



Austin/San Antonio Weather Forecast Office WEATHER EVENT SUMMARY

2015 Memorial Day Weekend Flooding

23 – 24 May 2015



Historic flash and river flooding occurred on Saturday, May 23rd and into Sunday, May 24th across portions of South-Central Texas. The worst rivers impacted by far were the Blanco and San Marcos Rivers that ran through Wimberley and San Marcos, TX that resulted in severe impacts to life and property. Additional flash flooding occurred on Memorial Day, May 25th, affecting large areas of Williamson, Travis, Bastrop, and Caldwell counties. Below is an overview of the May 23-24 event from the weather set-up, the National Weather Service product and warning timeline, satellite and radar videos, river hydrographs, and pictures.



Memorial Day Weekend Flooding

23 – 24 MAY 2015

EVENT SUMMARY

A persistent weather pattern from the beginning of May began to set the stage for a more concentrated and more impactful flash and river flooding event. May 2015 will go down in history as one of the wettest months across the state of Texas (Figure 1). For the first two to three weeks of the month, most locations across south-central received well-above normal rainfall that saturated the soils. By the time Memorial weekend arrived, much of the region was at least 2-4 inches (100-300%) above normal. These wet antecedent conditions meant that any new rain and especially heavy rain would become run-off directly into rivers, streams, and flash flood prone areas. Ingredients came together during the memorial weekend for several rounds of very heavy rain and severe thunderstorms to develop. Widespread 6-8 inches fell across Bandera, Kerr, Kendall, Blanco and far west portions of Comal and Hays counties with a max of 10 to 13 inches of rain across southern Blanco and extreme NE Kendall counties. Most of this rain fell from Saturday afternoon into the overnight hours of early Sunday morning, leading to a rapid rise in the Blanco and San Marcos Rivers (Figure 2). The Blanco River at Wimberley rose from near 5 feet at 9pm to near 41 feet by 1am. One staggering statistic is that the river rose 5 ft every 15 minutes from 10:45pm to 11:45pm. This equates to a 20ft rise along the river within a one hour time frame. The river gauge hydrograph for Wimberley can be seen in Figure 3 below depicting this rapid rise. Numerous high water rescues occurred throughout the late evening and morning hours along the banks of the Blanco and eventually the San Marcos Rivers.

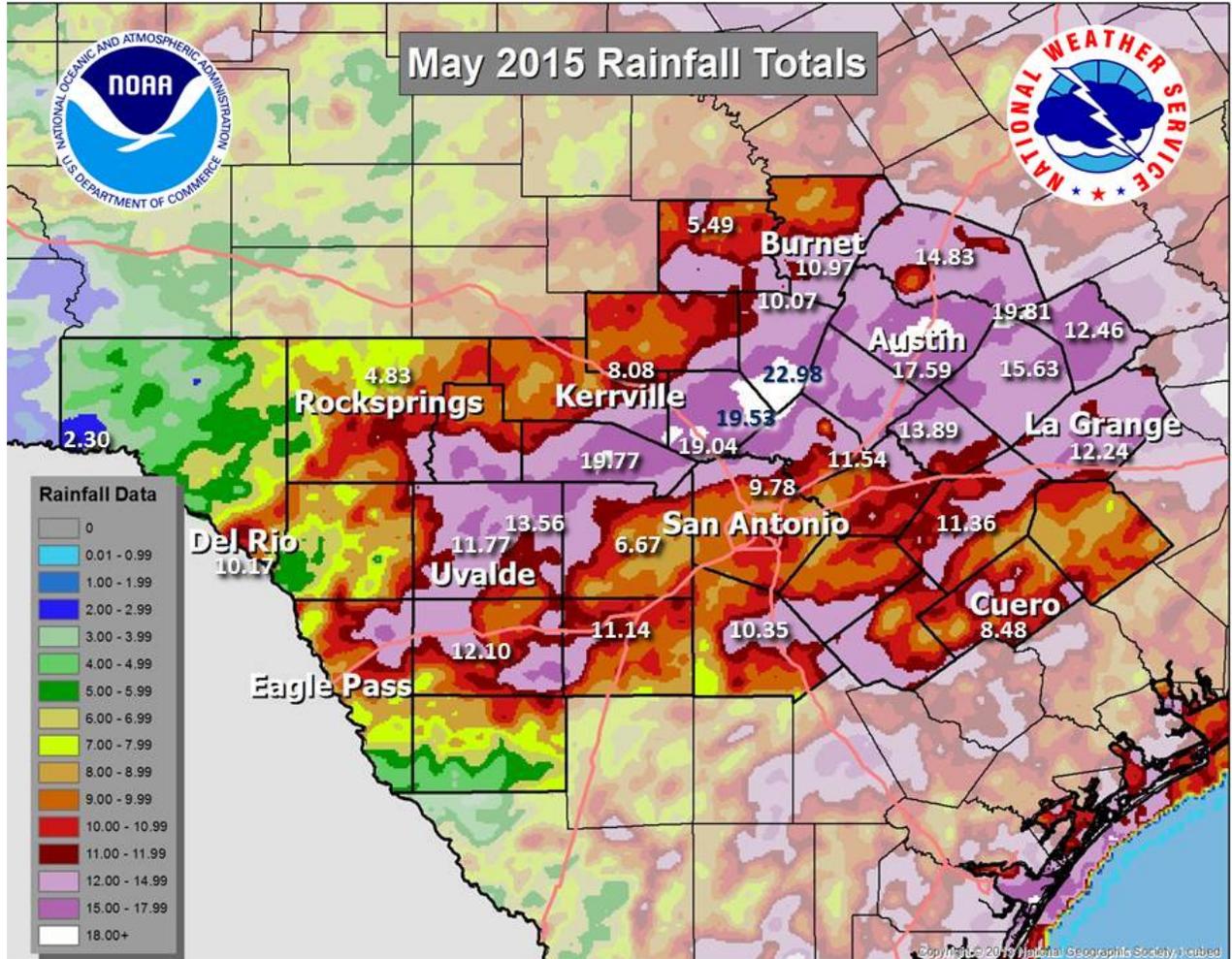


Figure 1: May 2015 rainfall totals.

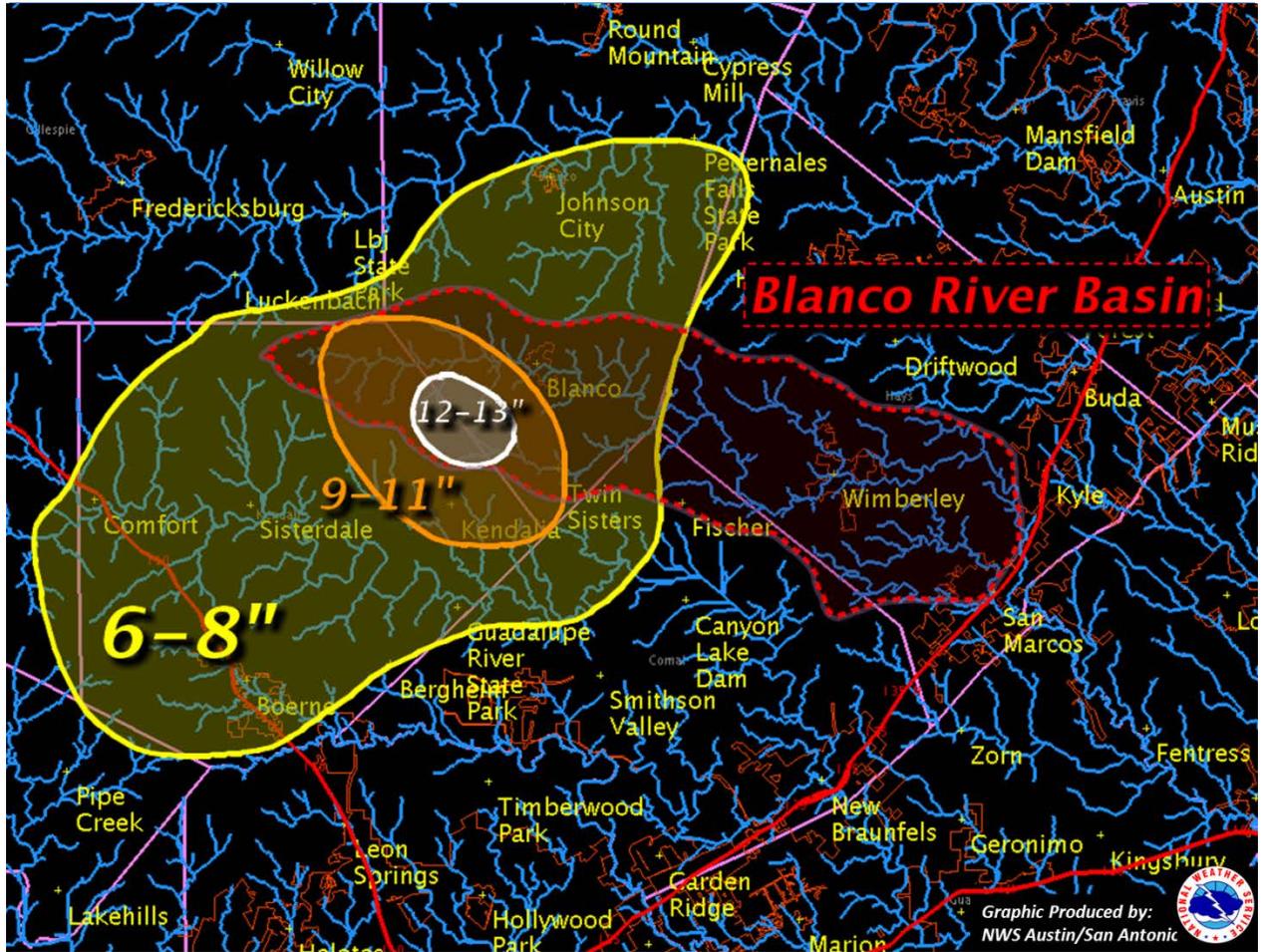


Figure 2: Widespread 6-8 inches of rainfall with local 9 to 11 inches and a maximum of 12-13 inches fell in the head waters of the Blanco River Basin over 4-6 hours.

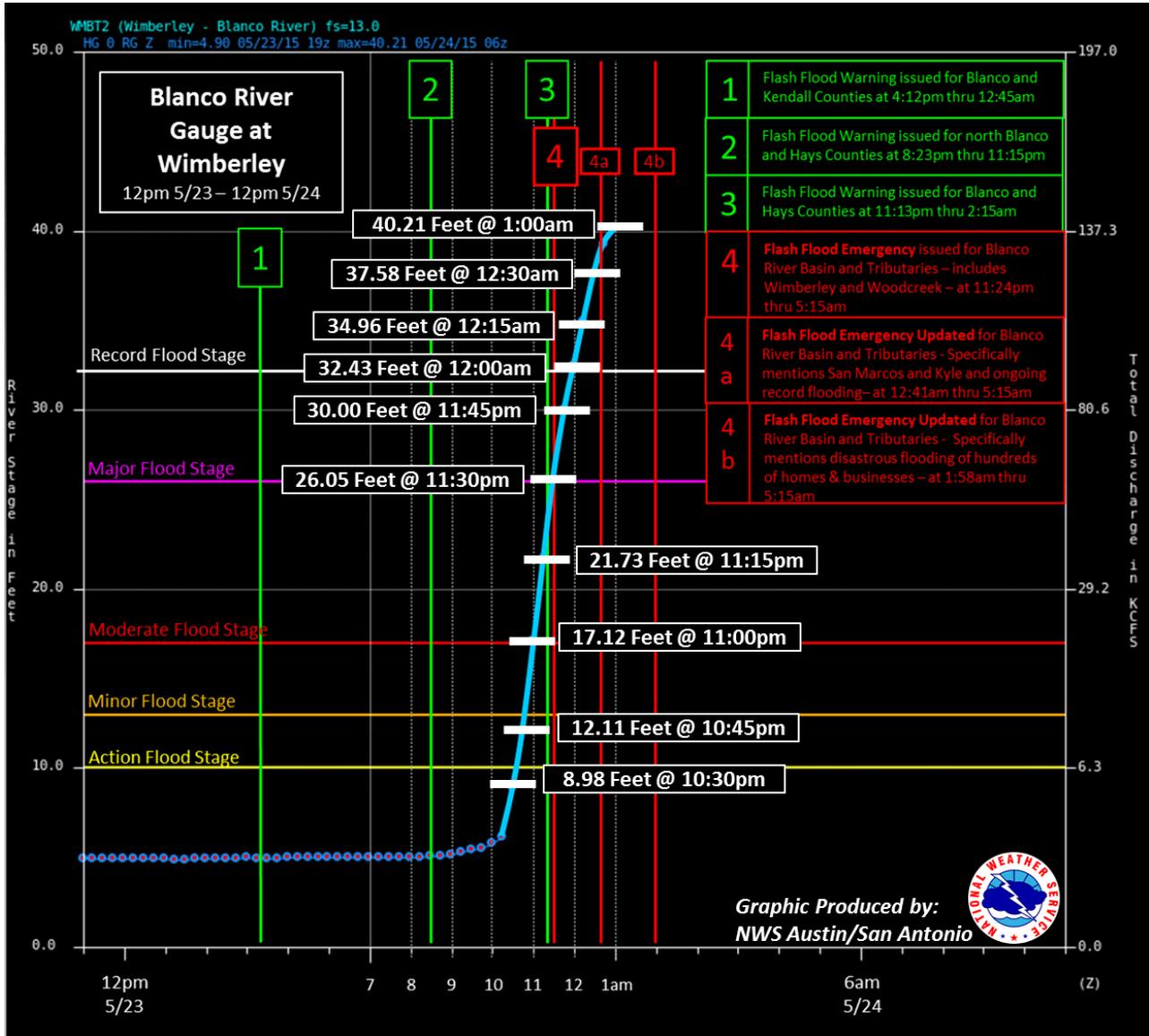


Figure 3a: Hydrograph for Blanco River at Wimberley, TX. Note the extreme rapid rise of river levels given the high rainfall amounts and rates in the Blanco River Basin headwaters from Figure 2. The river went from below flood stage to major flood stage in 45 minutes. A Flash Flood Emergency Warning was issued for Wimberley at 11:24pm with several flash flood warnings issued at 4:13pm, 8:23pm and again at 11:13pm.

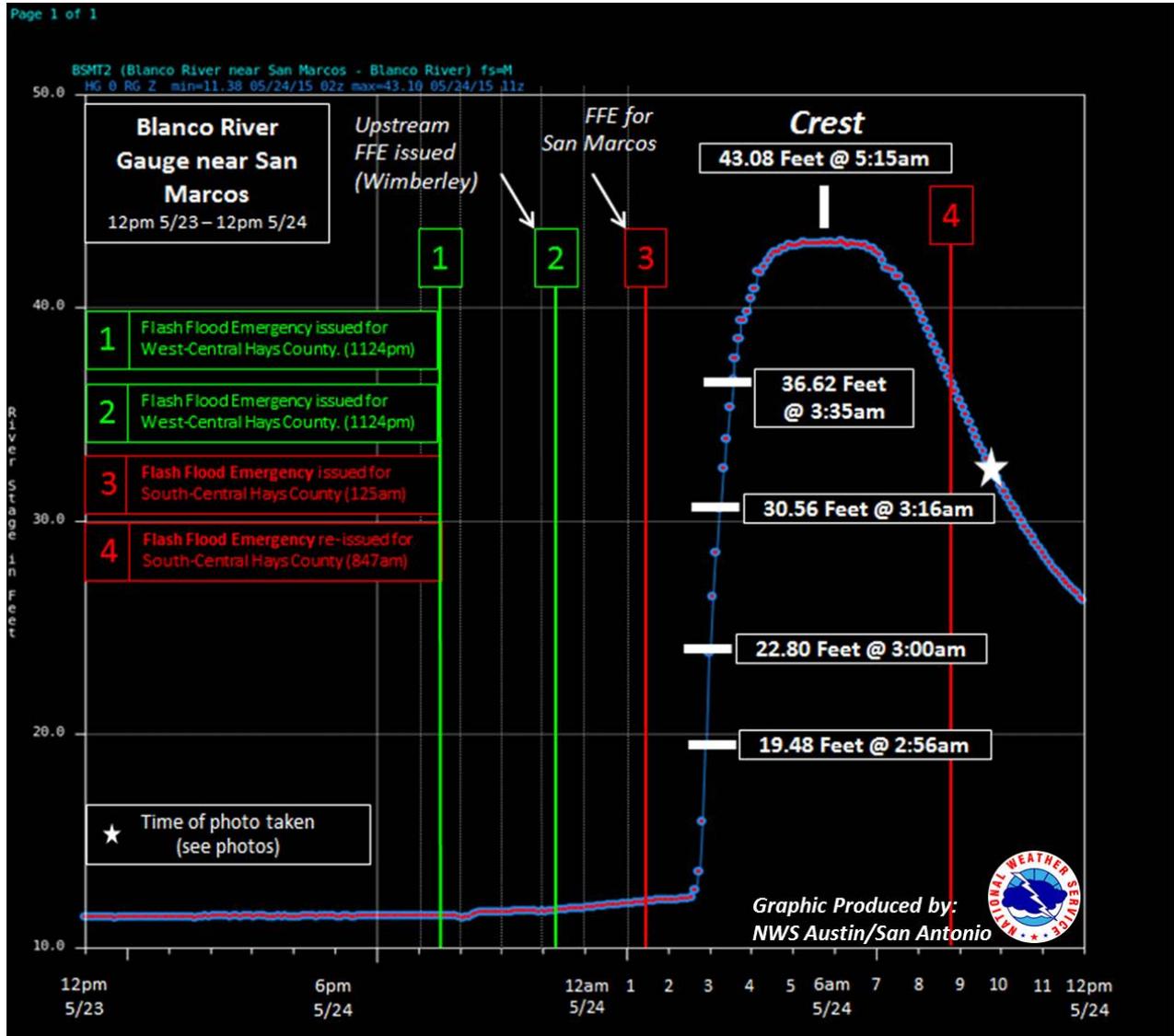


Figure 3b: Hydrograph for San Marcos River near San Marcos, TX. Note the similar rapid rise of river levels compared to the Wimberley gauge (Figure 3a). The heavy rains falling upstream created a river surge downstream into the city of San Marcos. The initial flash flood warning for this area was issued at 11:24PM and an upgrade to a Flash Flood Emergency was issued for San Marcos at 1:25am. The river surge arrived in San Marcos just before 3:00am. Several upstream warnings were issued prior this time. The river crested at 43.08 feet at 5:15am on the 24th. The significant impacts due to this river warranted a re-issuance of the Flash Flood Emergency at 8:47am when the river had already receded to 36.78 feet. An NWS employee that lives nearby this gauge took a picture of the river from the viewpoint of the gauge at 9:45am (see below).

WEATHER SET-UP

The saturated grounds from the previous above-normal rainfall through first couple of weeks of May set the stage for rapid run-off to occur if a concentrated heavy rainfall event was to occur. The ingredients came together on Saturday, May 23rd across the Hill Country with ample moisture, atmosphere instability, and lift from a strong weather disturbance across the region (Figure 4). In the low-levels, southeast winds off the Gulf of Mexico brought in highly anomalous moist air with perceptible water amounts (PWATs) of 1.83" observed in Del Rio, TX from the 7am weather balloon Saturday morning (Figure 5). Of significant note is that this value, according to SPC's sounding climatology, sets a new daily record maximum. In addition, the weather balloon sounding from Corpus Christi Saturday morning sampled 2.02" PWATs which also was near the daily record high. This ample moisture combined with afternoon heating that resulted in 1000-2000 J/kg of Convective Available Potential Energy (CAPE). Instability waned slightly into the evening but still remained adequate as moderately strong mid and upper level winds aided in impressive divergence over the region (Figure 6). This divergence of air aloft allowed for storms to continually produce heavy rainfall over the same areas.

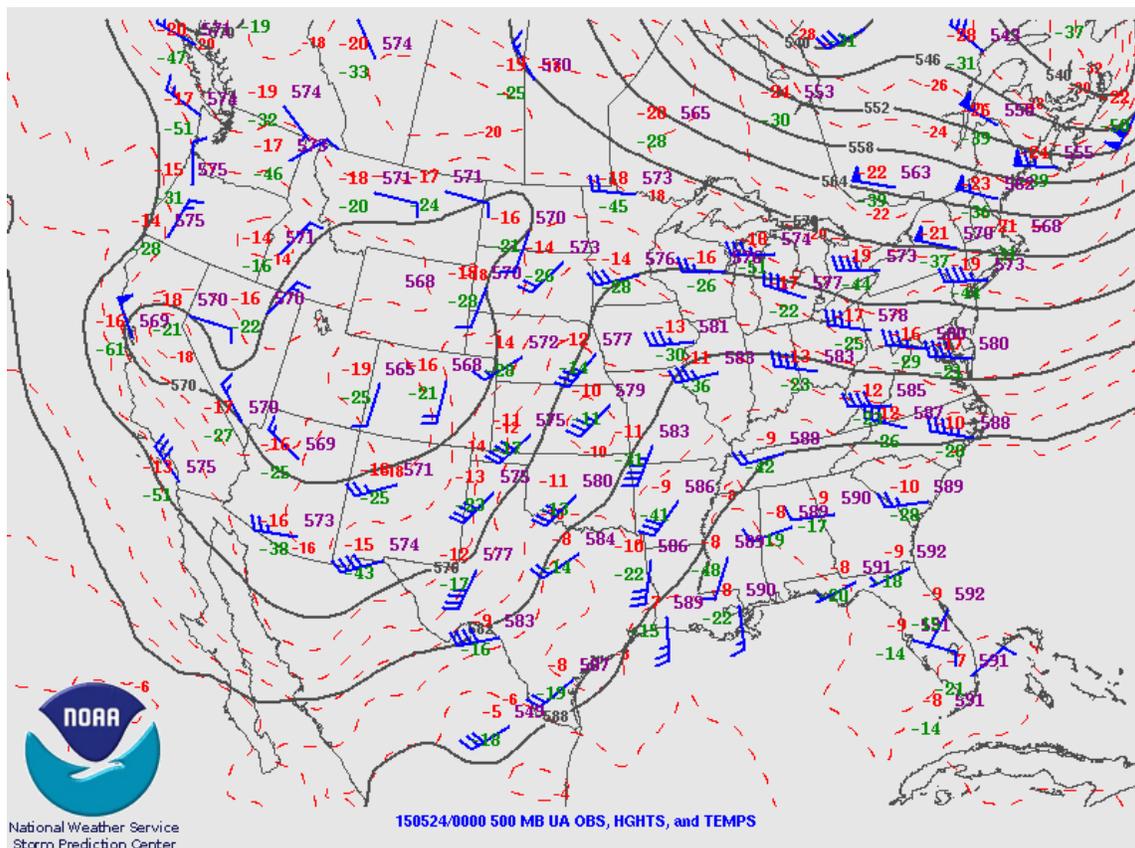


Figure 4: 500 mb chart for 5/24 at 00z (May 23 7pm). Mid-level Atmospheric pattern on May 23rd at 7pm. Note the little ripples in the lines over Texas. These ripples can indicate enhanced areas of lift and when combined with cyclonically-curved winds, can result in supportive environment for longer lived storms.

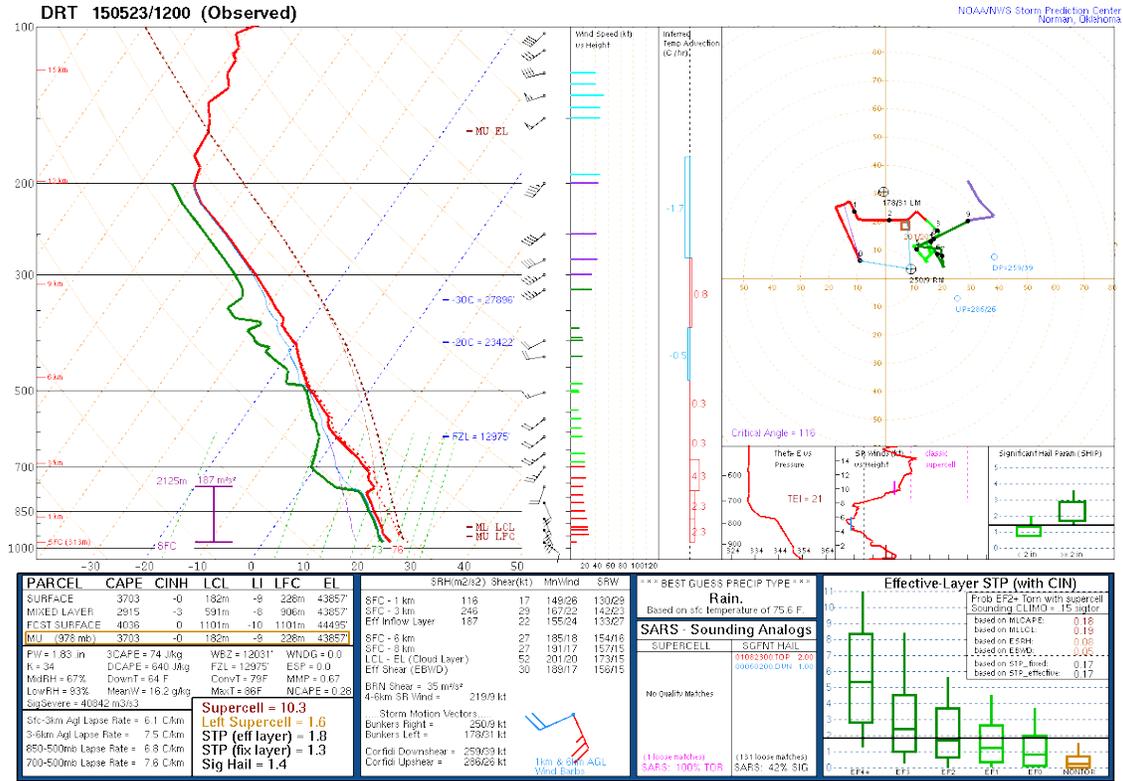


Figure 5: SPC Sounding chart from KDRT 05/23 12Z. Note the PW value of 1.83" taken from the weather balloon sampling in Del Rio, Texas from Saturday morning. CAPE values were already high that morning ahead of developing storms and indicated more storms would be likely that afternoon. This instability in combination with modest shear values allowed for organized storms to develop.

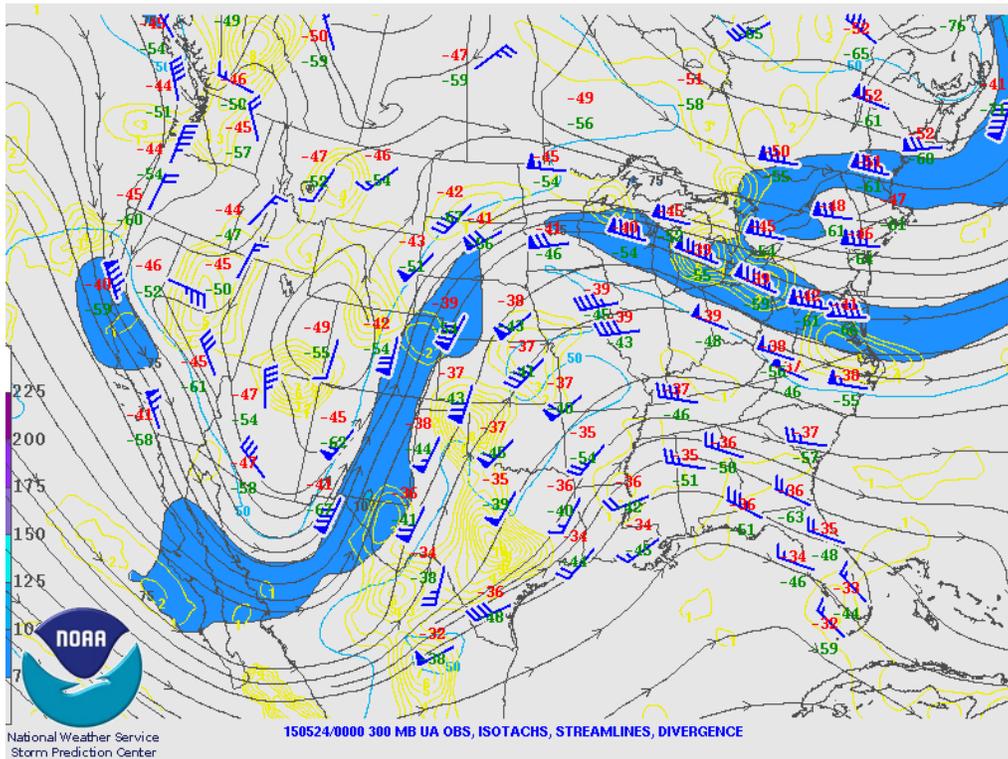
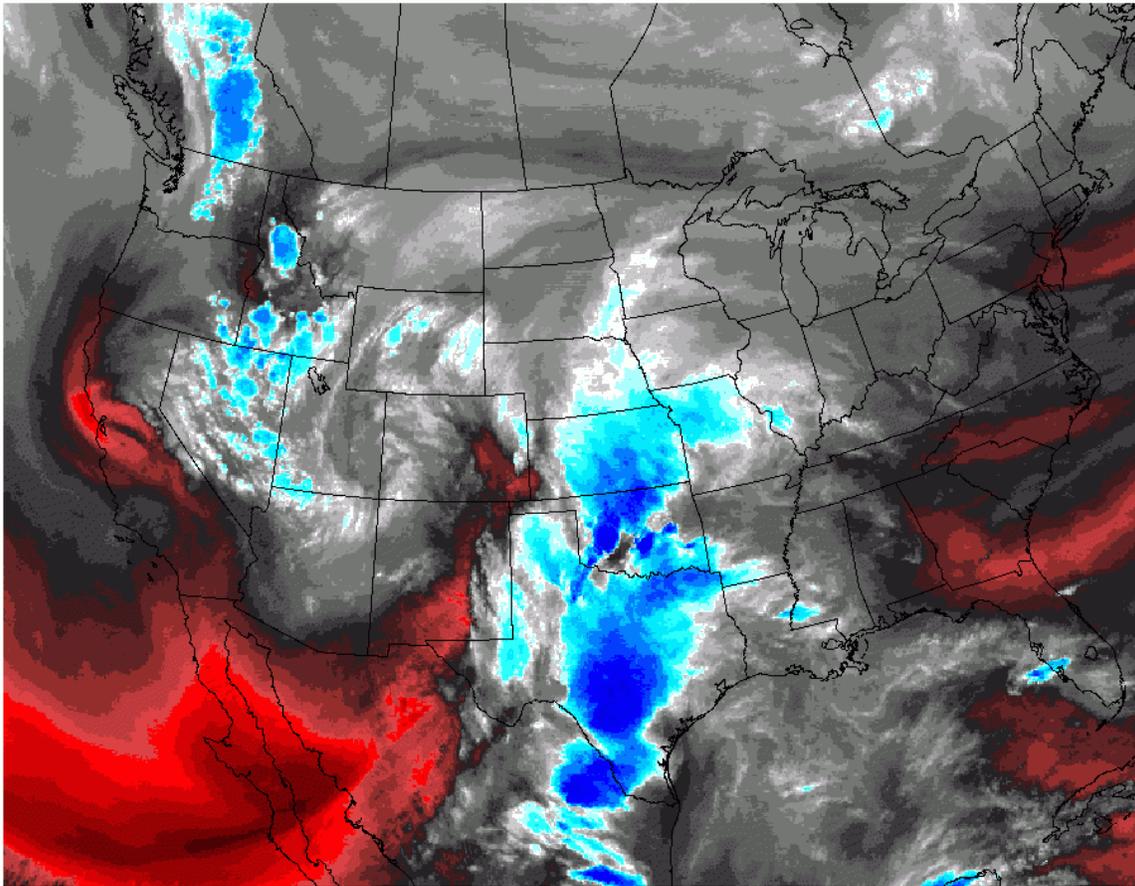


Figure 6: 300mb winds and divergence outlined in yellow. Note the sharp air flow direction change across northern Mexico with a potent long wave trough. This strong diffluence allowed for strong horizontal divergence that supported stronger and long-lived updrafts that tapped into the ample moisture in place over Texas. Note the high contouring of yellow outlines across south central Texas.



20150524/0015 WATER VAPOR

Figure 7: Water Vapor Image for 7:15pm on Saturday, May 23rd. Note the significant thunderstorm activity over south-central Texas that is producing heavy rainfall.

NWS Austin/San Antonio Product & Warning Timeline

A Flash Flood Watch was issued for the entire area early Saturday morning at 3:12am through 7pm Sunday evening given the favorable set up for heavy rainfall across the already soaked region. Several informational graphics were posted to Twitter, Facebook, and sent to Emergency Managers/Partners via email (Figure 8 & 9) indicating very high confidence in heavy rainfall and high confidence in both river and flash flooding.

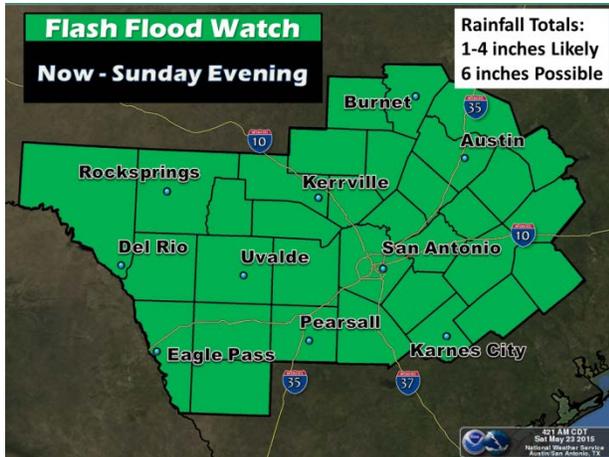


Figure 8: Flash Flood Watch issued at 3:12am

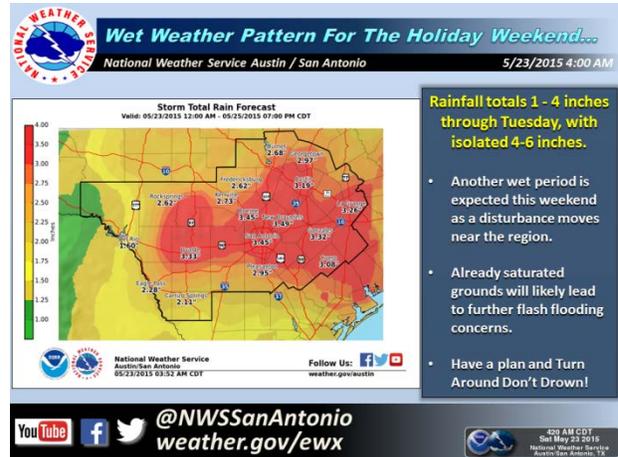


Figure 9: Rainfall Totals Graphic posted near 5am

This set-up was also highlighted in the Saturday morning's Area Forecast Discussion, reinforced in the afternoon update, and in the Hazardous Weather Outlook (Figures 10, 11, & 12).

SHORT TERM (TODAY THROUGH SUNDAY)...

MODERATE TO HEAVY RAINFALL IS GETTING AN EARLY START WITH CONVECTION INCREASING WEST OF HIGHWAY 83. THIS IS ALL ASSOCIATED WITH INCREASING LIFT AHEAD OF THE MAIN UPPER LOW WHICH IS STILL OVER UTAH/ARIZONA PER 00Z UPPER AIR ANALYSIS AND LATEST WATER VAPOR IMAGERY. RAINFALL RATES WITH THIS ACTIVITY ARE GENERALLY AT 1-2 INCHES PER HOUR AND WE HAVE ALREADY ISSUED ONE FLOOD ADVISORY. THE HRRR IS ZEROING IN ON THIS AREA WHERE RAIN IS CURRENTLY INCREASING AND IS COMING UP WITH SOME HIGH TOTALS THIS MORNING. BECAUSE OF THIS EARLY THREAT OF HEAVY RAINFALL...WILL GO AHEAD AND START THE FLASH FLOOD WATCH NOW. THIS WILL BE A BIT TOO EARLY FOR THE EASTERN ZONES...BUT WANT TO AVOID CONFUSION WITH A SEGMENTED PRODUCT. HIGH-RES MODEL GUIDANCE CONTINUES TO SHOW THE WESTERN CWA AS THE FAVORED AREA FOR CONVECTION LATER THIS MORNING BEFORE SPREADING ACROSS THE AREA THIS AFTERNOON. RAIN LOOKS LIKELY FOR TODAY WITH 60/70 POPS ACROSS THE CWA. INDIVIDUAL CELLS COULD CONTAIN HEAVY RAINFALL AND SOME TRAINING OF CELLS IS ALSO POSSIBLE.

THE MAIN FORCING WITH THIS INITIAL WAVE OF LIFT ASSOCIATED WITH THE UPPER LOW WILL BEGIN TO ARRIVE TO THE WESTERN ZONES LATE THIS AFTERNOON AND EVENING. CONFIDENCE IS HIGH THAT A LINE OF SHOWERS AND THUNDERSTORMS WILL DEVELOP WITH THIS LIFT AND STRETCH ACROSS A LARGE PORTION OF TEXAS. THERE ARE SOME DISCREPANCIES WITH THE GUIDANCE ON THE EXACT TIMING OF THIS WITH MOST MODELS SOMEWHERE BETWEEN THE 21Z TO 03Z TIME FRAME...WITH SOME OF THE HIGH-RES GUIDANCE BEING THE EARLIEST. THIS LINE IS EXPECTED TO SLOWLY MARCH THROUGH THE CWA OVERNIGHT AND IS EXPECTED TO AVERAGE A QUICK 1-3 INCHES OF RAIN AS IT MOVES ACROSS. OVERNIGHT RAIN ON TOP OF ANY RAINFALL THAT OCCURS TODAY WILL NOT BE ABLE TO SOAK INTO THE GROUND...AS SOILS REMAIN QUITE SATURATED FROM A VERY WET SPRING. MOST OF THE RAIN WILL RUNOFF INTO CREEKS...STREAMS AND RIVERS AND FLOODING IS ONCE AGAIN LIKELY.

Figure 10: Saturday morning discussion highlighting heavy rain and flash/river flooding threat. Issued at 3:14am



FOR TONIGHT...AS ALREADY DISCUSSED...THE MESOSCALE MODELS DEVELOP A COMPLEX OF STORMS THAT WILL SWEEP ACROSS THE STATE OVERNIGHT TONIGHT. TIMING FOR THIS CONTINUES TO GET EARLIER. THE NSSL WRF AND ARM BOTH HAVE THE LINE APPROACHING THE I-35 CORRIDOR BY THE LATE AFTERNOON. THE TEXAS TECH WRF AND HRRR AND NMM ALL SAY THAT THE LINE WILL BE MOVING THROUGH THE HILL COUNTRY AND APPROACHING THE I-35 CORRIDOR BY 9PM AND SLOWLY PUSHING EAST THROUGH THE EARLY MORNING HOURS. BASED ON CURRENT SATELLITE TRENDS THE EARLIER TIMING IS BEGINNING TO LOOK MORE LIKELY. MODELS ARE STILL HOLDING ONTO 1-3 INCH RAINFALL TOTALS WITH THIS INITIAL WAVE OF CONVECTION. THIS...ON TOP OF ADDITIONAL RAINS THAT HAVE ALREADY FALLEN TODAY...AND THE FACT THAT SOILS ARE SATURATED WILL LEAD TO THE THREAT OF BOTH RIVER FLOODING AND FLASH FLOODING. THE SEVERE WEATHER THREAT WILL ALSO BE PRESENT. WHILE CONVECTION GROUPING TOGETHER LIKE THIS TYPICAL MEANS THE THREAT FOR SEVERE WEATHER IS A LITTLE BIT LESS...CONVECTIVE PARAMETERS ARE VERY FAVORABLE. THE MAIN CONCERNS WILL BE FIRST DAMAGING THUNDERSTORM WINDS WITHIN BOWING SECTIONS OF THE LINE. THE HRRR ACTUAL SUPPORTS THIS WITH SEVERAL BOWING SECTIONS BEING SHOWN IN THE MODEL REFLECTIVITY. THERE IS ALSO SUFFICIENT SURFACE WIND SHEAR AND HELICITY VALUES TO RESULT IN AN ISOLATED TORNADO THREAT AS WINDS PROFILES TURN WITH HEIGHT.

DURING THE OVERNIGHT HOURS IT IS IMPERATIVE THAT THOSE OUT AND ABOUT FOR THE HOLIDAY WEEKEND...ESPECIALLY THOSE ON LOCAL RIVERS AND LAKES...MONITOR THE WEATHER AND BE READY TO ACT SHOULD A WARNING BE ISSUED FOR THEIR AREA. HAVE MULTIPLE WAYS TO RECEIVE WEATHER INFORMATION...HAVE A PLAN TO SEEK SHELTER OR GET TO SAFETY SHOULD SEVERE WEATHER OR FLOODING OCCUR...AND ALWAYS REMEMBER TO TURN AROUND...DONT DROWN.

Figure 11: Saturday Afternoon Area Forecast Discussion reinforcing the river and flash flood threat. Issued at 2:26pm

THIS HAZARDOUS WEATHER OUTLOOK IS FOR SOUTH CENTRAL TEXAS.

.DAY ONE...TODAY AND TONIGHT.

A FLASH FLOOD WATCH IS IN EFFECT FOR ALL OF SOUTH CENTRAL TEXAS TODAY AND TONIGHT. SCATTERED THUNDERSTORMS HAVE ALREADY DEVELOPED OVER WESTERN PARTS OF SOUTH CENTRAL TEXAS EARLY TODAY. THE THREAT FOR HEAVY RAINFALL WILL BECOME WIDESPREAD LATER TODAY AS A LARGE THUNDERSTORM COMPLEX DEVELOPS OVER TEXAS. WITH NEARLY SATURATED SOIL CONDITIONS ACROSS MUCH OF THE AREA...THERE WILL BE A HIGH THREAT FOR FLASH FLOODING. WHILE THE HEAVIEST RAINS ARE EXPECTED TO EXTEND FROM TONIGHT INTO SUNDAY...LOCALLY HEAVY DOWNPOURS OF 1 TO 4 INCHES ARE POSSIBLE TODAY AND TONIGHT. A FEW AREA STREAMS AND RIVERS MAY EXPERIENCE NEW RISES...ESPECIALLY OVER THE SOUTHERN EDWARDS PLATEAU AND HILL COUNTRY THROUGH TONIGHT.

IN ADDITION TO THE FLASH FLOOD AND POSSIBLE IMPACTS ON RIVERS... CONDITIONS ALONG THE LEAD EDGE OF THE STORM COMPLEX WILL BE ALSO FAVORABLE FOR A FEW SEVERE STORMS...WITH DAMAGING WINDS AND ISOLATED BRIEF TORNADOES POSSIBLE.

Figure 12: Saturday Morning Hazadous Weather Outlook issued at 4:53am

Twitter (@NWSSanAntonio) information timeline* on 5/23 to 5/24

* This is not a complete twitter timeline of all tweets but the most important highlighting the river flooding threat have been posted below

NWS San Antonio
@NWSSanAntonio

4:15 pm - New Flash Flood Warning for Multiple Counties...including northern Bexar County.
pic.twitter.com/8slUthiYob

Flash Flood Warning
Valid until May 23rd, 2015 at 7:15 PM CDT

Affected Population: 204,028
Public Schools: 56
Area: 1906 square miles
Hospitals: 5

Miles of interstate: 45
Airports: 2
Miles of railroad: 12
National Parks: 0

Created Saturday May 23rd, 2015 at 4:12 PM CDT

4:16pm - 23 May 2015 - TweetDeck

4 RETWEETS

NWS San Antonio
@NWSSanAntonio

9:45 pm - In addition to the Tornado and Severe Threat we also have Flash Flooding and River Flooding going on! Stay Weather Aware.

9:46pm - 23 May 2015 - Twitter Web Client

17 RETWEETS 5 FAVORITES

NWS San Antonio
@NWSSanAntonio

9:49 pm - If you are camping tonight in Central Texas, or out and about for the Holiday Weekend Remember to Stay Weather Aware!

9:49pm - 23 May 2015 - Twitter Web Client

18 RETWEETS 4 FAVORITES

Flash Flood Warning for Blanco Highlighting Flash/River Flooding Highlighting camping areas- DANGER

NWS San Antonio
@NWSSanAntonio

10:52 pm - As we shift from a severe to Flooding threat for the next few hours...remember 4 words... TURN AROUND, DON'T DROWN.

10:53pm - 23 May 2015 - Twitter Web Client

19 RETWEETS 8 FAVORITES

NWS San Antonio
@NWSSanAntonio

Flash Flood Emergency is in effect for Hays County. This is a very dangerous situation! #bxwx
pic.twitter.com/5blwydIUWI

Flash Flood Warning
Valid until May 24th, 2015 at 5:15 AM CDT

Affected Population: 9,863
Public Schools: 5
Area: 122 square miles
Hospitals: 0

Miles of interstate: 0
Airports: 0
Miles of railroad: 0
National Parks: 0

Created Saturday May 23rd, 2015 at 11:24 PM CDT

11:26pm - 23 May 2015 - TweetDeck

45 RETWEETS 12 FAVORITES

NWS San Antonio
@NWSSanAntonio

Here is a map which shows the past 24 hour rainfall. More is falling!
pic.twitter.com/WL9TQMLUxC

24 Hour Rainfall Ending 10 PM Saturday, May 23, 2015

11:44pm - 23 May 2015 - TweetDeck

29 RETWEETS 15 FAVORITES



NWS San Antonio @NWSSanAntonio

A New Flash Flood Emergency for portions of Hays/Guadalupe/Caldwell has been issued as water flows downstream. #tadd pic.twitter.com/JgmGFrRqa1

Flash Flood Warning @NWSSanAntonio

Valid until May 24th, 2015 at 9:15 AM CDT

Affected Population: 34,939
 Public Schools: 4
 Area: 95 square miles
 Hospitals: 0

Miles of interstate: 7
 Airports: 1
 Miles of railroad: 17
 National Parks: 0

Created Sunday May 24th, 2015 at 1:25 AM CDT

1:27am · 24 May 2015 · TweetDeck

37 RETWEETS 8 FAVORITES

NWS San Antonio @NWSSanAntonio

The Blanco River at Wimberly is now forecasted to be a record flood of 34.4 feet. The old record is 33.3. Current height is 32.4 ft. #txwx

12:12am · 24 May 2015 · TweetDeck

77 RETWEETS 14 FAVORITES

NWS San Antonio @NWSSanAntonio

Blanco River at Wimberly is now at 39 feet. This is unprecedented flooding for this site. Historic flooding is ongoing!

12:56am · 24 May 2015 · TweetDeck

156 RETWEETS 43 FAVORITES

Record Flood Now Forecast

Record/Historic Flooding Ongoing

2nd FLASH FLOOD EMERGENCY

NWS San Antonio @NWSSanAntonio

Radar Update: Catastrophic flash flooding continues on the Blanco River between Wimberley and San Marcos. #txwx
pic.twitter.com/4Lq9IbvpfB

Radar at 1:55 AM
May 24

2:00am - 24 May 2015 - TweetDeck

30 RETWEETS 8 FAVORITES

Catastrophic Flooding Ongoing

NWS San Antonio @NWSSanAntonio

Record flood along the Blanco River at Wimberley. Disastrous, life threatening flooding occurring. #txwx
pic.twitter.com/FO7vNggsrr

BLANCO RIVER AT WIMBERLEY

Universal Time (UTC)

Latest observed value: 43.7 ft at 1:01 AM CDT 24 May 2015. Flood Stage is 43 ft

Record: 33.7

Major: 28.7

Minor: 17.0

Action: 10.0

2:26am - 24 May 2015 - TweetDeck

58 RETWEETS 16 FAVORITES

Record and Life threatening Flooding Occuring

NWS San Antonio @NWSSanAntonio

Graph of Blanco River near Kyle, approaching record flood. #txwx
pic.twitter.com/iUufJysQ9s

BLANCO RIVER NEAR KYLE

Universal Time (UTC)

Latest observed value: 38.80 ft at 2:15 AM CDT 24 May 2015

Record: 40.0

Major: 35.0

Minor: 25.0

Action: 15.0

2:50am - 24 May 2015 - TweetDeck

29 RETWEETS 14 FAVORITES

Record Flooding near Kyle

NWS San Antonio @NWSSanAntonio

Flood wave along the Blanco River is moving into San Marcos. River has gone up 6.5 feet in 10 minutes. #txwx

3:01am - 24 May 2015 - TweetDeck

146 RETWEETS 45 FAVORITES

Flood wave moving Downstream

NWS San Antonio @NWSSanAntonio

3:15 AM Update: Catastrophic flash flooding continues on the Blanco River between Wimberley and San Marcos. #txwx
pic.twitter.com/prOyJYV7HH

Radar at 3:15 AM
May 24

3:01am - 24 May 2015 - TweetDeck

146 RETWEETS 45 FAVORITES

Catastrophic Flooding Continues

NWS San Antonio @NWSanAntonio

Graph of Blanco River at San Marcos cresting just under 43 feet. #txwx
pic.twitter.com/4QOxLiUFoS

BLANCO RIVER AT SAN MARCOS
 Universal Time (UTC)

Stage (ft)

102 100 98 96 94 92 90 88 86 84 82 80 78 76 74 72 70 68 66 64 62 60 58 56 54 52 50 48 46 44 42 40 38 36 34 32 30 28 26 24 22 20 18 16 14 12 10 8 6 4 2 0

May 21 May 22 May 23 May 24 May 25 May 26 May 27 May 28 May 29 May 30 May 31

Legend: observed value: 42.55 ft at 8:00 AM CDT 24 May 2015

Graph Created: 5:52AM May 24, 2015

5:12am - 24 May 2015 - TweetDeck

93 RETWEETS 31 FAVORITES

NWS San Antonio @NWSanAntonio

Flood waters from the Blanco River are now over I-35SB in San Marcos #txwx

4:06am - 24 May 2015 - TweetDeck

31 RETWEETS 16 FAVORITES

NWS San Antonio @NWSanAntonio

I-35 NB and SB lanes closed at the Blanco River just north of San Marcos due to flooding. #txwx

4:17am - 24 May 2015 - TweetDeck

55 RETWEETS 18 FAVORITES

Interstate 35 SB is closed

Interstate-35 SB & NW Closed

Hydrograph of Blanco at San Marcos

NWS San Antonio @NWSanAntonio

6:30am - To check the stage of Central TX rivers visit: water.weather.gov/ahps2/index.php... (image is rivers forecast to flood)
pic.twitter.com/QxzcXwlgaZ

6:28am - 24 May 2015 - TweetDeck

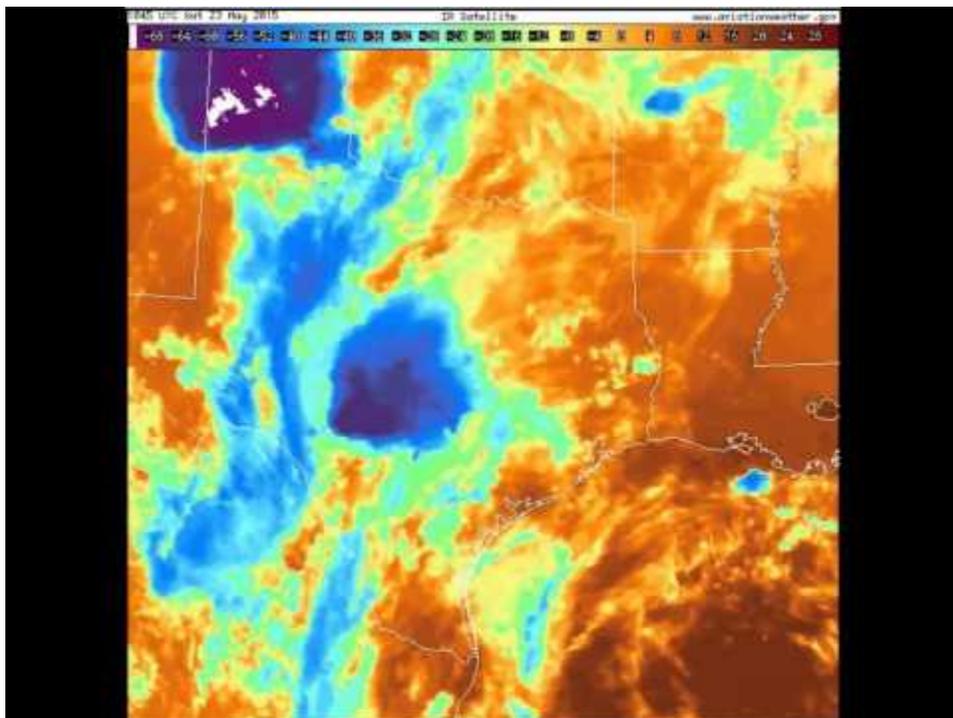
10 RETWEETS 7 FAVORITES

River Forecast Heights

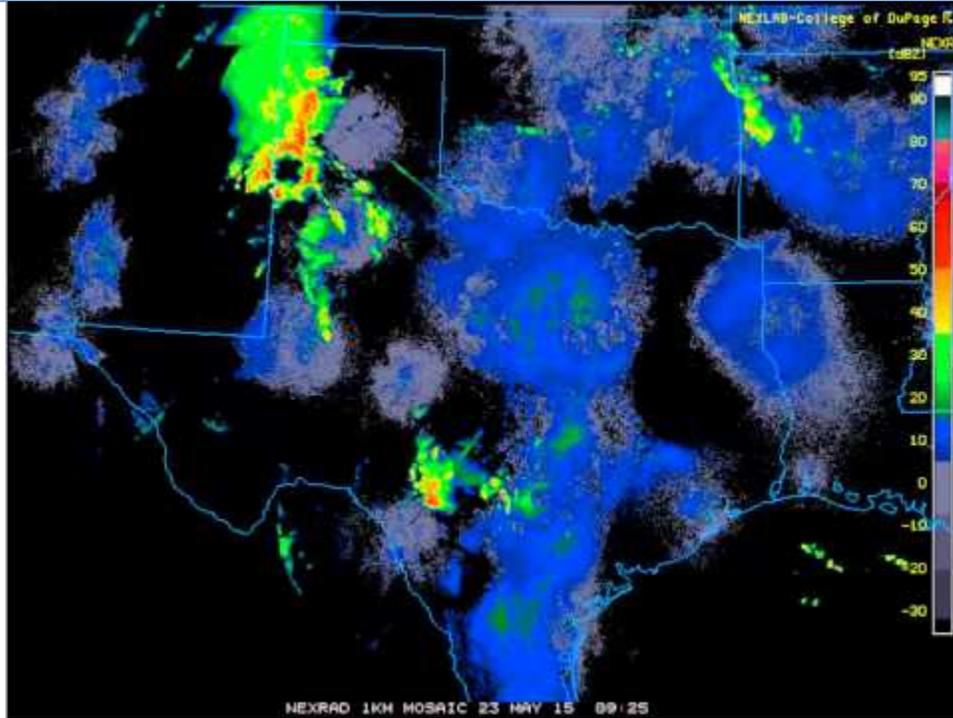
Satellite & Radar Imagery Videos



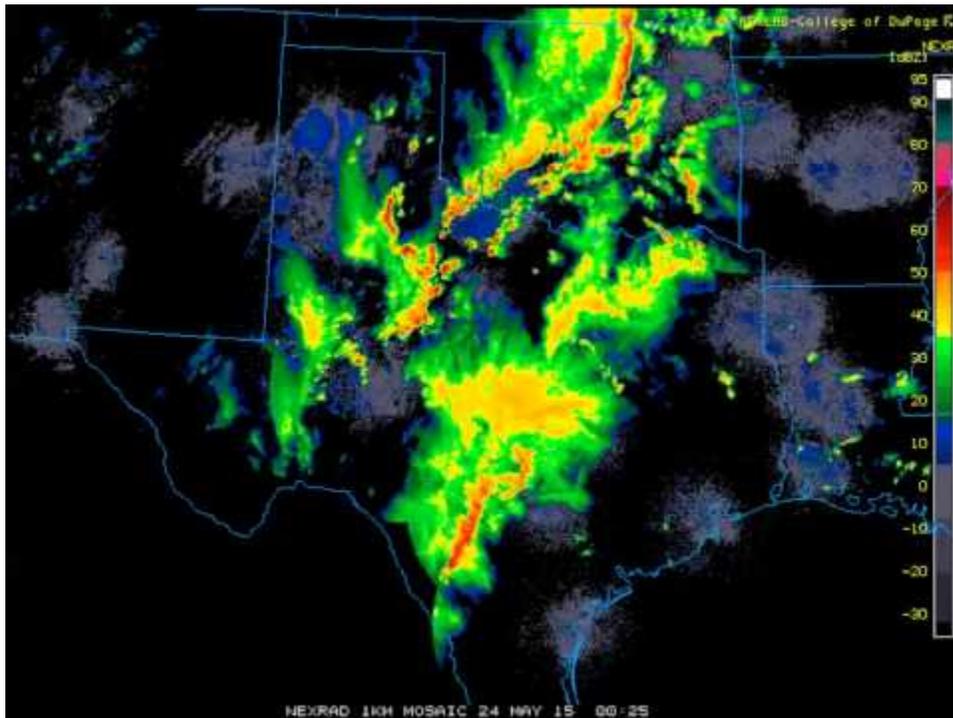
Visible Satellite loop from May 23, 2015



Infrared Satellite loop from May 23, 2015



Radar loop from 7pm CDT May 22 – 7pm CDT May 23, 2015



Radar loop from 7pm CDT May 23 – 7pm CDT May 24, 2015

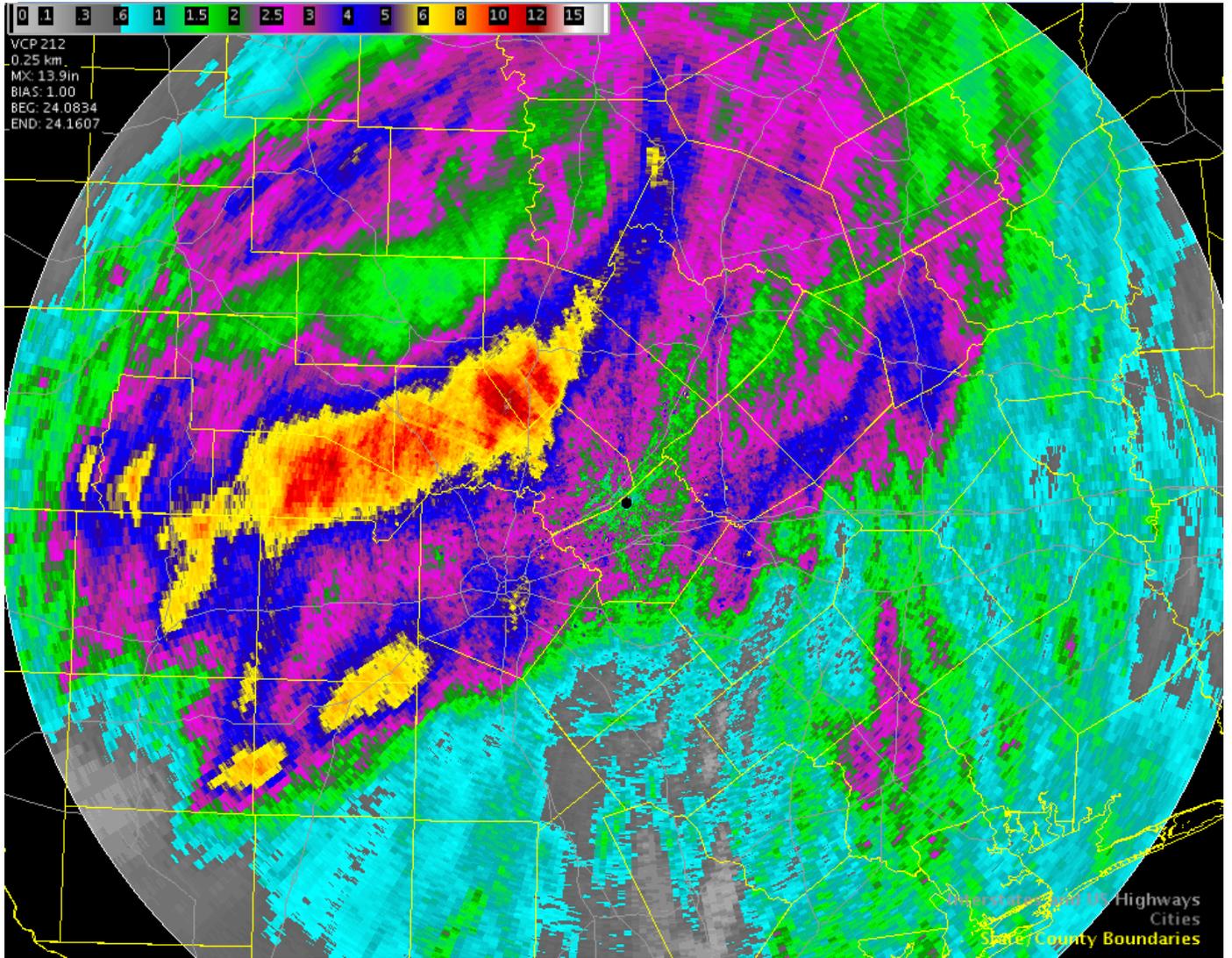
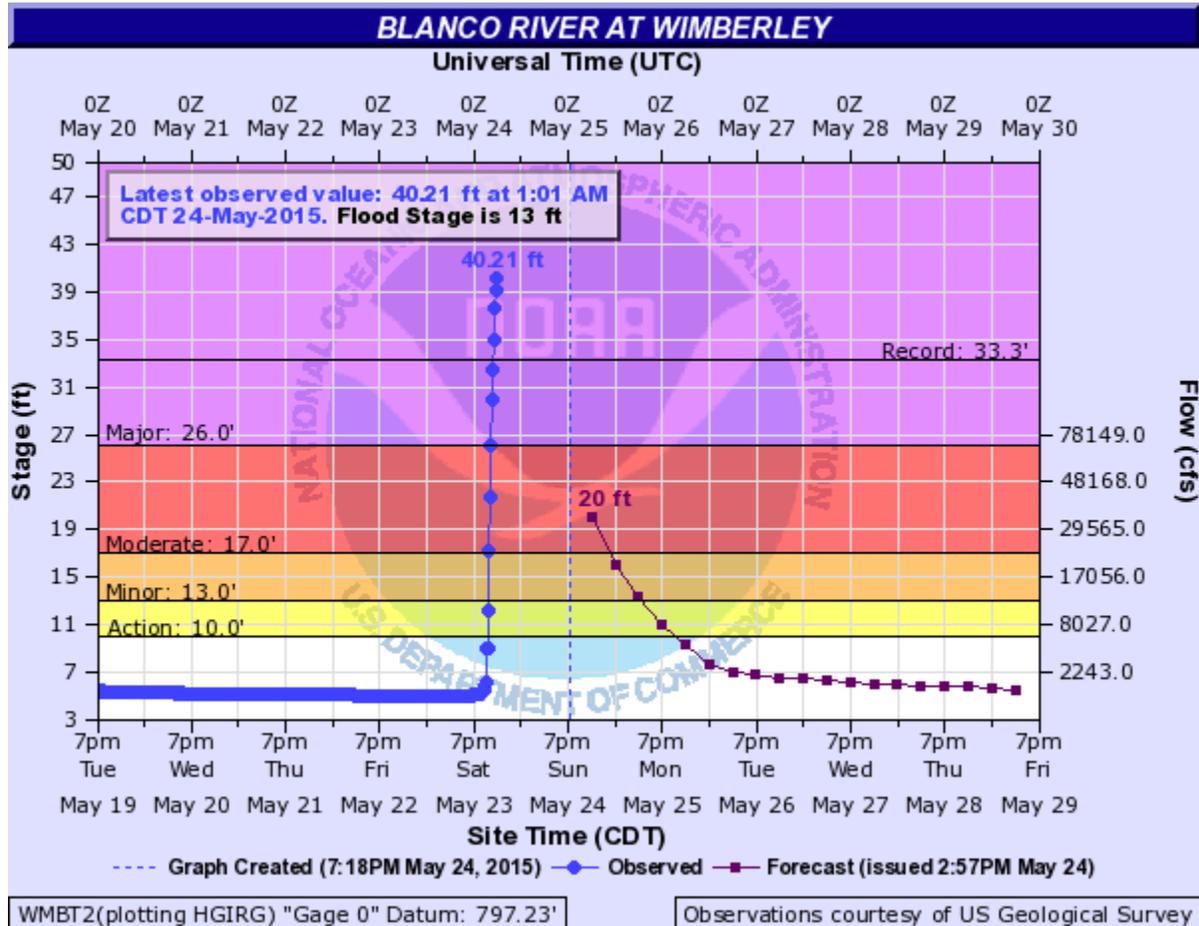
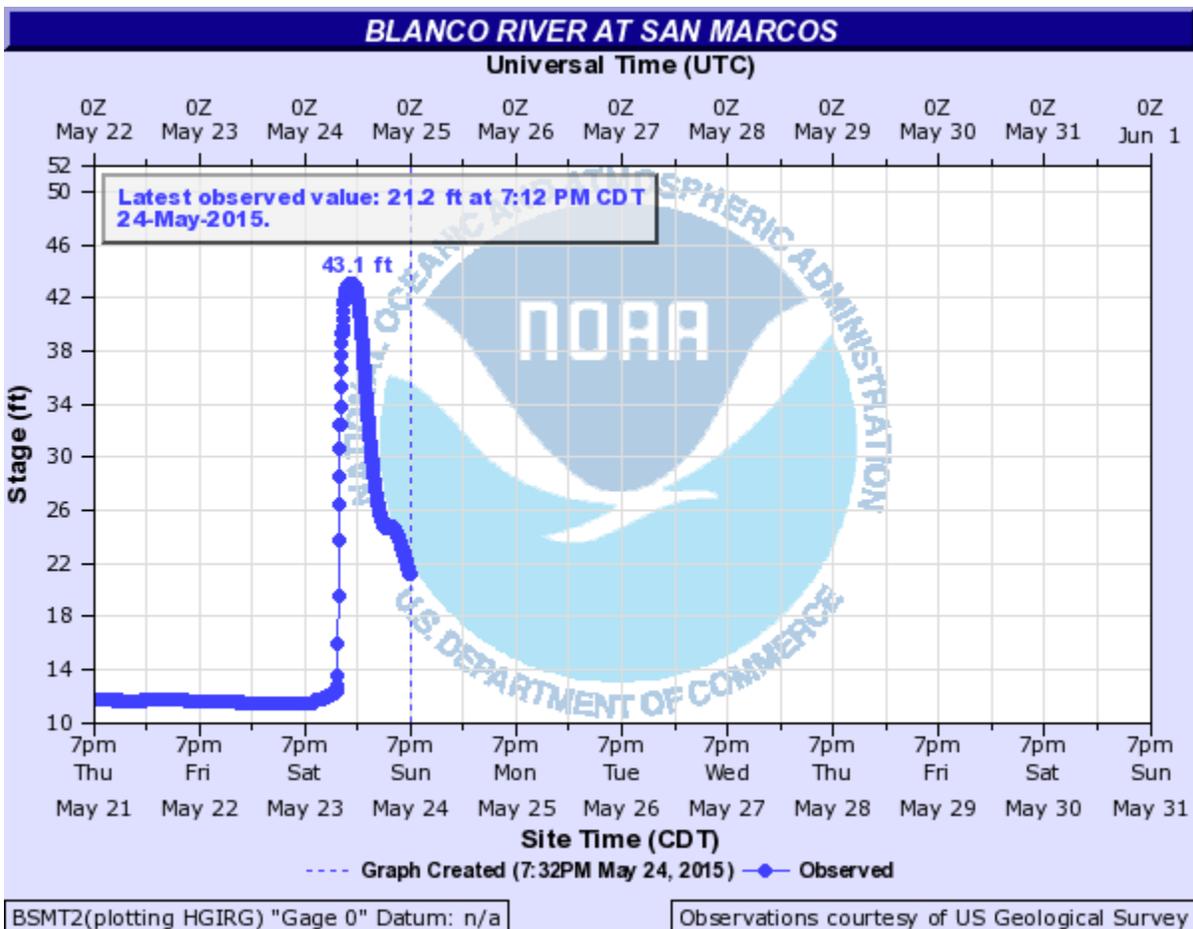
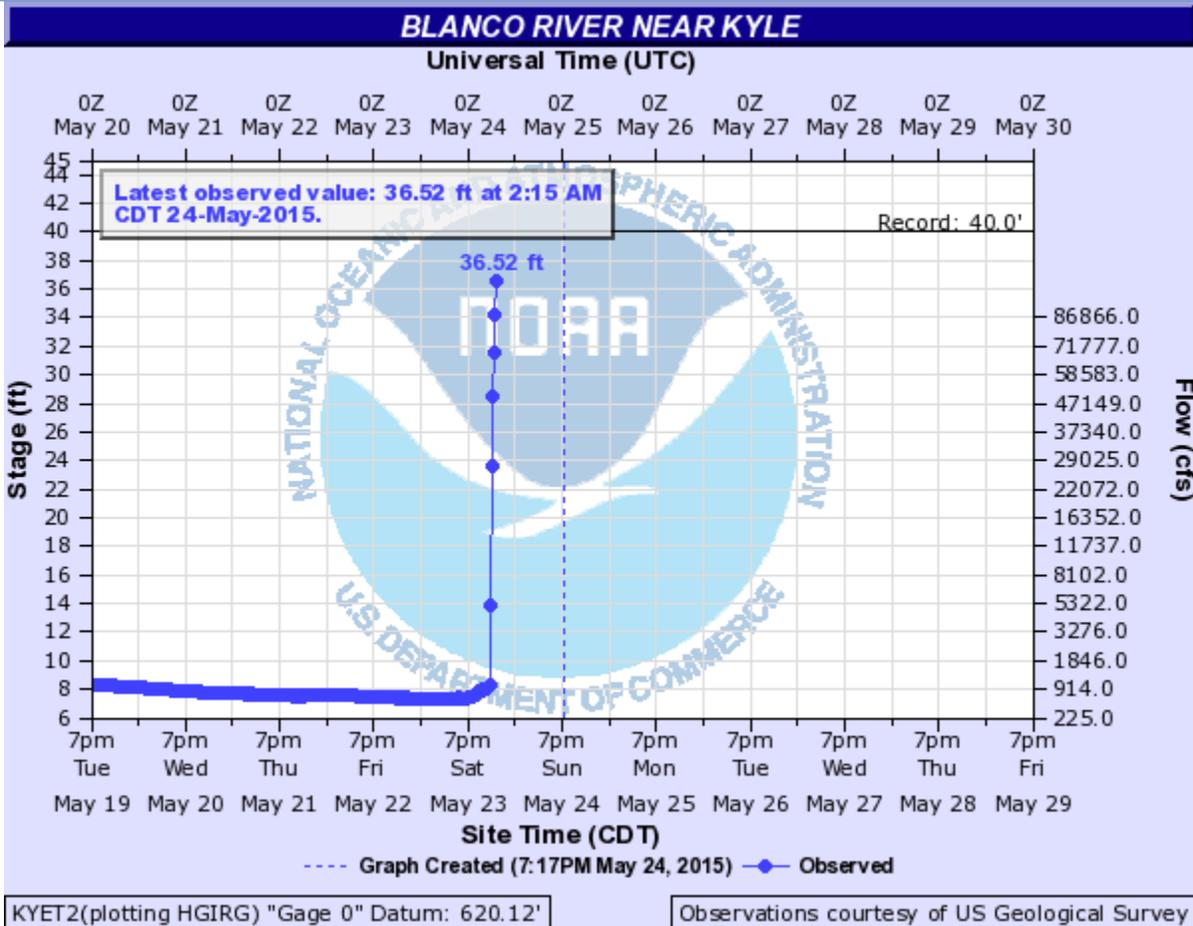
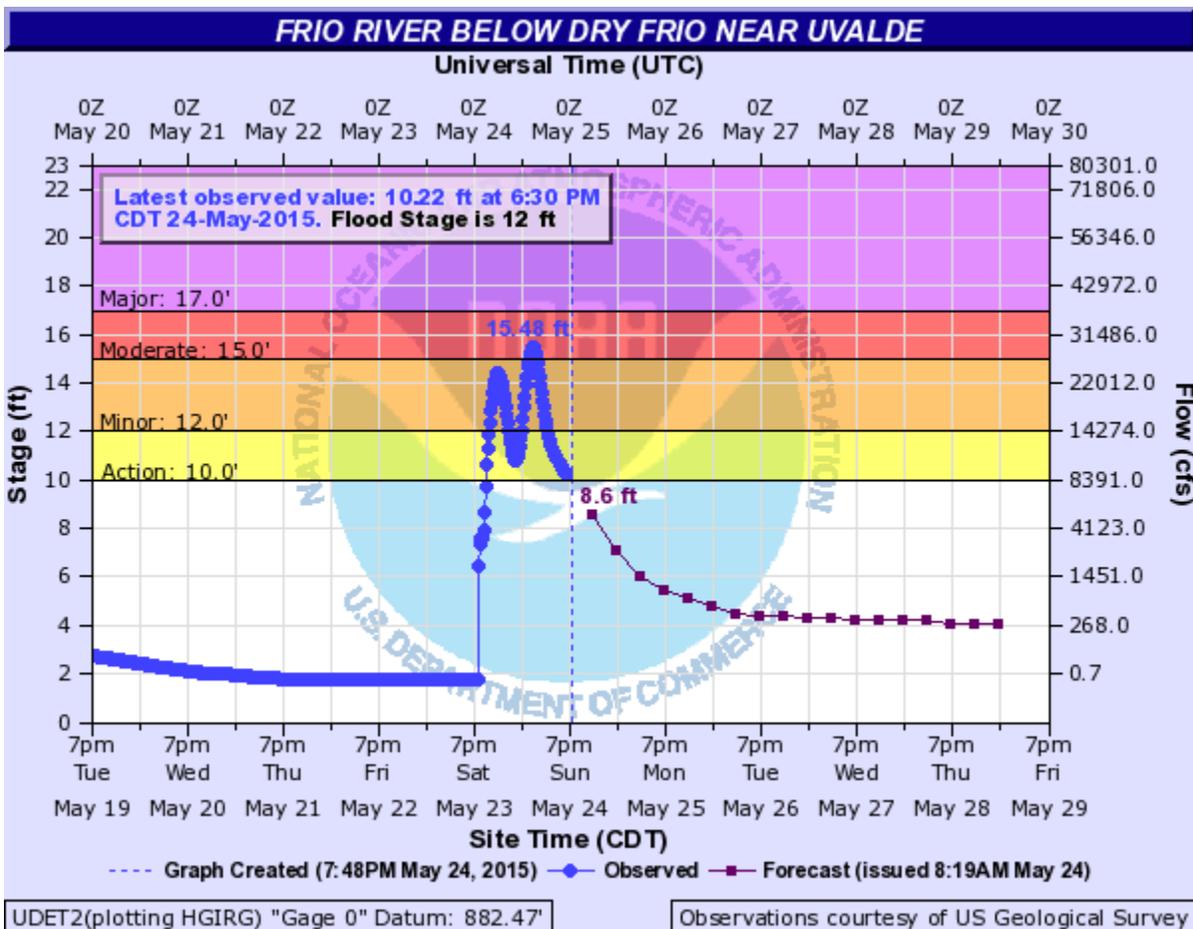


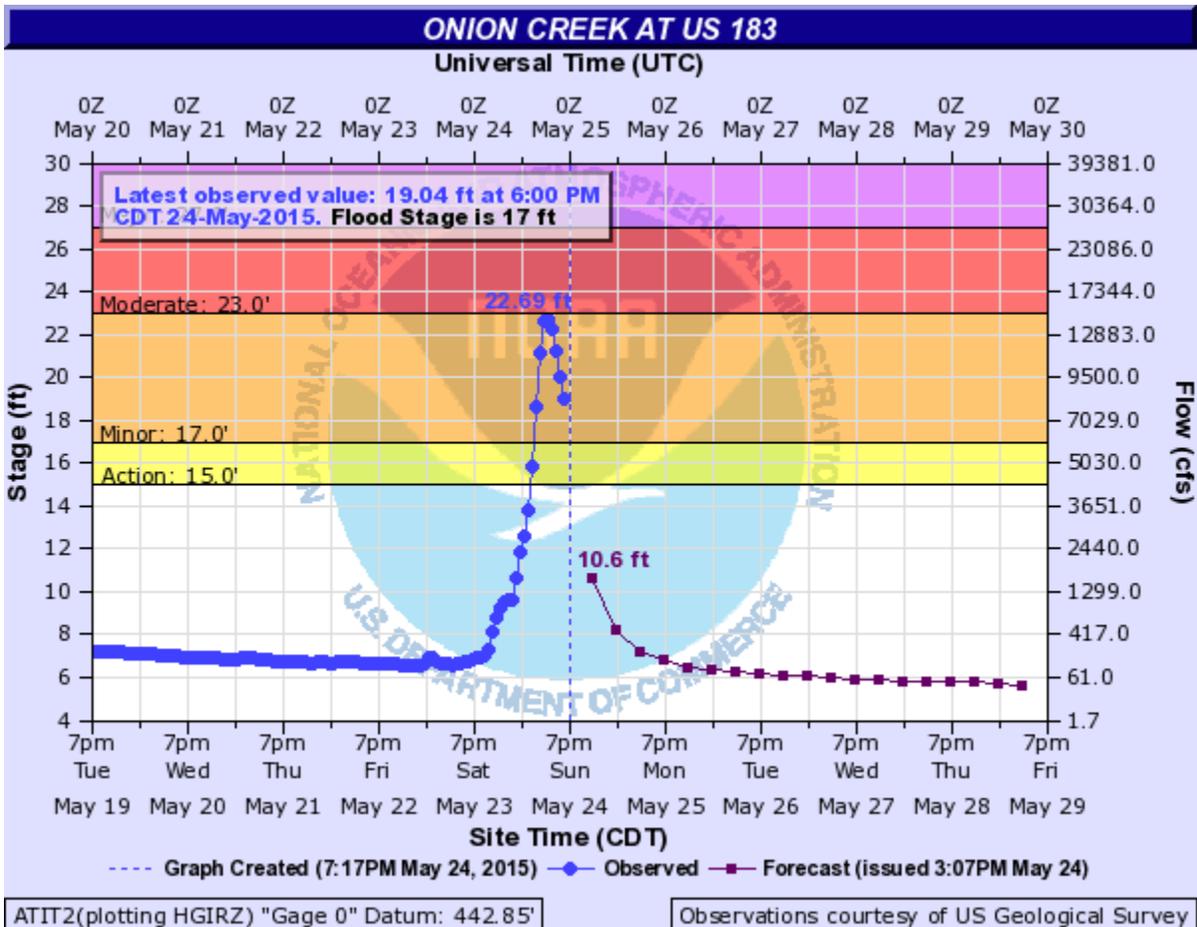
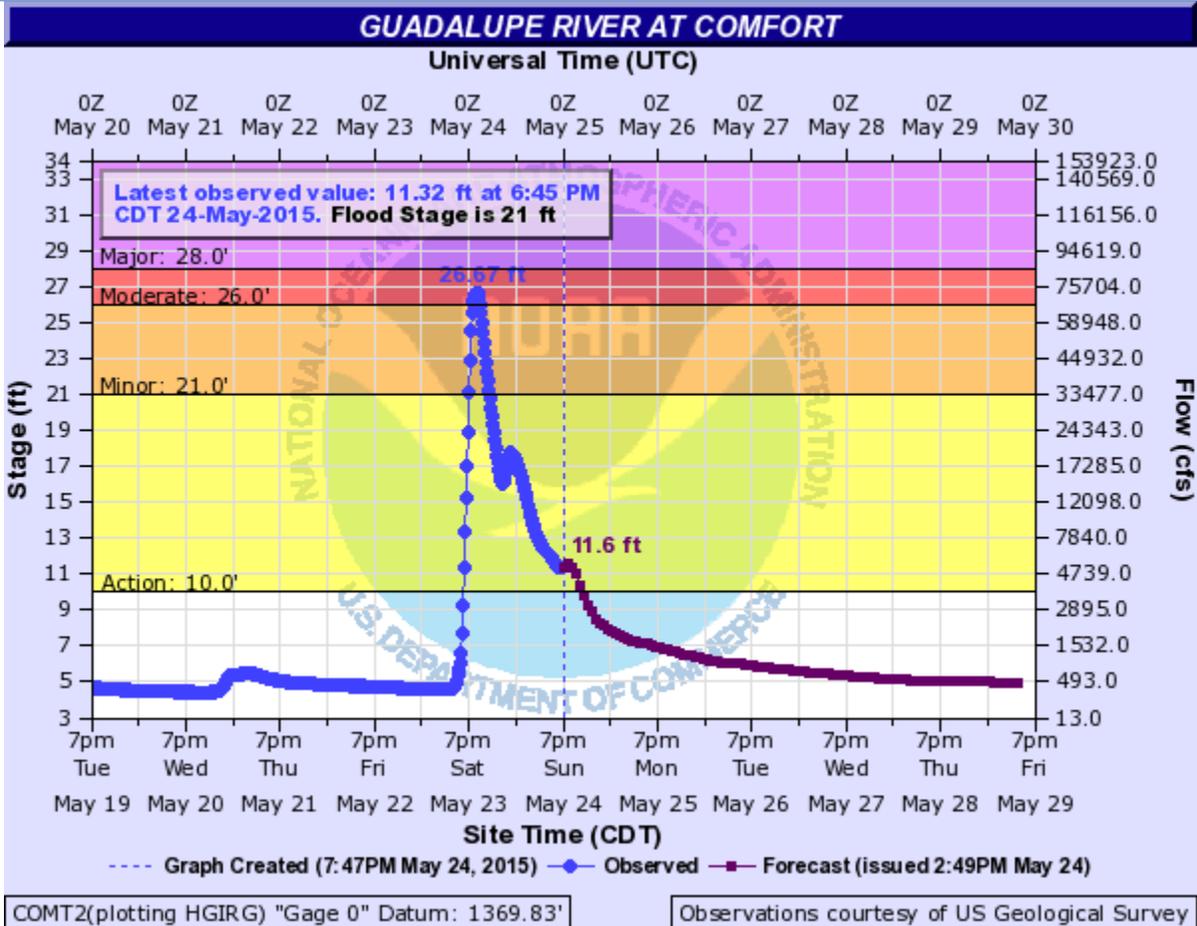
Figure 13: Dual-Polarization Radar Storm total Rainfall Estimates. Note the 9-11 inches with Max nearing 13" in the dark red to White area along the Blanco/Kendall County Line

River Hydrographs









Pictures



Ranch Road 12 at Blanco River Crossing in Wimberley, TX on May 24, 2015.



Near Ranch Road 12 at Blanco River Crossing in Wimberley, TX on May 24, 2015.



Upstream of Ranch Road 12 at Blanco River Crossing in Wimberley on May 24, 2015.



Downstream of Ranch Road 12 at Blanco River Crossing in Wimberley on May 24, 2015.



Downstream of Ranch Road 12 at Blanco River Crossing in Wimberley on May 24, 2015.



Malone Drive in Wimberley, TX on May 24, 2015.



View from near water line at Ranch Road 12 Blanco River Crossing in Wimberley on May 24, 2015.



USGS Gage Housing at Ranch Road 12 Bridge (Blanco River at Wimberley, TX) on May 24, 2015.



Dudley Johnson Park - Five Mile Dam Parks Complex in San Marcos, TX on May 24, 2015.



Parking lot, county vehicles, pavilion at Five Mile Dam Parks Complex in San Marcos, TX on May 24, 2015.



Large pavilion at Five Mile Dam Parks Complex in San Marcos, TX on May 24, 2015.



Playground at Five Mile Dam Parks Complex in San Marcos, TX on May 24, 2015.



Grill at Five Mile Dam Parks Complex in San Marcos, TX on May 24, 2015.



Blanco River Dam at Five Mile Dam Parks Complex in San Marcos, TX on May 24, 2015.



Stone boulders pushed across a parking lot at Five Mile Dam Parks Complex in San Marcos, TX on May 24, 2015.



Main park building in soccer complex at Five Mile Dam Parks Complex in San Marcos, TX on May 24, 2015.



(From Figure 3b) The Blanco River near San Marcos at 9:45am 5/24/2015. Photo taken from HWY 80 Bridge. The BSMT2 gauge is located 30 feet to the left of this photo. The river reported a level of 32.59 feet at this time, over 10 feet below its crest height of 43.08 feet 4.5 hours earlier.



The Blanco River near San Marcos at 6:29am 5/24/2015, almost 7 hours after the image above. River level was 21.88 feet at this time, almost 11 feet lower than above. The gauge is located on the left side of the photo where the tree line meets the bridge. You can see the trees are less submerged compared to the above photo.