

**HENDERSON COUNTY PLANNING BOARD  
MEETING SUMMARY  
February 15, 2024, at 5:30 PM**

**Planning Board Members Present:**

Steve Dozier, Chair  
Hunter Marks  
Bruce Hatfield  
Trey Ford  
Jared Ownbey  
Linda Bradley  
Bill Lapsley, BOC Liaison

**Planning Board Members Not Present:**

Rick Livingston  
Jim Miller, Vice Chair  
Robert Griffin

**Staff Present:**

Autumn Radcliff, Planning Director  
Janna Bianculli, Senior Planner  
Russ Burrell, County Attorney  
Chris Todd, Business and Community Development Director

**Meeting called to order:** Mr. Steve Dozier called the meeting to order at 5:30 pm.

**Roll Call:** Roll Call was taken.

**Informal Public Comment:** The Planning Board heard from 2 members of the public and were provided handouts from the speakers.

**Adjustment of Agenda:** None.

**December 21, 2023, Meeting Summary:** No change to the meeting summary was noted.

**Discussion with the Environmental Advisory Committee Chair:** Ms. Autumn Radcliff stated that the Chair of the Environmental Advisory Committee (EAC) had something come up last minute and was unable to make the meeting. She stated that the EAC is a county appointed board and have been in the process of determining how the committee can be more involved and effective with the County's goals and projects. The Chair will be invited to attend a future meeting to explain what the EAC does and what they are currently working on. The EAC would like the Planning Board to provide input on items they can assist the Planning Board with or work on jointly as it relates to the 2045 Comprehensive Plan or any other county projects. Ms. Radcliff asked the Planning Board to think about topics or items that the EAC could assist with to discuss with the Chair of the EAC at a future meeting.

**2045 Comprehensive Plan Update:** Ms. Autumn Radcliff and Ms. Janna Bianculli provided an update on the 2045 Comprehensive Plan. The update recapped the BOC's review over the last year. Ms. Bianculli stated that the BOC received the final document at their January 2<sup>nd</sup> meeting. It is anticipated that the BOC will adopt the plan in March. Ms. Radcliff stated that following adoption, the Planning Board will begin working on the implementation plan which will include a rewrite of the LDC and associated map amendments. She stated that several administrative amendments would need to be processed immediately after adoption as a temporary "band aid" to reference the 2045 Comprehensive Plan. These amendments will convert language from the old comprehensive plan to the corresponding terminology in the 2045 Comprehensive Plan.

**Planning Terms and Theories Overview:** Ms. Janna Bianculli provided the Board with a presentation and handout on common planning terms and theories. The Board was provided an

overview of the different types of review processes (administrative, quasi-judicial, and legislative), and with common terms that come up during the review of applications. Ms. Radcliff stated that staff will continue to provide presentations and training opportunities on a regular basis to the Planning Board.

**Staff Updates:** None.

**Adjournment:** With no further business, the meeting was adjourned at 7:01 pm.



### **Introduction to the League of Women Voters (LWV) and LWV Home and Observer Team**

While the League of Women Voters US was founded in 1920, our local League of Women Voters Henderson County is now 60 years old. The League is a grassroots, nonpartisan political organization committed to empowering voters and defending democracy. We envision a democracy where every person has the desire, the right, the knowledge and the confidence to participate. To those ends the League:

- Encourages informed and active participation in government.
- Increases understanding of major public policy issues.
- Influences public policy through education and advocacy.
- Welcomes all members of our community.

While the League of Women Voters is nonpartisan, it is not neutral on many important national, state, and local issues. Visit the websites of our national, state, and/or local league ([LWVHCNC.org](http://LWVHCNC.org)) to learn more about our positions on issues.

In addition to serving Henderson County, LWVHC also serves the voters of Transylvania and Polk Counties in North Carolina.

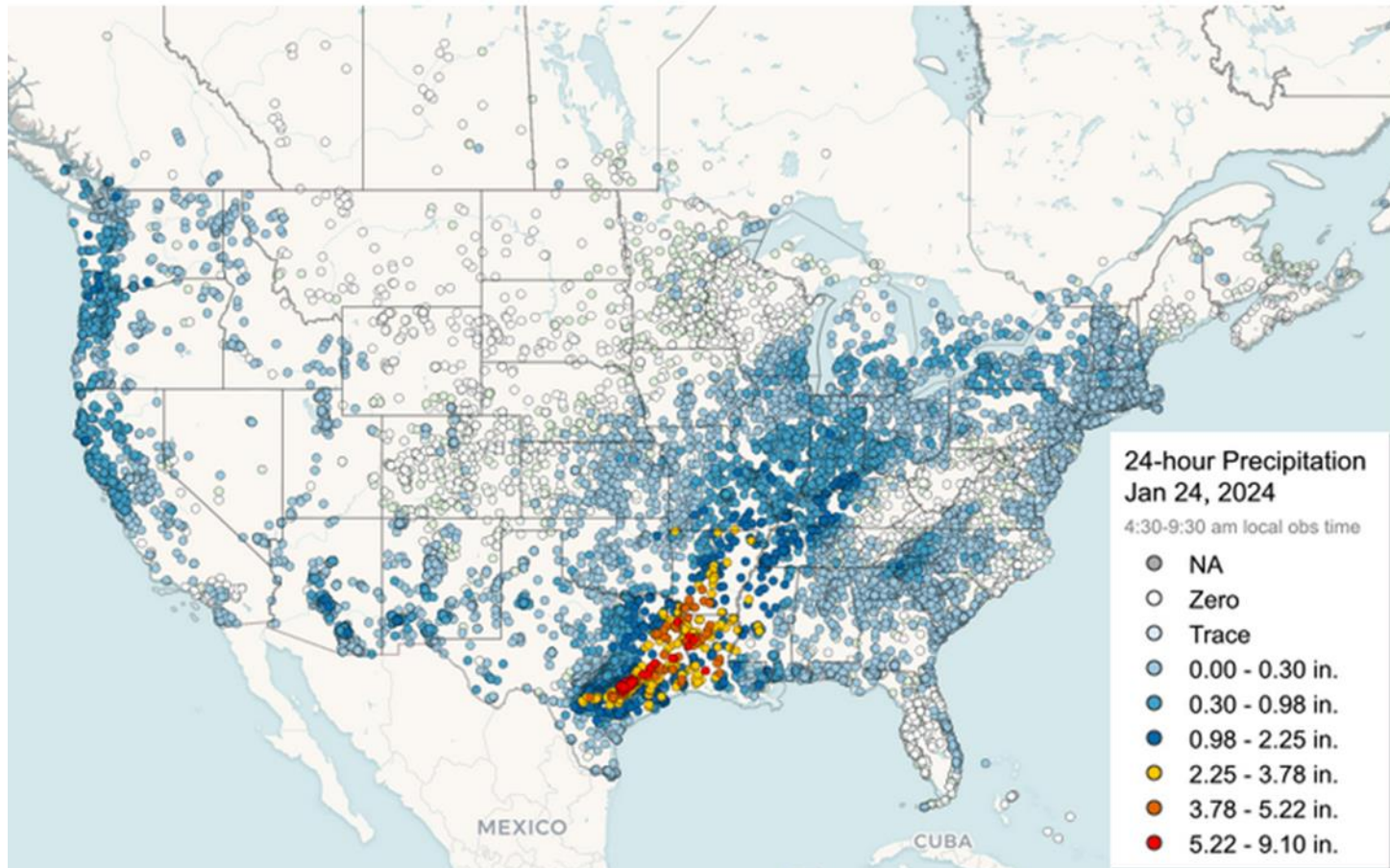
The League of Women Voters has promoted open government processes since its founding. LWVHC Home /Observer Team members attend public meetings and report to the League and interested citizens on any issues that might concern the League. Having League members visibly in attendance at meetings helps ensure that our government is conducting open meetings and encourages the accountability of public officials. If you have any questions, please feel free to contact us.

September 2023  
League of Women Voters of Henderson County  
P.O. Box 1163  
Flat Rock, North Carolina 28731

# Frequency of Heavy Precipitation Events and Impact on French Broad River

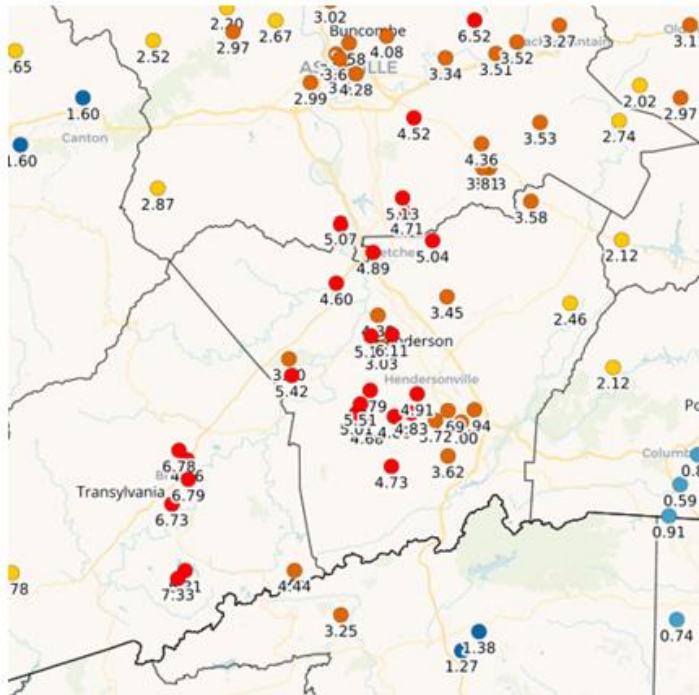
# Cocorahs Rainfall Network

## Over 26,000 Active Observers



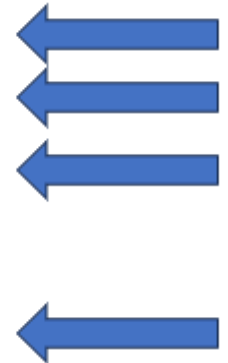
How often do we see 5-inch rainfalls?

## Henderson County Stations



## 24 Hr. Rainfalls Previously Reported

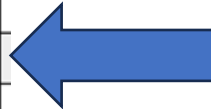
4/20/2019	7:00 AM	NC-HN-38	Etowah 1.1 WNW	5.42
10/24/2017	7:00 AM	NC-HN-38	Etowah 1.1 WNW	4.42
12/28/2018	7:00 AM	NC-HN-38	Etowah 1.1 WNW	4.27
3/26/2021	7:00 AM	NC-HN-38	Etowah 1.1 WNW	4.13
5/18/2018	7:00 AM	NC-HN-38	Etowah 1.1 WNW	3.90
8/18/2021	7:00 AM	NC-HN-38	Etowah 1.1 WNW	3.33
4/13/2020	7:00 AM	NC-HN-38	Etowah 1.1 WNW	3.08
2/4/2022	7:00 AM	NC-HN-38	Etowah 1.1 WNW	3.00



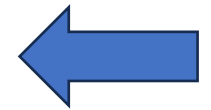
Blue arrows show the 5-inch rainfall events.

# Example of a 5-inch event on Jan 9 & 10, 2024

1/9/2024	6:00 AM	NC-HN-12	East Flat Rock 0.5 NNE	1.93
1/9/2024	6:00 AM	NC-HN-54	Mills River 1.1 N	1.19
1/9/2024	6:00 AM	NC-HN-61	Hendersonville 1.0 SSW	1.93
1/9/2024	7:00 AM	NC-HN-25	Hendersonville 6.1 SSW	2.36
1/9/2024	7:00 AM	NC-HN-33	Hendersonville 5.1 WSW	3.00
1/9/2024	7:00 AM	NC-HN-39	Mountain Home 0.9 WNW	2.28
1/9/2024	7:00 AM	NC-HN-40	Hendersonville 4.4 NW	1.96
1/9/2024	7:00 AM	NC-HN-46	Hendersonville 3.5 WNW	3.00
1/9/2024	7:00 AM	NC-HN-47	Hendersonville 3.3 SW	2.28
1/9/2024	7:00 AM	NC-HN-53	Flat Rock 1.0 NE	2.42
1/9/2024	7:00 AM	NC-HN-65	Fletcher 2.4 SW	1.65
1/9/2024	7:03 AM	NC-HN-66	Zirconia 3.5 WSW	2.23
1/9/2024	7:15 AM	NC-HN-38	Etowah 1.1 WNW	2.18
1/9/2024	7:30 AM	NC-HN-30	Laurel Park 1.5 W	2.99
1/9/2024	8:00 AM	NC-HN-2	Fletcher 1.2 WSW	2.02
1/9/2024	8:00 AM	NC-HN-14	Hendersonville 4.8 SW	3.39
1/9/2024	8:00 AM	NC-HN-27	Hendersonville 4.9 NNE	2.04
1/9/2024	8:00 AM	NC-HN-44	Gerton 0.4 SW	1.69
1/9/2024	8:00 AM	NC-HN-63	Bat Cave 1.8 NNW	1.78
1/9/2024	8:00 AM	NC-HN-67	Saluda 2.8 SSW	2.30
1/9/2024	8:00 AM	NC-HN-71	Laurel Park 0.9 SW	3.22
1/9/2024	3:15 PM	NC-HN-15	Hendersonville 9.6 ENE	4.46



1/10/2024	6:00 AM	NC-HN-2	Fletcher 1.2 WSW	2.16
1/10/2024	6:00 AM	NC-HN-12	East Flat Rock 0.5 NNE	3.49
1/10/2024	6:00 AM	NC-HN-61	Hendersonville 1.0 SSW	3.62
1/10/2024	7:00 AM	NC-HN-16	Hendersonville 3.4 NW	NA
1/10/2024	7:00 AM	NC-HN-25	Hendersonville 6.1 SSW	3.33
1/10/2024	7:00 AM	NC-HN-28	Hendersonville 2.6 SSW	NA
1/10/2024	7:00 AM	NC-HN-33	Hendersonville 5.1 WSW	2.82
1/10/2024	7:00 AM	NC-HN-39	Mountain Home 0.9 WNW	2.31
1/10/2024	7:00 AM	NC-HN-40	Hendersonville 4.4 NW	2.84
1/10/2024	7:00 AM	NC-HN-46	Hendersonville 3.5 WNW	2.11
1/10/2024	7:00 AM	NC-HN-47	Hendersonville 3.3 SW	3.19
1/10/2024	7:00 AM	NC-HN-53	Flat Rock 1.0 NE	2.91
1/10/2024	7:00 AM	NC-HN-54	Mills River 1.1 N	3.16
1/10/2024	7:00 AM	NC-HN-65	Fletcher 2.4 SW	2.43
1/10/2024	7:00 AM	NC-HN-66	Zirconia 3.5 WSW	3.12
1/10/2024	7:15 AM	NC-HN-38	Etowah 1.1 WNW	2.81
1/10/2024	8:00 AM	NC-HN-14	Hendersonville 4.8 SW	2.45
1/10/2024	8:00 AM	NC-HN-15	Hendersonville 9.6 ENE	NA
1/10/2024	8:00 AM	NC-HN-30	Laurel Park 1.5 W	3.04
1/10/2024	8:00 AM	NC-HN-44	Gerton 0.4 SW	2.22
1/10/2024	8:00 AM	NC-HN-63	Bat Cave 1.8 NNW	1.90
1/10/2024	8:00 AM	NC-HN-67	Saluda 2.8 SSW	2.12
1/10/2024	8:00 AM	NC-HN-71	Laurel Park 0.9 SW	2.60



## NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: NC

**Data description**

Data type:  Units:  Time series type:

**Select location**

1) Manually:

a) By location (decimal degrees, use "-" for S and W): Latitude:  Longitude:

b) By station (list of NC stations):

c) By address

2) Use map:



### Table for Etowah

<https://hdsc.nws.noaa.gov/pfds/>

Or Google: NOAA PRECIPITATION RETURN TIMES

Based on 2004 study

PDS-based precipitation frequency estimates with 90% confidence intervals (in inches) <sup>1</sup>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.381 (0.344-0.422)	0.453 (0.410-0.502)	0.541 (0.489-0.599)	0.608 (0.547-0.672)	0.696 (0.622-0.768)	0.761 (0.677-0.842)	0.828 (0.733-0.917)	0.894 (0.786-0.993)	0.981 (0.852-1.10)	1.05 (0.904-1.18)
10-min	0.608 (0.550-0.674)	0.724 (0.656-0.803)	0.866 (0.783-0.959)	0.972 (0.875-1.08)	1.11 (0.991-1.22)	1.21 (1.08-1.34)	1.32 (1.16-1.46)	1.42 (1.25-1.58)	1.55 (1.35-1.73)	1.66 (1.42-1.86)
15-min	0.760 (0.687-0.842)	0.910 (0.825-1.01)	1.10 (0.990-1.21)	1.23 (1.11-1.36)	1.40 (1.26-1.55)	1.54 (1.37-1.70)	1.66 (1.47-1.84)	1.79 (1.57-1.99)	1.95 (1.70-2.18)	2.08 (1.79-2.33)
30-min	1.04 (0.942-1.16)	1.26 (1.14-1.39)	1.56 (1.41-1.72)	1.78 (1.60-1.97)	2.08 (1.86-2.30)	2.31 (2.06-2.56)	2.55 (2.25-2.82)	2.78 (2.45-3.09)	3.11 (2.70-3.47)	3.36 (2.89-3.78)
60-min	1.30 (1.18-1.44)	1.58 (1.43-1.75)	2.00 (1.80-2.21)	2.32 (2.09-2.57)	2.77 (2.48-3.06)	3.13 (2.79-3.46)	3.51 (3.10-3.88)	3.91 (3.43-4.34)	4.46 (3.87-4.98)	4.91 (4.22-5.51)
2-hr	1.53 (1.39-1.69)	1.86 (1.68-2.05)	2.34 (2.11-2.58)	2.73 (2.46-3.00)	3.27 (2.92-3.60)	3.72 (3.30-4.10)	4.18 (3.68-4.62)	4.69 (4.10-5.18)	5.40 (4.66-6.00)	5.98 (5.11-6.68)
3-hr	1.67 (1.51-1.85)	2.01 (1.82-2.23)	2.52 (2.27-2.79)	2.94 (2.64-3.25)	3.54 (3.16-3.92)	4.06 (3.59-4.49)	4.60 (4.04-5.10)	5.20 (4.51-5.78)	6.07 (5.19-6.79)	6.80 (5.75-7.64)
6-hr	2.21 (2.02-2.43)	2.64 (2.41-2.91)	3.26 (2.97-3.59)	3.78 (3.44-4.16)	4.56 (4.10-5.01)	5.21 (4.65-5.74)	5.93 (5.23-6.54)	6.72 (5.87-7.44)	7.89 (6.77-8.78)	8.90 (7.52-9.95)
12-hr	2.83 (2.60-3.10)	3.39 (3.11-3.71)	4.16 (3.81-4.56)	4.79 (4.37-5.24)	5.67 (5.15-6.21)	6.40 (5.78-7.02)	7.17 (6.42-7.88)	7.99 (7.10-8.81)	9.17 (8.04-10.2)	10.1 (8.80-11.3)
24-hr	3.44 (3.18-3.72)	4.12 (3.82-4.46)	5.06 (4.68-5.48)	5.81 (5.37-6.28)	6.85 (6.30-7.40)	7.68 (7.05-8.30)	8.55 (7.80-9.23)	9.46 (8.58-10.2)	10.7 (9.63-11.6)	11.7 (10.4-12.7)
2-day	4.10 (3.82-4.42)	4.89 (4.56-5.27)	5.95 (5.54-6.41)	6.80 (6.32-7.32)	7.96 (7.37-8.57)	8.90 (8.21-9.58)	9.87 (9.07-10.6)	10.9 (9.94-11.7)	12.3 (11.1-13.3)	13.4 (12.0-14.5)
3-day	4.38 (4.09-4.69)	5.21 (4.87-5.59)	6.29 (5.87-6.74)	7.14 (6.65-7.65)	8.30 (7.71-8.89)	9.22 (8.54-9.88)	10.2 (9.38-10.9)	11.1 (10.2-12.0)	12.4 (11.3-13.4)	13.5 (12.2-14.6)
4-day	4.66 (4.36-4.97)	5.54 (5.18-5.91)	6.63 (6.20-7.07)	7.49 (6.99-7.98)	8.64 (8.05-9.21)	9.55 (8.87-10.2)	10.5 (9.68-11.2)	11.4 (10.5-12.2)	12.6 (11.6-13.5)	13.6 (12.4-14.6)
7-day	5.46 (5.11-5.86)	6.48 (6.07-6.95)	7.76 (7.25-8.32)	8.78 (8.19-9.40)	10.2 (9.44-10.9)	11.3 (10.4-12.1)	12.4 (11.4-13.3)	13.5 (12.4-14.5)	15.1 (13.8-16.2)	16.3 (14.8-17.6)
10-day	6.28 (5.90-6.68)	7.42 (6.98-7.91)	8.80 (8.27-9.37)	9.89 (9.28-10.5)	11.4 (10.6-12.1)	12.6 (11.7-13.4)	13.7 (12.8-14.6)	14.9 (13.8-15.9)	16.6 (15.2-17.7)	17.8 (16.3-19.1)
20-day	8.50 (8.05-8.98)	9.99 (9.47-10.6)	11.6 (11.0-12.3)	12.8 (12.1-13.6)	14.4 (13.6-15.2)	15.7 (14.8-16.5)	16.8 (15.8-17.8)	18.0 (16.9-19.0)	19.5 (18.2-20.7)	20.6 (19.2-21.9)
30-day	10.4 (9.85-10.9)	12.2 (11.5-12.8)	13.9 (13.2-14.7)	15.2 (14.4-16.1)	16.9 (16.0-17.8)	18.1 (17.1-19.1)	19.3 (18.2-20.4)	20.4 (19.2-21.5)	21.8 (20.4-23.0)	22.7 (21.3-24.1)
45-day	13.2 (12.6-13.9)	15.4 (14.7-16.2)	17.4 (16.5-18.2)	18.8 (17.9-19.7)	20.5 (19.5-21.5)	21.7 (20.6-22.8)	22.8 (21.7-24.0)	23.8 (22.6-25.1)	25.0 (23.7-26.3)	25.8 (24.4-27.2)
60-day	15.8 (15.1-16.5)	18.4 (17.6-19.3)	20.5 (19.6-21.5)	22.1 (21.1-23.2)	23.9 (22.8-25.1)	25.2 (24.0-26.4)	26.3 (25.0-27.6)	27.3 (26.0-28.7)	28.5 (27.0-30.0)	29.3 (27.7-30.9)

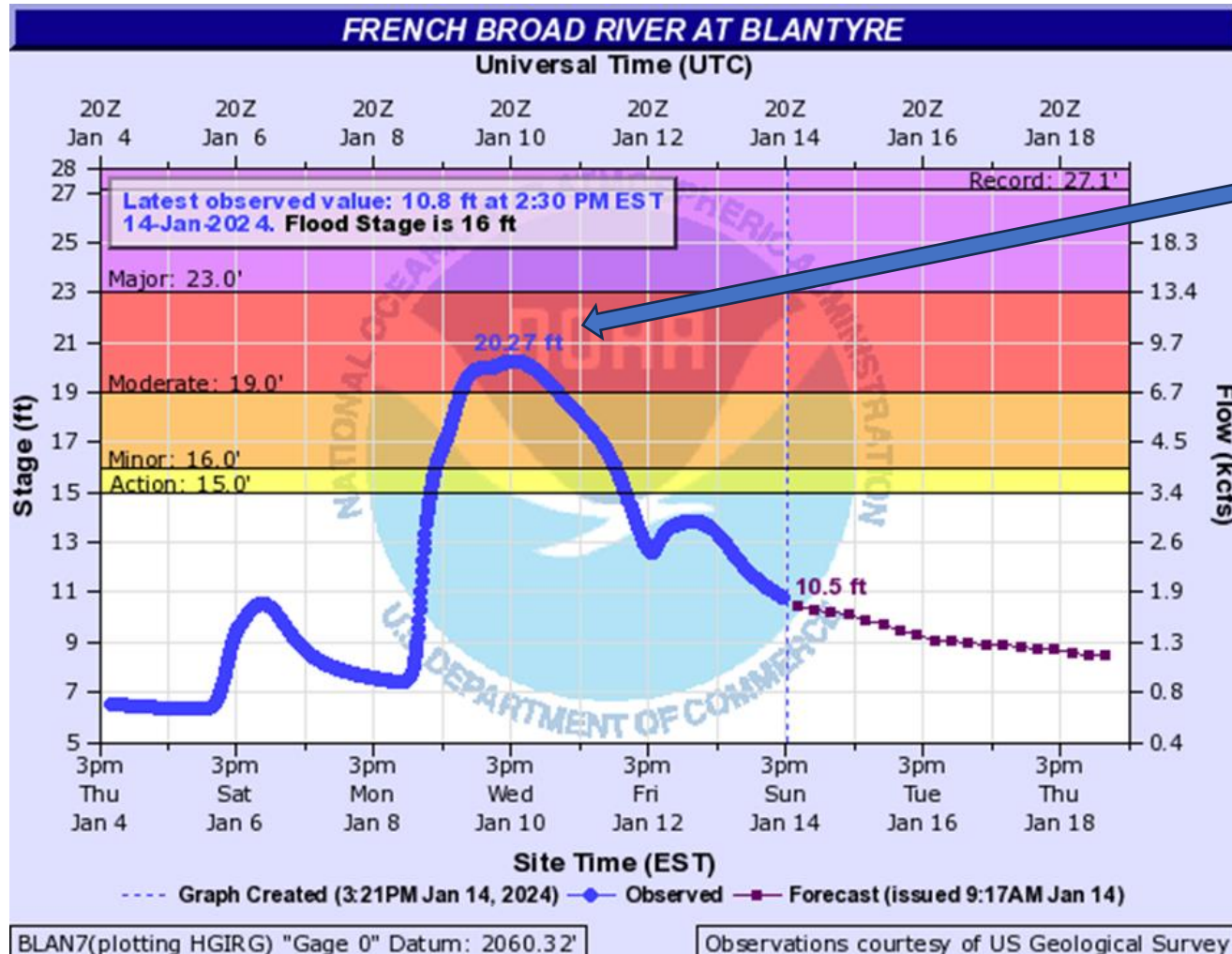
<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

Estimates from the table in CSV format:



# French Board River - Jan 4-18, 2024

USGS River Gauge – NOAA Hydrograph

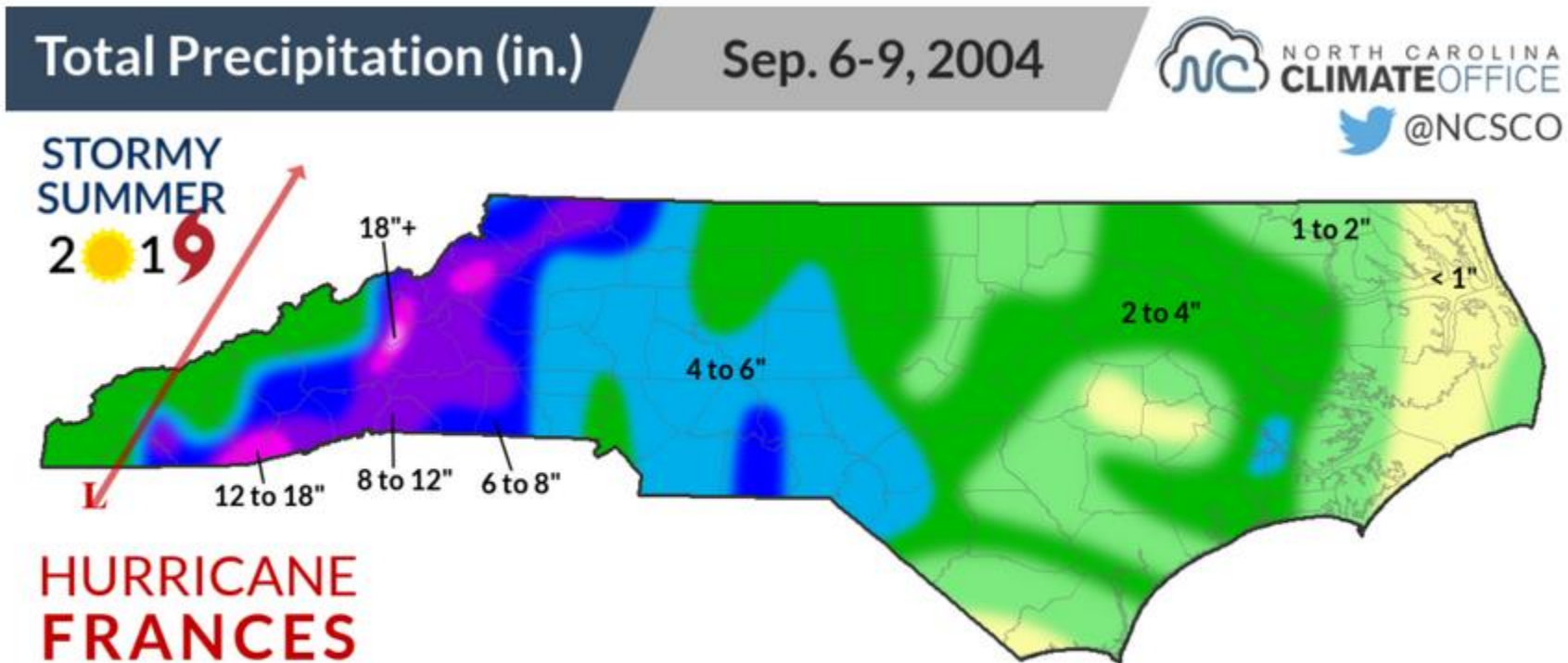


20.27 feet

Barn on Pleasant Grove, Blantyre  
January 10<sup>th</sup>, 2024



# Total Precipitation from Hurricane Frances



Total precipitation from Hurricane Frances.

How Did the River Response on January 8-9, 2024 Storm Compare with the River Response from Tropical Depression Frances in 2004?

- “The flood you are asking about took place on 9/9/04 with a water level of 25.81 feet. The water was even with the highway and across Grove Bridge at the stop sign.”

Blantyre Resident

- Compare the 25.81 feet with the January 2024 river gauge (20.27 ft)

# Tropical Storm Fred and Cruso Flood in August 2021

- Weather radar estimated that 10 to 12 inches of rain fell over the Pisgah National Forest area; nearby, in Cruso, 9.13 inches of rain was recorded within 24 hours.



## In Summary

- We are seeing heavy rain events more frequently in Henderson County.
- If we fill in the flood plains, the River response to these heavy rain events will be more flooding downstream, more river bank erosion, and the river will carve out new paths.

Henderson County is 375 square miles. The floodplain is 2% or 7.5 square miles. One foot of water in the floodplain is over 1.5 billion gallons of water.