Fall 2022 Review

of Weather Conditions Experienced In Central Indiana

58th Warmest on record at Indianapolis

****6th Driest on record at Indianapolis****

****Once in Every 25 Years ... Driest Since 1999****

Temperatures

SEPTEMBER 2022

September 2022's temperatures were overall near to slightly above normal. Synoptic patterns over Indiana through the first three weeks of the month cycled between moderation under weak or cut-off upper troughs and the hot western-US ridge building in from the west. As if on cue with the autumnal equinox, September's last several days were consistently cool to unseasonably so. To end the month, Indianapolis recorded 5 consecutive days below normal for the first time since April 2022; while the **21st-30th** also featured 9 consecutive days with no above normal average temperatures – for the first time since May 2021. For the third consecutive month Muncie was the relative cool spot. Elsewhere, the numbers showed a warm to hot trend during the **15th-21st** that was offset by consistently cool readings through the **22nd-30th**. Therefore, the difference that led the month's slightly warm trend was the several milder days across the **1st-10th**, and especially their above normal morning lows that were often in the mid to upper 60s.

Decreasing humidity on the **1st** promoted a 25-30 degree climb for the hottest day of the month's first nine; a diurnal range of 30 degrees was observed at both Bloomington and the Spencer COOP station (Owen Co.), both sites also peaked at **87F**, as did several COOP sites, including the Davis Purdue AG Center at Farmland 5NNW (Randolph Co.), and Washington 1W (Daviess Co.), while Indianapolis reached 86F. The **2nd** was another very warm day for several southern counties, with **89F** reported at the Southwest Purdue AG Center at Vincennes 5 NE (Knox Co.). The next week featured several generally seasonable days with daily temperatures ranging from the 60s to the 80s; slightly above normal conditions on the **4th-5th** were led by warmer overnights, with low temperatures as high as 70F at the Shoals 8 S COOP station (Martin Co.) and 69F at 1st-order airports in Marion County (on the **4th**) ... and 70F at Marion

SEPTEMBER 2022 TEMPERATURES (con't)

County airports, Shelbyville and Shoals 8 S (on the **5th**). Cooler mornings with lows in the 50s were found on the **8th** and **9th**, although more 25-30 degree rebounds kept these days overall near normal: on the **8th** the New Castle 3 SW COOP station (Henry Co.) dropped to **51F**, while the Farmland 5 NNW (Randolph Co.) COOP site climbed 35 degrees (from 54F to 89F); the **9th** brought lows of **50F** at the Crawfordsville 6 SE COOP station (Montgomery Co.) and 51F at Farmland 5 NNW, while Crawfordsville 6 SE sported a 32 degree climb to 82F. Indianapolis dropped to 60F both mornings.

The **10th** was the hottest day of the month's second week, with highs reaching **88F** at several COOP stations, including Spencer, and Tipton 5 SW (Tipton Co.), while most 1st-order airports, including Indianapolis, peaked at 87F. The cold core of an upper-level low then crossed the region on the **12th**-**13th**, bringing below normal temperatures led by unseasonably low daytime maximums. Highs were in the 60s to low 70s, with readings as low as 61F at the Kokomo 3 WSW COOP station (Howard Co.) and 62F at Lafayette (on the **12th**), and 66F at both Kokomo 3 WSW and Shelbyville (on the **13th**). Meanwhile minimums dropped as low as **48F** on both mornings at the Rockville COOP station (Parke Co.). Going into the **14th**, morning lows dropped to **51F** at Crawfordsville 6 SE and Tipton 5 SW, although the day was overall near normal after a strong rebound to a warm afternoon, with the greatest diurnal rise at Terre Haute, +30 degrees.

September **17th**-**19th** featured a moderating trend to well above normal levels, lead by very warm daytimes in the mid-80s on the **17th** and **18th**, and then unseasonably high minimums on the **19th**, as high as the upper 60s. The warmest locations were Vincennes 5 NE (**88F** on the **17th** and **90F** on the **18th**), and Perrysville 4 WNW (Vermillion Co.) which peaked one degree lower each day; on the **19th** Vincennes 5 NE reached **89F** for the region's warmest spot yet again, although more notable were Rockville, Farmersburg TV-2 (Sullivan Co.), and Washington 1 W all being held to a morning low of 69F. Maximums at Indianapolis were 84F, 85F, 83F, with a low on the **19th** of 68F. The **20th**, despite a cooler start (especially north and east of Indianapolis), found moderate southerly breezes bringing very warm to hot conditions across the southwestern half of the region; the Wabash Valley yet again featured the greatest heat, with **96F** at Vincennes 5 NE and 94F at Perrysville 4 WNW, while Indianapolis reached a modest 86F. The month's hottest day then occurred on the **21st**, when the anomalously high temperatures approached record levels, with both maximum and minimum readings at Indianapolis (93, 71) only 3 degrees shy of respective records; lows around 70F set up the widespread low to mid-90s, with the highest readings being Bloomington's low of 73F; while Shoals 8 S rose to **97F**, with 96F at both Bloomington and Elnora (Daviess Co.).

The year's strong end-of-summer cold frontal zone then crossed the region into early on the **22nd**, shocking the region back to slightly below normal levels as high pressure quickly built in from the north. Temperatures changed as much as −39 degrees at both Rockville and Crawfordsville 6 SE, with Crawfordsville's **52F** minimum on the **22nd** the lowest across the realm; equally impressive ~15-hour changes of −37 degrees were observed at both Muncie and Lafayette, while Indianapolis fell by 35 degrees to 58F. Also notable were ~24-hr temperature changes between daytime maximums on the **21st** and **22nd**, which were about −20 degrees at

most locations; Bloomington and Terre Haute led this trend at −23 degrees (Bloomington's maximums trending from 96F to 73F, and Terre Haute 1 degree lower on both values). Not two days after near-record heat, the region was flirting with a first frost: the **23rd** brought the coldest morning for most sites since April 27, with widespread morning lows in the low to mid-40s, and readings as low as **38F** at both Crawfordsville 6 SE and New Castle 3 SW, while light frost was reported on rooftops in parts of Hamilton County. Increasing clouds on the **23rd** limited diurnal temperature spreads, with a late-October-like chill felt among highs in the low to mid 60s, while only 61F was reached at Frankfort Disposal (Clinton Co.).

Overall near normal temperatures prevailed through the **24th**-**25th**. The next broad dome of Canadian high pressure began to slowly infiltrate Indiana on the **26th** before slowly crossing the southern Great Lakes on the **29th**. Conditions through this period were more reminiscent of October between dark blue skies and daily readings ranging from near 40F to the low 60s. A few reports of patchy frost reflected isolated minimums in the mid 30s on both the **28th** and **29th**: Terre Haute dropped to **34F** both mornings, while Farmland 5 NNW recorded **34F** and **33F**; meanwhile the 35F mark was reached at Crawfordsville 6 SE on the **28th**, and at Tipton 5 SW on the **29th**.

Frequency of 90F+ maximums was slightly below normal at 1-2 days across 1st-order stations. Year-to-date totals of 90F+ days ranged from 21 at Muncie to 30 at Terre Haute, while Indianapolis had accrued 23; these totals ranged from 3 above normal at Indianapolis to 9 above at Eagle Creek Airpark. Indianapolis' total was the greatest since 2019, and 4th most of the last ten years. Meanwhile frequency of minimums of 55F or lower was near to fewer than normal, with tallies ranging from 9 mornings at Shelbyville and Eagle Creek Airpark to 15 at both Lafayette and Terre Haute. Indianapolis' +0.3 departure from normal matched August 2022's value, but was much milder than September 2021's noticeably warmer departure.

At Indianapolis, September 2022's daily average temperatures were above normal on 17 days and below normal on 12 days. It tied for the **56th warmest** September for the Indianapolis Area since weather records began in 1871, placing it in the 63rd percentile of all recorded Septembers.

OCTOBER 2022 TEMPERATURES

October 2022's temperatures were overall slightly below normal, although this average included ~20 days that were at least 5 degrees above or below seasonal levels. Most of the month was cool to anomalously chilly: October started with several days of northeasterly winds from Hurricane Ian's remnants lingering over the Mid-Atlantic, the second week was led by a northwesterly flow around a deep trough over southeastern Canada, and the middle of the month found a strong upper-level trough spinning around the Great Lakes while its belly, positioned over Indiana, brought the month's coldest weather, as well as consistently breezy conditions and the season's first light snow. A quick pattern change then brought above normal temperatures for 8 of the month's final 11 days, as southerly winds across Indiana were promoted by weak troughs lifting from the southern Plains as well as surface high pressure positioned near the Atlantic coast.

OCTOBER 2022 TEMPERATURES (con't)

Following a persistently chilly end to September, October's **first six** days were near to slightly below normal, with highs in the 70s and lows in or near the 40s. The **4th** was the coldest morning, with most sites falling into the 30s, and the autumn's first freeze recorded at several of the typically-colder locations: **29F** at the Davis Purdue AG Center at Farmland 5 NNW (Randolph Co.), 30F at both the Crawfordsville 6 SE (Montgomery Co.) and Tipton 5 SW (Tipton Co.) COOP stations, 31F at the New Castle 3 SW (Henry Co.) COOP station, and 32F at both Muncie and the Beck Agricultural Center at West Lafayette 6 NW (Tippecanoe Co.); meanwhile Indianapolis was the region's warm spot, falling only to 41F.

A mild morning with lows near 50F led slightly above normal readings on the **6th**, before a cooler blast was felt during the **7th**-**9th**. The morning of the **8th** was the coldest yet for the season, with a first freeze reported to the rest of the region north of Interstate 70 outside of the Indianapolis Metro area: 30F was a common observation from Lafayette to Terre Haute to Rockville (Parke Co.), while readings were as low as **27F** at Farmland 5 NNW and 28F at New Castle 3 SW and West Lafayette 6 NW; a first freeze was also recorded at isolated southern locations – 32F at Bloomington and 30F at the North Vernon 2 ESE (Jennings Co.) COOP station; Indianapolis officially dropped to 35F. The **8th**'s daytime was the coolest of this second-week mini-blast, with highs generally in the upper 50s to around 60F, and maximums as low as 54F at the Carmel 3 E (Hamilton Co.) COOP station and 55F at the Castleton 2 S (Marion Co.) COOP station. The **9th** featured another cold morning, with reports of **27F** at New Castle 3 SW, 28F at the Perrysville 4 WNW COOP station (Vermillion Co.), and 29F at Terre Haute; while a couple first freezes were recorded over south-central zones with 30F at the Spencer COOP site (Owen Co.) and 31F at the Oolitic Purdue Farm (Lawrence Co.); Indianapolis dropped to 34F.

The **10th**-**16th** was on the whole near normal, between milder weather with highs mainly in the 70s through the **12th**, and then more autumnal conditions over the **13th**-**16th**, when most locations reported several more chilly mornings in the 30s to around 40F. The **14th**'s minimum temperatures were as low as **29F** at Farmland 5 NNW, with several 30F observations at the typically-colder locations, including Terre Haute; Indianapolis dropped to 36F. Another chilly morning on the **15th** included lows of **30F** at Perrysville 4 WNW and 34F at Lafayette. The **15th** also brought the coolest daytime of this period, with maximum temps around 60F, and as low as **54F** at the Kokomo 3 WSW (Howard Co.) COOP station, while 55F reports were common across Tippecanoe County to the Frankfort Disposal (Clinton Co.) COOP station.

The **17th**-**20th** then brought anomalous to near-record setting cold as Indiana sat within the belly of strong cut-off trough as it spun reinforcing shots of Canadian air into the Midwest. The **17th** and **18th** featured lows in the 30s yet again, although more noteworthy were very low high temperatures mainly in the 40s; the **17th** only reached **43F** at Frankfort Disposal, West Lafayette 6 NW and Carmel 3 E, while Lafayette managed 44F; the **18th** peaked at a mere **41F** at both Farmland 5 NNW and New Castle 3 SW, while a maximum of **42F** was observed at Kokomo 3 WSW, Rushville, Rockville (the station's earliest max temp this low since 1909!), and Muncie (their earliest day so cold since 1965); Indianapolis' high of 45F was the earliest high temp this low since 2009 (10/16). The coldest mornings of the month then followed: the **19th** brought a first freeze to Indianapolis (32F), as well as the Elnora (29F) and the Washington 1 W

and Vincennes 5 NE COOP stations (both 31F), while readings were as low as **26F** in Rockville; the **20th** finally saw a widespread hard freeze, with Rockville and Spencer both dropping to **24F**, while a 26F reading was found from Tipton 5 SW and the Jamestown 2 E (Boone Co.) COOP station, to as far south as Shoals 8 S (Martin Co.) and North Vernon 2 ESE, while Indianapolis recorded 28F. The lows at Rockville, Spencer and Indianapolis were all the earliest such readings in 30 years – since 10/19/1992.

As is often the case following very strong autumnal high pressure systems – a sharp pattern change occurred at the end of the third week as the flow around the broad, strong high pressure changed from northwesterly to southerly, facilitating a 1-day transformation from well below normal to mild readings. Temperatures rebounded by 30-35 degrees at most sites on the **20th,** with afternoon highs peaking in the upper 50s to mid-60s; the greatest diurnal spread was observed at Spencer which rose +37 degrees (from 24F to 61F), while Lafayette and Terre Haute both warmed by +36 degrees. The strong moderation continued, as warm winds boosted highs into the 70s on the **21st**, before morning lows then returned to seasonable marks on the **22nd**. The **22nd**-**25th** ran 10-15 degrees above normal across the region, with a few locations pushing 20 degrees above seasonable levels on the **23rd**. Afternoon maximums on the **22nd** hit **80F** along the Wabash Valley and as far east as Shakamak State Park (Sullivan Co.) and Tipton 5 SW; several sites then rose into the low 80s on the **23rd**, with **82F** at Tipton 5 SW, and **81F** at Perrysville 4 WNW, Vincennes 5 NE and Washington 1 W; Indianapolis peaked at 78F and 79F, respectively. The highest daily minimum temperatures during this warmer regime occurred on the **23rd** and **25th**, with mid-50s to low 60s common both mornings.

October's final six days were overall near normal, between slightly below normal readings on the **26th**-**27th** and milder temperatures thereafter amid a return to rainier conditions and not-as-cool mornings. Following the **20th**, 1st-order airports' month-to-date temperature departures were mainly 4.5 to 5.0 degrees below normal; yet after the few days of anomalous warmth these departures were brought much closer to normal.

At Indianapolis, October 2022's daily average temperatures were above normal on 12 days, below normal on 15 days and at normal on 4 days. It was the 58th coolest October for the Indianapolis Area since weather records began in 1871, placing it in the 38th percentile.

NOVEMBER 2022 TEMPERATURES

November 2022's temperatures were overall slightly above normal. However, the frequent occurrence of unseasonably warm and cold days seen since mid-September was amplified with more than half of November's days at least 10 degrees above or below normal. Unlike mid-autumn, longer-duration pattern regimes dominated November. Seasonably cool readings were observed on both the **11th** and **22nd**; yet the month's first three weeks were otherwise led by very mild to near-record warmth through the **10th**, and anomalous cold during the **12th**-**21st**. More reasonable late-autumn conditions then prevailed through November's final 8 days amid near to above normal readings. This late-month mild trend was the difference that placed the slightly above normal accent on what was an distinctively extreme month.

NOVEMBER 2022 TEMPERATURES (con't)

Through November's first ten days, broad, often stagnant high pressure along eastern North America coupled with storm systems tracking through the Plains to promote often warm-advective winds and large diurnal spreads. Daytime highs frequently in the upper 60s to mid-70s led this warm pattern. The **4th** was the warmest day, with lows mainly in the 50s, and many locations peaking in the upper 70s: **78F** was reached at several COOP stations, Perrysville 4 WNW (Vermillion Co.), Shoals 8 S (Martin Co.), Tipton 5 SW (Tipton Co.), and Vincennes 5 NE (Knox Co.), while the **4th**'s observed morning lows were as high as 62F at North Vernon 2 ESE (Jennings Co.). Following more modest warmth on the **7th**-**8th**, anomalously high readings returned with mid-70s common on the **9th**, and Shoals 8 S peaking at **79F**, while Indianapolis only managed 71F. On the **10th**, Tipton 5 SW led the region with **78F** while Indianapolis reached 73F. Even typical cool spots like the Jamestown 2 E COOP station (Boone Co.) saw several days with September-like readings, reaching 75F and 72F on the **4th** and **9th**, respectively. Washington 1 W (Daviess Co.) led the count of 70F+ days with 8, including **79F** on the **9th**.
A strong cold front crossed Indiana on the morning of the **11th**, ushering in a noticeably colder pattern that would last through the **21st**. The quick transition was marked by a ~33-hour temperature change (from the afternoon of the **10th** to midnight ending the **11th**) of greater than **-40 degrees** for most locations, with the Davis Purdue AG Center at Farmland 5 NNW (Randolph Co.) dropping from 75F to 26F (**-49**). Just as noteworthy was the 2-day difference in high temperatures from the **10th** to the **12th**, which was greatest at the Franklin WWTP (Johnson Co.) where the trend was from 74F to 30F (**-44**), while Indianapolis went from 73F to 32F (**-41**). This, **12th** maximum at Indianapolis, tied 2019 for the earliest first 32F-or-lower maximum since 1995 (11/5); and also tied for the 15th-earliest freezing max temp in the 152-year record, or roughly a ~10-year return period. The normal first freezing-high at Indianapolis is November 30th.

The cold, mid-November period consisted of the initial polar air mass on the **12th**-**14th**, where cold days in the 30s to near 40F marked the trend, with nights dropping into the 20s to near 30F. More moderated readings occurred on the **15th**, before reinforcing arctic high pressure on the **16th**-**20th** brought highs in generally the low to mid-30s and overnights into the teens on 2-3 mornings for most counties. The **12th** was quite cold, with highs of **30F** or **31F** also observed at several COOP stations: New Castle 3 SW (Henry Co.), Oolitic Purdue Ex Farm (Lawrence Co.), and Greenfield (Hancock Co.); six additional sites, including Shelbyville Sewage and Rushville, only reached 32F. The **14th** then had the coldest morning seen so far this autumn, with observations ranging from **16F** at the Crawfordsville 6 SE (Montgomery Co.) and Rockville (Parke Co.) COOP stations to 29F at North Vernon 2 ESE, while 19F was recorded at Lafayette and Terre Haute; Indianapolis was 25F.

The arctic reinforcement brought anomalously low maximum temperatures, with about half of the region not surpassing 32F on the **17th**, only **30F** at New Castle 3 SW and Rushville, and 31F at Lafayette. The **18th**'s daytime maximum came at dawn as cold advection overwhelmed the sun's heating, with only mid-20s across the northern tier: **24F** at the Beck Purdue Ag Center at West Lafayette 6 NW, 25F at Kokomo 3 WSW and Young America (both in Howard Co.), and 26F as far south as the Indianapolis Metro at Carmel 3 E (Hamilton Co.). The **19th**'s maximums

recovered to mainly 30-35F, although Tipton 5 SW only managed **27F**; the **20th**'s daytime was coldest across northeast counties, with only **28F** at Kokomo 3 WSW and 31F at Muncie, although Jamestown 2 E rebounded to a balmy 43F. Indianapolis was held to 32F twice more on the **18th** and **20th**. Low temperatures were also anomalous. Lafayette dropped to **19F** at midnight ending the **18th**, before two very cold mornings followed across the region, with widespread 15-20F on the **19th**, and mainly 10-15F early on the **20th**. The **19th**'s lows ranged from **12F** at West Lafayette 6 NW and Washington 1W to 19F at both Marion County airports and Spencer (Owen Co.). The **20th** was the month's coldest morning, with lowest readings from **8F** at Rockville and **9F** at Crawfordsville 6 SE, to **10F** at Kokomo 3 WSW, Young America, and Perrysville 4 WNW; while 16F at Columbus was one of the higher observations. A transition to more seasonable weather began on the **21st**, with some locations' highs into the low 50s trending about 20 degrees warmer than the previous day.

The following, so-called "seasonable" conditions actually included several days through the **22nd-24th** with impressive diurnal spreads of about 25 to 35 degrees; Terre Haute, starting in the low 20s both days, climbed 36 degrees on the **22nd** and 38 on the **23rd**; Bloomington rose 38 degrees on the **23rd** and 36 on the **24th**, peaking in the low 60s both days; and Muncie, on the **24th**, jumped 34 degrees (from 28F to 62F).

November 2022's temperatures were noteworthy both for the prolonged January-like cold, and also the strong polarity, so to speak, found between the early-month unseasonable warmth and the subsequent Canadian blast. The longest duration held at/under 32F was found both over the typical Montgomery-Parke Counties cold spot, as well as Howard County, where at least a 4-day period (**17th-20th**) did not reach 33F; Rockville's inability to crack freezing early on the **16th** placed them with 5 consecutive sub-freezing days. Indianapolis neared record temperatures with both of the month's extremes: the **4th** maximum was 2 degrees shy, and the **20th** minimum was 5 degrees above a relatively weak record low (8F, 1914). This was the first month Indianapolis tallied eight days at least 10 degrees below normal since May 2021 (9 days). Historically, Indianapolis has been held to 32F or lower on at least 3 days in 28% of Novembers, although this year's was only the third occurrence since 1991. Indianapolis dropped to 25F or lower on 6 days, which has also occurred in 28% of Novembers on record. The only Novembers at Indianapolis with at least 8 highs above 65F and 11 lows under 30F were 2005, 2020 and 2022 – a 50-year return.

Fall 2022 Temperature Data for Central Indiana Sites

Site	**Fall 2022 Av Temperature**	Fall Season Normal Temp	**Difference From Normal**
Indianapolis Int'l Airport	**55.7**	55.6	+0.1
Lafayette	**54.0**	53.5	+0.5
Muncie	**55.8**	55.6	+0.2
Terre Haute	**55.1**	54.9	+0.2
Bloomington*	**55.3**	55.1	+0.2
Shelbyville	**56.6**	55.9	+0.7
Eagle Creek Airpark	**55.4**	55.5	–0.1

* – Max and min temperatures missing for Bloomington on 10/1 through 10/6

Fall 2022 Temperature Extremes Across Central Indiana

Site	**Highest Temperature**	**Lowest Temperature**
Indianapolis Int'l Airport	93 on 9/21	13 on 11/20
Lafayette	91 on 9/20, 9/21	**12** on 11/20
Muncie	94 on 9/21	14 on 11/20
Terre Haute	95 on 9/21	14 on 11/20
Bloomington	**96** on 9/21	15 on 11/20
Shelbyville	95 on 9/21	15 on 11/20
Eagle Creek Airpark	93 on 9/21	15 on 11/20

Precipitation

SEPTEMBER 2022

Following the release of the new 30-year climatological normals (1991-2020), September has overall seen a very slight increase in normal precipitation than during the previous 30 years (1981-2010). Noticeable, yet modest increases occurred at Eagle Creek Airpark (+0.32"), Bloomington (+0.25"), and Muncie (+0.13"), while the only notable downward trend was at Terre Haute (-0.49); the remaining sites, including Indianapolis (+0.02") saw negligible changes. The new normals for September rainfall average near 3.00", and range from 2.57" at Eagle

Creek and 2.59" in Lafayette, to 3.60" at Bloomington. Relative to other months, at most sites September is normally the 4th driest of the year behind the three winter months (December-January-February). September's relatively-meager normal precipitation is, at some sites, comparable to that of March, August, and/or October; as a result it is normally only the 5th-driest month at Bloomington and Terre Haute, and normally only the 6th-driest at Muncie.

The August 30th Drought Monitor update (released on September **1st**) reflected an overall improvement in drought conditions, with **Abnormally Dry** (**D0**) reduced to only Howard and Tipton Counties and northern parts of Madison and Delaware Counties, although **D0** was introduced to much of southern central Indiana – from Greene County to points south and east.

On the **3rd**, very heavy rainfall fell across portions of far-southern Indiana, however, such totals were only isolated over central Indiana's southern counties, with scattered 1-3" reports south of the I-70 corridor, and the greatest observations being **3.36"** southwest of Greensburg (Decatur Co.), **3.27"** in Howesville (Clay Co.), and **2.09"** as far north as Harrisville (Randolph Co.). On the **4th**, isolated to moderate rainfall totals were led by **1.75"** southwest of Columbus, while the greatest reading outside of Bartholomew County was 0.80" in Meridian-Kessler (Marion Co.). The **5th** found scattered light to moderate rainfall continuing, over mainly southern counties, with the greatest report **1.56"** north of Oolitic (Lawrence Co.). Generally light rainfall continued south of the I-70 corridor on the **6th**, although locally heavy rains did occur over southwestern counties, including **2.18"** at the Elnora COOP station (Daviess Co.). 4-day precipitation totals showed a maximum band across southern zones, with **3.80"** at Howesville, **3.97"** at the Columbus WWTP COOP station, and **4.05"** southwest of Greensburg; meanwhile less-impressive totals were recorded farther south: **2.92"** north of Oolitic (Lawrence Co.), and **2.57"** at Shoals 8 S.

The September **6th** drought update saw further overall improvement from the previous week, as all **D0** was removed from southern counties, although **D0** over north-central zones was expanded northwestward to also include Carroll County and far-northern portions of Clinton and Tippecanoe Counties.

The next round of appreciable weekend rains began on the **10th** when numerous afternoon and overnight showers included tropical downpours along northern portions of the Indianapolis Metro, and isolated heavy rainfall total elsewhere; 1-day totals included **4.10"** on the north side of Carmel, **3.75"** between Fishers and Noblesville (both observations in Hamilton Co.), **2.35"** east of Whitestown (Boone Co.), **1.92"** in Augusta (Marion Co.); as well as **2.33"** west of Lake Lemon (Monroe Co.). Numerous showers and a few embedded thunderstorms continued after dawn on the **11th**, with additional 0.50-**2.00"** rains falling around the Indianapolis Metro and points northeast, as well as southward along the I-69 corridor, before late day clearing; greatest 1-day reports through dawn on the **12th** were **3.15"** east of Fishers (Hamilton Co.), **2.40"** at Tipton 5 SW, **2.36"** northwest of Ingalls (Madison Co.), and **2.31"** southeast of Albany (Randolph Co.). Scattered rain showers brought only light additional rainfall on the **12th**. Three-day precipitation totals of **1-2"** were found across many northern counties and southward along the I-69 corridor, while locally very heavy storm observations ranged from **5.44"** between Fishers and Noblesville, at least **4.88"** east of Elwood, **3.65"** in Cumberland (Hancock Co.), **3.06"** in Tipton, and **2.98"** as far south as the west side of Lake Lemon (Monroe Co.). However,

SEPTEMBER 2022 PRECIPITATION (con't)

several counties between the Lafayette and Terre Haute areas had simultaneously accumulated less than 0.50", with only 0.25" at the Perrysville 4 WNW COOP station (Vermillion Co.).

The September **13th** drought update then found **D0** retreat to north of the region, making the Indianapolis (central Indiana) County Warning Area free of any drought intensity for the first time since the 5/31/2022 update. The **13th-17th** then featured mainly dry conditions under a passing dome of high pressure. On the **19th**, pre-dawn showers and booming thunderstorms dropped a light to moderate rainfall across most counties, with a few observations approaching 1.00" in Hendricks County and Bartholomew County. The September **20th** drought update was status quo as central Indiana remained free of any drought intensity, while **D0** continued north of the region.

Mainly dry conditions persisted through late September. The **23rd's** late day into late night brought a widespread 0.10-0.45" to Indianapolis and surrounding counties, including a 0.48" observation near Fountain Square (Marion Co.). Otherwise the month ended on a dry note as northwest flow and continued Canadian high pressure suppressed rains to well south of the Ohio Valley. The September **27th** drought update reintroduced **D0** conditions to extreme-northern portions of northern central Indiana, from northeastern Carroll County to northwestern Delaware County. As the page turned to October, the remnants of Hurricane Ian had progressed as far north and west as West Virginia and far southeastern Ohio. No river or stream flooding was observed across central Indiana during September.

Overall, September 2022's precipitation was near to below normal across central Indiana. Variations in rainfall distribution ranged from numerous 1.00-2.00" totals in an arcing pattern from the Wabash Valley, across Howard County, and into several northeastern counties...to nearly-contiguous areas of 3.00-5.00" observations both immediately east and south of Bloomington, and around the eastern and northern portions of the Indianapolis Metro to points as far north as southern Tipton County. Extremes ranged from 0.73" at Perrysville 4 WNW to a 6.09" total observed between Fishers and Noblesville, with the region's greatest monthly totals (across southern Hamilton Co.) led by the locally heavy rains of the **10th-12th**. The 0.84" recorded at Lafayette 8 S (Tippecanoe Co.) made for the site's 5th-driest September on record, a 14-year return period. At most of 1st-order airports, the vast majority of the month's rain (81-89%) fell over the first 12 days, with only 0.16-0.56" recorded during the following 18 days at these sites. Indianapolis' (modest) precipitation was more evenly balanced throughout the month, with 1.13" through the **12th**, and 0.99" thereafter. Nevertheless, the year-to-date total at Indianapolis rose to only **29.41"**, increasing the year's deficit to **4.63"** below normal; making for the driest January-September total since 2010. (2012's very dry year rallied through 7.73" that September, for a January to September total of 30.22").

September 2022 was the **54th Driest** in the Indianapolis Area since weather records began in 1871, placing it in the 36th percentile for precipitation of all recorded Septembers. September 2022's below normal precipitation at Indianapolis contrasted above normal rainfall trends in both September 2021 and August 2022, although the below normal trend did more closely align with anomalously dry Septembers in 2020 and 2021. In fact, Septembers through the last

decade were commonly well above or well below normal at Indianapolis, so September 2022's 2.12" total was the closest to a seasonable level since 2014's 2.53" sum.

OCTOBER 2022 PRECIPITATION

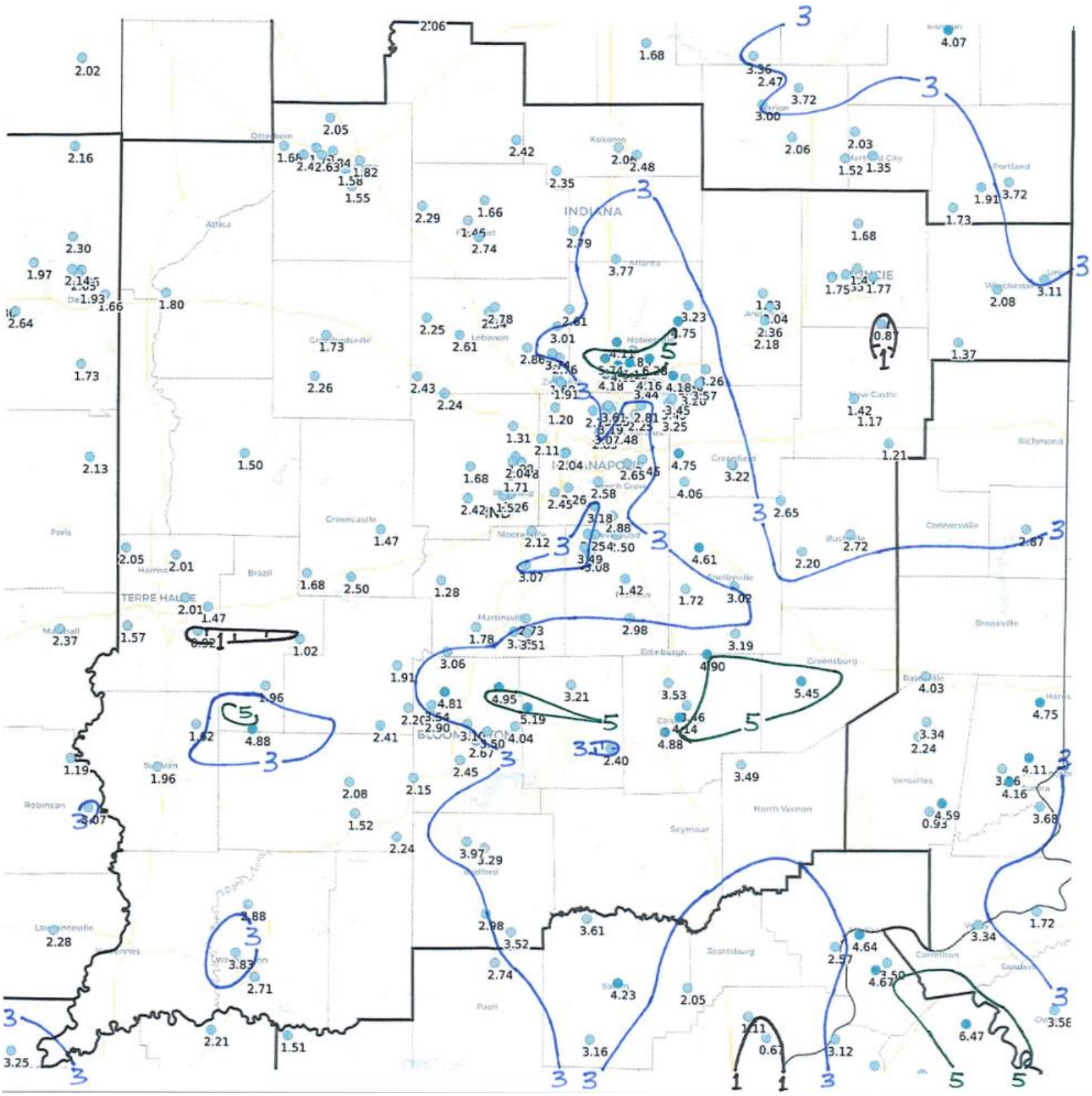
Following the release of the new 30-year climatological normals (1991-2020), October has overall seen a slight increase in normal precipitation than during the previous 30 years (1981-2010). The most noticeable, yet modest increases occurred across the center of the region: Bloomington (+0.17"), Eagle Creek Airpark (+0.14"), and Indianapolis (+0.10"), while a slight downward trend was again observed at Terre Haute (-0.13"); the remaining sites saw negligible changes. The new normals for October rainfall average near 3.25", ranging from 2.91" at Lafayette and 2.96" at Muncie, to 3.70" at Bloomington. Indianapolis' normal October precipitation increased from 3.12" to 3.22".

The October 4th Drought Monitor update (released on October **6th**) revealed **Abnormally Dry** (**D0**) conditions expanding back into mainly the region's northern counties: including Lafayette, Crawfordsville, Greencastle, Terre Haute and points north and west through the Wabash Valley, as well as essentially all of Carroll, Howard, Delaware and Randolph Counties, and most of Tipton, Madison and Henry Counties. **D0** also expanded into most of southern Jackson County with this update. Light rain from the evening of the **5th** to midday on the **6th** produced a band of 0.05-0.15" along and near Indiana Route 46, with as much as 0.13" in Bloomington and 0.15" in Columbus (Bartholomew Co.); with the overall dry pattern continuing: the majority of the region, including Indianapolis, had not measured more than a few hundredths of precipitation since September 24th.

The October 11th Drought Monitor update found **D0** expanding over most of the state and local region, although a broad patch of central Indiana was still free of drought conditions around the Indianapolis Metro and points both to the north-northwest and the southeast, from as far as Clinton County to Decatur and Rush Counties. Early morning on the **12th** through dawn on the **13th** brought measureable rain to nearly the entire region, even though areas outside of the Wabash Valley reported under 0.20"; 0.59" was observed west of New Goshen (Vigo Co.). The **14th** then found more modest rainfall grace areas north/west of I-70/I-69 for a few hours through the overnight, with as much as 0.37" near Frankfort (Clinton Co.).

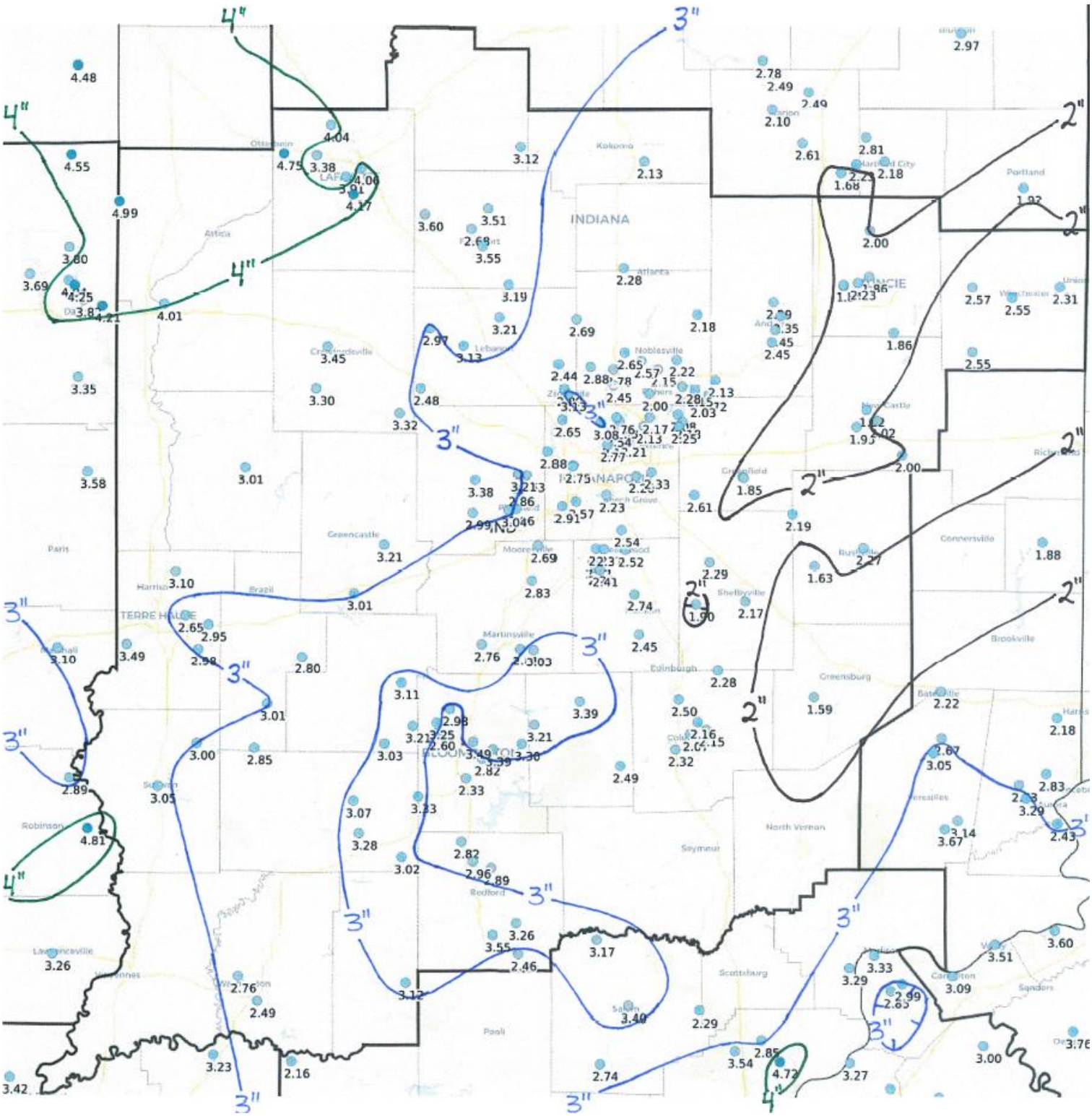
On the **17th**, Isolated late-day rain showers north and east of Indianapolis transitioned to a more organized band of rain/snow showers over the Indianapolis Metro and points north through the middle of the overnight, before locally and briefly moderate/heavy snow fell between downtown Indianapolis and Bloomington later at night (even though precipitation type remained all rain over far southeastern counties). Snow tapered off towards dawn on the **18th**, with greatest accumulations (on grassy surfaces) of **0.5"** found in portions of Morgan County from Brooklyn to east of Martinsville. A thinner coating was measured over most of Hendricks and Johnson Counties, with measurable snow found as far south as Beanblossom (Brown Co.). Snow melted as it fell onto the warm ground, with this first-snow-of-the-season reported as a trace across much of the region − from the northern tier of counties down to southern Lawrence County.

September – Mid-October 2022 Total Precipitation, Through the Morning of 10/17
As Reported By Central Indiana CoCoRaHS Observers



For the period 700 AM EDT 9/1/2022 -to- 700 AM EDT 10/17/2022. Data is unofficial.

Mid-October – November 2022 Total Precipitation, Through the Morning of 12/1
As Reported By Central Indiana CoCoRaHS Observers



For the period 700 AM EDT 10/17/2022 -to- 700 AM EDT 12/1/2022. Data is unofficial.

OCTOBER 2022 PRECIPITATION (con't…)

The continued lack of any *appreciable* rains led to one-week trends in drought increasing by almost one intensity level across the region: the October 18th update had **Moderate Drought** (**D1**) re-appear for the first time since the August 9th update, enveloping most of Delaware, Henry and Randolph Counties, as well as from just south of Spencer and Bloomington, down to essentially all of Daviess, Martin and Lawrence Counties. All of the region's remaining ~80% either maintained or entered **D0**. The October 25th update showed drought conditions continuing to worsen, with **D1** enveloping most of Indiana, while about half of the central Indiana region remained in **D0** – around the Indianapolis Metro and west-northwestward in between corridors to Terre Haute and Lafayette.

Indeed, the dry pattern was exemplified through October's first 24 days, when most locations only observed 0.10-0.50"; while less than 0.10" was totaled along the US-50 corridor, east-central counties, and southwestern portions of the Indianapolis Metro. Indianapolis officially observed only 0.09" through this 24-day period, while **no measurable precipitation** was recorded across western portions of Morgan County, as well as at North Vernon 2 ESE.

October 2022 finally picked-up a significant rainfall, if only reaching this distinction over the western half of the region. From around dawn on the **25th** to the morning of the **26th**, several rounds of rain brought a well needed **1.00-2.00"** soaking to these counties, while 0.40-**1.00"** storm totals were found across the region's eastern half. The final round of showers that fell over the upper Wabash Valley pre-dawn on the **26th** lead to local maximums: **2.70"** along the Illinois line at the Pence 1 SW COOP site (Warren Co.), and **2.23"** near Otterbein (Tippecanoe Co.), with as much as much as **2.12"** near Lafayette. A rainfall gradient over western portions of the Indianapolis Metro followed the bands of rain through the **25th**'s late evening – while ~0.65" was reported both west of Greenwood (Johnson Co.) and south of Fountain Square (Marion Co.), **1.33"** was observed in both Avon and Brownsburg (Hendricks Co.), with these greater amounts extending as far south as a **1.41"** report northeast of Spencer (Owen Co.).

October ended with additional light/moderate rainfalls. Another weakening system lifting from the southern Plains into the Midwest brought a slug of moderate to briefly heavy showers across southern counties on the **30th**, before lighter overnight rains tracked near the I-70 corridor; 1-days totals by dawn on the **31st** were generally 0.50-1.00" across the southeastern half of the region, with reports as great as **1.10"** at the Purdue Oolitic Farm's automated gauge site (Lawrence Co.) and **1.03"** in Beanblossom. Scattered showers on the **31st** brought additional light rainfall, with readings approaching 0.50" both northwest of West Lafayette and east of Winchester (Randolph Co.). 2-day totals included **1.36"** north of Mitchell (Lawrence Co.), while 0.80" in Anderson (Madison Co.) was the greatest sum north of Interstate 70.

Overall, October 2022's precipitation was mainly well below normal, with monthly totals of 1.00-2.00" common across central Indiana. Modest variations in rainfall distribution ranged from several 0.85-0.99" totals south of Muncie through east-central counties ... to generally 1.75-2.15" sums through south-central zones, in a circular patch centered about southern Monroe County ... to numerous 2.40-3.20" reported totals across Tippecanoe County and points to the west and southwest. Extremes ranged from values just shy of 0.90" in both

Macedonia (Delaware Co.) and east of Lewisville (Henry Co.) ... to **3.37"** at Pence 1 SW. Across 1st-order airports with complete data, monthly totals ranged from only 33% of normal at Muncie to 45% of normal at Eagle Creek Airpark. This was the driest October since 1994 at New Castle 3 SW (**0.92"**) as well as the WWTPs at both Muncie (**1.08"**) and Greenfield (**1.38"**), with the low sum at New Castle an 18-year return period for the station. Viewing sites with a ~24-year data period across northern portions of the Indianapolis Metro, Castleton 2 S' **1.09"** undercut 2010's total for the station's driest October on record, while Carmel 3 E's **1.36"** made for the site's 2nd-driest October on record. It was also the driest October since 2010 at Elnora (**1.23"**) and North Vernon 2 ESE (**1.33"**), while Vincennes 5 NE's **1.45"** total was a 10-year return. The year-to-date total at Indianapolis rose to only **30.83"**, increasing the year's deficit to **6.43"** below normal, continuing the lowest year to date total since 2010. Indianapolis' 2022 precipitation total surpassed 30 inches on the **25th**; of the 22 Octobers this century, only 2 did not reach the 30" mark until later in the year – 2007 (**11/12**) and 2010 (**11/25**).

October 2022 was the **35th Driest** October in the Indianapolis Area since weather records began in 1871, placing it in the 23rd percentile for precipitation of all recorded Octobers. October 2022's below normal precipitation at Indianapolis continued September 2022's dry trend, yet was in contrast to the above normal precipitation recorded over the last three Octobers, including 2021 which was the wettest October (7.86") since 1986.

NOVEMBER 2022 PRECIPITATION

November 2022 featured the third consecutive dry month for most of central Indiana, and continued the overall very dry conditions observed in October. The limited precipitation followed a similar pattern to October, with a few light rain and snowfalls gracing the region over the month's first half (totaling 0.25-0.50" for most locations, with greater totals over far western counties, and less to the east); before a rainier final week that was led by appreciable rain on mainly the **28th**. Weekly U.S. Drought Monitor updates maintained Abnormally Dry to Moderate Drought conditions across all of central Indiana through the entire month.

The November **1st** Drought Monitor update (released on November 3rd) showed little change from late October: **Moderate Drought** (**D1**) enveloped most of Indiana, although about half of the central Indiana region remained within only **Abnormally Dry** conditions (**D0**) -- around the Indianapolis Metro and west-northwestward in between corridors to Lafayette and Terre Haute. The only change was a small improvement in drought conditions from **D1** to **D0** in portions of Tippecanoe and Carroll Counties.

After mainly dry conditions prevailed through the **4th**, November **5th** featured a generally light rainfall through the morning hours. Total observations were greatest near Terre Haute, with 0.70" near Prairieton (Vigo Co.), and around to just over 0.50" from Rockville down into Knox County; meanwhile observations varied across the Indianapolis Metro from up to 0.25" in western Hendricks County to no precipitation in parts of Hancock and Shelby Counties. The November **8th** drought update showed **D1** conditions expanding westward through central counties, although **D0** remained along the Wabash Valley from far western Tippecanoe County to the northwestern half of Vigo County.

NOVEMBER 2022 PRECIPITATION (con't...)

Rain-free conditions then prevailed for essentially the entire region during the **6th–11th**, although light rainfall returned on the **11th** for several far-southeastern zones. An over-performing disturbance then followed on the **12th**, bringing a general **1-3"** snowfall to the region, with **3.3"** reported in a heavier band from northern portions of Vigo and Clay Counties to far southwestern Boone County, while at least **3.0"** also accumulated on the west and east sides of downtown Indianapolis, as well as in an elongated band from northern Daviess County, east of Bloomington, and to the Franklin (Johnson Co.) and Martinsville (Morgan Co.) areas. The official Indianapolis observation at the NWS office was **2.7"**, a daily record (old 0.9", 1991), and only the second time a 1-day snowfall so great had occurred so early in the season since 10/19/1989's **7.5"** (the other occasion being **2.8"** on Veteran Day 2019). Historically at Indianapolis (since 1884) , 2.8"+ snows this early in the season have only occurred 9 times; and only 6 times since 1900, or a ~20-year return period. Corresponding reported liquid equivalents were 0.10-0.25" for most locations. The November 15th drought update found the expanding-D1 trend continuing with all of the region reaching moderate drought, excepting the northwestern half of Warren County which remained in D0.

The anomalous upper trough that brought unseasonable cold through much of the month's third week also promoted several consecutive days of snow showers -- a pattern more often seen during the mid-winter. Snow and/or rain showers/drizzle fell on the 15th, with northern counties seeing steadier precipitation, and more often snow; despite snow generally melting as it fell on the warm ground, isolated measurable snowfall was reported across northern zones, with **0.2"** west of New Market (Montgomery Co.). The **16th** brought all-snow showers, and particularly north of I-70 where snow continued through the afternoon and evening, accumulating a thin coating on the (now-colder) ground, with an embedded heavier **~1.0"** band across the northern counties, and **1.1"** measured at both Tipton 5 SW and in Frankfort, while Indianapolis official picked up another 0.1". Further snow showers on the **18th** between midnight and dawn, were again focused on northern counties, with several reports of 0.2" to 0.5", and a small band of 0.6" from southwest of Thorntown (Boone Co.) to west of Kirklin (Clinton Co.). Flurries then followed, mainly over the northern half of the region, both pre-dawn on the **18th**, and late day on the **19th**, with the only noteworthy additional accumulation being 0.3" in Modoc (Randolph Co.) on the **19th**; Indianapolis recorded a trace both days. The November **21st** drought update showed no changes since the previous week, with **D1** prevailing aside from the far northwestern corner of the realm's **D0**.

Similar to October, the very dry month finally saw a widespread moderate-heavy rainfall event towards the end of the month. From late on the **26th** through the **27th**, mainly 0.50-**1.20"** fell across the region, with greater such reports in Marion County and to points north and west; while the Upper Wabash Valley picked-up as much as **1.50"** west of West Lafayette (Tippecanoe Co.). The greatest observation within the rest of the region was **1.22"** in Danville (Hendricks Co.). This single event drove November's overall precipitation trend and distribution, making up 60-70% of the month's total at most sites. Drought conditions finally showed signs of improvement in the November **29th** update, as **D1** transitioned to **D0** across the northwestern

quadrant of the region, including nearly all of Putnam and Hendricks Counties and far northwestern portions of Marion County.

No flooding was observed in central Indiana during November 2022.

Overall, November 2022's precipitation was well below normal, with monthly totals of 1.00-2.00" common across central Indiana for the second consecutive month. The exceptions to this range also displayed an overall west-east gradient, with slightly more than 2.00" along the Wabash Valley, and sums under 1.00" across several southeastern counties. Extremes ranged from **2.45"** west of West Lafayette to **0.68"** west of Shelbyville (Shelby Co.). The Franklin WWTP's **0.70"** made for the driest November in the station's 30-year record (undercutting 1.04" from 1999). North Vernon 2 ESE's 0.86" was the station's third driest November over the 85-year record, with the least precipitation since 1963's 0.42". Across 1st-order airports, monthly totals (see below) ranged from only **19%** of normal at Shelbyville to 52% of normal at Lafayette. It was the driest November since 2012 at Bloomington, Shelbyville and Terre Haute; while total precipitation was slightly greater than November 2021 at Indianapolis, Muncie and Eagle Creek Airpark. This was the 2nd-driest November of the last 10 years at Indianapolis, although historically Novembers with 1.42" or less are an 8-year return. The year-to-date total at Indianapolis rose to only **32.25"**, increasing the year's deficit to **8.46"** below normal, continuing the lowest year to date total since 2010 (which was 31.99" through November).

November 2022 tied for the **19th Driest** November in the Indianapolis Area since weather records began in 1871, placing it in the **13rd percentile** for precipitation of all recorded Novembers. This continued the dry trends seen both so far through autumn 2022, as well as from November 2021.

Fall 2022 Precipitation Data for Central Indiana Sites

Site	Fall 2022 Precipitation	Fall Season Normal Precip	Diff. From Normal	Greatest Daily Rainfall
Indianapolis Int'l Airport	**4.96**	9.81	**–4.85**	1.06 on 10/25
Lafayette*	**4.34INC**	8.37	M	1.10 on 10/25
Bloomington**	**6.99INC**	11.03	M	1.40 on 9/5
Muncie	**3.28**	9.28	**–6.00**	1.03 on 9/11
Terre Haute	**3.94**	9.42	**–5.48**	0.76 on 10/25
Shelbyville***	**4.23INC**	9.95	M	2.09 on 9/11
Indianapolis Eagle Creek AP	**5.02**	9.07	**–4.05**	1.12 on 11/27

*Lafayette's observed precipitation was incomplete through September
**Bloomington's observed precipitation was missing on 10/6
***Shelbyville's observed precipitation was missing on 10/25, 10/30, and 10/31

Severe Weather

SEPTEMBER 2022's severe weather was contained to the **21st** when a southward-advancing cold front combined with unseasonably hot and humid conditions to produce a broken line of strong thunderstorms across southern central Indiana. Embedded, isolated **downbursts** produced wind damage in portions of Decatur County and along the south side of Rushville (Rush Co.) where six homes were damaged. A third downburst in north-central Jennings County, containing winds estimated as high as **67 mph**, uprooted several large trees and leveled a commercial greenhouse.

OCTOBER 2022 was not only devoid of severe weather, but none of the seven 1st-order airports even observed thunder – an ongoing streak since September 22nd. See the Miscellaneous section (below) for details regarding the month's consistently breezy conditions and isolated wildfires.

NOVEMBER 2022's severe weather was contained to a strong to marginally-severe gradient wind event on the **5th**, where maximum wind gusts (mainly from southwesterly directions) were measured as high as **65 mph** east of Fickle (Clinton Co.), while **64 mph** was recorded at Lafayette. Winds **downed 3 trees** at a residence east of Brazil (Clay Co.), although isolated to scattered damage was mainly across the northeastern half of the region, with multiple trees downed in Madison, Delaware and Decatur counties, with the latter including a report of a **tree blown onto a vehicle** on Interstate 74. **58 mph** winds were recorded at both the Frankfort airport (Clinton Co.) and in Loogootee (Martin Co.), while Bloomington and Indianapolis gusted as high as **57** and **55 mph**, respectively. This episode broke the 3+ month streak of no severe gusts at any central Indiana 1st-order airports (since Shelbyville's 58 mph gusts on 8/1/2022).

See the Miscellaneous section (below) for details regarding the month's rather breezy conditions and a rare cold-weather brushfire that began on the **20th**.

For info on severe weather in other areas during the fall season, visit the Storm Prediction Center "Severe Weather Event Summaries" website at spc.noaa.gov/climo/online

Miscellaneous Weather

SEPTEMBER 2022's strongest observed wind gusts at the seven 1st-order airports was led by a modest 41 mph at Muncie on the **19th**, while Indianapolis' peak gust was 37 mph on the **26th**. More notable were multi-day periods through the early and middle portions of the month when none of the seven sites had a peak gust exceeding 24 mph – during both the **4th-9th** and **13th-17th**. Several late-month days were breezy, with most sites recording peak gusts of 30-35 mph on the **22nd**, **25th**, **26th**, and **27th**.

Fog was prevalent through September, occurring at at least one of the 1st-order sites on all but 4 days (the **18th**, **22nd**, **25th**, **26th**). Frequency ranged from 9 days at both Marion County sites to 20 days at Bloomington and 21 days at Terre Haute, while fog was observed on 15-18 days at the four other sites. Fog occurred at all sites on the **11th**, **14th**, **15th**, and **16th**, and at most sites on the **3rd-10th**, **13th**,m **19th**, **20th**, and **24th**. Lafayette observed fog on 12 consecutive days (**5th-16th**), while Terre Haute reported fog on 15 of the month's first 16 days.

Dense fog was also rather common, although usually not widespread, being observed at least one of the seven sites on 14 days, and at most locations on the **14th**, **15th**, and **20th**. Dense fog frequency ranged from 4-6 days at most sites, while ranging from no occurrences at Indianapolis to 7 days at Terre Haute, including 3 straight days over the **14th-16th**.

Thunder frequency ranged from no occurrence at Bloomington to 6 days at Shelbyville, while 3-4 days was common across most 1st-order sites, including 4 days at Indianapolis (on the **3rd**, **4th**, **10th**, and **19th**). Thunder was reported at most sites on both the **11th** and **19th**.

OCTOBER 2022's strongest observed wind gust at any of the seven 1st-order airports was a 49 mph observation at Eagle Creek Airpark on the **14th**, although the month was quite breezy, with daily peak gusts reaching 30 mph or greater for most of the seven sites on 9 days during a two-week period (**12th-25th**). Most outstanding during this period was the **13th** when Indianapolis and Lafayette gusted to 42 mph and 40 mph, respectively; the **14th** when four other 1st-order stations recorded gusts to 37-39 mph; and the **17th** when five of the seven peaked at 35-36 mph. For the month winds gusted to 30 mph or higher on 13 days at Muncie, 11 days at Lafayette and Terre Haute, and 10 days at Indianapolis.

Fog was noticeably less prevalent than in September 2022, ranging in frequency from 5 days at Indianapolis to 10 days at Lafayette and Muncie, and 11 days at Terre Haute. Fog occurred at all sites on the **25th**, **26th**, **31st**, and at most sites on the **4th**, **12th**, **13th**, **28th**, **27th**, and **30th**. Fog was reported on 6 of the month's last 7 days at both Bloomington and Terre Haute.

Dense fog was infrequent, observed at Muncie on the **4th** and **27th**, at Lafayette on the **12th**, and at Indianapolis on the **30th**.

No thunder was reported at any of the seven 1st-order airports, which continued this region-wide trend since September **21st**.

Relative humidity (RH) across the 1st-order airports was quite low both during October's first week as well as occasionally through the middle of the month, with Muncie and Shelbyville often observing the lowest daily values. Shelbyville reported 17-19% minimum RH on the **3rd**-**5th**, while Muncie dropped to 15% on both the **4th** and **5th**, and Lafayette and Terre Haute also observed a 19% minimum on the **5th**. The **14th** RH minimums ranged from 13% at Shelbyville to 17% at Terre Haute, while a ~35-acre grass fire burned in Shelby County, and a few brief, smaller fires were reported in Sullivan County. Very low humidity occurred again on the **20th**, with RH values ranging from 15% at Muncie to 18% at Terre Haute. The **21st'**s minimum RH was 21-24% across all 1st-order airports, while a fire in east-central Hancock County lead to smoke being observed crossing Interstate 70.

NOVEMBER 2022's strongest observed wind gusts occurred on the **5th** (as highlighted in the Severe Weather section below), with other noteworthy observations including **55** and **54 mph** at Terre Haute and Muncie, respectively. Indianapolis observed strong wind gusts again on the **30th**, peaking at **46 mph**, while about half of the 1st-order sites' observed peak gusts of 40-43 mph on both the **19th** and **29th**. November was overall quite breezy at times, as additional days found the majority of 1st-order airports with peak wind gusts of 30+ mph, on the **4th**, **11th**, **16th**, **18th**, **21st** and **27th**. For the month, winds gusted to 30 mph or higher on 10 days at Lafayette and Muncie, and 7 or 8 days at the five other 1st-order sites. The only somewhat consistent respite from the month's winds came during the **23rd–26th**, when essentially all wind gusts peaked at 22 mph or less.

Fog was prominent at times – through mainly the very early month and again after Thanksgiving. Frequency across the month ranged from 10 days at Shelbyville to 16 days at Lafayette, although most sites observed fog on 11 or 12 days. All 1st-order airports reported fog on the **1st**, **2nd**, **3rd**, **12th**, **15th**, **25th**, **26th**, and **27th**; while fog occurred at most sites on the **16th** and **24th**. Lafayette reported fog on the **11th**-**13th** and **16th**-**18th**, while fog was reported on the last seven days of November at both Indianapolis and Eagle Creek Airpark. Dense fog was occurred at five or six of the seven 1st-order sites on the **3rd**, **12th**, and **26th**; and in total on 1 day at Muncie, 2 days at Terre Haute, and 3 days at all other 1st-order airports.

Thunder was observed on the **5th** at Lafayette and Terre Haute (which broke the 1st-order airport thunder-less streak going back to 9/22/2022), and on the **29th** at Lafayette.

Relative humidity (RH) across the 1st-order sites was quite low on the **7th** and **9th**, and consistently low during the **20th**-**22nd**. Daily minimum RH values on the **7th** ranged from 14% at Bloomington to 19% at Eagle Creek Airpark; while the **9th'**s lowest minimum was 15% at Muncie, with all other 1st-order sites 21-30%; most sites dropped to 20-21% on the **20th**, with daily minimum RH values of 24-30% common through the **22nd**. Less extreme dry conditions continued through the **24th**. The month's only noteworthy wildfire was an 110-acre brush fire through eastern portions of Brown County State Park, which occurred amid cold northwesterly gusts from the **20th** through the **22nd**.

Indianapolis Fall 2022 Monthly Data

INDIANAPOLIS **SEPTEMBER 2022** SUMMARY

	Average Temp	Precipitation	Highs ≥ 70°	Lows ≤ 40°
September 2022	**68.1**	**2.12**	**23**	**0**
Normal September	67.8	3.14	25	1
Diff from Normal	+0.3	**–1.02**	–2	+1

September 2022 All-Time Ranks... **Temperature: 56th Warmest** (Tied)
Precipitation: 54th Driest

INDIANAPOLIS **OCTOBER 2022** SUMMARY

	Average Temp	Precipitation	Highs ≥ 70°	Lows ≤ 40°
October 2022	**54.5**	**1.42**	**14**	**11**
Normal October	55.5	3.22	11	11
Diff from Normal	–1.0	**–1.80**	**+3**	0

October 2022 All-Time Ranks... **Temperature: 58th Coolest**
Precipitation: 36th Driest

INDIANAPOLIS **NOVEMBER 2022** SUMMARY

	Average Temp	Precipitation	Highs ≥ 70°	Lows ≤ 40°
November 2022	**44.4**	**1.42**	**4**	**17**
Normal November	43.3	3.45	2	22
Diff from Normal	+1.1	**-2.03**	+2	**–5**

November 2022 All-Time Ranks... **Temperature: 45th Warmest** (Tied)
Precipitation: 19th Driest (Tied)

INDIANAPOLIS FALL 2022 SUMMARY

	Average Temp	Precipitation	Highs ≥ 70°	Lows ≤ 40°
FALL 2022	**55.7**	**4.96**	**41**	**28**
Normal Fall	55.6	9.81	38	33
Diff from Normal	+0.1	**–4.85**	+3	**–5**

Fall 2022 All-Time Ranks... **Temperature: 58th Warmest**
Precipitation: 6th Driest

Winter 2022-23 Outlook for Central Indiana

The official outlook for the 2022-23 winter season (December–February) from the Climate Prediction Center, indicates equal chances for above, below, or near normal temperatures across central Indiana. The outlook also indicates slightly greater chances of above normal winter precipitation across the region.

At Indianapolis, the normal winter temperature is **31.5 degrees** and the normal winter precipitation is **8.47”**.

Data prepared by the NWS Indianapolis Weather Forecast Office’s Indiana State Climate Team
Questions should be referred to nws.indianapolis@noaa.gov