The probability of exceedance for the daily low flows recorded along these mainstem rivers during October was generally 90 to 95%, meaning 90 to 95% of the time flow will be higher than it was this past October.

For more information on precipitation statistics for 2022, see "The Year in Review" on pages 6 and 7.

Picture above: East Fork White River at Seymour on October 25, 2022. The river was at 1.9 ft and daily streamflow was 326 cfs. Note the exposed river banks as well as an exposed sandbar in the distance. At this level, water is too low for the backup manual wire weight gauge reading.

LOWEST DAILY AVERAGE STREAMFLOW IN CFS

Wabash River at:	2022	2012	Record	Date of Record	Probability of Exceedance (%)
Lafayette	969	654	399	9-26-1941	90
Covington	1160	940	487	9-29-1941	95
Montezuma	1270	1060	571	9-24-1941	95
Terre Haute	1540	1300	701	8-3-1934	95
Riverton	1770	1510	858	9-27-1941	95
Vincennes	2020	1610	770	*Date not listed	90
Mount Comfort	3560	3130	1650	9-27-1941	95
White River at:	2022	2012	Record	Date of Record	Probability of Exceedance (%)
Muncie	8.88	12	1.1	9-16-1954	90
Anderson	61.1	75	9.1	9-24-1940	90
Noblesville	115	114	44	9-28-1954	95
Nora	162	100	49	9-17-1941	90
Indianapolis	141	66	8	9-29-1941	90
Centerton	386	313	138	9-27-1954	90
Newberry	565	491	200	10-1-1941	90
Petersburg	1340	1270	573	10-1-1941	90

*Data and statistics compiled using USGS Streamstats

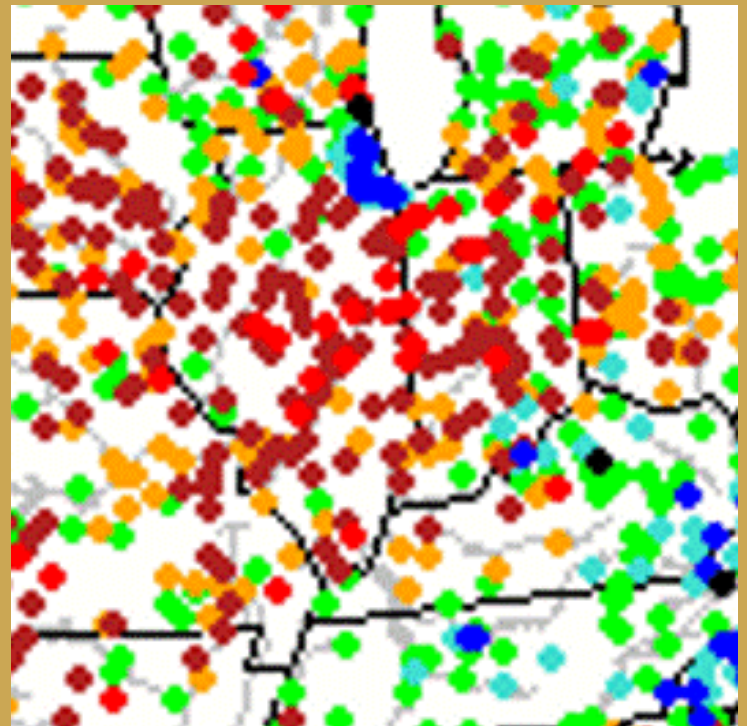
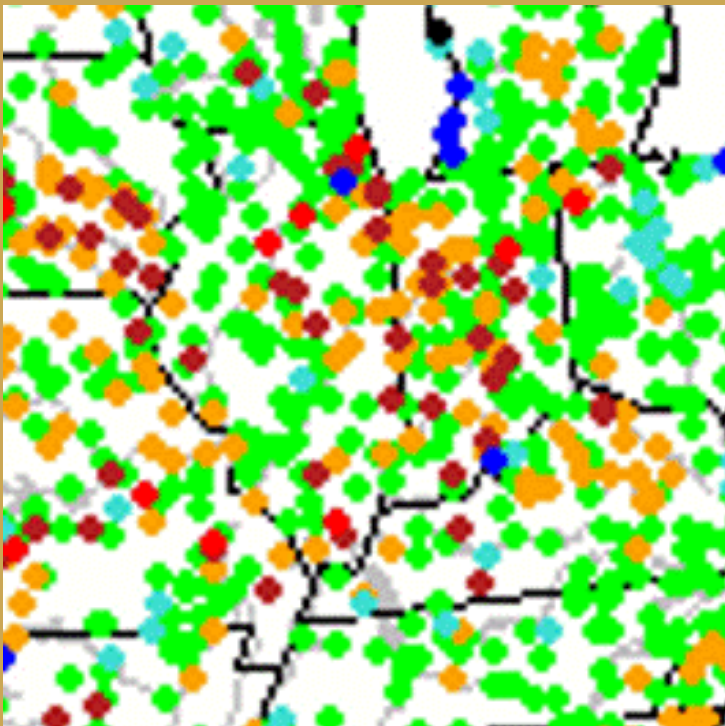
LOWEST DAILY AVERAGE STREAMFLOW IN CFS CONTINUED

East Fork White River at:	2022	2012	Record	Date of Record	Probability of Exceedance (%)
Columbus	248	135	85	9-22-1994	90
Seymour	324	213	86	9-28-1941	85
Bedford	398	278	138	9-7-1941	85
Shoals	538	379	64	10-6-1935	90

DAILY STREAMFLOW COMPARED TO HISTORICAL STREAMFLOW FOR THE DAY OF YEAR

OCTOBER 19, 2022

JULY 19, 2012



Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

*by Alexander McGinnis,
Forecaster*

THE COOP PROGRAM

The Cooperative Observer Program (COOP) is a network of volunteer observers maintained by the NWS, who take daily precipitation, if not also temperature and evaporation, observations. Several thousand of these observation sites are scattered throughout the United States' territories, with 53 of them located in central Indiana. Our local sites stretch from all corners of the region – from northwest of West Lafayette to southeast of North Vernon, from Vincennes to east of Muncie.

Central Indiana's COOP observation extremes during 2022 ranged from:

- 102°F at Farmersburg TV-2 in Sullivan Co. on July 5



- -14°F at Rockville in Parke Co. on December 23
- 4.77" 1-day rainfall at Vincennes 4 E in Knox Co. on July 24
- 14.0" 2-day snowfall at West Lafayette Sew Plant in Tippecanoe Co. from February 2-3

The greatest monthly precipitation from any site was 15.01" at Vincennes 5 NE (Knox Co.) in July.

Several individual observers and one institution celebrated length of service awards during 2022. Please join us in congratulating everyone below for their milestones.

50 Years

The Greenfield Water Filtration Plant

30 Years

Angie Thompson-Hewitt – Vincennes 5 NE
Paul O. Hunt – Pence 1 SW
Robert McLain – Castleton 2 S

25 Years

Teddy Scales – Indiana University

20 Years

Jeff Boyer – Farmland 5 NNW

15 Years

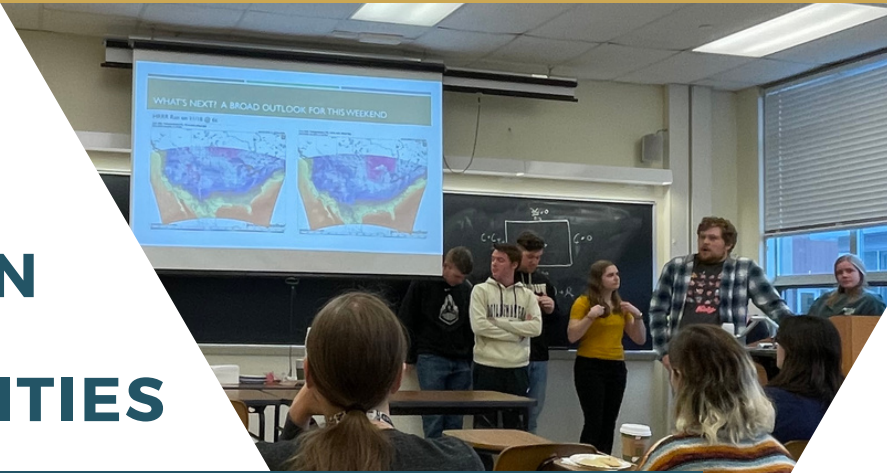
Jim Moore – Muncie

10 Years

Brad W. Shelton – Oolitic Purdue Farm
Sam Perry Jr. – Oolitic Purdue Farm

by Dave Beachler, Science & Operations Officer

DEVELOPING A MAP DISCUSSION PROGRAM WITH LOCAL UNIVERSITIES



As a science based agency, the goal each year is to build a stronger foundational understanding of the atmosphere and implement new cutting edge tools that the research community has developed or enhanced for operational usefulness. This process has numerous layers, with one layer focused on looking at the future generation of forecasters and weather enterprise partners. This past year the Science and Operations Officer (SOO) David Beachler organized a program to engage with students in atmospheric sciences from local universities.

The vision of this program is to build a bridge for students to understand how operational forecasting functions at IND, but equally be a resource or partner for them. The map discussions begin with students providing a quick briefing on the atmospheric processes that are taking place and drawing conclusions on possible outcomes to expect over the next several days from this forecast. IND personnel provide some insights on how to enhance their briefing skills or methods to connect the science to the general public for easy digestion. The other side of this program is that NWS personnel join

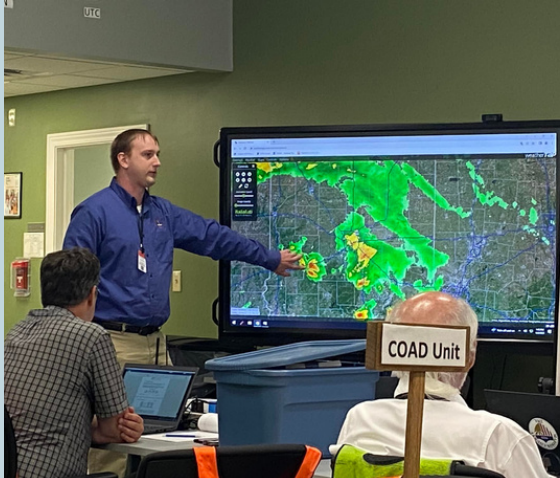
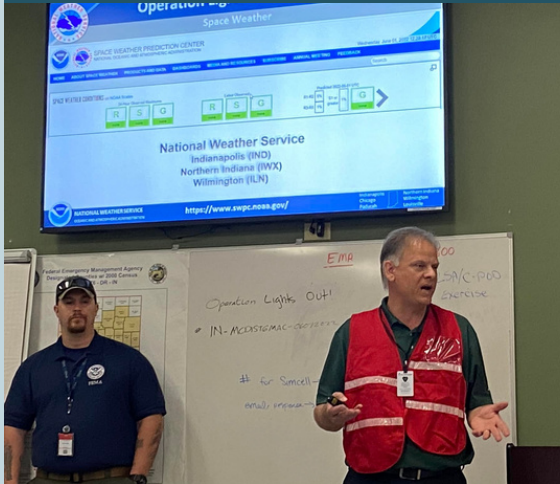
the SOO in attendance, which provides an opportunity for veteran forecasters to reignite the passion for operational meteorology and strengthen the scientific understanding of the atmosphere with students.

A couple additional layers to the map discussion program will be IND colleagues leading remote map discussions from the forecast office operations floor, and hosting students in-person at our office. The in-person visits will have students sit and learn the warning decision making process from use of the Weather Event Simulator (WES), which is the tool that forecasters utilize before and after hazardous weather events to improve and refine their skills.

The final piece of this entire program with local universities is the relationship being fostered between NWS personnel and students. While not all students will seek future employment within the NWS, we are focused on building a strong relationship with future members within the Weather Enterprise. That will help build a Weather Ready Nation!

STATE EXERCISE

by Andrew White, Forecaster



During June 2022, the NWS office in Indianapolis worked with IDHS and local county emergency managers on a Full Scale Exercise (FSE). This is the largest scale exercise that the state undergoes and involved numerous entities within the federal, state, and local governments.

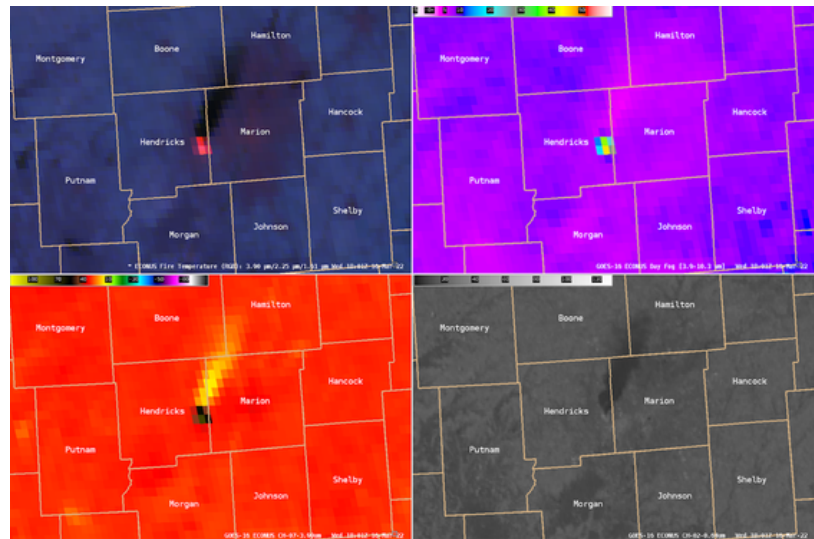
The focus of this exercise was to test a plan regarding the impacts of a long term power outage due to a solar storm and to see how supply chains could be maintained during a period of extended power and communication outages.

The NWS not only provided weather information regarding how a solar storm would impact both power and communication systems ahead of the event, but were also present during the exercise to ensure that all participating parties were safe from any real world weather events. During the exercise, thunderstorms impacted the site on the second day of the exercise which caused a brief shutdown of operations and the eventual cancellation of the end of day activities.

We greatly value the partnership and collaboration that is built upon during exercises like these and look forward to how we can take the lessons learned from 2022 and apply them in 2023.

FIRE WEATHER PROGRAM

*by Michael Koch, Lead
Forecaster*



Fire weather is just one of the many factors of weather that the NWS forecasts for. In 2022, IND issued 50 spot forecasts for prescribed burns. There were many Elevated Fire Danger days and 3 Red Flag Warnings that needed to be issued through the year.

On March 5, south-southwesterly gusts as high as 40 mph and record warmth led to minimum relative humidity (RH) values under 25% east of the Wabash Valley. A 20-acre forest fire occurred southwest of Nashville, which was ignited and fanned from the anomalously dry and windy conditions over central Indiana. Five households were evacuated, with 12 volunteer fire departments on site to help extinguish the blaze.

Often, fires can be seen from Geostationary Observational Environmental Satellites (GOES). On March 16, a distribution center in Plainfield burned down due to a fire that started within the building. From various satellite products (shown above), it can be seen that smoke was being blown to the north-northeast and stretched all the way into Hamilton County. The IND office was in contact with local fire departments and dispatch throughout the day to update them with current wind conditions as recovery efforts were underway.

In November, the fire weather program leader at IND, Michael Koch, presented at the Big River and Lower Ohio National Fire Danger Rating System (NFDRS) workshop. This led to a better understanding between the forecast process and how fire officials use NWS products. From this workshop, it was requested that a new forecast point be created for Sullivan County, which was then implemented by December 18.

SHAREHOLDERS REPORT 2022

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