

SEPTEMBER 2016
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NUMBER 9

STORM DATA



AND UNUSUAL WEATHER PHENOMENA
WITH LATE REPORTS AND CORRECTIONS



NCEI NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE
NATIONAL CENTERS FOR ENVIRONMENTAL INFORMATION

Cover: This cover represents a few weather conditions such as snow, hurricanes, tornadoes, heavy rain and flooding that may occur in any given location any month of the year. *(Photos courtesy of NCEI)*

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STORM DATA

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National Centers For Environmental Information

Editor: Sherri Nave

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The Storm Data and Unusual Weather Phenomena narratives and Hurricane/Tropical Storm summaries are prepared by the National Weather Service. Monthly and annual statistics and summaries of tornado and lightning events resulting in deaths, injuries, and damage are compiled by the National Centers For Environmental Information (NCEI) and the National Weather Service's (NWS) Storm Prediction Center.

STORM DATA contains all confirmed information on storms available to our staff at the time of publication. Late reports and corrections will be printed in each edition.

Except for limited editing to correct grammatical errors, the data in Storm Data are published as received.

Note: "None Reported" means that no severe weather occurred and "Not Received" means that no reports were received for this region at the time of printing.

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National Centers For Environmental Information

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ALABAMA, Central

ALZ012-019>021-024>026-028>029-037>038-045-047

Calhoun - Chambers - Cherokee - Clay - Cleburne - Jefferson - Lamar - Lee - Macon - Randolph - Shelby - St. Clair - Tallapoosa

01	0000CST								
30	2359CST			0	0	0.00K	0.00K	Drought	

Drought conditions continued to worsen over central Alabama with Extreme Drought (D3) conditions developing across portions of east central Alabama. Below normal rainfall and above average temperatures continued across central Alabama with several counties added to the Severe Drought (D2) category. Observing sites in the Severe to Extreme Drought category were near 10 inches below normal rainfall for the year.

**Elmore County
4 NW Ware**

11	1448CST								
	1449CST			0	0	0.00K	0.00K	Thunderstorm Wind (58MG)	

A microburst produced widespread tree and power line damage along Jackson Road. Dozens of trees were uprooted and snapped with at least 10 power poles damaged. A resident in the neighborhood measured 58 knots with a Davis Instrument Wind Sensor.

A quasi-stationary cold front was positioned just north of the I-85 corridor. Scattered thunderstorms developed along the front during the afternoon. One of the storms produced a microburst over Elmore County. Note: The measured wind gust of 58 knots is equivalent to 67 mph.

ALABAMA, North

ALZ005>010

Dekalb - Jackson - Limestone - Madison - Marshall - Morgan

06	0000CST								
30	2359CST			0	0	0.00K	0.00K	Drought	

Drought Conditions Worsen during the month of September.

ALZ001

Lauderdale

27	0000CST								
30	2359CST			0	0	0.00K	0.00K	Drought	

Drought Conditions worsened across the area during September.

ALABAMA, Southeast

**Dale County
1 W Midland City**

12	1441CST								
				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)	

Two trees were blown down off Highway 231 near Pinckard.

Scattered thunderstorms developed in the afternoon with a couple of trees blown down. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

ALASKA, Northern

AKZ225-226

Denali - Northeast Slopes of the Eastern AK Range

11	1044AKS								
	0100AKS			0	0	0.00K	0.00K	High Wind	

A strong pressure gradient developed in channeled areas of the Alaska range on the 11th of September. A 1030 mb high over the Arctic and a 989 Low over the Bering Sea induced the pressure gradient. A surface trough moved across the range as well. High winds were reported on the 11th at:

Zone 225: Peak wind gust of 61 kts (70 mph) reported at the State of Alaska Department of Transportation Mesonet site named Antler Creek.

Zone 226: The U.S. Army Mesonet station Edge Creek reported a wind gust to 65 kts (75 mph).

20	0600AKS								
21	1155AKS			0	0	0.00K	0.00K	High Wind	

Storm Data and Unusual Weather Phenomena

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ALASKA, Northern

AKZ223-226

Deltana and Tanana - Northeast Slopes of the Eastern AK Range

21	0600AKS				0	0	0.00K	0.00K	High Wind
	1200AKS								

A strong pressure gradient developed in channeled areas of the Alaska range on the 21th of September. A 980 Low over the Bering Sea induced the pressure gradient and associated weather front moved across the range as well. At Delta Junction power was lost due to downed power lines by trees snapped by the wind.

High winds were reported on the 21th at:

zone 223: Peak wind gust of 61 kt (70 mph) reported at OP5 mesonet site at Fort Greely.

Zone 225: Peak wind gust of 61 kts (70 mph) reported at the State of Alaska Department of Transportation Mesonet site named Antler Creek.

Zone 226: The U.S. Army Mesonet station Edge Creek reported a wind gust to 77 kts (89 mph).

ALASKA, Southeast

AKZ023

Cape Decision to Salisbury Sound Coastal Area

09	1200AKS				0	0	0.00K	0.00K	High Wind
	1800AKS								

A gale force low developed over the central Gulf of Alaska on the morning of September 9th down to 991 MB. This low went inland that afternoon and rapidly weakened. This system caused gale force winds for the outside and inland waters and brief high wind near Sitka during Search and Rescue operations. No damage was reported, but search efforts were hampered.

Taiya Inlet
4 NNW Skagway

13	0300AKS				0	0	0.00K	0.00K	Flood
	1500AKS								

The atmospheric river moved across the the panhandle from the northeast gulf coast to the southern panhandle Monday through Tuesday morning. There were two bursts of heavy rain with totals near seal level ranging from three quarters of an inch to just over one inch. There was much more rainfall in the headwaters of the Taiya River with rain amounts from one and half to almost three inches at Chilkoot Pass. The initial bout of rain and high freezing levels produced a two and half foot rise on the Taiya River with the river going over minor flood stage of sixteen point five feet. The river remained just under moderate flood stage through the early morning hours of September 13th from the persistent rainfall. There was another burst of heavy rainfall and the river rose another half foot to go over the moderate flood stage of seventeen feet and crested at seventeen point twenty seven feet around 9 am. The rain tapered off through the late morning and the Taiya River began to slowly recede to be below minor flood stage by Tuesday afternoon. The National Park Service reported that there was significant flooding along the Chilkoot trail with waist deep water at the lower portions of the trail.

An atmospheric river that extended deep into the north Pacific moved over Southeast Alaska on September 12th and 13th. This plume of sub-tropical moisture slowly moved through the area Monday afternoon through Tuesday morning with expected rainfall amounts over the northern Lynn Canal region of 1 to 3 inches. Also as the front spread east across the region it increased the freezing levels to be above the ridge tops of six thousand feet. This allowed for increased runoff from snow and ice melt in the Taiya River basin. The combination of the runoff from the snow/ice melt and the heavy rainfall produced moderate flooding along the Chilkoot trail by Tuesday morning.

ALASKA, Southern

AKZ101

Anchorage Muni to Bird Creek

11	1840AKS				0	0	0.00K		High Wind
	2215AKS								

A 994mb low pressure system crossed the Alaska Peninsula and moved into Bristol Bay. The associated warm front brought high winds to Anchorage as it crossed the Kenai Peninsula.

Storm Data and Unusual Weather Phenomena

September 2016

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ALASKA, Southern

Wrn P.w. Snd & Kenai Mtns

1 ENE Seward

21	0100AKS								
22	1400AKS				0	0	15.00K	0.00K	Flood

About 3.5 inches of rain fell in the Seward area, with 1.72 inches falling in a 6 hour period. The Resurrection River, adjacent to the Seward airport, rose 5 ft in 24 hours, resulting in water and debris impacting the runway and causing a 2 day closure of the airport.

AKZ101-125-135

Anchorage Muni to Bird Creek - Southeastern Prince William Sound - Western Prince William Sound & Kenai Mountains

21	0118AKS								
	1140AKS				0	0	0.00K		High Wind

A triple point low associated with a low in the Bering Sea developed in Bristol bay and moved into the Gulf of Alaska. The associated occluded front brought high winds to Anchorage, the Kenai Peninsula and the Prince William Sound as it progressed through the region, as well as flooding to the Seward area.

ARIZONA, Central and Northeast

Yavapai County

2 SSW Chino Vly

01	1245MST								
	1345MST				0	0	0.00K	0.00K	Flash Flood

Granite Creek rose 3.5 feet near Prescott with a peak flow of 1468 CFS. An upstream gauge rose 4 feet with a peak flow of 1209 CFS.

Yavapai County

1 S Cornville

6 WSW Oak Creek Canyon Arp

01	1615MST								
	1815MST				0	0	0.00K	0.00K	Heavy Rain

Thunderstorms produced 1.42 inches of rain over about 2 hours. Minor street flooding and flowing washes were reported.

Increasing monsoon moisture brought thunderstorms with heavy rain over Yavapai County.

Coconino County

1 S Williams

07	1158MST								
					0	0	0.00K	0.00K	Funnel Cloud

A funnel cloud was seen about two miles south-southwest of Williams.

A funnel clouds was seen near Williams.

Coconino County

4 NNE Marble Canyon

8 WSW Page Wahweap Arpt

22	1300MST								
	1600MST				0	0	0.00K	0.00K	Flash Flood

Heavy rain caused the Paria River at Lees Ferry to rise 4 feet.

High pressure over Texas and a low pressure center off the California Coast brought increasing moisture to northern Arizona. Thunderstorms over far north-central Arizona and southern Utah produced flash flooding in the very narrow Paria Canyon.

AZZ008

Yavapai County Mountains

25	0448MST								
					0	0	0.00K	0.00K	High Wind

High pressure across northeastern Arizona and low pressure over southwestern Arizona created a tight pressure gradient primarily across central Arizona. Breezy to windy conditions were observed across the Mogollon Rim and points south as a result.

Navajo County

2 NNW Show Low

27	1543MST								
	1555MST				0	0	0.00K	0.00K	Hail (1.00)

Trained spotters reported one half inch to one inch diameter hail covering the ground between 2 and 8 miles north of Show Low.

A weak low centered over Baja California gradually moved northward across Arizona during the day. Moisture over far northern Mexico moved northward during the day and combined with upward motion to create strong to severe thunderstorms over the western part of the White Mountains.

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ARIZONA, Northwest

Mohave County

2 WNW Colorado City

22	0600MST 0730MST				0	0	5.00K	0.00K	Flash Flood
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Several roads in Colorado City were closed due to flooding and debris.

A cold front passing through the Mojave Desert brought a band of thunderstorms well ahead of it, and strong winds with dust storm conditions immediately ahead of it.

ARIZONA, South

Cochise County

5 S Dragoon

02	1415MST 1530MST				0	0	0.00K	0.00K	Flash Flood
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Thunderstorms produced brief heavy rain that caused 6 to 12 inches of water to flow over Dragoon Road and Old Ranch Road.

Scattered thunderstorms moved northeast across Cochise County during the afternoon. One storm produce heavy rain that caused localized flash flooding.

Cochise County

2 NE Sierra Vista

07	1130MST 1400MST				0	0	10.00K	0.00K	Flash Flood
----	--------------------	--	--	--	---	---	--------	-------	-------------

A swift water rescue occurred on South Burro Drive south of Ramsey Road in Hereford. Two people and their dog were rescued when their vehicle was washed down a low water crossing. No injuries occurred. Additionally, a portion of Leonardo de Vinci Drive in Sierra Vista was closed due to flash flooding.

Tropical Storm Newton barely weakened to a remnant low before crossing into Arizona. It brought strong winds and decent rainfall totals to much of southeast Arizona. In spite of rain amounts of 3 to 6 inches in the Santa Rita, Santa Catalina, Rincon and Pinaleno Mountains, the 24 hour duration of the rain event precluded much in the way of flooding from occurring. The Sierra Vista area was most adversely affected by flash flooding on September 7th.

Pima County

2 ENE (DMA) Davis Monthan A 12

	1407MST 1412MST				0	0	2.00K	0.00K	Hail (1.00)
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Hail up to 1 inch in diameter occurred for a time near along Kolb Road near Escalante Rd, 29th St, and Golf Links Rd. One home near Kolb Rd and 29th St sustained damage when hail broke 5 double-paned skylights.

Pima County

3 ENE (DMA) Davis Monthan A 12

	1410MST				0	0	1.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds uprooted a tree near Golf Links Rd and Prudence Rd.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Pinal County

2 W Oracle

12	1717MST 1722MST				0	0	0.00K	0.00K	Hail (1.75)
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Golfball size hail was reported in Oracle.

Pima County

24 SE Avra

12	1730MST 1735MST				0	0	10.00K	0.00K	Thunderstorm Wind (48EG)
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A large tree fell on a mobile home near Flowing Wells Rd and Wetmore Road causing damage. The tree was dead and had little root system. An 81-yr old woman and her cat were rescued by fire fighters but were uninjured.

Scattered thunderstorms moved east across southeast Arizona. Some storms were severe and produced large hail and damaging winds in Tucson and Oracle. Note: The estimated wind gust of 48 knots is equivalent to 55 mph.

Pinal County

13 W Oracle

13	1348MST				0	0	0.00K	0.00K	Hail (1.00)
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Thunderstorms moved northeast across Pinal and Graham counties during the afternoon hours. One storm became severe producing large hail near Oracle Junction.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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ARIZONA, South

AZZ504

Tucson Metro Area

26	1200MST	1600MST			0	0	2.0K	0.00K	Strong Wind
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A tight pressure gradient due to low pressure located over central Baja California caused gusty easterly winds and localized wind damage.

Cochise County 3 SSE Sierra Vista

30	1407MST	1415MST			0	0	0.00K	0.00K	Hail (0.75)
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Thunderstorms moved east or northeast across southeast Arizona. One storm produced large hail in Sierra Vista.

ARIZONA, Southwest

Maricopa County 2 NW West Chandler

01	1645MST	1850MST			0	0	0.00K	0.00K	Heavy Rain
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Thunderstorms developed across the southeast portions of the greater Phoenix metropolitan area during the afternoon hours on September 1st and some of the storms produced locally heavy rain with peak rainfall rates as high as 2 inches per hour. The heavy rains led to areas of urban street flooding in communities such as Ahwatukee, Chandler and Guadalupe. At 1705MST a trained weather spotter located 3 miles south of Guadalupe estimated that one half inch of rain fell within 22 minutes. The heavy rains flooded the parking lot at Sprouts, which was located at the intersection of Interstate 10 and Ray Road. An Urban and Small Stream Flood Advisory was issued for the area beginning at 1731MST and it remained in effect through 1850MST.

Thunderstorms developed across portions of the greater Phoenix metropolitan area during the late afternoon hours on September 1st and the stronger storms were able to produce locally heavy rainfall sufficient to produce areas of street flooding. Some of the heavier rains occurred in the southeast portion of the greater Phoenix area including communities such as Chandler, Tempe and Ahwatukee. Peak rainfall rates were measured to be as high as 2 inches per hour, sufficient to overwhelm drainage systems and produce street flooding. An Urban and Small Stream Flood Advisory was issued for the greater Phoenix area as a result of the heavy rains.

Maricopa County 2 SE Mobile

07	0700MST	1100MST			0	0	0.00K	0.00K	Flood
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Considerable amounts of tropical moisture associated with former Tropical Storm Newton moved into the central deserts during the morning hours on September 7th. The moisture led to widespread light to moderate showers along with embedded thunderstorms and this resulted in small stream flooding to the southwest of the greater Phoenix metropolitan area. According to the Department of Highways, flooding forced the closure of Highway 238 east of Gila Bend and about 4 miles northeast of the town of Mobile. The closure, which affected the area between mileposts 24 and 44, started at 0930MST. No flash flooding was observed in the area.

Deep tropical moisture spread northward and across the central deserts of Arizona during the morning hours on September 7th; the moisture was remnants of dissipating Tropical Storm Newton. The moisture resulted in widespread moderate rainfall across much of southwest Maricopa County which began in the early morning and continued well into the day. Embedded thunderstorms caused locally heavier rainfall amounts that led to episodes of urban and small stream flooding to the southwest of the greater Phoenix area. Flash flooding did not occur, but rainfall was heavy enough to warrant the closure of Highway 238 near Mobile and to the east of Gila Bend during the middle of the morning.

Yuma County 3 N Growler

07	0900MST	1200MST			0	0	0.00K	0.00K	Flood
----	---------	---------	--	--	---	---	-------	-------	-------

Considerable tropical moisture, associated with former Tropical Storm Newton, spread north and into the southwest deserts during the morning hours on September 7th. The moisture led to widespread light to moderate rain along with embedded thunderstorms. The storms enhanced rainfall totals and this resulted in some small stream flooding across portions of Yuma county, mainly north of Interstate 8. According to Yuma County Emergency Management, at 1030MST Palomas Road became flooded at Milepost 55. The location of the flooding was about 9 miles northeast of the town of Mohawk. Flash flooding was not observed and there were no reports of accidents or injuries due to the flooded roadway.

Considerable amounts of tropical moisture associated with former Tropical Storm Newton spread across the southwest and south-central Arizona deserts during the morning hours on September 7th. The moisture led to widespread light to moderate showers along with embedded thunderstorms. The thunderstorms enhanced rainfall totals which resulted in episodes of small stream flooding across the southwest deserts. Small Stream Flood Advisories were issued during the morning hours, and the rainfall was sufficient to force the closure of Palomas Road about 9 miles to the northeast of the town of Mohawk. Flash flooding did not occur.

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September 2016

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ARIZONA, Southwest

AZZ023

Greater Phoenix Area

09	1200MST								
	1700MST				2	0	0.00K	0.00K	Heat

It does not take dangerous or excessive levels of heat during the summer in southern Arizona to cause serious, even fatal, repercussions to the populace of Phoenix. Friday September 9th was a normal summer day in September; the high in Phoenix was 103 degrees and that is just 1 degree above the seasonal normal for the date. Despite the near normal nature of the heat, a man visiting from Switzerland went hiking in the afternoon and he was overcome by the heat, eventually passing away. Fire crews performed CPR on him to no avail. Triple digit heat can be very dangerous, especially to someone who is not used to the heat and who does not take the proper precautions. M26OU

ARKANSAS, Central and North Central

Woodruff County

3 WNW Augusta

01 0000CST

2 WSW Ruffwood

06 1000CST

0 0 0.00K 0.00K Flood

Flooding continued on the White River at Augusta from heavy rain in August.

Woodruff County

1 WSW Riverside

01 0000CST

1 N Cavell

04 2100CST

0 0 0.00K 0.00K Flood

Flooding continued on the Cache River at Patterson from August.

Heavy rain in August brought flooding to rivers in northeast Arkansas which continued into September.

Fulton County

Salem

16 1835CST

Trees were blown down in Salem across Byron St. and Young St.

0 0 0.00K 0.00K Thunderstorm Wind (52EG)

As a cold front moved through the area...strong to severe thunderstorms developed in north and central Arkansas on 9/16/16. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

ARKANSAS, Northwest

Benton County

Bentonville

08 1749CST

2015CST

0 0 0.00K 0.00K Flash Flood

Several streets in Bentonville were flooded.

Benton County

2 E Bentonville

08 1806CST

2015CST

0 0 0.00K 0.00K Flash Flood

Several additional streets were reported flooded in Bentonville.

Benton County

3 SSE Bentonville Muni Arp

08 1909CST

2015CST

0 0 0.00K 0.00K Flash Flood

Flooding occurred near the Village on the Creeks apartments in Rogers.

Showers and thunderstorms developed along a cold front that moved into northwestern Arkansas and became nearly stationary. Several rounds of heavy rainfall occurred across the area, resulting in localized flooding.

Benton County

3 S Bentonville Branch J

16 1508CST

0 0 0.00K 0.00K Hail (1.00)

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ARKANSAS, Northwest

Benton County

3 S Bentonville Branch J

16	1508CST				0	0	5.00K	0.00K	Thunderstorm Wind (56EG)
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Strong thunderstorm wind damaged the roofs of several homes.

Thunderstorms developed across portions of northwestern Arkansas during the afternoon of the 16th. The strongest storms produced hail up to quarter size and damaging wind. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

ARKANSAS, Southeast

Chicot County

1 NW Dermott

23	1538CST				0	0	4.00K	0.00K	Thunderstorm Wind (39EG)
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A tree was blown down in Dermott.

Isolated storms developed in a warm, moist airmass across the region. Some of these storms were strong and produced gusty winds. Note: The estimated wind gust of 39 knots is equivalent to 45 mph.

CALIFORNIA, North Central

CAZ019-067

Motherlode/Camptonville to Groveland - Northern San Joaquin Valley

01	0000PST								
19	2359PST				0	0	0.00K	0.00K	Drought

Long term drought impacts continued through the month of September, although some of the largest of the reservoirs in northern interior California continued to be around normal levels. While there was a better snow pack for the mountains over the wet season, very warm weather caused the snow to melt and run off quickly in the spring. This caused peak reservoir levels to occur earlier than expected. At the end of September, all but Lake Shasta and Don Pedro were dropping off faster than normal. Lake Shasta was 105% of normal by the end of the month, Lake Oroville was 75%, Folsom Lake was 56%, and Don Pedro was 96%. New Melones continued to lag behind the other significant area reservoirs and was only 39% of normal.

The U.S. Drought Monitor showed no change from August for the area, with severe drought across the southern Sacramento Valley; the northern and central Sacramento Valley and the northern Sierra in moderate drought, while Shasta County was abnormally dry. The remainder of the Central and northern portion of the Southern Sierra Nevada mountain areas remained in the severe to extreme drought. There remained extreme drought in the Sierra south of Highway 50.

Groundwater aquifers continued to recharge much more slowly than the surface reservoirs, with many in the Central Valley still falling toward record levels. Growers in the San Joaquin Valley continued to turn to groundwater with reduced surface water allocations. This heavy reliance on groundwater resulted in declining water levels.

Governor Jerry Brown declared a drought emergency for the entire state of California January 17, 2014 and this continued to be in effect. Governor Brown issued an executive order on May 9, 2016 that built on temporary statewide emergency water restrictions to establish longer-term water conservation measures, including permanent monthly water use reporting, new permanent water use standards in California communities and banned clearly wasteful practices such as hosing off sidewalks, driveways and other hardscapes.

Local Emergency proclamations remain for Colusa, Calaveras, El Dorado, Glenn, Plumas, San Joaquin, Shasta, Stanislaus, Sutter, Tuolumne, and Yuba counties. The cities of Live Oak (Sutter County), Lodi (San Joaquin County), Manteca (San Joaquin County), Portola (Plumas County), Ripon (San Joaquin County), and West Sacramento (Yolo County). Drought task forces remain in Lake, Nevada, Placer, Plumas, Sacramento, San Joaquin, Stanislaus, Sutter, Tehama, Tuolumne, and Yolo counties to coordinate response to the drought.

Mandatory water reductions of 25% as ordered by Governor Brown were suspended in May due to the improved reservoir levels, with voluntary reductions requested.

The state continued to supply food assistance to those impacted by the drought, along with California Disaster Assistance Act money for those who have lost drinking water due to dry wells. Nonprofit organizations in the San Joaquin Valley struggled to meet the needs of their clients for drought-related programs.

Tree mortality from drought and resulting bark beetle infestation continued to increase both in scale and intensity, especially in low elevation pine and oak woodlands along the Sierra Nevada Range. A US Forest Service- Forest Health Protection aerial survey showed tree mortality was especially high in the Stanislaus National Forest southward, though pockets of tree mortality were present as far north as eastern Shasta County. Tree mortality from the recent years of drought has been estimated at 66 million trees across California. This increase in dead and dying trees made the forest more susceptible to wildfires.

Drought conditions are blamed for an increase in blue-green algae across Northern California lakes, with a concentration of these in Shasta County. These algae can produce cyanotoxins, which in high enough concentrations can potentially cause allergic reactions, skin irritation, fever, diarrhea, vomiting, joint pain, liver damage and even cancer in people and pets swimming in the water.

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September 2016

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CALIFORNIA, South Central

CAZ089>099

East Central San Joaquin Valley - Indian Wells Valley - Kern County Mountains - South Sierra Foothills - South Sierra Mountains - Southeast Kern County Desert - Southeast San Joaquin Valley - Southwest San Joaquin Valley - Tulare County Foothills - Tulare County Mountains - West Central San Joaquin Valley

01	0000PST								
30	2359PST				0	0			Drought

The California drought continues during the month of September, 2016. Both Fresno and Bakersfield received no precipitation during the month. No precipitation and near normal temperatures we received this month did allow for increased evaporation rates and soil moisture to decrease.

The U.S. Drought Monitor continued to report exceptional drought conditions across the entire Central California region. This extent of exceptional drought is extremely unusual for California. The general trend of below normal precipitation and above normal temperatures has continued this year.

There continues to be significant media coverage on the on-going drought conditions. These reports include discussion of significant re-allocation of water resources from the east to west side of the San Joaquin Valley, farmers forgoing planting of some crops, loss or reduction of ground water, wells drying up in several communities leaving them with no water, and an unprecedented increase in fire danger across the Southern Sierra Nevada and Tehachapi Mountains. Also, communities in Central California interior face state mandated reductions in municipal water use.

CAZ095-097

Kern County Mountains - Tulare County Mountains

01	0000PST								
30	0700PST				0	0	0.00K		Wildfire

The Cedar fire began on 8/16/16 5 miles north of Alta Sierra in Kern County and spread northward into Tulare County. It was human caused. The fire burned 29,322 acres mostly during August 2016, before being fully contained on 9/30/16. The fire forced evacuations for several communities in Kern and Tulare counties for more than two weeks and Highway 155 was closed for several days due to the fire. Six cabins in the Spear Creek Summer Homes tract in the community of Posey in Tulare County were destroyed. The cost of containment was \$58.4 million.

CALIFORNIA, Southeast

CAZ523-525

Morongo Basin - Western Mojave Desert

22	1422PST								
	1715PST				0	0	0.00K	0.00K	Dust Storm

A cold front passing through the Mojave Desert brought a band of thunderstorms well ahead of it, and strong winds with dust storm conditions immediately ahead of it.

CALIFORNIA, Southwest

**San Diego County
1 W Grantville**

19	0500PST								
	0800PST				0	0	10.00K	0.00K	Lightning

A band of convection formed along the leading edge of moisture from former Hurricane Paine as it moved northward. Numerous lightning strikes occurred in San Diego County setting palm trees on fire and causing power outages to 4000 customers.

An upper-level trough off the SoCal coast pulled tropical moisture from former Hurricane Paine northward into the area, bringing unsettled weather from the 19th-21st. Unusual lightning activity occurred over the San Diego Metro on the 19th. San Diego and Riverside Counties saw unseasonable rainfall, with one-quarter to one-half of an inch falling over the coastal and valleys, and one-half to one and a half inches in the mountains and deserts. The rainfall delayed a San Diego Padres baseball game at Petco Park on the 20th, and increased September rainfall to more than 200% of normal over San Diego and Riverside Counties. When the trough moved through the region on the 22nd strong winds surfaced in the deserts bring areas of blowing dust and sand.

CAZ552

Orange County Coastal

21	0900PST								
	1600PST				0	0	0.00K	0.00K	High Surf

Several pushes of southerly swell produced periods of high surf along the Orange County beaches.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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CALIFORNIA, Southwest

CAZ060-062

Apple and Yucca Valleys - San Diego County Deserts

22	1200PST								
	1700PST				0	0	0.00K	0.00K	Dust Storm

An upper-level trough off the SoCal coast pulled tropical moisture from former Hurricane Paine northward into the area, bringing unsettled weather from the 19th-21st. Unusual lightning activity occurred over the San Diego Metro on the 19th. San Diego and Riverside Counties saw unseasonable rainfall, with one-quarter to one-half of an inch falling over the coastal and valleys, and one-half to one and a half inches in the mountains and deserts. The rainfall delayed a San Diego Padres baseball game at Petco Park on the 20th, and increased September rainfall to more than 200% of normal over San Diego and Riverside Counties. When the trough moved through the region on the 22nd strong winds surfaced in the deserts bring areas of blowing dust and sand.

CAZ552

Orange County Coastal

24	1600PST								
25	1000PST				0	0	0.00K	0.00K	High Surf

Several pushes of southerly swell produced periods of high surf along the Orange County beaches.

CAZ050

San Diego County Valleys

25	0800PST								
26	1800PST				2	0	0.00K	0.00K	Heat

A strong upper level ridge and offshore flow brought very hot temperatures and low relative humidity to areas west of the mountains. Temperatures ranged from 85 along the coast to 105 degrees in the San Diego County valleys and Inland Empire. ??Unknown

San Diego County 1 S Guatay

29	1500PST								
	1700PST				0	0	0.00K	0.00K	Flood

A spotter reported minor urban flooding from a nearly stationary thunderstorm in Pine Valley.

An upper level low off the SoCal coast en-trained moisture from northern Mexico, resulting showers and isolated thunderstorms over the mountains and deserts on the 29th.

CALIFORNIA, Upper

CAZ080

Western Siskiyou County

01	0000PST								
18	0330PST				0	0	0.00K	0.00K	Wildfire

The Gap Wildfire started on 08/27/16 at around 1945 PDT. The cause was unknown, but likely human caused. As of 0430 PDT on 09/18/16, the fire covered 33867 acres and was 100% contained. 14 structures were lost and 29.7 million dollars had been spent on firefighting efforts.

CAZ084-085

Modoc County - Northeast Siskiyou and Northwest Modoc Counties

05	0200PST								
	0700PST				0	0	0.00K	0.00K	Frost/Freeze

Clearing skies and a cold air mass allowed temperatures to drop below freezing over portions of northeast California.

CAZ085

Modoc County

17	1519PST								
30	2359PST				0	0	0.00K	0.00K	Wildfire

The Soup Complex wildfire started on 09/17/16 at 1619 PDT. The cause remains unknown. As of 0345 PDT on 10/01/16, the fire covered 2647 acres and was 62% contained. No structures were lost and 5.35 million dollars had been spent on firefighting efforts.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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CALIFORNIA, West South Central

CAZ037-052 San Luis Obispo County Interior Valleys - Santa Barbara County Mountains

01	0000PST								
06	0600PST				0	0	0.00K	0.00K	Wildfire

In early September, both the Chimney Fire (in San Luis Obispo county) and the Rey Fire (in Santa Barbara county) were finally contained. In all, the Chimney Fire scorched 46,344 acres and the Rey Fire scorched 33,606 acres.

CAZ035 Santa Barbara County Central Coast

17	1630PST								
26	0600PST				0	0	0.00K	0.00K	Wildfire

The Canyon Fire burned over 12,000 acres of land across Vandenberg Air Force Base.

COLORADO, Central and Northeast

Logan County

1 NNW Sterling	02	1407MST							Hail (0.88)
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Washington County

4 NE Otis Stansfield Arpt	02	1505MST	0.01	50					Tornado (EF0)
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A tornado touched down briefly but no damage was observed.

Severe thunderstorms produced a brief tornado in Washington County and hail up to nickel size in Logan County.

Logan County

8 N Willard	03	1514MST							Hail (1.00)
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Logan County

10 W Peetz	03	1530MST							Thunderstorm Wind (52MG)
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Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Washington County

4 S Platner	03	1730MST							Hail (2.50)
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Washington County

2 SSW Akron	03	1740MST							Hail (2.00)
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Washington County

3 SW Platner	03	1805MST							Hail (3.00)
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A severe thunderstorm produced very large hail, from 2 to 3 inches in diameter, south of the towns of Akron and Platner. The storm also produced wind gusts up to 60 mph and heavy rainfall, from 1.25 to 1.5 inches. Home and vehicles were damaged the strong wind and very large hail.

Phillips County

7 SSE Holyoke Arpt	04	1524MST							Hail (1.75)
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Morgan County

1 NNE Ft Morgan	04	1600MST							Hail (1.75)
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Morgan County

1 NNE Ft Morgan	04	1601MST							Hail (0.88)
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Sedgwick County

12 SE Julesburg	04	1602MST							Hail (1.75)
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Morgan County

2 ENE Brush Muni Arpt	04	1621MST							Hail (1.00)
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Morgan County

2 N Hillrose	04	1630MST							Hail (1.75)
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Severe thunderstorms produced large hail, ranging from nickel to golfball size, across parts of Morgan, Phillips and Sedgwick Counties. Damage to home and vehicles was reported.

Weld County

6 S Gill	14	1753MST							Hail (1.00)
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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COLORADO, Central and Northeast

Weld County 6 NNW New Raymer	14	1922MST			0	0			Hail (1.25)
Weld County 6 NNW New Raymer	14	1922MST			0	0			Thunderstorm Wind (56MG) A severe thunderstorm produced large hail, from half dollar to ping pong size, and wind gusts to 65 mph in Washington County. Note: The measured wind gust of 56 knots is equivalent to 64 mph.
Washington County 4 WSW Thurman	15	1345MST			0	0	0.00K	0.00K	Hail (0.75)
Washington County 5 S Arickaree	15	1417MST			0	0	0.00K	0.00K	Hail (0.75) Very heavy rainfall also produced minor field flooding.
Weld County 9 N Purcell	15	1417MST			0	0	0.00K	0.00K	Hail (0.75)
Washington County 10 WSW Burdett	15	1510MST			0	0			Hail (1.25)
Washington County 3 N Burdett	15	1532MST			0	0			Hail (1.00) A severe thunderstorm produced large hail, from quarter to half dollar size, along with heavy rainfall in Washington County. Minor field flooding was also reported.

COLORADO, East Central

Yuma County 7 SW Clarkville	02	1540MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG) Pea size hail also occurred with the storm. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Kit Carson County 4 S Burlington	02	1657MST 1704MST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG) Note: The measured wind gust of 53 knots is equivalent to 61 mph.
Kit Carson County 8 S Seibert	02	1750MST			0	0	0.00K	0.00K	Flash Flood A portion of CR L near the CR L/Highway 59 intersection was washed out from the rainfall.
Kit Carson County 4 S Burlington	02	1818MST 2118MST			0	0	0.00K	0.00K	Flash Flood Five to six inches of water was flowing over Highway 385 just south of the CR R intersection.
Cheyenne County 15 NNW Firstview	02	1930MST 2230MST			0	0	0.00K	0.00K	Flash Flood Six inches of water was flowing over CR 28 halfway between CR DD and CR FF where one of the branches of the North Fork of the Smokey River flows under CR 28. Three inches of rainfall was measured at this location. During the afternoon and evening a group of strong to severe thunderstorms moved east across East Central Colorado. The main threat with these storms was the heavy rainfall and associated flooding. The majority of the flooding was reported in Kit Carson County with water running over highways and washing a county road out. The strongest wind gust reported was 61 MPH at the Burlington airport.
Yuma County 4 ESE Idalia	04	1415MST			0	0	0.00K	0.00K	Hail (1.75)
Yuma County 7 NNW Alvin	04	1510MST			0	0	0.00K	0.00K	Hail (2.50)

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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COLORADO, East Central

Yuma County

9 NNW Alvin

04 1513MST 0 0 0.00K 0.00K Hail (3.00)
During the afternoon a severe thunderstorm moved northeast across Yuma County. The largest hail size reported was softball near Alvin.

Kit Carson County

16 NNW Flagler

15 1420MST 0 0 0.00K 0.00K Hail (1.00)
A lot of quarter size hail and heavy rainfall.

Kit Carson County

12 N Flagler

15 1434MST 0 0 0.00K 0.00K Hail (1.00)
The hail size ranged from penny to quarter size, with most of the hail being the size of a penny or nickel. The hail covered the ground. Estimated time of the report from radar.

Kit Carson County

10 NW Burlington Arpt

15 1535MST 0 0 0.00K 0.00K Hail (1.75)

Kit Carson County

11 NNW Burlington Arpt

15 1542MST 0 0 0.00K 0.00K Hail (2.75)

Kit Carson County

8 NNW Burlington Arpt

15 1543MST 0 0 0.00K 0.00K Hail (2.75)
Most of the hail was golf ball in size with some baseball size hail.

Kit Carson County

10 N Burlington Arpt

15 1545MST 0 0 0.00K 0.00K Hail (2.50)

Kit Carson County

11 N Burlington Arpt

15 1545MST 0 0 0.00K 0.00K Hail (1.25)
The hailstones ranged from nickel to half dollar in size. Estimated time of the report from radar.

Kit Carson County

8 NNE Peconic

15 1608MST 0 0 0.00K 0.00K Hail (2.00)

Kit Carson County

11 NW Burlington Arpt

15 1645MST 0 0 0.00K 0.00K Hail (1.75)
Estimated time of the report from radar.
During the afternoon a severe thunderstorm moved east across Kit Carson County. The thunderstorm produced a swath of hail across the northern half of the county ranging from quarter to baseball in size, with the hail size increasing as the storm moved east. The baseball size hail fell north of Burlington.

Yuma County

2 W Yuma

17 1300MST 0 0 0.00K 0.00K Hail (0.88)
1310MST
The hail ranged from pea to nickel in size.

Yuma County

Yuma

17 1306MST 0 0 0.00K 0.00K Hail (0.75)
Dime size hail fell.

Cheyenne County

1 W Cheyenne Wells

17 1443MST 0.85 100 0 0 46.00K 0.00K Tornado (EF0)
1457MST

A landspout tornado developed west of Cheyenne Wells between CR 42 and CR 43 just north of Highway 40, slowly moving east. Minor damage was sustained to most houses from South 1st Street to South 2nd Street between West 14th and West 10th. Damage included shingles blown off roofs, a garage door blown inward, a piece of tin ripped off a metal shed, windows broken, and sections of privacy fence blown down. The most notable damage was a six car garage leveled due to the walls collapsing and a mature pine tree being uprooted. The tornado ended at West 10th Street.

Cheyenne County

4 NNW Cheyenne Wells

17 1443MST 1.92 100 0 0 0.00K 0.00K Tornado (EF0)
1500MST

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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COLORADO, East Central

A second landspout was seen north of Cheyenne Wells. Based on photos and the subtle rotation couplet on radar, the tornado remained roughly three miles north of town between CR T and CR V, crossing CR 43 first then Highway 385 near the CR U/Highway 385 intersection before dissipating east of the highway. No damage was reported with this tornado.

During the afternoon a line of strong to severe thunderstorms moved through East Central Colorado. Two landspout tornadoes occurred in the Cheyenne Wells vicinity. One of them caused damage to structures on the west side of town near Highway 40 while the other remained north of town a couple miles. This line of storms also produced dime to nickel size hail, with the largest hail falling near Yuma.

COLORADO, South Central and Southeast

Kiowa County

7 SSE Chivington	03	1715MST 1720MST			0	0	0.00K	0.00K	Hail (1.25)
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A severe storm produced hail up to half dollar size.

Prowers County

1 W Lamar Arpt	04	1208MST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
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Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Prowers County

Wiley	04	1210MST			0	0	10.00K	0.00K	Thunderstorm Wind (60EG)
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A few power poles were knocked down, and a semi-trailer was blown over.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Prowers County

3 ENE Wiley	04	1215MST			0	0	20.00K	0.00K	Thunderstorm Wind (60EG)
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Four utility poles were downed.
Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Prowers County

5 NE Wiley	04	1215MST			0	0	20.00K	0.00K	Thunderstorm Wind (80EG)
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Irrigation pivot was destroyed.
Note: The estimated wind gust of 80 knots is equivalent to 92 mph.

Kiowa County

8 SE Sheridan Lake	04	1259MST			0	0	0.00K	0.00K	Thunderstorm Wind (83MG)
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Strong thunderstorms produced damaging wind gusts across portions of Kiowa and Prowers Counties. Damage to utility poles, irrigation pivots, and a semi-trailer were reported in the Wiley and Mays Valley areas. Note: The measured wind gust of 83 knots is equivalent to 96 mph.

Prowers County

1 W Lamar Arpt	06	1723MST			0	0	0.00K	0.00K	Thunderstorm Wind (57MG)
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A severe storm produced a 66 mph wind gust west of Lamar. Note: The measured wind gust of 57 knots is equivalent to 66 mph.

Crowley County

1 E Olney Spgs	14	1327MST 1333MST			0	0	0.00K	0.00K	Hail (1.00)
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Crowley County

3 NE Crowley	14	1331MST 1336MST			0	0	0.00K	0.00K	Hail (1.50)
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Crowley County

Ordway	14	1350MST 1355MST			0	0	0.00K	0.00K	Hail (1.75)
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Crowley County

1 E Sugar City	14	1357MST 1402MST			0	0	0.00K	0.00K	Hail (1.75)
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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COLORADO, South Central and Southeast

Crowley County 1 NE Sugar City

14	1403MST 1408MST				0	0	0.00K	0.00K	Hail (1.75)
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Severe storms generated hail up to golfball size.

COLORADO, West

La Plata County 2 NE Bondad

12	1430MST 1445MST				0	0	2.00K	0.00K	Thunderstorm Wind (52MG)
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Strong thunderstorm winds produced minor damage at a residence. The damage included a large trampoline which was anchored into the ground over a foot deep at all legs and was ripped out and totally demolished.

A strong thunderstorm produced damaging winds in La Plata County. Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Moffat County 3 NW Elk Spgs

14	1110MST 1115MST				0	0	0.00K	0.00K	Hail (1.25)
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Firefighters on the Calico Wildfire were pelted with large hailstones.

A strong thunderstorm produced large hail in Moffat County.

CONNECTICUT, Northeast

CTZ004

Windham

05	1506EST 1926EST				0	0	10.0K	0.00K	Strong Wind
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Hermine was named on August 31st as it intensified to a tropical storm in the Gulf of Mexico. She meandered about in the eastern Gulf of Mexico before moving northeastward across the Florida panhandle, through Georgia and then along the coast of North and South Carolina. She was a hurricane as she made landfall in Florida, then weakened to a tropical storm and finally a tropical depression as she moved off the coast of North Carolina. After moving off the coast of North Carolina, Hermine moved northeast, then north, then west, meandering south of southern New England for several days in early September.

While classified as a tropical system, Hermine's effects on southern New England were rather minimal. Rainfall added up to less than an inch for most locations and winds were generally below tropical storm force. Because trees were still fully leaved and we had higher wind gusts, there was some wind damage. Storm surge was highest during low tide so we had minimal coastal flooding impacts.

Hartford County

1 E (BDL)Bradly Fld Wnds

11	0822EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was downed on North Street, blocking the road.

A cold front moved through during the morning hours, producing showers and thunderstorms. Some of these storms became strong enough to produce wind damage. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

CTZ002-003

Hartford - Tolland

13	0700EST				0	0	0.00K	0.00K	Drought
30	2359EST				0	0	0.00K	0.00K	Drought

Below normal monthly precipitation that began in March of 2016, continued through September. In September, rainfall throughout northern Connecticut was below normal.

The Connecticut Department of Public Health issued a drought advisory for the state on June 27th. Soil moisture (measured by the Climate Prediction Center) was much drier than normal. Groundwater conditions (measured by the United States Geological Survey) were found to be below to well below normal. River and streamflow conditions were below to well below normal with 16 gage sites in southern New England at record low levels.

Farmers have had to irrigate their crops much more than normal for September. A few communities in northern Connecticut were encouraging voluntary water conservation, only one community had imposed mandatory water restrictions. Three counties in Connecticut (two in the Taunton CWA) were declared primary disaster counties due to the drought. They include: Litchfield, Hartford, and Tolland Counties. Farms in these counties are eligible for assistance from the Farm Service Agency and the Livestock Forage Disaster Program.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CONNECTICUT, Northwest

Litchfield County

1 N Torrington

11	0746EST				0	0			Thunderstorm Wind (50EG)
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Trees and wires were downed in Torrington due to thunderstorm winds.

A mild and humid air mass was in place over northwestern Connecticut during the early morning hours on Sunday, September 11th. A cold front was crossing through the region around sunrise and a potent line of thunderstorms accompanied the passage of this boundary. Some of these storms were severe, producing damaging winds to trees and power lines across northern parts of Litchfield County. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

CONNECTICUT, Southern

Fairfield County

1 NE New Canaan

14	1557EST				0	0	1.00K	0.00K	Thunderstorm Wind (52EG)
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A tree was snapped and downed near the railroad crossing at Talmadge Hill Station.

A cold frontal passage produced a severe thunderstorm over the area. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

New London County

1 NNW New London

19	0830EST				0	0	0.00K	0.00K	Flash Flood
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Broad Street was closed due to flooding between Connecticut Avenue and Ledyard Street in New London.

A weakening cold front combined with favorable upper dynamics in a high precipitable water environment produced isolated flash flooding across portions of New London County.

DELAWARE

DEZ001

New Castle

10	1200EST				0	9			Excessive Heat
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Temperatures soared into the mid 90's across Delaware. This was coupled with a considerable amount of outdoor activities going on including several high school football games. 12 players cramped up during the Carvel @ Concord game. Five people at White Clay Creek State park suffered from heat exhaustion with four more occurrences in Baynard stadium.

New Castle County

1 W Brandywine Spgs

19	0923EST				0	0			Heavy Rain
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Just over 2 inches of rain was measured.

Sussex County

1 NW Georgetown

19	0923EST				0	0			Heavy Rain
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Just over 2 inches of rain was measured.

Kent County

1 E Harrington

19	0924EST				0	0			Heavy Rain
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Just over 2 inches of rain was measured.

Sussex County

1 N Blades

19	0924EST				0	0			Heavy Rain
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Just over 2 inches of rain fell.

Kent County

1 E Woodside

19	0925EST				0	0			Heavy Rain
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Just over 2 inches of rain fell.

Kent County

1 NW Capitol Park

19	1040EST				0	0			Heavy Rain
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Just under 3 inches of rain fell.

Sussex County

1 NW Georgetown

19	1040EST				0	0			Heavy Rain
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Two and two thirds inches of rain fell.

Kent County

1 E Woodside

19	1041EST				0	0			Heavy Rain
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Two and a half inches of rain fell.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
DELAWARE									
Sussex County 2 SW Rehoboth Beach	19	1316EST			0	0			Heavy Rain
			Just under 4 inches of rain fell.						
Sussex County 1 N Bridgeville	19	1320EST			0	0			Heavy Rain
			Just over 5 inches of rain fell with 3 inches in 90 minutes.						
Kent County 1 E Harrington	19	1328EST			0	0			Heavy Rain
			Three and a half inches of rain fell.						
Kent County 1 E Woodside	19	1328EST			0	0			Heavy Rain
			Three a third inches of rain fell.						
Sussex County 1 N Bridgeville	19	1328EST			0	0			Heavy Rain
			Just over 3 inches of rain fell.						
Sussex County Laurel	19	1329EST			0	0	0.00K	0.00K	Heavy Rain
			Just over 3 inches of rain fell.						
Sussex County 1 NW Georgetown	19	1329EST			0	0	0.00K	0.00K	Heavy Rain
			Three and a half inches of rain fell.						
Sussex County 1 N Blades	19	1329EST			0	0	0.00K	0.00K	Heavy Rain
			Just under 4 inches of rain fell.						
Sussex County 1 NE Bethany Beach	19	1740EST			0	0			Heavy Rain
			Three inches of rain in 24 hours.						
Sussex County 1 NE Redden	19	1808EST			0	0			Heavy Rain
			Three inches of rain fell in 12 hours.						
Sussex County 2 N Seaford	19	1902EST			0	0			Heavy Rain
			Three and two thirds inches of rain fell in 12 hours.						
Sussex County 1 NE Georgetown Arpt	20	0131EST			0	0			Heavy Rain
			Two and three quarters inches of rain fell.						
Kent County 1 ENE Andrewsville	20	0600EST			0	0			Heavy Rain
			Just under 4 inches of rain fell in 24 hours.						
Sussex County 2 N Millville	20	0600EST			0	0			Heavy Rain
			Just over 4 inches of rain fell in 24 hours.						
Sussex County 1 WNW Lincoln	20	0600EST			0	0			Heavy Rain
			Just over 3 inches of rain fell in 24 hours.						
Sussex County 1 N Chestnut Knoll	20	0600EST			0	0			Heavy Rain
			Just over 3 inches of rain fell in 24 hours.						
Sussex County 1 NNW Blades	20	0600EST			0	0			Heavy Rain
			Three and a third inches of rain fell in 24 hours.						

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
DELAWARE									
Sussex County 1 NW Blades	20	0600EST			0	0			Heavy Rain
			Three and a half inches of rain fell in 24 hours.						
Sussex County 1 ESE Blades	20	0600EST			0	0			Heavy Rain
			Three and a half inches of rain fell in 24 hours.						
Sussex County 1 NE Redden	20	0608EST			0	0			Heavy Rain
			Just over 3 inches of rain fell in 24 hours.						
Sussex County 1 NW Georgetown	20	0620EST			0	0			Heavy Rain
			Just over 4 inches of rain fell.						
Sussex County 1 N Blades	20	0620EST			0	0			Heavy Rain
			Just over 4 inches of rain fell.						
Sussex County 2 N Seaford	20	0656EST			0	0			Heavy Rain
			Three and three quarters inches of rain fell in 24 hours.						
Kent County 2 WSW Milford	20	0700EST			0	0			Heavy Rain
			Three and a third inches of rain fell in 24 hours. The remnants of tropical storm Julia and a frontal boundary interacted leading to several rounds of rainfall over the region.						
Sussex County 1 E Oak Orchard	29	0130EST 0430EST			0	0	0.00K	0.00K	Flood
			Water was several inches deep on the road and one car was stuck for several days due to the water on Mercer avenue.						
Sussex County 1 NE Milton	29	0200EST 0500EST			0	0	0.00K	0.00K	Flood
			Minor Street flooding was reported.						
Sussex County 1 ENE Shortly 1 SSW Stockley	29	0300EST 0700EST			0	0	0.00K	0.00K	Flash Flood
			Over five inches of rain fell most in short duration. Long drain road was flooded as a result near cross keys road.						
Sussex County 2 NNW Cool Spg	29	0500EST 0900EST			0	0	0.00K	0.00K	Flood
			Water on roadway at intersection of Cave Neck and Hudson roads.						
Sussex County 1 N Harbeson	29	0500EST 0800EST			0	0			Heavy Rain
			Over six inches of rain fell in less than a day.						
Sussex County 2 NW Georgetown	29	0600EST 2200EST			0	0	0.00K	0.00K	Flood
			Delaware Technical Community College had many roads that were impassable and closed the campus early in the afternoon on the 29th due to flooding.						

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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DELAWARE

Kent County

2 WNW Houston 29 0619EST 0 0 Heavy Rain
Four and a half inches of rain fell in 24 hours.

Kent County

1 E Harrington 29 0624EST 0 0 Heavy Rain
Four and two thirds inches of rain fell.

Kent County

1 SE Frederica 29 0624EST 0 0 Heavy Rain
Four and a quarter inches of rain fell.

Kent County

2 E Hickman 29 0624EST 0 0 Heavy Rain
Four and a half inches of rain fell.

Sussex County

1 NE Stockley 29 0624EST 0 0 Heavy Rain
Five and three quarters inches of rain fell.

Sussex County

2 E Sycamore 29 0624EST 0 0 Heavy Rain
Just over 4 inches of rain fell.

Sussex County

1 N Blades 29 0624EST 0 0 Heavy Rain
Just over 4 inches of rain fell.

Sussex County

Gumboro 29 0624EST 0 0 Heavy Rain
Four and a quarter inches of rain fell.

Sussex County

1 N Ellendale 29 0624EST 0 0 Heavy Rain
Just under four and a half inches of rain fell.

Sussex County

1 NW Georgetown 29 0624EST 0 0 Heavy Rain
Just under four and a half inches rain fell.

Sussex County

Laurel 29 0624EST 0 0 Heavy Rain
Just over 4 inches of rain fell.

Sussex County

Harbeson 29 0624EST 0 0 Heavy Rain
Eight and a half inches of rain fell.

Sussex County

1 N Bridgeville 29 0624EST 0 0 Heavy Rain
Just under four and a half inches of rain fell.

Sussex County

Harbeson 29 0658EST 0 0 Heavy Rain
Eight and a half inches of rain fell.

Sussex County

1 SW Rehoboth Beach 29 0700EST 0 0 0.00K 0.00K Flood
Dewey Beach 1300EST

Route 1 was closed due to flooding, rainfall and high tide both contributed.

Kent County

1 E Harrington 29 0701EST 0 0 Heavy Rain
Four and two thirds inches of rain fell.

Kent County

2 E Hickman 29 0701EST 0 0 Heavy Rain
Four and a half inches of rain fell.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
DELAWARE									
Sussex County 1 N Bridgeville	29	0701EST			0	0			Heavy Rain
			Four and a half inches of rain fell.						
Sussex County 1 N Harbeson	29	0900EST			0	0			Heavy Rain
			Seven and a half inches of rain fell.						
Kent County 1 E Harrington	29	0920EST			0	0			Heavy Rain
			Just over four and a half inches of rain fell.						
Sussex County Harbeson	29	0920EST			0	0			Heavy Rain
			Just over eight and a half inches fell.						
Sussex County 1 NE Stockley	29	0920EST			0	0			Heavy Rain
			Five and three quarters of an inch of rain fell.						
Kent County 2 E Hickman	29	0925EST			0	0			Heavy Rain
			Four and a half inches of rain fell.						
Sussex County Gumboro	29	0925EST			0	0			Heavy Rain
			Four and a quarter inches of rain fell.						
Sussex County 1 N Ellendale	29	0925EST			0	0			Heavy Rain
			Four and just under a third of an inch of rain fell.						
Sussex County 1 NW Georgetown	29	0925EST			0	0			Heavy Rain
			Just under four and a half inches of rain fell.						
Sussex County 1 N Bridgeville	29	0925EST			0	0			Heavy Rain
			Four and a half inches of rain fell.						
Sussex County Laurel	29	0925EST			0	0			Heavy Rain
			Four and a quarter inches of rain fell.						
Sussex County Harbeson	29	1043EST			0	0			Heavy Rain
			Almost 9 inches of rain fell.						
Kent County 1 E Harrington	29	1044EST			0	0			Heavy Rain
			Four and a half inches of rain fell.						
Sussex County 1 NE Stockley	29	1044EST			0	0			Heavy Rain
			Six inches of rain fell.						
Sussex County 1 NNW Harbeson	29	1045EST			0	0			Heavy Rain
			Six and three quarters inches of rain fell.						
Kent County 2 E Hickman	29	1050EST			0	0			Heavy Rain
			Just over four inches of rain fell.						
Kent County 1 E Woodside	29	1050EST			0	0			Heavy Rain
			Two and a half inches of rain fell.						
Kent County 1 SE Dover	29	1050EST			0	0			Heavy Rain
			Just under four inches of rain fell.						

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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DELAWARE

Kent County

1 SE Frederica 29 1050EST
Just over four inches of rain fell. 0 0 Heavy Rain

Kent County

1 E Harrington 29 1050EST
Four and a half inches of rain fell. 0 0 Heavy Rain

Sussex County

Gumboro 29 1050EST
Just under four and a half inches of rain fell. 0 0 Heavy Rain

Sussex County

Pilottown 29 1050EST
Three and a half inches of rain fell. 0 0 Heavy Rain

Sussex County

1 N Blades 29 1050EST
Just under four inches of rain fell. 0 0 Heavy Rain

Sussex County

1 N Bridgeville 29 1050EST
Just under four and a half inches of rain fell. 0 0 Heavy Rain

Sussex County

1 NW Georgetown 29 1050EST
Four and a half inches of rain fell. 0 0 Heavy Rain

Sussex County

1 NE Stockley 29 1050EST
Six inches of rain fell. 0 0 Heavy Rain

Sussex County

Harbeson 29 1050EST
Almost nine inches of rain fell. 0 0 Heavy Rain

Sussex County

Laurel 29 1050EST
Just over four inches of rain fell. 0 0 Heavy Rain

Sussex County

1 N Ellendale 29 1050EST
Four and a third inches of rain fell. 0 0 Heavy Rain

Sussex County

2 E Sycamore 29 1057EST
Just over four inches of rain fell. 0 0 Heavy Rain

Sussex County

4 NW Slaughter Beach 29 1146EST
1446EST 0 0 0.00K 0.00K Flood

Cedar Beach Road was closed at Lighthouse Road due to flooding.

Kent County

1 E Harrington 29 1220EST
Four and a half inches of rain fell. 0 0 Heavy Rain

Sussex County

Harbeson 29 1220EST
Just over nine inches of rain fell. 0 0 Heavy Rain

Sussex County

1 N Ellendale 29 1220EST
Just under four and a half inches of rain fell. 0 0 Heavy Rain

Sussex County

1 NE Stockley 29 1220EST
Just over six inches of rain fell. 0 0 Heavy Rain

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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DELAWARE

Kent County 2 E Hickman	29	1222EST			0	0			Heavy Rain
			Just over four inches of rain fell.						
Sussex County 1 NW Georgetown	29	1222EST			0	0			Heavy Rain
			Four and two thirds inches of rain fell.						
Sussex County 1 N Bridgeville	29	1222EST			0	0			Heavy Rain
			Just under four a half inches of rain fell.						
Sussex County Gumboro	29	1222EST			0	0			Heavy Rain
			Four and a half inches of rain fell.						
Sussex County 1 NW Greenwood	29	1232EST			0	0			Heavy Rain
			Just over four and a half inches of rain fell.						
Sussex County 1 NE Georgetown Arpt	29	1235EST			0	0			Heavy Rain
			Just under five inches of rain fell.						
Kent County 1 SW Felton	29	1238EST			0	0			Heavy Rain
			Just over four inches of rain fell.						
Sussex County Harbeson	29	1242EST			0	0			Heavy Rain
			Just over nine inches of rain fell.						
Sussex County Harbeson	29	1247EST			0	0			Heavy Rain
			Just over nine inches of rain fell.						
Sussex County 1 NW Georgetown	29	1247EST			0	0			Heavy Rain
			Just under five inches of rain fell.						
Sussex County 1 NE Stockley	29	1247EST			0	0			Heavy Rain
			Just over six inches of rain fell.						
Sussex County Harbeson	29	1303EST			0	0			Heavy Rain
			Just over nine inches of rain fell.						
Sussex County Harbeson	29	1329EST			0	0			Heavy Rain
			Just over nine inches of rain fell.						
Kent County 1 E Harrington	29	1355EST			0	0			Heavy Rain
			Four and a half inches of rain fell.						
Sussex County Harbeson	29	1355EST			0	0			Heavy Rain
			Almost nine and a half inches of rain fell.						
Sussex County 1 N Ellendale	29	1355EST			0	0			Heavy Rain
			Four and a half inches of rain fell.						
Sussex County 1 NW Georgetown	29	1355EST			0	0			Heavy Rain
			Almost five inches of rain fell.						
Sussex County Gumboro	29	1355EST			0	0			Heavy Rain
			Almost five inches of rain fell.						

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	
DELAWARE									
Sussex County 1 NE Stockley	29	1355EST			0	0			Heavy Rain
			Six and a half inches of rain fell.						
Sussex County Harbeson	29	1400EST 1700EST			0	0	0.00K	0.00K	Flood
			Route 5 was closed in a couple of locations.						
Sussex County 1 NE Redden	29	1401EST			0	0			Heavy Rain
			Just over four inches of rain fell.						
Sussex County Harbeson	29	1405EST			0	0			Heavy Rain
			Nine and a half inches of rain fell.						
Sussex County 1 NE Stockley	29	1405EST			0	0			Heavy Rain
			Six and a half inches of rain fell.						
Sussex County 1 NE Redden	29	1433EST			0	0			Heavy Rain
			Almost four and a half inches of rain fell.						
Sussex County 2 E Sycamore	29	1436EST			0	0			Heavy Rain
			Almost five inches of rain fell.						
Sussex County Gumboro	29	1436EST			0	0			Heavy Rain
			Just under five inches of rain fell.						
Sussex County 1 NW Georgetown	29	1436EST			0	0	0.00K	0.00K	Heavy Rain
			Just under five inches of rain fell.						
Sussex County 1 NE Stockley	29	1436EST			0	0			Heavy Rain
			Just under seven inches of rain fell.						
Sussex County Harbeson	29	1436EST			0	0			Heavy Rain
			Almost ten inches of rain fell.						
Sussex County Pilottown	29	1436EST			0	0			Heavy Rain
			Four and a half inches of rain fell.						
Sussex County Harbeson	29	1447EST			0	0			Heavy Rain
			Almost ten inches of rain fell.						
Sussex County 1 SE Georgetown Arpt	29	1610EST 1910EST			0	0	0.00K	0.00K	Flood
			A road was reported to be flooded.						
Sussex County 2 N Millsboro 2 E Dagsboro	29	1703EST 2003EST			0	0	0.00K	0.00K	Flood
			Roadway flooding at the intersection of routes 113 and 26. Flooding also along route 20 and other spots on 113.						
Sussex County Harbeson	29	1732EST			0	0			Heavy Rain
			Over eleven inches of rain fell.						

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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DELAWARE

Sussex County 1 NE Stockley	29	1734EST Just over eight inches of rain fell.			0	0			Heavy Rain
Sussex County 1 NE Georgetown Arpt	29	1736EST Just over six inches of rain fell.			0	0			Heavy Rain
Sussex County 1 NE Selbyville	29	1741EST Just over five inches of rain fell.			0	0	0.00K	0.00K	Heavy Rain
Sussex County Pilottown	29	1742EST Almost six inches of rain fell.			0	0			Heavy Rain
Sussex County 1 SW Delmar State Line Ar	29	1743EST Just over five inches of rain fell.			0	0			Heavy Rain
Kent County 1 E Harrington	29	1744EST Just over five inches of rain fell.			0	0			Heavy Rain
Sussex County 1 N Bridgeville	29	1745EST Just over five inches of rain fell.			0	0			Heavy Rain
Sussex County 1 NW Greenwood	29	1745EST Just over five inches of rain fell.			0	0			Heavy Rain
Sussex County 1 NW Greenwood	29	1745EST Just over five inches of rain fell.			0	0			Heavy Rain
Kent County 1 SE Frederica	29	1746EST Almost five inches of rain fell.			0	0			Heavy Rain
Sussex County 1 N Bethany Beach	29	1747EST Four and a half inches of rain fell.			0	0			Heavy Rain
Sussex County 1 N Ellendale	29	1749EST Over five and a half inches of rain fell.			0	0			Heavy Rain
Sussex County 1 N Bethany Beach 2 WSW Dewey Beach	29 30	2100EST 0000EST			0	0	0.00K	0.00K	Flood
Route 1 closed between Bethany Beach and Dewey beach due to water on the road.									
Kent County 1 W Smyrna	29	2147EST Around three inches of rain fell.			0	0			Heavy Rain
Kent County 1 E Woodside	29	2147EST Around three inches of rain fell.			0	0			Heavy Rain
Kent County 1 SE Dover	29	2148EST Just over four inches of rain was measured.			0	0			Heavy Rain
Kent County 1 E Harrington	29	2148EST Almost six inches of rain fell.			0	0			Heavy Rain

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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DELAWARE

Sussex County

1 NW Greenwood	29	2148EST			0	0			Heavy Rain
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Five inches of rain fell.

Sussex County

Harbeson	29	2150EST			0	0			Heavy Rain
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Over twelve inches of rain fell.

Sussex County

Rehoboth Beach	29	2151EST			0	0			Heavy Rain
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Just over three inches of rain fell.

Sussex County

1 N Ellendale	29	2151EST			0	0			Heavy Rain
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Just over six inches of rain fell.

Sussex County

1 N Blades	29	2151EST			0	0			Heavy Rain
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Just over three inches of rain fell.

Sussex County

Pilottown	29	2152EST			0	0			Heavy Rain
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Just over six inches of rain fell.

Sussex County

1 NE Stockley	29	2152EST			0	0			Heavy Rain
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Just over nine inches of rain fell.

Sussex County

1 N Bethany Beach	29	2152EST			0	0			Heavy Rain
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Five inches of rain fell.

Sussex County

1 SW Delmar State Line Ar	29	2153EST			0	0			Heavy Rain
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Almost six inches of rain fell.

Sussex County

Laurel	29	2153EST			0	0			Heavy Rain
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Almost five inches of rain fell.

Kent County

1 WNW Milford	29	2230EST			0	0	0.00K	0.00K	Flood
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30 0130EST

Minor flooding was reported.

New Castle County

1 NE Odessa	30	0300EST			0	0	0.00K	0.00K	Flood
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0600EST

Marl Pit road closed between US 13 and Brick Mill Road due to water on road.

Sussex County

1 NE Georgetown Arpt	30	0348EST			0	0			Heavy Rain
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Almost nine inches of rain fell from the 27th through the 30th.

New Castle County

1 S Stanton	30	0400EST			0	0	0.00K	0.00K	Flood
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1 SSE Bellemeor		1100EST			0	0	0.00K	0.00K	Flood
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The Christina River rose Friday morning to 10.6 feet, .1 feet above flood stage. Water covered a section of nearby Airport Road for a time. A car was stuck in the water while it was flooded as well.

Kent County

1 ENE Masten	30	0539EST			0	0			Heavy Rain
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Almost six inches of rain fell.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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DELAWARE

A slow moving frontal boundary coupled with tropical moisture advecting northward ahead of the front led to rounds of heavy showers in Delaware from the 27th into the next couple of days. Numerous occurrences of both nuisance and flash flooding were also reported, a main example being water damage to a building in Denton. Quite a few weekend events were moved or postponed including high school football games, a local music festival, craft fair, A NASCAR race and a town festival. Several trees were also taken down due to soft ground conditions.

FLORIDA, East Central

Lake County Mascotte

01	1916EST				0	0	14.00K	0.00K	Thunderstorm Wind (50EG)
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A large oak tree was toppled onto a home by severe winds on Florida Avenue in Mascotte as squalls associated with a far outer rainband of Hurricane Hermine affected the area. Damage to trees and powerlines was reported within Mascotte, Groveland and Clermont.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lake County 1 WNW Eustis

01	1938EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Several trees were topped due to the passage of squalls associated with Hurricane Hermine. Trees and powerlines were reported downed from Tavares to Eustis to Mt. Dora.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Orange County 1 ENE Killarney

01	1938EST 1939EST	1.51	150	0	0	21.00K	0.00K	Tornado (EF0)
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Emergency management officials surveyed an area of wind damage in southern, rural Winter Garden and provided observations and photos to the NWS. In addition, several citizens provided valuable data and at least one person reported seeing a funnel cloud to his south shortly before the onset of damage. A path of damage occurred from the northern portion of the Orange County National Golf Center grounds, northward for 1.5 miles, paralleling Highway 429, just to the east. Significant tree was noted along Porter Road, and along both sides of Hamlin Groves Trail. Over 100 trees were damaged along the path (falling in a convergent pattern), including dozens of pine trees which were snapped several feet above the ground and many others which were uprooted. The path continued northward where five newly built homes on Bowman Drive were damaged. A pool screen enclosure and fences were damaged and a few homes experienced soffit, window and air conditioning unit damage from flying debris. Some debris was carried just north of New Independence Parkway, with no significant damage noted farther north. A review of all available data strongly suggested the damage was a result of a short-track, EF-0 tornado, with maximum winds estimated at 80 to 85 mph. DI1, DOD1, UB; DI28, DOD3, EXP; DI28, DOD4, LB.

Lake County 1 NW Fruitland Park Lady Lake

01	1940EST 1944EST	4.35	250	0	0	22.00K	0.00K	Tornado (EF0)
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Emergency Management officials provided detailed wind damage reports which occurred along a 4.35 mile long south-to-north path from Fruitland Park to Lady Lake, parallel to and just west of U.S. Highway 441. The damage consisted mainly of downed trees, branches and powerlines, although two homes in Lady Lake sustained structural damage due to falling trees. The most significant damage occurred on the east side of the tornado track, due to the rapid storm motion of 60 mph. The discontinuous damage path began near the College Avenue and W Miller Street in Fruitland Park and ended in Lady Lake, about midway between the Recreation Plantation RV Resort and Highway 441. A review of all available data suggests that the wind damage was likely the result of a EF-0 tornado (winds estimated 70-75 mph). Isolated tree damage south and north of the tornado track was likely due to strong straight-line winds associated with the cell. DI2, DOD1, EXP; DI27, DOD2, EXP; DI27, DOD3, LB.

As Hurricane Hermine approached a Gulf of Mexico landfall along the Florida Big Bend, a strong outer rainband moved into the central Florida interior from the eastern Gulf. Within the rainband, several shallow mesocyclones become evident on radar across western Orange County and northwest Lake County. Two EF0 tornadoes were confirmed, as well as areas of straight-line wind damage.

Brevard County 1 NW (COF)Patrick Afb

02	1058EST				0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
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The Patrick Air Force Base AWOS (KCOF) measured a peak gust of 53 knots from the west as a line of heavy showers and isolated thunderstorms crossed the airfield.

A thunderstorm embedded with a large rainband trailing from Tropical Storm Hermine, which was centered over southeast Georgia, produced a severe wind gust at Patrick Air Force Base. Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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FLORIDA, East Central

Volusia County Edgewater

13	1030EST				0	0	5.00K	0.00K	Thunderstorm Wind (48EG)
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A corner of a metal, secondary roof (overlying the original roof) on a manufactured home in Edgewater was peeled back due to strong wind gusts as a rainband with heavy showers and thunderstorms moved onshore and inland. The original roof was not damaged. A nearby mesonet site recorded wind gusts of 45-55 mph as the rainband moved by.

Note: The estimated wind gust of 48 knots is equivalent to 55 mph.

Brevard County 3 WSW Micco 1 SW Grant

13	1251EST				0	0	40.00K	0.00K	Tornado (EF0)
	1259EST	3.47	250	0	0				

An eyewitness report documented the onset of the tornado within the St. Sebastian River Preserve State Park, south of Micco Road and west of the town of Micco, in far southern Brevard County. Based on results from a NWS damage survey and other eyewitness reports (including photographs), the tornado moved in a northerly direction for approximately 3.5 miles before lifting south of Grant Road. The tornado was rated as an EF-0, with maximum winds estimated at 75-85 mph.

The discontinuous damage path occurred within a mostly rural area within the town of Grant-Valkaria, with damage to a two block area that included Orchid Tree Drive, Cottonwood Drive and Crepe Myrtle Drive. An RV at the south end of Cottonwood Drive was toppled onto its side and a large mango tree was uprooted. Farther north, toward the middle of Orchid Tree Drive, a single family home had a large patio enclosure destroyed. The patio was connected securely to the home, resulting in a large portion of the home's roof also being removed. Debris was carried downstream over 100 yards in a northwest direction. A few additional homes nearby experienced minor soft and shingle damage. Numerous large tree branches were downed or damaged throughout the neighborhood. DI2, DOD4 LB; DI3, DOD5 LB; DI27, DOD2, EXP.



A picture of a large patio enclosure that was totally lifted from the concrete patio slab in Brevard County, Florida on September 13th, 2016. The patio enclosure was securely anchored to concrete and home with numerous 3 inch screws. Several large pieces of the metal patio were carried and deposited over 100 yards downstream, toward the northwest direction. Photo courtesy of NWS.

Lake County 3 NE Emerald

13	1816EST				0	0	0.00K	0.00K	Funnel Cloud
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A social media report and photograph, relayed via an Orlando TV station, confirmed a funnel cloud near the intersection of Country Roads 452 and 42 in Umatilla.

A tropical disturbance, with a well-defined surface circulation, moved onshore near Vero Beach during the early morning hours, then lifted northward along the coast to Volusia County (and beyond) through the evening. By late evening, the system was upgraded to Tropical Storm Julia, as it approached Jacksonville. A rainband associated with the system spawned an EF-0 tornado in southern Brevard County during the early afternoon, resulting in damage to a few residences. Other passing rainbands, produced strong wind gusts along the coast of Brevard and Volusia Counties, one of which resulted in damage to a home in Edgewater. A funnel cloud was also sighted in Lake County.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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FLORIDA, East Central

Seminole County

1 E Lake Jessup

15	1620EST				0	0	0.00K	0.00K	Funnel Cloud
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Local news media relayed a video of a funnel cloud near Lake Jessup.

A report of a funnel cloud sighting near Lake Jessup was relayed by local news media.

Brevard County

1 E (MLB)Wfo Melbourne A

19	1410EST				0	1	0.00K	0.00K	Lightning
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A firefighter, in the drivers seat of a fire engine, pulled up to a security gate when he attempted to use a key to return to the station bay. A bolt of lightning struck the fence, hitting the firefighter as he held a key to open the gate. He experienced ringing in the ears, but remained conscious. He was transported to a local hospital for a complete check-up and was released.

A firefighter returning from a call was injured from a lightning strike at the Melbourne International Airport as a strong thunderstorm was overhead.

Volusia County

2 W Hucomer

29	1410EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Two weather spotters reported downed trees and powerlines one mile and two miles south of Edgewater, respectively. Another spotter reported a downed maple tree and numerous branches in the same general area.

A thunderstorm became severe over southeast Volusia County and produced damage to several trees and powerlines in the town of Edgewater. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

St. Lucie County

6 SW Port St Lucie

30	1530EST				0	0			Hail (1.00)
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A public safety officer reported quarter sized hail, 6 miles south-southwest of Port St. Lucie.

A thunderstorm became severe as it moved slowly northeast toward Port St. Lucie, where quarter sized hail was observed.

FLORIDA, Northeastern

FLZ020>023-025-031>033-035-037>038-040-124>125

Baker - Bradford - Clay - Coastal Duval - Coastal Nassau - Columbia - Duval - Flagler - Gilchrist - Hamilton - Marion - Putnam - St. Johns - Suwannee

01 03	0700EST				0	0	0.00K	0.00K	Tropical Storm
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Clay County

2 W Meadowbrook

01	1635EST				0	0	0.00K	0.00K	Funnel Cloud
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A funnel cloud was observed heading NNE toward Pine Ridge Plantation.

FLZ036

Alachua

02	0030EST								
03	0700EST				0	0	0.00K	0.00K	Tropical Storm

Hurricane Hermine impacted northeast Florida and Southeast Georgia during the afternoon of Sept. 1st through Sept. 2nd as the storm tracked inland near Cedar Key Florida as a Category 1 hurricane Thursday night, then tracked northward across SE Georgia through early Friday morning. The left front quadrant of the storm impacted the local area as well as widespread rainfall with wind gusts generally around 35-55 mph in squalls. Storm total rainfall (1200 UTC Sep. 1st through 1200 UTC Sep. 3rd) was 4-6 inches across the Suwannee River Valley to 1-3 inches toward the Atlantic coast. Storm surge values were 0.5 ft to 2 ft along the coast and within the St. Johns River basin. For county specific impacts, please read county specifics in the Storm Data report.

Baker County

2 W Knabb

03	1500EST 1805EST				0	0	0.00K	0.00K	Heavy Rain
----	--------------------	--	--	--	---	---	-------	-------	------------

The public measured 3.39 inches of rainfall since 4 pm a few miles ESE of Sanderson.

Baker County

2 W Knabb

03	1500EST 2130EST				0	0	0.00K	0.00K	Heavy Rain
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The public measured 4.3 inches a few miles ENE of Sanderson since 4 pm.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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FLORIDA, Northeastern

Baker County

2 S Macclenny

03	1630EST 2100EST				0	0	0.00K	0.00K	Heavy Rain
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The public measured 3.43 inches of rainfall a couple miles south of Macclenny since 5:30 pm.

A surface trough in the wake of Hurricane Hermine was across northeast Florida. This boundary was a focus for showers and thunderstorms as it slowly lifted northward toward the Fl-Ga state line. High atmospheric moisture and the meandering frontal boundary supported heavy rainfall potential.

FLZ125

Coastal Duval

05	1420EST				0	0	0.00K	0.00K	Rip Current
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Long period swells with periods 14-16 seconds and swells of 2-3 ft were reported. These seas combined with breezy onshore flow created a High Risk of Rip currents along the local coast.

10	1400EST				0	0	0.00K	0.00K	Rip Current
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A moderate risk of rip currents was in effect.

Marion County

1 N Santos

12	1342EST				0	0	1.00K	0.00K	Thunderstorm Wind (45EG)
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A few trees were blown down between Ocala and Belleview. The cost of damage was unknown but estimated for the event to be included in Storm Data. The time of damage was based on radar.

Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

Marion County

2 ESE Anthony

12	1354EST				0	0	1.00K	0.00K	Thunderstorm Wind (45EG)
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A few trees were blown down. The time of damage was based on radar. The cost of damage was unknown but estimated for the event to be included in Storm Data.

Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

Marion County

1 ENE Ocala

12	1430EST				0	1	0.00K	0.00K	Lightning
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A 22 yr old male was struck by lightning in Silver Springs. He was transported to the hospital as a precaution. The time of the event was based on radar.

A few strong storms developed with increased moisture over the area due to a tropical wave and active sea breezes with a weak frontal boundary still draped across the local area.

FLZ025-032-038-124>125

Clay - Coastal Duval - Coastal Nassau - Duval - Flagler - St. Johns

13 15	0000EST				0	0	0.00K	0.00K	Tropical Storm
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St. Johns County

1 NNE St Augustine

13	1612EST 1812EST				0	0	0.00K	0.00K	Flood
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King Street was flooded near Flagler College which required a detour. There was about 4 to 6 inches of standing water in the street near the Bridge of Lions.

Duval County

1 N Donner

13	2053EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A gas station roof off of Mayport Road was damaged by winds in a thunderstorm.

Tropical Storm Julia developed offshore of the Florida Atlantic coast and tracked northward over the local coastal counties Tue Sept. 13th through Wed. Sept. 14th. Gusts to tropical storm force started to impact the local coast and coastal waters the evening of the 12th as the tropical wave that would become Julia moved northward over the Bahamas. Tropical storm force wind gusts generally ranged from 30-48 mph along the Atlantic coast with storm total rainfall greatest along the coast of 6.5 inches to just over 2 inches. Storm surge values of 0.89 to 1.79 ft were reported along the coast and within the St. Johns River basin. Damage across the area included tree damage, some structural damage and flooding especially of normally flood prone areas that received heavy rainfall. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
----------	------	----------------------------	---------------------------	--------------------------	--------------------------------	---------	---------------------------------	-------	--------------------

FLORIDA, Northeastern

Marion County

2 NNE Peoples City

19	2025EST 2225EST				0	0	0.00K	0.00K	Heavy Rain
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Measured rainfall was 3.26 inches this evening.

St. Johns County

2 ESE Palmo

19	2025EST 2225EST				0	0	0.00K	0.00K	Heavy Rain
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Measured rainfall was 3.12 inches near World Golf Village.

Marion County

1 E Eureka

19	2225EST				0	0	0.00K	0.00K	Heavy Rain
----	---------	--	--	--	---	---	-------	-------	------------

Evening rainfall was 3.53 inches.

A mid an upper level shortwave trough moved across the western Florida panhandle with PWATs near 2 inches. The moist and unstable airmass combined with lift from the trough and sea breeze and outflows produced heavy rainfall and a few strong storms.

FLORIDA, Northwest

FLZ015-018-027-115-118-127>128

Coastal Franklin - Coastal Jefferson - Coastal Taylor - Coastal Wakulla - Franklin - Jefferson - Taylor - Wakulla

01	1900EST								
02	0700EST				0	0	3.492M	0.00K	Hurricane

FLZ115-118-127-134

Coastal Dixie - Coastal Franklin - Coastal Jefferson - Coastal Taylor - Coastal Wakulla

01	1900EST								
02	0700EST				0	0	57.141M		Storm Surge/Tide

FLZ014-016-019-026-029-034-114-134

Coastal Dixie - Coastal Gulf - Dixie - Gadsden - Gulf - Lafayette - Leon - Liberty - Madison

01	1900EST								
02	0700EST				0	0	34.094M	0.00K	Tropical Storm

Taylor County

5 SSE Howell Place

01	1907EST	0.01	25	0	0	0.00K	0.00K	Tornado (EF0)
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The media reported on twitter that a Taylor county deputy reported a tornado near Steinhatchee with no damage.

Taylor County

5 ENE Adams Beach

01	1936EST	0.01	25	0	0	0.00K	0.00K	Tornado (EF0)
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The media reported on twitter that a Taylor county deputy reported a tornado near Keaton Beach with no damage.

Taylor County

1 SW Salem

01	2139EST	0.01	25	0	0	0.00K	0.00K	Tornado (EF0)
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A storm chaser reported a tornado on the ground with power flashes visible in rural Taylor county.

Hurricane Hermine impacted the Florida big bend in early September with significant storm surge along the coast and strong winds inland which downed numerous trees and power lines, resulting in extended power outages in Tallahassee. The following inundation values (height above mean higher high water) were estimated along the coast. Panama City Beach: 1.71 ft, Panama City Marina: 1.60 ft, Apalachicola: 3.04 ft, Curtis Mill (US-319): 5.29 ft, Spring Creek Entrance: 5.91 ft, Town of Saint Marks: 5.08 ft, Saint Marks Lighthouse: 6.28 ft, Nutall Rise (Aucilla River): 6.07 ft, Econfina River: 7.17 ft, Spring Warrior Creek: 8.57 ft, Jabo Road (Taylor county): 7.94 ft, Keaton Beach: 7.57 ft, Steinhatchee Entrance: 7.30 ft, Shired Creek (Dixie county): 7.24 ft, Gopher River (Dixie county): 6.19 ft. In addition, storm surge was noted up the Suwannee River past the US-19 gauge at Wilcox, which is more than 20 river miles from the mouth of the river. The Wakulla River at Wakulla Springs also had its 2nd highest crest on record behind Hurricane Dennis (2005) at 7.49 ft NGVD29. There were three tornadoes confirmed, all brief EF0's in Taylor county with no damage reported from them. Rainfall generally ranged from 3-8 with minimal impacts from inland flooding. Inland wind impacts were significant. County by county impacts are as follows.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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FLORIDA, Northwest

In Taylor county, 6 people were rescued from high water related to surge in Steinhatchee. There were also 5 other rescues in the county. Approximately 75 homes or businesses sustained major damage, 60 had minor damage, and 140 were affected. Public assistance damage values were listed \$907,000 for the county. Additional individual assistance damage values were estimated at around \$4,490,000 with \$200,000 assigned to a destroyed structure, \$50,000 assigned to a structure with major damage, \$10,000 assigned to a structure with minor damage, and \$1,000 assigned to a structure that was affected.

In Liberty county, there were sporadic power outages reported with public assistance damage values listed at \$110,748.

In Franklin county, a mandatory evacuation of residents on Saint George Island occurred with the causeway being closed. Surge flooding was reported in Apalachicola, Carrabelle Beach, and Alligator Point. Approximately 27 homes or businesses were destroyed, 43 suffered major damage, 102 suffered minor damage, and 100 others were affected. Public assistance damage values were listed at \$703,872. Additional individual assistance damage values were estimated at about \$8,670,000 based on the numbers of homes and businesses damaged or destroyed.

In Dixie county, mandatory evacuations were ordered. There were 61 homes or businesses that were destroyed, 540 that sustained major damage, 322 that sustained minor damage, and 660 others that were affected. Public assistance damage values were listed at \$3,269,599. Additional individual assistance damage values were estimated at around \$43,080,000 based on the numbers of homes and businesses damaged or destroyed.

In Wakulla county, mandatory evacuations were ordered for special needs and Zone A residents. There were 133 trees down on roadways across the county and 115 power lines down. One home or business was destroyed with 4 sustaining major damage. There were an additional 43 with minor damage and 11 others affected. Approximately 14759 customers lost power in the county. Public assistance damage values were listed at \$1,198,687. Additional individual assistance damage values were estimated at around \$841,000 based on the numbers of homes and businesses damaged or destroyed.

In Madison and Jefferson counties, there were numerous trees and power lines blown down. Public assistance damage values were listed at \$722,908 for Madison county and \$681,697 for Jefferson county.

In Leon county, there were numerous trees and power lines blown down across the county and city of Tallahassee. There were 45 homes or businesses destroyed, 187 suffered major damage, 259 suffered minor damage, and 238 were affected. An estimated 80 percent of the city of Tallahassee lost power with roughly 145,000 homes or businesses without power at the peak of the outage. On day 6 of the power outage, there were still 3685 residents without power. The peak wind gust measured in the county was 64 mph at the FSU campus, but some gusts were not recorded due to the widespread power outages, and the actual peak gust was likely higher than that. Public assistance damage values were listed at \$8,771,036. Additional individual assistance damage values were estimated at about \$21,200,000 based on the numbers of homes and businesses damaged or destroyed.

Bay County

Brannonville

24	1715CST			0	0	0.00K	0.00K	Hail (0.75)
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Washington County

4 SE Gilberts Mill

25	1631CST			0	0	5.00K	0.00K	Thunderstorm Wind (65EG)
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One home sustained significant roof damage from wind on Tumble Creek Road. This was likely a microburst. Damage was estimated.

Scattered thunderstorms developed with a couple of reports of hail and a microburst. Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

FLORIDA, Southern

Palm Beach County

3 SW Boca Raton

19	1510EST			0	0	30.00K	5.00K	Thunderstorm Wind (56MG)
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Multiple reports of downed power lines reported by the Deerfield Beach Sheriff's Office along the west side of I-95 from Hillsboro Beach Boulevard south to beyond SW 10 Street. Areas where damage was reported include: SW 12 Ave and Hillsboro Beach Boulevard, Military Trail and SW 10 Street, and 1350 East Newport Center Drive. Multiple small to medium size trees also were uprooted and fell onto parked cars.

A measured gust of 64 mph was recorded at the WeatherBug station at the Deerfield Beach Fire Station 102 on the east side of I-95 south of SW 10 St at 4:11 PM.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Broward County

2 WNW Lighthouse Pt

19	1528EST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Multiple power lines down near 4400 North Powerline Road in Deerfield Beach. Time based on radar.

Scattered thunderstorms developed along sea breeze collisions and moved east towards the coast. The strongest storms produced small hail and gusty winds to cause power lines and small to medium size trees to be uprooted. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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FLORIDA, Southern

Miami-Dade County

1 W South Miami Hgts

20	1249EST				0	0			Thunderstorm Wind (50MG)
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A thunderstorm wind gust of 58 mph/50 kts was recorded by a Weather Bug mesonet site MMRMS located at the Robert Morgan Ed Center at 149 PM EDT.

Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Miami-Dade County

2 WNW West Miami

20	1300EST				0	1			Lightning
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A lightning strike caused injury to a construction worker in a building just south of Miami International Airport near the intersection of NW 62nd Avenue and 7th Street. Lightning detection networks indicated lightning strikes in the immediate area around 2 PM EDT. Workers in the building were in the process of evacuating due to storms in the area when the incident occurred on the 7th floor of the structure. It wasn't totally clear whether the person was directly or indirectly struck.

Thunderstorms developed along sea breeze collisions, slightly cooler temperatures aloft allow a few thunderstorms to become severe. The strongest storms produced gusty winds and a lightning injury.

Glades County

11 S Tasmania

21	1830EST				0	0			Funnel Cloud
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A report of a funnel cloud in the area of Loblolly Road in Glades County near Muse. The funnel cloud never touched down and lasted approximately 5 minutes.

Typical summertime afternoon showers and thunderstorms, along with weak westerly flow produced a funnel cloud in Glades County.

Palm Beach County

4 SW Wellington

29	1524EST				0	1			Lightning
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A local newspaper reported a man was struck by lightning in Wellington in Palm Beach County. The incident occurred in the 15000 block of Sunnyland Lane. The man was taken to a local trauma center for treatment.

Deep moisture due to light southwesterly flow and summertime heating provide enough energy for thunderstorms to develop. One of these thunderstorms had lightning strike cause injury to a man in Palm Beach County.

Broward County

3 ESE Miramar

30	1303EST				0	0			Hail (1.00)
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A member of the media reported quarter size hail on I-75 in Miramar. There were also multiple reports of pea size hail in surrounding areas.

Collier County

3 WNW Golden Gate

30	1313EST				0	0			Funnel Cloud
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Naples Airport observer reported a funnel cloud 4-5 miles northeast of the airport. The funnel cloud lasted from 213 PM EDT until 221 PM EDT and never touched the ground.

Palm Beach County

7 W Tequesta

30	1408EST				0	0			Hail (0.88)
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A trained spotter called to report nickel size hail falling in Jupiter Farms.

A frontal boundary and plenty of tropical moisture provided enough instability to produce strong thunderstorms in the afternoon. Some of these storms produced hail in Broward and Palm Beach Counties and a funnel cloud in Collier County.

FLORIDA, West Central

Manatee County

1 WSW Anna Maria Comps Sit 01

4 SE Longbeach 02

01	1100EST								
02	1200EST				0	0	350.00K	0.00K	Flood

Heavy rain from Hurricane Hermine fell across Manatee County, with the three day total rainfall ranging from 5 to 10 inches. The highest rain accumulation recorded during the event was 9.82 inches at the CoCoRaHS station 1 mile west of Palmetto. The rain caused widespread street flooding across the eastern half of the county, and rising flood waters also caused numerous homes in Bradenton to be evacuated. Damage from the flooding was roughly estimated to total \$350,000.

Pinellas County

8 WSW Anclote 01

5 WSW Boca Ciega 02

01	1100EST								
02	1200EST				0	0	2.30M	0.00K	Flood

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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FLORIDA, West Central

Heavy rain from Hurricane Hermine fell across Pinellas County, with the three day total rainfall ranging from 6 to 20 inches. The highest rain accumulation recorded during the event was 22.11 inches at the CWOP station 1 mile SSE Baskin. The rain caused widespread street flooding and was reported to have inundated numerous homes and businesses. Damage from the flooding was roughly estimated to total \$2.3 million.

Sarasota County 2 NW Longboat Key 1 SW Siesta Key

01	1100EST								
02	1200EST				0	0	250.00K	0.00K	Flood

Heavy rain from Hurricane Hermine fell across Sarasota County, with the three day total rainfall ranging from 4 to 7 inches. The highest rain accumulation recorded during the event was 6.88 inches at the CWOP station in South Sarasota. The rain caused widespread street flooding across the eastern half of the county, and flood waters caused some residents to evacuate from their homes in Sarasota. Total damage from flooding was roughly estimated at \$250,000.

FLZ043-050-052-139-142-148-151-155-160-162-165-248>249-251-255-265

COASTAL LEE - Coastal Charlotte - Coastal Citrus - Coastal Hernando - Coastal Hillsborough - Coastal Levy - Coastal Manatee - Coastal Pasco - Coastal Sarasota - INLAND HERNANDO - INLAND LEE - INLAND MANATEE - INLAND PASCO - Inland Hillsborough - Pinellas - Polk - Sumter

01	1100EST								
02	1200EST				0	0	3.22M	0.00K	Tropical Storm
01	2000EST				0	0	4.0M	0.00K	Storm Surge/Tide
02	0400EST				0	0	4.0M	0.00K	Storm Surge/Tide

FLZ139-142-148-155-160

COASTAL HERNANDO - Coastal Citrus - Coastal Levy - Coastal Manatee - Coastal Sarasota

01	2000EST								
02	0400EST				0	0	120.15M	0.00K	Storm Surge/Tide

Pasco County Elfers 1 SE Holiday

03	0400EST								
06	0100EST				0	0	89.00M	0.00K	Flood

Heavy rains, mostly from Hurricane Hermine brought the Anclote River at Elfers into major flood stage, cresting at 25.08 feet at 1830EST on the 3rd. The river was in moderate or major flood stage from 0400EST on the 3rd through 0100EST on the 6th. In total, 2,672 properties were impacted, with 1,565 homes with minor damage, 305 homes with major damage, and 7 homes destroyed. In total, damage from the flooding was estimated to be \$89 million.

Hermine formed in the Florida Straits south of Key West on August 28th. It remained a very disorganized tropical depression for a few days before the environment around it gradually became more favorable and it became a tropical storm late in the day on the 30th. Hurricane Hermine made landfall just east of St. Marks, Florida around 0130EDT on September 2 as a Category 1 Hurricane with a minimum central pressure of 982 mb, and maximum sustained winds estimated at 70 knots (80 MPH). Heavy rainfall over West-Central and Southwest Florida began on August 31 and continued through September 2, with as much as 20 inches of rain falling in some locations. River flooding from this heavy rain impacted some areas through September 6th. Storm surge generally ranged from 2 to 7 feet above normal high tide, with the highest storm surge value recorded of 7.5 feet at Cedar Key.

The collective effects of Hurricane Hermine during the period of September 1-6 resulted in just over \$219M in property damage, and no fatalities or injuries across West-Central and Southwest Florida. This damage included \$124.15 million in surge and coastal flood damage, \$91.9 million in inland flooding, and \$3.22 million in wind damage. Totaling up all of the residences and other structures reported damaged by the individual counties, 3440 structures sustained minor damage, 1000, had major damage, and 22 were destroyed.

The Sunshine Skyway Bridge across the mouth of the Tampa Bay was closed for just over 24 hours beginning on the afternoon of the 1st due to the high wind speeds. Numerous power outages were also reported, with around 39,000 people without power in Pinellas and Hillsborough County on the evening of the 1st.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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FLORIDA, West Central

Hillsborough County

3 SSE Coronet

26	1455EST				0	0	0.00K	0.00K	Hail (0.88)
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Nickel sized hail and very gusty winds were reported by a caller along County Line Road.

Polk County

1 ENE Willow Oak

26	1508EST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A mesonet station near Mulberry measured a thunderstorm wind gust of 52 knots.

Cool temperatures aloft combined with afternoon sea breeze convection set the stage for strong to severe afternoon thunderstorms across central Florida. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

FLORIDA, West Panhandle

Santa Rosa County

3 NNE Woodlawn Beach

24	1525CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter size hail reported on Burgren Rd.

Santa Rosa County

1 N Pace

24	1609CST				0	0	0.00K	0.00K	Hail (1.00)
----	---------	--	--	--	---	---	-------	-------	-------------

Quarter size hail reported on W. Spencer Field Road and Norris Road.

Santa Rosa County

1 N Pace

24	1609CST				0	0	5.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm wind gust knocked down power lines and a traffic light near the intersection of W. Spencer Field Road and Norris Road.

Isolated pulse severe thunderstorms produced two instances of quarter size hail in the western Florida panhandle, along with one report of minor wind damage. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

GEORGIA, East Central

GAZ065-077

Burke - Richmond

02	1100EST				0	0	35.0K	0.00K	High Wind
	1700EST								

Tropical Storm Hermine impacted the region, especially on the 2nd with heavy rain and strong gusty winds. The center of TS Hermine tracked to the NE across S and SE GA during the morning of Sept. 2nd, and across the coastal plain of SC during the afternoon and evening of the 2nd.

Richmond County

3 W Augusta Daniel Arprt

11	1545EST				0	0			Hail (0.75)
----	---------	--	--	--	---	---	--	--	-------------

Nickel to dime size hail fell along Wrightsboro Road near Augusta Mall.

Richmond County

4 W Augusta Daniel Arprt

11	1545EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

Reported a large limb or small pine tree fell on a home along Belair Road causing roof damage.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Burke County

2 NE Midville

11	1725EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Reported a large tree down on a home northeast of the town of Midville.

Storms associated with a stationary front produced small hail and damaging winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

GEORGIA, Lower

**GAZ132>136-149>
152-154-163>166**

Appling - Atkinson - Bacon - Brantley - Charlton - Clinch - Coastal Camden - Coastal Glynn - Coffee - Inland Camden - Jeff Davis - Pierce - Ware - Wayne

01	0700EST				0	1	0.00K	0.00K	Tropical Storm
03									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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GEORGIA, Lower

Hurricane Hermine impacted northeast Florida and Southeast Georgia during the afternoon of Sept. 1st through Sept. 2nd as the storm tracked inland near Cedar Key Florida as a Category 1 hurricane Thursday night, then tracked northward across SE Georgia through early Friday morning. The left front quadrant of the storm impacted the local area as well as widespread rainfall with wind gusts generally around 35-55 mph in squalls. Storm total rainfall (1200 UTC Sep. 1st through 1200 UTC Sep. 3rd) was 4-6 inches across the Suwannee River Valley to 1-3 inches toward the Atlantic coast. Storm surge values were 0.5 ft to 2 ft along the coast and within the St. Johns River basin. For county specific impacts, please read county specifics in the Storm Data report.

GAZ154

Coastal Glynn

13	0000EST				0	0	0.00K	0.00K	Tropical Storm
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15
Tropical Storm Julia developed offshore of the Florida Atlantic coast and tracked northward over the local coastal counties Tue Sept. 13th through Wed. Sept. 14th. Gusts to tropical storm force started to impact the local coast and coastal waters the evening of the 12th as the tropical wave that would become Julia moved northward over the Bahamas. Tropical storm force wind gusts generally ranged from 30-48 mph along the Atlantic coast with storm total rainfall greatest along the coast of 6.5 inches to just over 2 inches. Storm surge values of 0.89 to 1.79 ft were reported along the coast and within the St. Johns River basin. Damage across the area included tree damage, some structural damage and flooding especially of normally flood prone areas that received heavy rainfall.

GEORGIA, North and Central

GAZ086-097-106-108>113

Crisp - Dodge - Emanuel - Laurens - Montgomery - Telfair - Toombs - Wheeler - Wilcox

02	0200EST				0	0	71.0K		Tropical Storm
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1300EST
On August 28th a tropical depression formed in the Florida Straits, drifting slowly west into the Gulf of Mexico. During the afternoon of August 31st this tropical depression developed into Tropical Storm Hermine over the central Gulf of Mexico and began turning to the northeast. By the late afternoon of September 1st Hermine reached hurricane strength as it approached the coast of the Florida Big Bend region in the northeast Gulf of Mexico. Hurricane Hermine moved onshore across northwest Florida during the evening of September 1st and swept into southern Georgia. Through the morning of September 2nd and into the afternoon, now Tropical Storm, Hermine continued to accelerate to the northeast bringing damaging, tropical storm force winds and heavy rain to portions of central Georgia.

Lamar County 1 NNE Lamont

12	1415EST				0	0	3.00K		Thunderstorm Wind (50EG)
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The Lamar County 911 center reported power lines blown down at the Fredonia Church along Brent Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Rockdale County 3 N Camp Smyrna

12	1445EST				0	0	0.10K		Thunderstorm Wind (40EG)
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1450EST
The Rockdale County Emergency Manager reported a large limb blown out of a tree onto the power lines at the intersection of Klondike Road and McDaniel Mill Road.

Note: The estimated wind gust of 40 knots is equivalent to 46 mph.

Bibb County 3 NNW Skipperton

12	1630EST				0	0	30.00K		Thunderstorm Wind (55EG)
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1645EST
The Bibb County Emergency Manager reported several trees blown down in the vicinity of Bloomfield Road and Reynolds Drive. A few of these trees fell on homes. The fire station at the corner of Bloomfield Road and Rocky Creek Road had part of its metal roof peeled off.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Floyd County 1 SE Silver Creek

12	1832EST				0	0			Hail (1.00)
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The public reported quarter size hail in the Silver Creek area.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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GEORGIA, North and Central

Gilmer County

2 SE Licklog

12	1955EST 2010EST				0	0	1.00K		Thunderstorm Wind (50EG)
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The Gilmer County Emergency Manager reported a few trees blown down along Highway 52 around the Dawson County line.

Ample moisture, moderate instability, strong daytime heating and a weak stationary front combined to produce isolated severe thunderstorms across portions of north and central Georgia during the afternoon and evening. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Madison County

1 SSE Velpoe

1 SE Danielsville

19	1820EST 1835EST				0	0	5.00K		Thunderstorm Wind (50EG)
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The Madison County 911 center reported several trees blown down across the Danielsville area.

A very moist and moderately unstable air mass combined with strong daytime heating, a weak upper-level trough and a stalled front to produce an isolated severe thunderstorm in north Georgia during the early evening. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

GEORGIA, Northeast

GAZ018-026-028-029

Elbert - Franklin - Hart - Stephens

01	0000EST								
30	2359EST				0	0	0.00K		Drought

Drought conditions continued to deteriorate across the northeast Georgia Piedmont during September. Most locations within the drought stricken area saw rainfall of only a tenth of an inch or less in September. The extremely dry weather combined with continued abnormally hot temperatures to produce significant impacts to agricultural interests, mainly to unirrigated corn crops and hay cutting operations. Stream flows and reservoir levels were well below normal across the area, and voluntary water restrictions remained in place in some communities.

GEORGIA, Southeast

GAZ114

Tattnall

02	0200EST 1600EST				0	0		0.00K	Tropical Storm
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Liberty County

4 SE Retreat

3 E Riceboro

02	0250EST 0259EST	4.84	650	0	0			0.00K	Tornado (EF1)
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A National Weather Service survey team confirmed a tornado near Riceboro. The tornado touched down just north of Blackbeard Creek, about one half of a mile east of Interstate 95. The tornado moved north at 30 to 35 miles per hour toward the remote and heavily wooded area of South Hampton Island, and then continued north across North Hampton Island. Overall, it was estimated that a few thousand trees were snapped or uprooted across the region. The worst damage occurred across portions of North Hampton Island where many large oak and pine trees were snapped or had large limbs removed. Additionally, minor damage occurred to a few structures throughout the property due to trees falling on them. The tornado dissipated just north of Ferry Road on North Hampton Island.

GAZ088-099-115-118-138>139

Candler - Coastal Chatham - Coastal Liberty - Evans - Inland Chatham - Inland Liberty - Screven

02	0300EST 1800EST				0	0		0.00K	Tropical Storm
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Chatham County

3 ESE Wilshire

2 S Parkersburg

02	0412EST 0415EST	1.38	350	0	0			0.00K	Tornado (EF1)
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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GEORGIA, Southeast

A National Weather Service survey team confirmed a tornado near Skidaway Island. The tornado touched down in Romerly Marsh of Skidaway Island and was associated with the rainbands from Tropical Storm Hermine. The tornado moved northward into the residential area known as The Landings. More than 20 homes sustained roof damage from large trees falling on them after either being snapped or uprooted. One home in The Landings lost about one half of it's roof from wind pushing up on a large gable structure. Several other homes sustained minor to moderate roof damage. Hundreds of large pine and oak trees were either snapped or uprooted from the winds. The storm moved north at approximately 30 to 35 miles per hour and dissipated over the northern portion of The Landings, near the intersection of N Landings Way and McWhorter Drive.

GAZ119

Coastal Chatham

02	1306EST								
	1312EST				0	0	0.00K	0.00K	Storm Surge/Tide

Hermine developed as a Tropical Depression near the north coast of Cuba on August 28th. The depression then tracked westward into the central Gulf of Mexico and strengthened into a Tropical Storm. Hermine then tracked generally northeastward and strengthened into a Hurricane. According to the National Hurricane Center, Hermine made landfall as a Category 1 Hurricane at 1:30 am EDT on September 2nd along the Florida Big Bend coast just east of St. Marks, Florida, near the Wakulla-Jefferson County line. Hermine continued on a northeastward track across the Florida panhandle and into southeast Georgia and southeast South Carolina, gradually weakening back to a Tropical Storm. Across southeast Georgia and southeast South Carolina, the main impacts from Hermine included heavy rain and wind damage in the form of scattered to numerous trees being blown down. Storm total rainfall amounts generally ranged from 2 to 8 inches across the region, including a daily record rainfall of 2.32 inches at the Charleston International Airport. The wind damage produced numerous power outages and even some damage to homes and other structures throughout the area. Hermine spawned 2 tornadoes, and produced a 1.5 to 2.5 foot storm surge along the coast, though no flooding was reported.

GEORGIA, Southwest

GAZ125>131-143> 148-155>161

Baker - Ben Hill - Berrien - Brooks - Colquitt - Cook - Decatur - Dougherty - Grady - Irwin - Lanier - Lee - Lowndes - Miller - Mitchell - Seminole - Thomas - Tift - Turner - Worth

02	0000EST								
	0700EST				0	0	2.407M	3.0M	Tropical Storm

Hurricane Hermine impacted southwest Georgia in early September with significant inland wind gusts which downed numerous trees and power lines. Rainfall generally ranged from 3-8 with minimal impacts from inland flooding. County by county impacts are as follows.

In Cook county, there were numerous trees and power lines blown down. A tree fell across Highway 41 at Dardon Road, causing a traffic crash which resulted in 1 injury. Total damage cost was estimated.

In Grady county, 55-60 trees were blown down across roadways. Approximately 2800 customers lost power. The main damage was across the southeast part of the county from the Spence area to Whigham. Total damage cost was estimated.

In Thomas county, 70 trees were blown down across the county. Total damage cost was estimated.

In Colquitt county, 125 trees were blown down across the county over roads. One home sustained tree damage. Power outages occurred across much of the county. Total damage cost was estimated.

In Dougherty county, two roofs were damaged by fallen limbs. One tree was blown down which did not cause damage. There were spotty power outages with about 200 customers losing power. Total damage cost was estimated.

In Lanier county, there were numerous trees and power lines blown down, especially in the pecan orchards. Total damage cost was estimated.

In Mitchell county, 26 trees were blown down in roadways including 7 in Pelham, 5 in Camilla, and 14 elsewhere in the county. There were minimal power outages. Total damage cost was estimated.

In Worth county, there were several trees downed across the county. Trees fell across Wynn Drive and Wa Patterson Road. Branches fell on a vehicle on Highway 256 west of Deerland Road. Total damage cost was estimated.

In Tift county, there were widespread trees and power lines downed on roadways, mainly on the south and west side of the county. Highway 41S at Adcock Road was closed due to a tree down. U.S Highway 125N was also closed due to a downed tree. Total damage cost was estimated.

In Berrien county, several trees and power lines were blown down. Total damage cost was estimated.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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GEORGIA, Southwest

In Lowndes county, numerous trees and power lines were blown down including hundreds in the city of Valdosta. About 1,000 pecan trees were blown down with estimated damage to the pecan crop at around \$3 million. Approximately 90 roads were closed mainly due to downed power lines. Property damage estimates are around \$1 million. About 31,000 county customers lost power. Up to 117,000 gallons of sewage spilled due to the sewer system being overwhelmed by heavy rain.

Mitchell County

Baconton

12	1955EST				0	0	10.00K	0.00K	Thunderstorm Wind (40EG)
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One tree fell on a home in Baconton. A picture posted on social media shows that the trunk of the tree split and may have been rotted. No other trees down or wind damage was reported in the area. Damage was estimated.

Scattered thunderstorms developed in the afternoon with impacts to trees and power lines. One tree fell on a home. Note: The estimated wind gust of 40 knots is equivalent to 46 mph.

HAWAII

Hawaii County

1 ENE Akaka Falls St Park 1 N Naalehu

01	0000HST				0	0	0.00K	0.00K	Heavy Rain
	0252HST								

HIZ002-008-012-017-020-024>025

Big Island North and East - Kauai Windward - Maui Windward West - Molokai Windward - Oahu Koolau - Olomana - South Big Island - Windward Haleakala

01	0000HST								
02	1800HST				0	0	0.00K	0.00K	High Surf

A swell from Tropical Cyclone Madeline generated surf of 8 to 25 feet along the east-facing shores of the Big Island of Hawaii, Maui, Molokai, Oahu, and Kauai, with the highest surf over eastern parts of the island chain. The system also produced gusty winds and heavy showers over parts of the Big Island. Power outages and minor flooding were the result. No significant property damage or injuries were reported, however. This episode is continued from the end of August.

HIZ019-021

Leeward Haleakala - Maui Central Valley

01	0000HST								
30	2359HST				0	0	0.00K	0.00K	Drought

Although much of Maui was deluged with heavy downpours and thunderstorms in the middle of September, that portion of leeward East Maui that had been drought-stricken remained so, in the D2 category of severe drought, as the rains missed that area.

Hawaii County

6 S Kona Village Resort 4 ESE Honaunau National Pk

02	0136HST				0	0	0.00K	0.00K	Heavy Rain
	0312HST								

A swell from Tropical Cyclone Madeline generated surf of 8 to 25 feet along the east-facing shores of the Big Island of Hawaii, Maui, Molokai, Oahu, and Kauai, with the highest surf over eastern parts of the island chain. The system also produced gusty winds and heavy showers over parts of the Big Island. Power outages and minor flooding were the result. No significant property damage or injuries were reported, however. This episode is continued from the end of August.

HIZ002-008-012>013-017-020-024>025

Big Island North and East - Kauai Windward - Maui Windward West - Molokai Leeward - Molokai Windward - Oahu Koolau - Olomana - South Big Island - Windward Haleakala

03	0000HST								
04	0100HST				0	0	0.00K	0.00K	High Surf

Hawaii County

14 SE Waikii 1 E Waikoloa Beach Resort

03	1341HST				0	0	0.00K	0.00K	Heavy Rain
	1957HST								

Maui County

Huelo 1 NNW Kaupo

03	1752HST								
04	0413HST				0	0	0.00K	0.00K	Heavy Rain

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
HAWAII									
Maui County									
1 NNE Kepuhi	04	1306HST							
2 SSE Hoolehua		1501HST			0	0	0.00K	0.00K	Heavy Rain
Honolulu County									
1 WSW Waialua	04	1434HST							
1 SSE Pearl City		1724HST			0	0	0.00K	0.00K	Heavy Rain
Hawaii County									
2 W Kamuela	04	1455HST							
4 E Honaunau National Pk		1738HST			0	0	0.00K	0.00K	Heavy Rain
<p>As Hurricane Lester passed to the north of the Aloha State, its swell train boosted surf on east-facing shores of Kauai, Oahu, Molokai, Maui, and the Big Island of Hawaii. Surf heights reached 10 to 20 feet. Lifeguards were busy with providing advice to beach-goers and rescuing those who encountered problems in the water. There were no reports of serious property damage or injuries, however.</p> <p>Moisture trailing to the southeast of Lester, in combination with local instability, triggered heavy showers and isolated thunderstorms over parts of the island chain. The rain produced small stream and drainage ditch flooding, and ponding on roadways. No significant injuries or property damage were reported.</p>									
HIZ003									
Kauai Leeward									
	06	0200HST							
	30	2359HST			0	0	0.00K	0.00K	Drought
<p>With little rainfall in leeward Kauai in September, a portion of the isle deteriorated to the D2 category of severe drought.</p>									
Maui County									
1 SSW Puukoolii	12	1816HST							
2 SSW Hana		2346HST			0	0	0.00K	0.00K	Heavy Rain
Maui County									
1 W Pauwela	13	0853HST							
1 WSW Koali		1905HST			0	0	0.00K	0.00K	Heavy Rain
Honolulu County									
3 W Kaaawa	13	1244HST							
1 NNE Hahaione Valley		1442HST			0	0	0.00K	0.00K	Heavy Rain
Hawaii County									
2 W Hakalau	13	1409HST							
6 WSW Naalehu		1705HST			0	0	0.00K	0.00K	Heavy Rain
Maui County									
2 W Wailuku Heights	13	1914HST							
		2114HST			0	0	0.00K	0.00K	Flash Flood
<p>Flash flood waters along the Wailuku River inundated the Iao Valley. There was significant damage at the Iao Valley State Park and Kepaniwai Heritage Gardens County Park. Also, a debris flow and flooding occurred along Honoapiilani Highway between Maalaea and Lahaina.</p>									
Hawaii County									
1 W Papaikou	13	1921HST							
4 NNE Pahala		2147HST			0	0	0.00K	0.00K	Heavy Rain
Honolulu County									
1 NNE Schofield Barracks	13	2059HST							
1 E Hawaii Kai		2352HST			0	0	0.00K	0.00K	Heavy Rain

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
HAWAII									
Hawaii County Kamuela Kailua Kona	13	2130HST 2328HST			0	0	0.00K	0.00K	Heavy Rain
Hawaii County 3 SSW Papaikou 6 WSW Volcano	14	0411HST 0539HST			0	0	0.00K	0.00K	Heavy Rain
Maui County 1 SSE Halawa Valley 2 W Molokai Airport	14	1014HST 1312HST			0	0	0.00K	0.00K	Heavy Rain
Maui County 1 NW Koele 1 WSW Manele Harbor	14	1104HST 1353HST			0	0	0.00K	0.00K	Heavy Rain
Maui County 3 W Nuu	14	1300HST 1445HST			0	0	0.00K	0.00K	Flash Flood
Streams were overflowing along Piilani Highway on Maui between mile markers 20 and 30, causing debris flows.									
Hawaii County 2 W Hakalau 3 SW Pahala	14	1636HST 2111HST			0	0	0.00K	0.00K	Heavy Rain
Hawaii County 99 SE Kipahulu	14	2120HST 2330HST			0	0	0.00K	0.00K	Flash Flood
South Kopua Road was closed in Mountain View on the Big Island of Hawaii because of high water.									
Hawaii County 2 NE Mountain View 3 SSW Volcano	15	0323HST 0558HST			0	0	0.00K	0.00K	Heavy Rain
Maui County 1 WSW Keanae	15	0425HST 0523HST			0	0	0.00K	0.00K	Flash Flood
Part of the Hana Highway near Keanae in windward East Maui was closed due to a debris flow and high water.									
Maui County 2 SSE Halawa Valley 2 SSW Papohaku Beach Park	15	0425HST 0524HST			0	0	0.00K	0.00K	Heavy Rain
Honolulu County 1 N Schofield Barracks 1 SSE Kailua	15	0502HST 0753HST			0	0	0.00K	0.00K	Heavy Rain
Maui County 2 W Wailuku Heights	16	1916HST 2158HST			0	0	0.00K	0.00K	Flash Flood

An emergency manager reported two homes in Iao Valley inundated with water overflowing from the Wailuku River (Iao Stream). The waterway had been rerouted by the extreme downpours that had occurred, and this was likely causing the problem of water getting into the residents' homes.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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HAWAII

As a weak tropical disturbance with abundant low-level moisture moved through the islands, an upper low moved in from the northwest. This combination generated heavy showers and thunderstorms, which then resulted in flash flooding over Maui, especially in the Iao Valley. Other parts of the state received heavy rainfall as well. An initial estimate of damages was about \$15 million; though this was, apparently, for public costs. No estimate was available for private losses. No serious injuries were reported, though several residents from Iao Valley had to be rescued because of flood waters.

Maui County

Paia	23	0207HST							
1 NW Hamoa		1053HST			0	0	0.00K	0.00K	Heavy Rain

Hawaii County

4 S Kona Village Resort	24	1950HST							
2 NNE Keauhou		2109HST			0	0	0.00K	0.00K	Heavy Rain

As remnants of Tropical Cyclone Orlene moved north of the island chain, moisture to the south and southeast of the feature produced heavy showers over upslope portions of East Maui, and also contributed to evening convection in leeward portions of the Big Island of Hawaii. The rain caused small stream and drainage ditch flooding, and ponding on roadways. There were no reports of serious property damage or injuries.

Hawaii County

4 ESE Honaunau National Pk	30	2226HST							
1 W Holualoa		2359HST			0	0	0.00K	0.00K	Heavy Rain

Late evening heavy rain affected parts of leeward Big Island. The showers generated ponding on roadways, and small stream and drainage ditch flooding. No significant injuries or property damage were reported.

Hawaii County

1 ENE Akaka Falls St Park	01	0000HST							
1 N Naalehu		0252HST			0	0	0.00K	0.00K	Heavy Rain

HIZ002-008-012-017-020-024>025

Big Island North and East - Kauai Windward - Maui Windward West - Molokai Windward - Oahu Koolau - Olomana - South Big Island - Windward Haleakala

01	0000HST								
02	1800HST				0	0	0.00K	0.00K	High Surf

A swell from Tropical Cyclone Madeline generated surf of 8 to 25 feet along the east-facing shores of the Big Island of Hawaii, Maui, Molokai, Oahu, and Kauai, with the highest surf over eastern parts of the island chain. The system also produced gusty winds and heavy showers over parts of the Big Island. Power outages and minor flooding were the result. No significant property damage or injuries were reported, however. This episode is continued from the end of August.

HIZ019-021

Leeward Haleakala - Maui Central Valley

01	0000HST								
30	2359HST				0	0	0.00K	0.00K	Drought

Although much of Maui was deluged with heavy downpours and thunderstorms in the middle of September, that portion of leeward East Maui that had been drought-stricken remained so, in the D2 category of severe drought, as the rains missed that area.

Hawaii County

6 S Kona Village Resort	02	0136HST							
4 ESE Honaunau National Pk		0312HST			0	0	0.00K	0.00K	Heavy Rain

A swell from Tropical Cyclone Madeline generated surf of 8 to 25 feet along the east-facing shores of the Big Island of Hawaii, Maui, Molokai, Oahu, and Kauai, with the highest surf over eastern parts of the island chain. The system also produced gusty winds and heavy showers over parts of the Big Island. Power outages and minor flooding were the result. No significant property damage or injuries were reported, however. This episode is continued from the end of August.

HIZ002-008-012>013-017-020-024>025

Big Island North and East - Kauai Windward - Maui Windward West - Molokai Leeward - Molokai Windward - Oahu Koolau - Olomana - South Big Island - Windward Haleakala

03	0000HST								
04	0100HST				0	0	0.00K	0.00K	High Surf

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
HAWAII									
Hawaii County									
14 SE Waikii	03	1341HST							
1 E Waikoloa Beach Resort		1957HST			0	0	0.00K	0.00K	Heavy Rain
Maui County									
Huelo	03	1752HST							
1 NNW Kaupo	04	0413HST			0	0	0.00K	0.00K	Heavy Rain
Maui County									
1 NNE Kepuhi	04	1306HST							
2 SSE Hoolehua		1501HST			0	0	0.00K	0.00K	Heavy Rain
Honolulu County									
1 WSW Waialua	04	1434HST							
1 SSE Pearl City		1724HST			0	0	0.00K	0.00K	Heavy Rain
Hawaii County									
2 W Kamuela	04	1455HST							
4 E Honaunau National Pk		1738HST			0	0	0.00K	0.00K	Heavy Rain

As Hurricane Lester passed to the north of the Aloha State, its swell train boosted surf on east-facing shores of Kauai, Oahu, Molokai, Maui, and the Big Island of Hawaii. Surf heights reached 10 to 20 feet. Lifeguards were busy with providing advice to beach-goers and rescuing those who encountered problems in the water. There were no reports of serious property damage or injuries, however.

Moisture trailing to the southeast of Lester, in combination with local instability, triggered heavy showers and isolated thunderstorms over parts of the island chain. The rain produced small stream and drainage ditch flooding, and ponding on roadways. No significant injuries or property damage were reported.

HIZ003

Kauai Leeward

06	0200HST								
30	2359HST				0	0	0.00K	0.00K	Drought

With little rainfall in leeward Kauai in September, a portion of the isle deteriorated to the D2 category of severe drought.

Maui County

1 SSW Puukoolii	12	1816HST							
2 SSW Hana		2346HST			0	0	0.00K	0.00K	Heavy Rain

Maui County

1 W Pauwela	13	0853HST							
1 WSW Koali		1905HST			0	0	0.00K	0.00K	Heavy Rain

Honolulu County

3 W Kaaawa	13	1244HST							
1 NNE Hahaione Valley		1442HST			0	0	0.00K	0.00K	Heavy Rain

Hawaii County

2 W Hakalau	13	1409HST							
6 WSW Naalehu		1705HST			0	0	0.00K	0.00K	Heavy Rain

Maui County

2 W Wailuku Heights	13	1914HST							
		2114HST			0	0	0.00K	0.00K	Flash Flood

Flash flood waters along the Wailuku River inundated the Iao Valley. There was significant damage at the Iao Valley State Park and Kepaniwai Heritage Gardens County Park. Also, a debris flow and flooding occurred along Honoapiilani Highway between Maalaea and Lahaina.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
HAWAII									
Hawaii County 1 W Papaikou 4 NNE Pahala	13	1921HST 2147HST			0	0	0.00K	0.00K	Heavy Rain
Honolulu County 1 NNE Schofield Barracks 1 E Hawaii Kai	13	2059HST 2352HST			0	0	0.00K	0.00K	Heavy Rain
Hawaii County Kamuela Kailua Kona	13	2130HST 2328HST			0	0	0.00K	0.00K	Heavy Rain
Hawaii County 3 SSW Papaikou 6 WSW Volcano	14	0411HST 0539HST			0	0	0.00K	0.00K	Heavy Rain
Maui County 1 SSE Halawa Valley 2 W Molokai Airport	14	1014HST 1312HST			0	0	0.00K	0.00K	Heavy Rain
Maui County 1 NW Koele 1 WSW Manele Harbor	14	1104HST 1353HST			0	0	0.00K	0.00K	Heavy Rain
Maui County 3 W Nuu	14	1300HST 1445HST			0	0	0.00K	0.00K	Flash Flood
Streams were overflowing along Piilani Highway on Maui between mile markers 20 and 30, causing debris flows.									
Hawaii County 2 W Hakalau 3 SW Pahala	14	1636HST 2111HST			0	0	0.00K	0.00K	Heavy Rain
Hawaii County 99 SE Kipahulu	14	2120HST 2330HST			0	0	0.00K	0.00K	Flash Flood
South Kopua Road was closed in Mountain View on the Big Island of Hawaii because of high water.									
Hawaii County 2 NE Mountain View 3 SSW Volcano	15	0323HST 0558HST			0	0	0.00K	0.00K	Heavy Rain
Maui County 1 WSW Keanae	15	0425HST 0523HST			0	0	0.00K	0.00K	Flash Flood
Part of the Hana Highway near Keanae in windward East Maui was closed due to a debris flow and high water.									
Maui County 2 SSE Halawa Valley 2 SSW Papohaku Beach Park	15	0425HST 0524HST			0	0	0.00K	0.00K	Heavy Rain
Honolulu County 1 N Schofield Barracks 1 SSE Kailua	15	0502HST 0753HST			0	0	0.00K	0.00K	Heavy Rain

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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HAWAII

Maui County

2 W Wailuku Heights	16	1916HST 2158HST			0	0	0.00K	0.00K	Flash Flood
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An emergency manager reported two homes in Iao Valley inundated with water overflowing from the Wailuku River (Iao Stream). The waterway had been rerouted by the extreme downpours that had occurred, and this was likely causing the problem of water getting into the residents' homes.

As a weak tropical disturbance with abundant low-level moisture moved through the islands, an upper low moved in from the northwest. This combination generated heavy showers and thunderstorms, which then resulted in flash flooding over Maui, especially in the Iao Valley. Other parts of the state received heavy rainfall as well. An initial estimate of damages was about \$15 million; though this was, apparently, for public costs. No estimate was available for private losses. No serious injuries were reported, though several residents from Iao Valley had to be rescued because of flood waters.

Maui County

Paia 1 NW Hamoa	23	0207HST 1053HST			0	0	0.00K	0.00K	Heavy Rain
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Hawaii County

4 S Kona Village Resort 2 NNE Keauhou	24	1950HST 2109HST			0	0	0.00K	0.00K	Heavy Rain
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As remnants of Tropical Cyclone Orlene moved north of the island chain, moisture to the south and southeast of the feature produced heavy showers over upslope portions of East Maui, and also contributed to evening convection in leeward portions of the Big Island of Hawaii. The rain caused small stream and drainage ditch flooding, and ponding on roadways. There were no reports of serious property damage or injuries.

Hawaii County

4 ESE Honaunau National Pk 1 W Holualoa	30	2226HST 2359HST			0	0	0.00K	0.00K	Heavy Rain
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Late evening heavy rain affected parts of leeward Big Island. The showers generated ponding on roadways, and small stream and drainage ditch flooding. No significant injuries or property damage were reported.

IDAHO, Northwest

IDZ001-004

Central Panhandle Mountains - Northern Panhandle

01 19	0000PST			0	0	0.00K	0.00K	Wildfire
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The Pegleg fire was a lightning caused fire, growing only to 16 acres, yet lingered in the denser forested areas of Shoshone County in the Central Panhandle Mountains of North Idaho.

Boundary County

1 NW Bonners Ferry	30	1416PST 1426PST			0	0	0.00K	0.00K	Hail (0.75)
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A trained weather spotter reported 0.75 inch hail one mile northwest of Bonners Ferry, Idaho.

Boundary County

3 NNW Bonners Ferry	30	1419PST 1429PST			0	0	0.00K	0.00K	Hail (0.88)
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A member of the public reported 0.88 inch hail 3 miles north northwest of Bonners Ferry, Idaho.

A southerly flow of moisture was favorable for thunderstorm development. One such thunderstorm developed and produced hail just under one inch in size near Bonners Ferry, Idaho on September 30, 2016.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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IDAHO, Southeast

IDZ022-023

Caribou Highlands - South Central Highlands

01	0001MST								
24	1500MST				0	0	0.00K	0.00K	Wildfire

A 773 acre wildfire began on August 29th due to lightning in Caribou County and continued through much of September. It was in open land and was visible from Highway 34.

Bannock County 1 E Chubbuck

01	1502MST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
	1515MST								

A 60 mph thunderstorm wind gust in Chubbuck.

A 60 mph thunderstorm wind gust in Chubbuck. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

IDZ020

Upper Snake River Plain

11	1500MST				0	0	2.0K	0.00K	Dust Storm
	1800MST								

Vehicle accident on US Highway 26 east of Ririe due to reduced visibility in blowing dust due to high winds.

Lincoln County 1 ENE Richfield

13	2015MST				0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
	2025MST								

A 62 mph wind gust measured by Richfield.

A 62 mph wind gust measured by Richfield. Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Oneida County Malad City

14	1502MST				0	0	0.00K	0.00K	Funnel Cloud
	1515MST								

A funnel cloud was photographed near Malad on September 14th.

A funnel cloud was photographed near Malad on September 14th.

Bannock County 3 NE North Pocatello

14	1700MST				0	0	0.20K	0.00K	Thunderstorm Wind (56EG)
	1720MST								

A large tree was blown down by thunderstorm winds on September 14th at Highland Golf Course in Pocatello.

A large tree was blown down by thunderstorm winds on September 14th at Highland Golf Course in Pocatello. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

IDAHO, Southwest

Twin Falls County Murtaugh 2 NNE Milner

04	1450MST				0	0	0.00K	0.00K	Funnel Cloud
	1500MST								

Social media reported and posted a photo of a funnel cloud near Murtaugh, Idaho around 4:00 PM MDT. Strong, gusty winds were also reported around the Twin Falls area.

A funnel cloud was reported near Murtaugh, Idaho around 4:00 PM MDT. Strong, gusty winds were reported around the Twin Falls area.

ILLINOIS, Central

Knox County 2 WNW Abingdon

07	1530CST				0	0	100.00K	0.00K	Thunderstorm Wind (78EG)
	1540CST								

A downburst with estimated winds of 80-90mph created considerable damage at several farms near the town of Abingdon. A silage wagon was flipped over, the roof of a livestock barn was ripped off, and a machine shed was destroyed at Malone Farms. Numerous trees were blown down around the area, and neighboring farm buildings were damaged as well.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ILLINOIS, Central

An approaching cold front triggered scattered thunderstorms across west-central Illinois during the afternoon of September 7th. While widespread severe weather did not occur, one cell produced a downburst with estimated winds of 80-90mph across southwestern Knox County near the town of Abingdon. Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

Vermilion County 2 SW Catlin

09	1713CST 1714CST	0.1	10	0	0	0.00K	10.00K	Tornado (EF0)
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A tornado briefly touched down in a field 2 miles southwest of Catlin at 7:13pm CDT before quickly dissipating by 7:14pm CDT. Minor crop damage was reported.

Champaign County Block 2 SSE Homer

09	1731CST 1750CST	6.26	75	0	0	800.00K	100.00K	Tornado (EF2)
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A tornado touched down in a field 3.6 miles south of Sidney at 6:31pm CDT. The tornado tracked northeastward for more than two miles damaging corn and soybean crops before destroying a garage and a large shed. A car and large RV were also damaged. A barn was destroyed less than one mile away before the tornado moved into a cemetery, where it damaged several headstones and two trees. The most extensive damage occurred at a farmstead further northeast, where three outbuildings were destroyed and a house was pushed off its foundation causing it to collapse. The tornado then dissipated in a field 2.5 miles south of Homer at 6:50pm CDT.

Vermilion County 3 WNW (DNV)Vermilion Apt D09

09	1734CST 1743CST	1.63	50	0	0	50.00K	0.00K	Tornado (EF1)
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A tornado touched down 3.6 miles southwest of Bismarck at 6:34pm CDT, then tracked northeastward for 1.6 miles mostly across open fields. The tornado damaged a few trees, took shingles off the roof of a house, and blew a camper over before dissipating 2.3 miles south-southwest of Bismarck at 6:43pm CDT.

Clark County 1 SSW Casey

09	1744CST 1745CST	0.1	10	0	0	0.00K	10.00K	Tornado (EF0)
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A tornado briefly touched down in a field 1.4 miles south of Casey at 6:44pm CDT before quickly dissipating by 6:45pm CDT. Minor crop damage occurred.

Scattered severe thunderstorms developed along a warm front extending across central Illinois during the late afternoon and evening of September 9th. A Mesoscale Convective Vortex (MCV) associated with a complex of thunderstorms that had developed the previous night across Kansas interacted with the boundary to greatly enhance low-level wind shear across east-central Illinois. As new thunderstorm cells developed and moved into this area of stronger shear, many of them began to rotate. Four tornadoes touched down across portions of Champaign, Vermilion, and Clark counties between 6:30pm CDT and 7:15pm CDT, including an EF-2 tornado that produced considerable damage across southern Champaign County.

Knox County Henderson

21	1145CST 1150CST			0	0	18.00K	0.00K	Thunderstorm Wind (52EG)
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Several 1-foot diameter trees were blown down and shingles were torn off a roof in Henderson.

A large complex of nocturnal thunderstorms that had developed over the Upper Midwest during the night of September 20th dropped southward and weakened considerably as they tracked into north-central Illinois around midday on September 21st. While most of the storms produced wind gusts of 40-50mph along the associated gust front, enhanced winds of up to 60mph possibly associated with a gustnado caused some minor wind damage in the town of Henderson in northern Knox County. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

ILLINOIS, Northeast

Mchenry County 1 SE Pistakee 1 WSW Fox Lake

07	1045CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Trees blown down, as well as a utility pole and power line snapped.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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ILLINOIS, Northeast

Lake County Antioch

07	1055CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Power lines blown down. Report received via twitter.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lake County Lindenhurst

07	1100CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Tree blown down on a car.
Widespread thunderstorms, mainly north of Interstate 80, brought gusty winds and heavy rain across northern Illinois. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

ILLINOIS, Northwest

Mcdonough County 1 W Macomb

07	1500CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Local law enforcement reported downed tree limbs, also a few limbs on some power lines in Macomb and Sciota. The time of the event was estimated by radar.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Mcdonough County 3 WNW Macomb

07	1515CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A trained spotter reported two post signs were snapped of at their bases. Also a large tree limb 10 inches in diameter was down.

An area of thunderstorms and showers moved across the region bringing a couple of damaging wind reports. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Mercer County 3 W New Boston 11 SSW Keithsburg

30	1030CST 2359CST				0	0	100.00K	0.00K	Flood
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Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Mississippi River to rise above major flood stage levels. Keithsburg rose above its major flood stage level of 17.0 feet on September 30th, 2016 around 10 AM CST. It crested around 17.8 feet on October 2nd, 2016. It fell below major flood stage on October 4th around 4 AM CST.

Mercer County 8 WNW New Boston

30	1300CST 2359CST				0	0	100.00K	0.00K	Flood
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Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Mississippi River to rise above major flood stage levels. New Boston rose above its major flood stage level of 18.5 feet on September 30th, 2016. It crested around 19.23 feet at approximately 1 PM CDT on October 2nd, 2016. It fell below major flood stage on October 4th around 6 pm CST.

Significant record to near record heavy rainfall in North Central and Northeast Iowa from 21 to 23 September of 4 to over 10 plus inches caused major river flooding on three forecast points on the Mississippi River downstream from the Iowa River and Mississippi River convergence zone and south.

ILLINOIS, South

Perry County 3 W Clinch 2 WSW St Johns

16	1819CST 2015CST				0	0	0.00K	0.00K	Flood
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Street flooding was reported throughout the community, as well as portions of U.S. Highway 51.

Hamilton County 2 W Dale 1 W Hoodville

16	2050CST 2300CST				0	0	0.00K	0.00K	Flood
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The intersection of Highway 142 and County Road 700N was covered with three inches of water.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ILLINOIS, South

A couple of thunderstorm complexes moved eastward across southern Illinois in a warm and moist air mass. A stationary front that extended from southern Illinois to central Arkansas provided a focus for heavy rainfall. A 500 mb shortwave trough moved east-northeast across Missouri, which helped maintain the intensity of the storms.

ILZ077-083>094

Alexander - Edwards - Gallatin - Hardin - Jackson - Johnson - Massac - Pope - Pulaski - Saline - Union - Wabash - White - Williamson

18	0000CST						0.00K	0.00K	Dense Fog
	0700CST				0	0			

Widespread dense fog formed across most of southern Illinois. Visibility was reduced to one-quarter mile or less. The fog formed under weak high pressure that followed in the immediate wake of a cold front.

ILZ075>078-080>094

Alexander - Edwards - Franklin - Gallatin - Hamilton - Hardin - Jackson - Jefferson - Johnson - Massac - Perry - Pope - Pulaski - Saline - Union - Wabash - Wayne - White - Williamson

19	0000CST						0.00K	0.00K	Dense Fog
	0700CST				0	0			

Widespread dense fog formed across southern Illinois. Visibility was reduced to one-quarter mile or less. The fog formed in association with a weak high pressure ridge that extended from southeast Missouri to northwest Indiana.

ILLINOIS, Southwest

ILZ100-101

Madison - St. Clair

06	1100CST								
07	1800CST				0	0			Heat

High temperatures rose into the middle 90s with the Heat Index up to 105.

Washington County Hoyleton

09	1700CST						0.00K	0.00K	Thunderstorm Wind (56MG)
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Isolated severe storms popped up over the region. Some of the storms produced damaging winds. Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Randolph County Prairie Du Rocher

16	1420CST						0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down numerous large tree limbs around town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Randolph County 1 S Houston

16	1551CST						0.00K	0.00K	Thunderstorm Wind (70EG)
	1553CST				0	0			

Thunderstorm winds blew down several corn fields. Also, about a mile northeast of Houston, a farm outbuilding's roof was blown off by downburst winds estimated to be around 80 mph.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Randolph County 1 NW Ellis Grove

16	1613CST						0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several trees around town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Randolph County 1 NNW Ellis Grove

16	1614CST						0.00K	0.00K	Hail (0.88)
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Randolph County 1 SSW Menard

16	1614CST						0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down numerous large tree limbs around town.

Isolated severe thunderstorms moved across southeastern Missouri and southern Illinois. Numerous reports of damaging winds and large hail. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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INDIANA, Central

Monroe County 2 SSE Ellettsville

08	2201EST				0	0	7.00K	1.00K	Flash Flood
	2300EST								

A water rescue from a vehicle occurred at this location due to flash flooding from heavy thunderstorm rainfall.

Decatur County 2 NE Greensburg

08	2230EST				0	0	20.00K	1.50K	Flash Flood
	2330EST								

Interstate 74 was shut down between mile markers 134 and 143 due to high water from heavy thunderstorm rainfall.

Also, an Indianapolis woman drowned inside a vehicle late Thursday after it struck a semi on a flooded portion of Interstate 74 and overturned into a water-filled ditch, trapping her inside, county law enforcement officials said.

The accident occurred at approximately 11:53 p.m. Thursday. At that time, a Cloverdale man, 62, was traveling east on Interstate 74, near the 143 mile marker. Heavy rains led to high water on the roadway, which are believed to have caused the man to lose control of the vehicle and slide. As it slid, the vehicle was hit by a 2000 Freightliner semi and sent into a roadside ditch. The SUV came to rest upside-down and was partially submerged. More than four feet of water had collected in the ditch by the time the accident had occurred, Decatur County Sheriff said.

The deceased woman, 58, a passenger in the SUV, was pronounced dead at the scene. The man escaped the vehicle unharmed and he and emergency responders attempted to free the woman from the vehicle, but all were unable to pull her from the submerged car. Attempts to resuscitate the woman after she was extricated were unsuccessful.

Westbound lanes in the vicinity of the accident were shut down for approximately two hours, sheriffs department personnel said.

A band of heavy rainfall blanketed southern portions of the central Indiana during the evening of the 8th of September. A couple reports of flash flooding were received which included one water rescue from a car and a drowned woman after being involved in a automobile accident.

Hendricks County 1 S Avon

28	1227EST				0	0			Hail (0.75)
	1229EST						0.00K		

Lots of pea to dime sized hail observed just east of the Highway 267 and Highway 36 intersection.

A single storm intensified as it pushed south-southeast across western portions of the Indianapolis metropolitan area during the afternoon hours of the 28th of September. Small hail was observed.

INDIANA, Northeast

Marshall County 2 NW Twin Lakes 3 SSW Donaldson

09	2145EST				0	0	0.00K	0.00K	Flash Flood
10	0030EST								

The town of LaPaz as well as surrounding areas were impacted the greatest as five to six inches of rain fell over the span of a few hours. Evacuations took place due to the high water with at least eight roads closed due to high flowing water and several more with general high water. A few vehicles were pulled from high water.

St. Joseph County 3 S South Bend 3 S Nutwood

10	0015EST				1	0	0.00K	0.00K	Flood
	0200EST								

Street and some basement flooding reported in South Bend. A 53 year old female was electrocuted by flood waters that had entered her basement. She stepped into water of unknown depth and was electrocuted by a box fan that was plugged in and sitting in the water. First responders could not reach her immediately until the scene was safe. They were able to revive her, but she died a few days later with cause of death being electrocution. F53PH

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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INDIANA, Northeast

Tropical moisture, associated with the remnants of Hurricane Newton, streamed into the southern Great Lakes ahead of a low pressure that developed and moved into central Indiana. Showers and thunderstorms developed across the area with heavy rain reported in many spots. The heaviest rainfall occurred across portions of Marshall and St. Joseph counties where locally five to six inches of rain fell. One fatality occurred as a result of flood waters entering a basement and a resident being electrocuted near South Bend. F53PH

INDIANA, Southeast

Dearborn County 3 E St Leon

08	1726EST				0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
	1728EST								

A couple of trees were downed across Barber Road near Lawson Lane.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Ripley County Napoleon

08	2130EST				0	0	0.00K	0.00K	Flash Flood
	2230EST								

Over 2 feet of water was over a road in downtown Napoleon. Several roads elsewhere across the county were also impassable due to high water.

Ripley County Batesville

08	2135EST				0	0	0.00K	0.00K	Flash Flood
	2155EST								

State Route 46 was nearly impassable due to water flowing across it.

Franklin County 2 SE Stavetown

08	2215EST				0	0	0.50M	0.00K	Flash Flood
	2345EST								

Water was flowing over several roads across Franklin County, including U.S. Route 52. One bridge on River Road sustained significant damage. On Big Cedar Road, the pavement on a section of the road was peeled away and laid into a field beside the road. Several other bridge approaches were damaged in the county and numerous culvert pipes were destroyed.

Dearborn County 1 WNW Lawrenceville

08	2300EST				0	0	0.00K	0.00K	Flash Flood
09	0000EST								

High water was reported on several roadways in the Lawrenceville area. Two motorists had to be rescued from cars in flood waters on Trackville Road and Lawrenceville Road.

Ripley County 1 WNW Batesville

08	2300EST				0	0	2.00K	0.00K	Flash Flood
09	0000EST								

Evacuations were necessary at a retirement community when water started to enter some buildings.

Showers and thunderstorms moved slowly east along a stalled out boundary that was in place across the Ohio Valley. Four to five inches of rain fell during the evening hours across parts of southeast Indiana.

Ripley County Friendship

09	2045EST				0	0	0.00K	0.00K	Flood
	2245EST								

Rising water along Laughery Creek caused flooding over a portion of State Route 62 near Friendship.

Flooding issues lingered through the day from heavy rainfall that fell the night before.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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INDIANA, Southeast

Switzerland County 1 WNW Fairview

10	1449EST 1451EST				0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was downed onto State Route 250.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Switzerland County Florence

10	1502EST 1504EST				0	0	0.20K	0.00K	Thunderstorm Wind (45EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A large pine tree limb was downed.
Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

Ripley County Friendship

10	1530EST 1630EST				0	0	0.00K	0.00K	Flash Flood
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Laughery Creek was reported out of its banks.
Showers and thunderstorms developed during the afternoon hours as a cold front moved through the region.

INDIANA, Southwest

INZ081-085>088

Gibson - Pike - Posey - Spencer - Vanderburgh - Warrick

18	0200CST 0800CST				0	0	0.00K	0.00K	Dense Fog
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Widespread dense fog formed across southwest Indiana. Visibility was reduced to one-quarter mile or less. The fog formed under weak high pressure that followed in the immediate wake of a cold front.

19	0300CST 0800CST				0	0	0.00K	0.00K	Dense Fog
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INZ082-085

Pike - Posey

19	0300CST 0800CST				0	0	0.00K	0.00K	Dense Fog
----	--------------------	--	--	--	---	---	-------	-------	-----------

Widespread dense fog formed in parts of southwest Indiana, mainly north through west of Evansville. Visibility was reduced to one-quarter mile or less. The fog formed in association with a weak high pressure ridge that extended from southeast Missouri to northwest Indiana.

IOWA, Central

Hancock County 1 NE Britt

06 07	0500CST				0	0	0.00K	0.00K	Heavy Rain
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CoCoRaHS observer reported heavy rainfall of 2.34 inches over the last 24 hours. Most of which came down in the evening and overnight.

Cerro Gordo County 1 NW (MCW)Mason City Muni

06 07	0600CST				0	0	0.00K	0.00K	Heavy Rain
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Mason City ASOS measured 2.87 inches of heavy rainfall over the last 24 hours.

Cerro Gordo County 1 E Clear Lake Jct

06 07	0600CST				0	0	0.00K	0.00K	Heavy Rain
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CoCoRaHS observer reported heavy rainfall of 2.15 inches over the last 24 hours.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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IOWA, Central

Cerro Gordo County 2 E Mason City

06 07	0600CST				0	0	0.00K	0.00K	Heavy Rain
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Coop observer reported heavy rainfall of 2.68 inches over the last 24 hours.

Cerro Gordo County 3 N Portland

06 07	0600CST				0	0	0.00K	0.00K	Heavy Rain
----------	---------	--	--	--	---	---	-------	-------	------------

CoCoRaHS observer reported heavy rainfall of 2.02 inches over the last 24 hours.

Cerro Gordo County Mason City

06 07	0600CST				0	0	0.00K	0.00K	Heavy Rain
----------	---------	--	--	--	---	---	-------	-------	------------

Trained spotter measured 1.98 inches of heavy rainfall over the last 24 hours.

Hancock County 4 NNW Miller

06 07	0600CST				0	0	0.00K	0.00K	Heavy Rain
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Forest City AWOS measured 2.08 inches of heavy rainfall over the last 24 hours.

Kossuth County 1 N Algona Muni Arpt

06 07	0600CST				0	0	0.00K	0.00K	Heavy Rain
----------	---------	--	--	--	---	---	-------	-------	------------

Algona AWOS measured 2.98 inches of heavy rainfall over the last 24 hours.

Kossuth County 1 E Algona

06 07	0600CST				0	0	0.00K	0.00K	Heavy Rain
----------	---------	--	--	--	---	---	-------	-------	------------

CoCoRaHS observer reported heavy rainfall of 3.46 inches over the last 24 hours.

Winnebago County Forest City

06 07	0600CST				0	0	0.00K	0.00K	Heavy Rain
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Coop observer reported heavy rainfall of 2.70 inches over the last 24 hours.

Pocahontas County 1 SW Rolfe

06 07	0756CST				0	0	0.00K	0.00K	Heavy Rain
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Trained spotter reported heavy rainfall of 2.70 inches over the past 24 hours.

Cerro Gordo County 1 NW Freeman

06 07	1630CST 0330CST				0	0	0.00K	0.00K	Heavy Rain
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Trained spotter reported heavy rainfall of 3.06 inches of rain since Tuesday evening. Spring Creek reported to be rising over bank full.

Kossuth County 1 S Algona

06 07	1700CST 0700CST				0	0	0.00K	0.00K	Heavy Rain
----------	--------------------	--	--	--	---	---	-------	-------	------------

Public reported storm total heavy rainfall of 3.50 inches since Tuesday night.

Cerro Gordo County Clear Lake

06 07	1730CST 0600CST				0	0	0.00K	0.00K	Heavy Rain
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Trained spotter reported heavy rainfall of 2.42 inches storm total since Tuesday night.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Cerro Gordo County

1 N Clear Lake

06	1730CST								
07	0602CST				0	0	0.00K	0.00K	Heavy Rain

Public reported heavy rainfall of 4.20 inches.

Pocahontas County

2 NNW Plover

06	1900CST								
07	0505CST				0	0	0.00K	0.00K	Heavy Rain

Public reported an estimated 5.7 inches of heavy rainfall about 2 miles north of Plover.

Hancock County

1 E Garner

06	2000CST								
07	0620CST				0	0	0.00K	0.00K	Heavy Rain

Public reported storm total heavy rainfall of 4.5 inches since Tuesday night.

A frontal boundary was draped across Iowa northwest and central Iowa, roughly in a southwest to northeast orientation, providing a focusing mechanism for storms to initiate. Primarily, bouts of heavy rainfall resulted from storms beginning the evening of the 6th and continuing on through much of the night across northern Iowa. Greatest rainfall amounts exceeded 5 inches in Pocahontas county, while the majority of rainfall reports fell within the 2 to 4 inch range.

Boone County

2 WNW Moingona

07	0437CST								
08					0	0	0.00K	0.00K	Heavy Rain

CoCoRaHS observer measured heavy rainfall of 1.94 inches over the last 24 hours.

Boone County

Boone Muni Arpt

07	0600CST								
08					0	0	0.00K	0.00K	Heavy Rain

Boone AWOS measured heavy rainfall of 2.20 inches over the last 24 hours.

Polk County

Bondurant

07	0600CST								
08					0	0	0.00K	0.00K	Heavy Rain

CoCoRaHS observer measured heavy rainfall of 2.39 inches over the last 24 hours.

Poweshiek County

1 SE Grinnell

07	0600CST								
08					0	0	0.00K	0.00K	Heavy Rain

Coop observer reported heavy rainfall of 2.04 inches over the last 24 hours.

Poweshiek County

Grinnell

07	0600CST								
08					0	0	0.00K	0.00K	Heavy Rain

CoCoRaHS observer reported heavy rainfall of 2.0 inches over the last 24 hours.

Story County

Ames Arpt

07	0600CST								
08					0	0	0.00K	0.00K	Heavy Rain

Ames ASOS measured heavy rainfall of 1.88 inches over the last 24 hours.

Story County

1 E Ames

07	0600CST								
08					0	0	0.00K	0.00K	Heavy Rain

CoCoRaHS observer reported heavy rainfall of 3.14 inches over the last 24 hours.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Tama County

Clutier

07	0600CST				0	0	0.00K	0.00K	Heavy Rain
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08

Coop observer reported heavy rainfall of 3.45 inches over the last 24 hours.

Iowa sat squarely within the warm sector on the 7th as low pressure moved across the Northern Plains. The trailing cold front made its way into and across Iowa during the evening and overnight hours of the 7th into the 8th. Resulting in generally scattered storms with periods of heavy rainfall. No storms were severe, and the greatest rainfall amounts were around the 3 to 3.5 inch mark.

Kossuth County

1 N St Benedict

07	0745CST				0	0	0.00K	0.00K	Flood
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Public reported water, a couple inches deep, gradually overflowing from field across 200th Ave, just north of the 200th St and 200th Ave intersection. Roughly 1 mile north of St. Benedict.

A frontal boundary was draped across Iowa northwest and central Iowa, roughly in a southwest to northeast orientation, providing a focusing mechanism for storms to initiate. Primarily, bouts of heavy rainfall resulted from storms beginning the evening of the 6th and continuing on through much of the night across northern Iowa. Greatest rainfall amounts exceeded 5 inches in Pocahontas county, while the majority of rainfall reports fell within the 2 to 4 inch range.

Dallas County

1 S Hadden Hill

07	1000CST				0	0	0.00K	0.00K	Heavy Rain
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1330CST

Public reported heavy rainfall of 1.08 inches.

Marion County

Knoxville

07	1115CST				0	0	0.00K	0.00K	Heavy Rain
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1545CST

Public reported heavy rainfall of 1.63 inches.

Iowa sat squarely within the warm sector on the 7th as low pressure moved across the Northern Plains. The trailing cold front made its way into and across Iowa during the evening and overnight hours of the 7th into the 8th. Resulting in generally scattered storms with periods of heavy rainfall. No storms were severe, and the greatest rainfall amounts were around the 3 to 3.5 inch mark.

Franklin County

Hampton

09	0730CST				0	0	0.00K	0.00K	Heavy Rain
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1630CST

Public reported heavy rainfall of 4.4 inches.

Butler County

3 ENE Packard

09	0745CST				0	0	0.00K	0.00K	Heavy Rain
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1015CST

Clarksville fire department reported heavy rainfall of 2.3 inches. Much of the rainfall fell within 30 minutes.

Butler County

Clarksville

09	0830CST				0	0	0.00K	0.00K	Heavy Rain
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1215CST

Trained spotter reported heavy rainfall of 3.25 inches. This is an updated rainfall total from an earlier report as rain has now stopped.

Butler County

Clarksville

09	0830CST				0	0	0.00K	0.00K	Heavy Rain
----	---------	--	--	--	---	---	-------	-------	------------

1845CST

Clarksville fire department reported heavy rainfall on the day of 4.6 inches.

Butler County

1 N Clarksville

09	0830CST				0	0	0.00K	0.00K	Heavy Rain
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1215CST

Trained spotter reported heavy rainfall of 4.17 inches storm total on the north end of town.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Butler County

Clarksville

09	0900CST 1100CST				0	0	0.00K	0.00K	Heavy Rain
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Trained spotter reported heavy rainfall of 2.9 inches roughly over the last two hours.

Butler County

**1 NE Clarksville
4 ESE Packard**

09	1200CST				0	0	0.00K	0.00K	Flash Flood
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Public reported several rural roads north of Clarksville impassable due to water flowing over them. Time radar estimated.

Crawford County

Denison

09	1200CST 1500CST				0	0	0.00K	0.00K	Heavy Rain
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Trained spotter reported heavy rainfall of 1.2 inches.

Story County

1 W Ames

09	1420CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG) Large branch around 6 inches in diameter down on the Iowa State University campus west of the Food Science Building.
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Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Dallas County

2 WSW Hadden Hill

09	1430CST 1510CST				0	0	0.00K	0.00K	Heavy Rain
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NWS Employee reported heavy rainfall of 1.20 inches.

A relatively weak cold front that worked through the state the previous day stalled out across northern Missouri and tracked back northward as a weak warm front and eventual stationary front. Initially, storms were able to initiate in South Dakota along/north of the warm/stationary front and progress east/southeast through the evening and overnight hours of the 8th into the 9th. Later that day, another round of storms moving out of Nebraska were able to strengthen with daytime heating and produce another round of heavy rainfall through portions of the state. The greatest daily totals reached into the 4 to 5 inch range.

Black Hawk County

**1 NE (ALO)Waterloo Muni A
2 W Boies**

10	1133CST				0	0	0.00K	0.00K	Flood
13	2103CST								

The Cedar River at Cedar Falls crested at 88.69 feet on 12 September 2016 at 4 am CDT.

Heavy rain fell in the middle of the month across portions of north central and northeast Iowa sending the Cedar River at Cedar Falls into flood twice in a little over a week.

Kossuth County

1 NW Swea City

15	0430CST								
16	0330CST				0	0	0.00K	0.00K	Heavy Rain

Coop observer reported heavy rainfall of 2.08 inches.

Palo Alto County

1 E Emmetsburg

15	0430CST								
16	0300CST				0	0	0.00K	0.00K	Heavy Rain

Coop observer reported heavy rainfall of 2.41 inches.

Clarke County

1 W Murray

15	1130CST								
16	0330CST				0	0	0.00K	0.00K	Heavy Rain

Trained spotter reported heavy rainfall of 3.05 inches.

Emmet County

2 SE Estherville

15	1300CST								
16	0300CST				0	0	0.00K	0.00K	Heavy Rain

Estherville ASOS recorded heavy rainfall of 2.59 inches.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
IOWA, Central									
Adair County									
1 E Adair	15	1500CST							
	16	0300CST			0	0	0.00K	0.00K	Heavy Rain
Automated LARC recorded heavy rainfall of 3.2 inches over the previous 12 hours.									
Kossuth County									
1 N Algona	15	1500CST							
	16	0330CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.70 inches.									
Hancock County									
1 E Britt	15	1600CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.10 inches.									
Pocahontas County									
1 N Pocahontas	15	1600CST							
	16	0300CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.95 inches.									
Winnebago County									
1 SE Forest City	15	1600CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.25 inches.									
Winnebago County									
1 E Forest City	15	1600CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
Trained spotter reported heavy rainfall of 2.30 inches.									
Winnebago County									
Lake Mills	15	1600CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.11 inches.									
Sac County									
1 NNW Nemaha	15	1629CST			0	0	0.00K	0.00K	Hail (0.75)
Numerous public reports of penny sized hail.									
Sac County									
1 N Sac City	15	1630CST							
	16	0300CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.55 inches.									
Cerro Gordo County									
1 S Mason City	15	1710CST			0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
Trained spotter reported 58-66 mph wind gusts measured with a hand held anemometer. Also reported several 2 inch diameter tree limbs down.									
Note: The measured wind gust of 54 knots is equivalent to 62 mph.									
Calhoun County									
Rockwell City	15	1730CST							
	16	0330CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.78 inches.									
Hardin County									
Iowa Falls	15	1752CST			0	0	0.00K	0.00K	Hail (0.88)
Trained spotter reported nickel sized hail.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
IOWA, Central									
Crawford County									
Denison	15	1800CST							
	16	0230CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.30 inches.									
Crawford County									
Denison	15	1800CST							
	16	0300CST			0	0	0.00K	0.00K	Heavy Rain
Trained spotter reported heavy rainfall of 2.48 inches.									
Hamilton County									
1 NE Jewell	15	1800CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.72 inches.									
Hardin County									
Iowa Falls	15	1800CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.31 inches.									
Calhoun County									
1 WNW Rockwell City Lanedale	15	1830CST							
		2250CST			0	0	15.00K	0.00K	Flash Flood
Local law enforcement reported a car stalled/stranded after driving through flooded roads. Delayed report.									
Greene County									
1 SE Paton	15	1830CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
Trained spotter reported heavy rainfall of 2.50 inches from storms last night.									
Hardin County									
1 N Hubbard	15	1830CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
Public called in heavy rainfall report of 1.72 inches from storms last night.									
Story County									
1 S Zearing	15	1830CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 3.76 inches.									
Adair County									
1 E Adair	15	1900CST							
	16	0230CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 3.20 inches.									
Boone County									
1 S Boone	15	1900CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.19 inches.									
Carroll County									
1 E Carroll	15	1900CST							
	16	0300CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer reported heavy rainfall of 2.64 inches.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
IOWA, Central									
Story County									
1 W Ames	15	1900CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
	Ames airport ASOS recorded heavy rainfall of 2.16 inches.								
Black Hawk County									
1 N (ALO)Waterloo Muni A	15	1903CST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
	Waterloo airport ASOS recorded 61 mph wind gusts. Note: The measured wind gust of 53 knots is equivalent to 61 mph.								
Cass County									
1 E Atlantic	15	1930CST							
	16	0230CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer reported heavy rainfall of 2.49 inches.								
Grundy County									
1 E Conrad	15	1930CST							
	16	0430CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer reported heavy rainfall of 2.05 inches.								
Marshall County									
1 SE Marshalltown	15	1930CST							
	16	0430CST			0	0	0.00K	0.00K	Heavy Rain
	Marshalltown airport ASOS recorded heavy rainfall of 2.02 inches.								
Adair County									
1 NE Greenfield	15	2000CST							
	16	0230CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer reported heavy rainfall of 2.30 inches.								
Audubon County									
Audubon	15	2000CST							
	16	0300CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer reported heavy rainfall of 3.19 inches.								
Carroll County									
1 N Coon Rapids	15	2000CST							
	16	0300CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer reported heavy rainfall of 2.9 inches.								
Dallas County									
2 NE Perry	15	2000CST							
	16	0330CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer reported heavy rainfall of 2.57 inches.								
Story County									
1 N Maxwell	15	2000CST							
	16	0400CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer reported heavy rainfall of 2.50 inches.								
Marshall County									
1 E Gilman	15	2030CST							
	16	0500CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer reported heavy rainfall of 2.20 inches.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Tama County

1 S Toledo

15	2030CST								
16	0500CST				0	0	0.00K	0.00K	Heavy Rain

Coop observer reported heavy rainfall of 2.02 inches.

Guthrie County

Guthrie Center

15	2100CST								
16	0300CST				0	0	0.00K	0.00K	Heavy Rain

Coop observer reported heavy rainfall of 3.11 inches.

Polk County

1 E Ashawa

15	2100CST								
16	0400CST				0	0	0.00K	0.00K	Heavy Rain

NWS employee reported heavy rainfall of 2.07 inches.

Polk County

1 E Altoona

15	2100CST								
16	0400CST				0	0	0.00K	0.00K	Heavy Rain

Amateur radio report of heavy rainfall of 2.57 inches.

Polk County

2 W Enterprise

15	2100CST								
16	0400CST				0	0	0.00K	0.00K	Heavy Rain

Coop observer reported heavy rainfall of 2.83 inches.

Warren County

2 ESE Hartford

15	2200CST								
16	0400CST				0	0	0.00K	0.00K	Heavy Rain

Trained spotter reported heavy rainfall of 2.36 inches.

Cass County

1 NE Massena

15	2300CST								
16	0400CST				0	0	0.00K	0.00K	Heavy Rain

Coop observer reported heavy rainfall of 2.40 inches.

Union County

1 E Lorimor

15	2300CST								
16	0330CST				0	0	0.00K	0.00K	Heavy Rain

Coop observer reported heavy rainfall of 2.26 inches.

Warren County

1 W New Virginia

15	2300CST								
16	0400CST				0	0	0.00K	0.00K	Heavy Rain

Public reported heavy rainfall of 3.80 inches.

Clarke County

1 ESE Murray

15	2330CST								
16	0330CST				0	0	0.00K	0.00K	Heavy Rain

Trained spotter called in heavy rainfall report of 3.10 inches from storms last night.

Storms initiated out in the Nebraska Panhandle area the night prior, translating eastward through the night across northern Nebraska and southern South Dakota. As the storms approached and entered northern Iowa and southern Minnesota they strengthened, expanded in aerial coverage, and turned southward along the instability gradient. The primary results of the storms were gusty winds and heavy rainfall. The bulk of the rainfall occurred during the evening of the 15th, and tapered off in the early hours of the 16th. A couple of high wind gust reports were received along with numerous heavy rainfall amounts between 2 and 3 inches.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Black Hawk County

1 NE (ALO) Waterloo Muni A	17	2125CST							
2 W Boies	20	2145CST			0	0	0.00K	0.00K	Flood

The Cedar River at Cedar Falls crested at 89.35 feet on 19 September 2016 at 7 am CDT.

Heavy rain fell in the middle of the month across portions of north central and northeast Iowa sending the Cedar River at Cedar Falls into flood twice in a little over a week.

Lucas County

1 E Chariton	19	1630CST					40.00K	0.00K	Thunderstorm Wind (61EG)
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Law enforcement reported two instances of a large tree downed onto a house in Chariton. Time and location estimated from radar.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Lucas County

1 SSE Chariton	19	1633CST					10.00K	0.00K	Thunderstorm Wind (56EG)
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Law enforcement reported a roof off of a shed and an attached garage damaged on the southern edge of Chariton. Time and location estimated from radar.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Wayne County

3 NNW Millerton	19	1708CST					0.00K	0.00K	Funnel Cloud
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Trained spotter reported a funnel cloud almost to the ground. Delayed report.

Wayne County

2 SE Corydon	19	1721CST					20.00K	0.00K	Thunderstorm Wind (61EG)
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Emergency manager in Wayne county reported a pole barn downed from strong winds. Time and location estimated from radar. Delayed report.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Wayne County

2 W Harvard	19	1724CST					75.00K	0.00K	Thunderstorm Wind (61EG)
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Wayne county emergency manager reported multiple pole barns blown over. Debris from pole barns blew into and downed nearby power lines. Time estimated from radar.

A relatively weak cold front made its way into Iowa from the northwest during the daytime hours of the 19th, eventually working its way through central Iowa by the afternoon. A few storms initiated along and just ahead of the front during the mid-afternoon hours, though many simply could not maintain themselves within the environment. One storm was able to sustain and strengthen, including consistent rotation and taking a 'right turn' with regards to its motion. Resulting reports out of the storm included a funnel cloud and a handful of damaging winds reports. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Butler County

1 NW Parkersburg	21	0500CST					0.00K	0.00K	Heavy Rain
	22	1700CST			0	0	0.00K	0.00K	

Coop observer recorded heavy rainfall of 3.15 inches, over a duration of 36 hours.

Hancock County

1 NE Britt	21	0500CST					0.00K	0.00K	Heavy Rain
	22								

CoCoRaHS observer in Britt recorded heavy rainfall of 2.45 inches over the last 24 hours.

Winnebago County

Lake Mills	21	0500CST					0.00K	0.00K	Heavy Rain
	22								

CoCoRaHS observer in Lake Mills recorded heavy rainfall of 2.07 inches over the last 24 hours.

Cerro Gordo County

1 N (MCW) Mason City Muni	21	0553CST					0.00K	0.00K	Heavy Rain
	22								

Mason City ASOS recorded heavy rainfall of 2.53 inches over the last 24 hours.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Hancock County 4 NNW Miller

21	0555CST				0	0	0.00K	0.00K	Heavy Rain
22	Forest City AWOS recorded heavy rainfall of 2.19 inches over the last 24 hours.								

Bremer County 1 NNW Tripoli

21	0600CST				0	0	0.00K	0.00K	Heavy Rain
22	Coop observer recorded heavy rainfall of 2.3 inches over the last 24 hours.								

Bremer County 1 NW Tripoli

21	0600CST				0	0	0.00K	0.00K	Heavy Rain
22	Coop observer recorded heavy rainfall of 2.30 inches over the last 24 hours.								

Butler County Shell Rock

21	0600CST				0	0	0.00K	0.00K	Heavy Rain
22	Coop observer recorded heavy rainfall of 2.35 inches over the last 24 hours.								

Cerro Gordo County Mason City

21	0600CST				0	0	0.00K	0.00K	Heavy Rain
22	Mason City ASOS recorded heavy rainfall of 2.53 inches over the last 24 hours.								

Cerro Gordo County 2 NNW Portland

21	0600CST				0	0	0.00K	0.00K	Heavy Rain
22	CoCoRaHS observer recorded heavy rainfall of 2.61 inches over the last 24 hours.								

Cerro Gordo County 1 E Swaledale

21	0600CST				0	0	0.00K	0.00K	Heavy Rain
22	CoCoRaHS observer in Swaledale recorded heavy rainfall of 2.4 inches over the last 24 hours.								

Cerro Gordo County 1 N Mason City

21	0600CST				0	0	0.00K	0.00K	Heavy Rain
22	Coop observer KIMT TV recorded heavy rainfall of 2.38 inches over the last 24 hours.								

Cerro Gordo County 1 NE Clear Lake

21	0600CST				0	0	0.00K	0.00K	Heavy Rain
22	Public reported heavy rainfall of 4.00 inches over the last 24 hours.								

Cerro Gordo County 1 NNE Mason City

21	0600CST				0	0	0.00K	0.00K	Heavy Rain
22	Public reported heavy rainfall of 2.88 inches over the last 24 hours.								

Hancock County 1 NW Kanawha

21	0600CST				0	0	0.00K	0.00K	Heavy Rain
22	Coop observer recorded heavy rainfall of 2.26 inches over the last 24 hours.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
IOWA, Central									
Story County									
1 W Zearing	21 22	0600CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer recorded heavy rainfall of 2.25 inches over the last 24 hours.								
Winnebago County									
2 NE Forest City	21 22	0600CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer KIOW Radio recorded heavy rainfall of 3.05 inches over the last 24 hours.								
Winnebago County									
1 S Lake Mills	21 22	0600CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer recorded heavy rainfall of 2.1 inches over the last 24 hours.								
Winnebago County									
1 N Lake Mills	21 22	0600CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer recorded heavy rainfall of 2.1 inches over the last 24 hours.								
Worth County									
1 W Northwood	21 22	0600CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer recorded heavy rainfall of 4.13 inches over the last 24 hours.								
Worth County									
Northwood	21 22	0600CST			0	0	0.00K	0.00K	Heavy Rain
	Coop observer recorded heavy rainfall of 4.13 inches over the last 24 hours.								
Butler County									
Clarksville	21 22	0700CST			0	0	0.00K	0.00K	Heavy Rain
	CoCoRaHS observer recorded heavy rainfall of 2.30 inches over the last 24 hours.								
Bremer County									
3 N Tripoli	21 22	0845CST			0	0	0.00K	0.00K	Heavy Rain
	Mesonet station recorded heavy rainfall of 2.10 inches over the last 24 hours.								
Cerro Gordo County									
1 S Clear Lake	21 22	0900CST			0	0	0.00K	0.00K	Heavy Rain
	Mesonet station recorded heavy rainfall of 2.27 inches over the last 24 hours.								
Grundy County									
3 N Dike	21 22	0900CST			0	0	0.00K	0.00K	Heavy Rain
	Mesonet station recorded heavy rainfall of 2.37 inches over the last 24 hours.								
Wright County									
2 N Solberg	21 22	0900CST			0	0	0.00K	0.00K	Heavy Rain
	Mesonet station recorded heavy rainfall of 2.15 inches over the last 24 hours.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Cerro Gordo County

1 NNE Mason City

21	0930CST				0	0	0.00K	0.00K	Heavy Rain
22									

Mesonet station recorded heavy rainfall of 4.21 inches over the last 24 hours.

Winnebago County

1 W Leland

21	1330CST				0	0	0.00K	0.00K	Heavy Rain
22	0830CST				0	0	0.00K	0.00K	Heavy Rain

Public reported storm total heavy rainfall of 3.03 inches.

Cerro Gordo County

2 SW Cartersville

21	1432CST				0	0	0.00K	0.00K	Hail (1.00)
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Trained spotter reported quarter sized hail.

Cerro Gordo County

2 S Hanford

21	1455CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Trained spotter reported 3 inch tree branches down along with quarter sized hail.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Butler County

Greene

21	1500CST				0	0	0.00K	0.00K	Heavy Rain
	2030CST								

Green fire department reported heavy rainfall of 7.50 inches storm total.

Butler County

Greene

21	1500CST				0	0	0.00K	0.00K	Heavy Rain
22	1700CST				0	0	0.00K	0.00K	Heavy Rain

Greene fire department reported a storm total rainfall since beginning Wednesday of 10.40 inches. Total rainfall since last report, 7.5 inches through 10:47pm previous night, was 2.9 inches. Relayed by Butler County Emergency Manager.

Worth County

2 SSE Deer Creek

21	1530CST				0	0	0.00K	0.00K	Heavy Rain
22	0930CST				0	0	0.00K	0.00K	Heavy Rain

Public reported heavy rainfall of 6.25 inches from yesterday evening through this morning.

Cerro Gordo County

1 N Rock Falls

21	1650CST				0	0	0.00K	0.00K	Hail (1.25)
	1700CST								

Trained spotter reported hail lasted for around 10 minutes, starting out as pea sized and gradually got bigger to around half dollar size.

Cerro Gordo County

1 E Mason City

21	1650CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Amateur radio operator reported tree limbs approximately 3 inches in diameter down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Cerro Gordo County

3 ENE Portland

21	1717CST				0	0	1.00K	0.00K	Thunderstorm Wind (56EG)
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Public reported a large tree downed, estimated 1 foot or more in diameter.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Cerro Gordo County

1 WNW Freeman

21	1730CST				0	0	0.00K	0.00K	Flash Flood
	2325CST				0	0	0.00K	0.00K	Flash Flood

Trained spotter reported creek in pasture out of banks and rising. Location estimated.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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IOWA, Central

Butler County 2 E Greene

21	1738CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Observed tree damage in storm chaser live video stream. Multiple large tree limbs down.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Butler County Greene

21	1740CST				0	0	30.00K	0.00K	Thunderstorm Wind (56EG)
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Emergency manager reported trees down on roofs and power lines. Extent of damage unknown at the time. Time estimated from radar.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Butler County Greene

21	1745CST				0	0	20.00K	0.00K	Thunderstorm Wind (56EG)
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Emergency manager reported widespread tree damage throughout town, including several trees on houses.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Cerro Gordo County 1 N Mason City

21	1750CST				0	0	0.00K	0.00K	Hail (0.75)
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Trained spotter reported penny sized hail.

Cerro Gordo County 2 NW Rockwell

21	1800CST 2140CST				0	0	100.00K	0.00K	Flash Flood
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DOT reported county roads flooded near Rockwell. Delayed report.

Butler County Greene

21	1811CST				0	0	0.00K	0.00K	Hail (1.00)
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Public reported quarter sized hail.

Butler County 1 W Greene

21	1849CST				0	0	0.00K	0.00K	Hail (1.00)
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Emergency manager reported quarter sized hail.

Cerro Gordo County 1 NNE Mason City

21	1915CST 2325CST				0	0	25.00K	0.00K	Flash Flood
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Cerro Gordo County dispatch noted that East Park had been fully closed due to flooding.

Butler County 4 W Greene 4 WNW Wilmar

21	2140CST				0	0	200.00K	500.00K	Flash Flood
22	0659CST				0	0			

Emergency Manager reported many roads closed throughout the northern fourth of Butler county. The Shell Rock river reported beginning to leave its banks and moving toward businesses in downtown Greene. Sandbagging ongoing in Green and Clarksville.

An ideal setup was seen across northern and central Iowa for repeated rounds of heavy rainfall and severe weather. A weak warm frontal boundary stalled out across the area as it transitioned to a stationary boundary and allowed multiple rounds of storms to initiate on the 21st and well into the 22nd. Primarily heavy rainfall and flooding was seen, however a couple of hail and a handful of damaging wind reports were received as well. The hardest hit areas were from roughly Forest City on southeast towards Mason city and Waverly. Rainfall amounts of 4 to 6 plus inches were seen, with greatest amounts just outside of the Des Moines county warning area in and around Charles City.

Grundy County 3 W Stout

21	2300CST				0	0	0.00K	0.00K	Heavy Rain
22									

Public reported heavy rainfall of 4.1 inches over the last 24 hours.

A generally stationary boundary remained oriented roughly west to east across the state through the evening and overnight hours. As a result, storms initiated along and north of the boundary and provided multiple rounds of heavy rainfall from roughly Ames northward. Rainfall amounts typically resided within the 2 to 5 inch range with a few reports within the 5 to 5.5 inch range. Given the relatively short duration of the rainfall, flash flooding was reported in a number of areas, again ranging from Ames northward.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Butler County

2 WNW Greene

22	0047CST 0659CST				0	0	200.00K	0.00K	Flash Flood
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Emergency manager reported multiple homes in Greene now being impacted by floodwaters from the rapidly rising Shell Rock river. Also estimated that the river is near the level it reached in 2008.

An ideal setup was seen across northern and central Iowa for repeated rounds of heavy rainfall and severe weather. A weak warm frontal boundary stalled out across the area as it transitioned to a stationary boundary and allowed multiple rounds of storms to initiate on the 21st and well into the 22nd. Primarily heavy rainfall and flooding was seen, however a couple of hail and a handful of damaging wind reports were received as well. The hardest hit areas were from roughly Forest City on southeast towards Mason city and Waverly. Rainfall amounts of 4 to 6 plus inches were seen, with greatest amounts just outside of the Des Moines county warning area in and around Charles City.

Cerro Gordo County

6 NW Freeman

10 NNW Clear Lake Lake

22	0336CST								
23	2230CST				0	0	0.00K	0.00K	Flood

The Winnebago River at Mason City crested at 14.14 feet on 22 September 2016 at 6:15 pm CDT.

Several rivers went into flood across central and northern Iowa due to heavy rains received during the month of September, especially during the middle to latter portion of the month. Two of the rivers, the Iowa River at Tama Highway E49 and the Cedar River at Cedar Falls, remained in flood until early October.

Butler County

1 WNW Greene

22	0400CST 0659CST				0	0	0.00K	0.00K	Flash Flood
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Law enforcement reported evacuations occurring in Greene due to flash flooding.

Grundy County

4 N Wellsburg

22	0415CST				0	0	15.00K	0.00K	Thunderstorm Wind (52EG)
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Public reported damage to several large trees. Time estimated.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Cerro Gordo County

1 SW Rockwell

22	0520CST 0900CST				0	0	50.00K	200.00K	Flash Flood
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Law enforcement reported barricades put up due to street flooding along Highway 65 near Rockwell.

Bremer County

1 NW Plainfield

22	0530CST								
23	1000CST				0	0	50.00K	0.00K	Flood

Law enforcement reported street flooding along 130th in Plainfield, along with several other roads in the Plainfield area.

An ideal setup was seen across northern and central Iowa for repeated rounds of heavy rainfall and severe weather. A weak warm frontal boundary stalled out across the area as it transitioned to a stationary boundary and allowed multiple rounds of storms to initiate on the 21st and well into the 22nd. Primarily heavy rainfall and flooding was seen, however a couple of hail and a handful of damaging wind reports were received as well. The hardest hit areas were from roughly Forest City on southeast towards Mason city and Waverly. Rainfall amounts of 4 to 6 plus inches were seen, with greatest amounts just outside of the Des Moines county warning area in and around Charles City.

Black Hawk County

1 N (ALO) Waterloo Muni A

22	0600CST				0	0	0.00K	0.00K	Heavy Rain
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Waterloo ASOS recorded heavy rainfall of 2.12 inches over the last 24 hours.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
IOWA, Central									
Boone County									
3 NNE Napier	22 23	0600CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer recorded heavy rainfall of 4.01 inches over the last 24 hours.									
Bremer County									
1 NW Tripoli	22 23	0600CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer recorded heavy rainfall of 4.61 inches over the last 24 hours.									
Cerro Gordo County									
1 N (MCW)Mason City Muni	22 23	0600CST			0	0	0.00K	0.00K	Heavy Rain
Mason City ASOS measured 2.13 inches of heavy rainfall over the last 24 hours.									
Kossuth County									
Algona	22 23	0600CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer recorded heavy rainfall of 2.32 inches over the last 24 hours.									
Story County									
2 NNW Ames	22 23	0600CST			0	0	0.00K	0.00K	Heavy Rain
CoCoRaHS observer reported 4.86 inches of heavy rainfall over the past 24 hours.									
Story County									
1 S Ames Arpt	22 23	0600CST			0	0	0.00K	0.00K	Heavy Rain
Ames ASOS recorded heavy rainfall of 3.30 inches over the last 24 hours.									
Story County									
1 N Midvale	22 23	0600CST			0	0	0.00K	0.00K	Heavy Rain
Coop observer recorded heavy rainfall of 4.54 inches over the last 24 hours.									
Story County									
1 S Gilbert	22 23	0600CST			0	0	0.00K	0.00K	Heavy Rain
CoCoRaHS observer reported heavy rainfall of 3.25 inches over the last 24 hours.									
Story County									
Ontario	22 23	0600CST			0	0	0.00K	0.00K	Heavy Rain
CoCoRaHS observer reported heavy rainfall of 5.41 inches over the last 24 hours.									
Story County									
1 NNE Ames	22 23	0600CST			0	0	0.00K	0.00K	Heavy Rain
CoCoRaHS observer reported heavy rainfall of 5.11 inches over the last 24 hours.									
Story County									
1 E Ames	22 23	0600CST			0	0	0.00K	0.00K	Heavy Rain
CoCoRaHS observer reported heavy rainfall of 5.41 inches over the last 24 hours.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Tama County 3 N Dysart

22		0600CST			0	0	0.00K	0.00K	Heavy Rain
23									

CoCoRaHS observer reported 2.09 inches of heavy rainfall over the past 24 hours.

Tama County 1 S Traer

22		0600CST			0	0	0.00K	0.00K	Heavy Rain
23									

Coop observer recorded heavy rainfall of 1.97 inches over the last 24 hours.

Wright County Clarion

22		0600CST			0	0	0.00K	0.00K	Heavy Rain
23									

Coop observer recorded heavy rainfall of 3.82 inches over the last 24 hours.

Wright County 1 NW Clarion Arprt

22		0600CST			0	0	0.00K	0.00K	Heavy Rain
23									

Clarion AWOS recorded heavy rainfall of 2.60 inches over the last 24 hours.

Story County 1 SE Gilbert

22		0657CST			0	0	0.00K	0.00K	Heavy Rain
23									

CoCoRaHS observer reported heavy rainfall of 3.30 inches over the last 24 hours.

A generally stationary boundary remained oriented roughly west to east across the state through the evening and overnight hours. As a result, storms initiated along and north of the boundary and provided multiple rounds of heavy rainfall from roughly Ames northward. Rainfall amounts typically resided within the 2 to 5 inch range with a few reports within the 5 to 5.5 inch range. Given the relatively short duration of the rainfall, flash flooding was reported in a number of areas, again ranging from Ames northward.

Butler County 2 WNW Greene

22		0726CST			0	0	50.00K	0.00K	Flood
23		1000CST							

Emergency manager reported most roads closed in and around Greene. The only way to access the town is via Highway 14. Delayed report.

An ideal setup was seen across northern and central Iowa for repeated rounds of heavy rainfall and severe weather. A weak warm frontal boundary stalled out across the area as it transitioned to a stationary boundary and allowed multiple rounds of storms to initiate on the 21st and well into the 22nd. Primarily heavy rainfall and flooding was seen, however a couple of hail and a handful of damaging wind reports were received as well. The hardest hit areas were from roughly Forest City on southeast towards Mason city and Waverly. Rainfall amounts of 4 to 6 plus inches were seen, with greatest amounts just outside of the Des Moines county warning area in and around Charles City.

Butler County 7 SE Shell Rock

22		1117CST			0	0	0.00K	0.00K	Flood
27		0315CST							

The Shell Rock River at Shell Rock crested at 21.51 feet on 23 September 2016 at 2:08 pm CDT.

Several rivers went into flood across central and northern Iowa due to heavy rains received during the month of September, especially during the middle to latter portion of the month. Two of the rivers, the Iowa River at Tama Highway E49 and the Cedar River at Cedar Falls, remained in flood until early October.

Butler County 1 S Clarksville

22		1225CST			0	0	50.00K	0.00K	Flood
23		1000CST							

Public reported water over the road on Highway 188 just south of Clarksville.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Bremer County

4 SW Frederika	22	1324CST							
4 NE Bremer	23	1000CST			0	0	50.00K	0.00K	Flood

Iowa DOT reported US Highway 63 closed to southbound traffic due to flooding. Detour in place.

Butler County

1 S Clarksville	22	1325CST							
	23	1000CST			0	0	50.00K	0.00K	Flood

Iowa DOT reported Highway 188 closed in both directions due to flooding. Detour in place.

An ideal setup was seen across northern and central Iowa for repeated rounds of heavy rainfall and severe weather. A weak warm frontal boundary stalled out across the area as it transitioned to a stationary boundary and allowed multiple rounds of storms to initiate on the 21st and well into the 22nd. Primarily heavy rainfall and flooding was seen, however a couple of hail and a handful of damaging wind reports were received as well. The hardest hit areas were from roughly Forest City on southeast towards Mason city and Waverly. Rainfall amounts of 4 to 6 plus inches were seen, with greatest amounts just outside of the Des Moines county warning area in and around Charles City.

Story County

2 NW Ontario	22	1830CST							
		2223CST			0	0	0.00K	0.00K	Heavy Rain

Trained spotter reported heavy rainfall of 4.02 inches. Rainfall ongoing at report time.

Story County

2 NW Ames	22	1830CST							
		2311CST			0	0	0.00K	0.00K	Heavy Rain

Public reported heavy rainfall of 5.02 inches storm total.

A generally stationary boundary remained oriented roughly west to east across the state through the evening and overnight hours. As a result, storms initiated along and north of the boundary and provided multiple rounds of heavy rainfall from roughly Ames northward. Rainfall amounts typically resided within the 2 to 5 inch range with a few reports within the 5 to 5.5 inch range. Given the relatively short duration of the rainfall, flash flooding was reported in a number of areas, again ranging from Ames northward.

Black Hawk County

1 NE (ALO)Waterloo Muni A	22	1838CST							
2 W Boies	30	2359CST			0	0	0.00K	0.00K	Flood

The Cedar River at Cedar Falls crested at 98.90 feet on 24 September 2016 at 12 pm CDT. The river remained in flood at Cedar Falls into early October.

Several rivers went into flood across central and northern Iowa due to heavy rains received during the month of September, especially during the middle to latter portion of the month. Two of the rivers, the Iowa River at Tama Highway E49 and the Cedar River at Cedar Falls, remained in flood until early October.

Story County

1 N Ames	22	1900CST							
		2330CST			0	0	0.00K	0.00K	Heavy Rain

Public reported heavy rainfall of 5.11 inches since rain began at 8pm.

Story County

1 SW Ontario	22	1900CST							
		2330CST			0	0	0.00K	0.00K	Heavy Rain

NWS employee reported heavy rainfall of 3.88 inches since rain began at 8pm.

A generally stationary boundary remained oriented roughly west to east across the state through the evening and overnight hours. As a result, storms initiated along and north of the boundary and provided multiple rounds of heavy rainfall from roughly Ames northward. Rainfall amounts typically resided within the 2 to 5 inch range with a few reports within the 5 to 5.5 inch range. Given the relatively short duration of the rainfall, flash flooding was reported in a number of areas, again ranging from Ames northward.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Butler County

1 NW Clarksville

22	2110CST								
23	1000CST				0	0	300.00K	0.00K	Flood

Emergency Manager reported levee on the west side of Clarksville along the Shell Rock river failed and the southwest side of town is flooding. Residents being evacuated.

An ideal setup was seen across northern and central Iowa for repeated rounds of heavy rainfall and severe weather. A weak warm frontal boundary stalled out across the area as it transitioned to a stationary boundary and allowed multiple rounds of storms to initiate on the 21st and well into the 22nd. Primarily heavy rainfall and flooding was seen, however a couple of hail and a handful of damaging wind reports were received as well. The hardest hit areas were from roughly Forest City on southeast towards Mason city and Waverly. Rainfall amounts of 4 to 6 plus inches were seen, with greatest amounts just outside of the Des Moines county warning area in and around Charles City.

Story County

1 SE Ontario

22	2125CST								
23	0229CST				0	0	0.00K	0.00K	Flash Flood

Broadcast media reported standing water in places with others covered with flowing water on Lincoln Way. A manhole cover was also reported blown off on Stange Road and an underpass flooded at Grand Ave.

Story County

1 WSW Ames

22	2130CST								
23	0229CST				0	0	10.00K	0.00K	Flash Flood

Trained spotter reported College Creek on ISU campus out of its banks and has reached the base of Union Drive. Heavy rainfall still ongoing as of time of report.

Story County

**1 S Ontario
1 NE Ames Arpt**

22	2140CST								
23	0229CST				0	0	10.00K	0.00K	Flash Flood

Law enforcement reported portions of Lincoln Way and Grand Ave flooded. Other streets impacted include South Dakota and Mortensen, Arizona and Ontario and numerous other roads. Depth of water estimated to be 3 to 4 feet deep.

Story County

2 NW Ames

22	2230CST								
23	0229CST				0	0	20.00K	0.00K	Flash Flood

Public reported stores along Stange Road starting to flood with water from out front.

Story County

2 E Ames

22	2255CST								
23	0229CST				0	0	30.00K	0.00K	Flash Flood

Ames Police reported several streets throughout the town have deep enough water to cause multiple stalled vehicles.

Story County

**1 NW Ames Arpt
1 SW Ames**

22	2300CST								
23	0229CST				0	0	10.00K	0.00K	Flash Flood

Trained spotter reported water flowing rapidly through a parking lot at Jack Trice stadium. Water estimated to be 3 to 6 inches deep and up to bumpers on some vehicles.

Palo Alto County

1 E Emmetsburg

23	0100CST 0800CST				0	0	0.00K	0.00K	Heavy Rain
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Iowa DOT reported heavy rainfall of 3.50 inches storm total through 8am.

A generally stationary boundary remained oriented roughly west to east across the state through the evening and overnight hours. As a result, storms initiated along and north of the boundary and provided multiple rounds of heavy rainfall from roughly Ames northward. Rainfall amounts typically resided within the 2 to 5 inch range with a few reports within the 5 to 5.5 inch range. Given the relatively short duration of the rainfall, flash flooding was reported in a number of areas, again ranging from Ames northward.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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IOWA, Central

Butler County

14 E Shell Rock

23	0111CST								
26	1600CST				0	0	0.00K	0.00K	Flood

The Cedar River at Janesville crested at 16.35 feet on 23 September 2016 at 10:30 pm CDT.

Several rivers went into flood across central and northern Iowa due to heavy rains received during the month of September, especially during the middle to latter portion of the month. Two of the rivers, the Iowa River at Tama Highway E49 and the Cedar River at Cedar Falls, remained in flood until early October.

Butler County

2 E Shell Rock

23	0142CST								
24	1000CST				0	0	50.00K	200.00K	Flood

Iowa DOT and local law enforcement have closed Highway 3 between County Road T55 near Clarksville and US 218 near Shell Rock due to flooding of the Shell Rock River.

Franklin County

4 WSW Geneva

3 NE Bradford

23	0219CST								
	0415CST				0	0	50.00K	200.00K	Flash Flood

Law enforcement reported water flowing over Highway 65 south of 95th street in Franklin County.

Wright County

2 NNE Rowan

6 NW Florence

23	0230CST								
	0600CST				0	0	50.00K	200.00K	Flash Flood

Law enforcement reported numerous secondary roads with water over topping them, with some now closed. Issues are mostly across northern Wright County, but scattered about elsewhere too.

Franklin County

8 E Sheffield

2 NNE Faulkner

23	0300CST								
	0415CST				0	0	50.00K	200.00K	Flash Flood

Law enforcement reported numerous secondary roads in Franklin County with water over them to varying depths. Some roads are closed.

Wright County

1 NW Goldfield

23	0300CST								
	0800CST				0	0	10.00K	0.00K	Flash Flood

Law enforcement reported water flowing over the road near River Park in Goldfield.

Bremer County

2 SSW Bremer

23	0345CST								
	0415CST				0	0	10.00K	0.00K	Flash Flood

Law enforcement reported a bridge along C38, or 212th St, has water flowing over it due to Baskins Run flooding.

Bremer County

1 NE Denver

23	0345CST								
	0415CST				0	0	0.00K	0.00K	Flash Flood

Law enforcement reported that an officer is notifying residents along Forest Ave in Denver to evacuate due to the creek flooding the northern part of town.

Bremer County

1 W Waverly

23	0345CST								
24	1000CST				0	0	100.00K	0.00K	Flood

Law enforcement reported all of the southeast portion of Waverly has been evacuated due to the Cedar River flooding. Time of evacuation unknown.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Butler County

3 S Clarksville	23	0400CST 0415CST			0	0	0.00K	0.00K	Flash Flood
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Law enforcement reported water up to the wheel wells of a pickup truck along 220th st near Terrace Ave.

A generally stationary boundary remained oriented roughly west to east across the state through the evening and overnight hours. As a result, storms initiated along and north of the boundary and provided multiple rounds of heavy rainfall from roughly Ames northward. Rainfall amounts typically resided within the 2 to 5 inch range with a few reports within the 5 to 5.5 inch range. Given the relatively short duration of the rainfall, flash flooding was reported in a number of areas, again ranging from Ames northward.

Black Hawk County

1 NE (ALO)Waterloo Muni A	23	0807CST							
1 S Cedar Falls	29	1837CST			0	0	0.00K	0.00K	Flood

The Cedar River at Waterloo crested at 22.95 feet on 24 September 2016 at 4 pm CDT.

Wright County

2 SSE Cornelia	23	0845CST							
2 SW Dows	27	2200CST			0	0	0.00K	0.00K	Flood

The Iowa River at Rowan crested at 14.47 feet on 24 September 2016 at 2 pm CDT.

Several rivers went into flood across central and northern Iowa due to heavy rains received during the month of September, especially during the middle to latter portion of the month. Two of the rivers, the Iowa River at Tama Highway E49 and the Cedar River at Cedar Falls, remained in flood until early October.

Wright County

1 WNW Belmond	23	0943CST							
3 ENE Cornelia	24	1000CST			0	0	50.00K	100.00K	Flood

Iowa DOT reported US Highway 69 closed near Belmond due to flooding. Detour in place.

Bremer County

3 ENE Readlyn	23	1217CST							
2 SSW Buck Creek	24	1000CST			0	0	20.00K	100.00K	Flood

Iowa DOT reported IA Highway 3 closed near Readlyn due to flooding. Detour in place.

A generally stationary boundary remained oriented roughly west to east across the state through the evening and overnight hours. As a result, storms initiated along and north of the boundary and provided multiple rounds of heavy rainfall from roughly Ames northward. Rainfall amounts typically resided within the 2 to 5 inch range with a few reports within the 5 to 5.5 inch range. Given the relatively short duration of the rainfall, flash flooding was reported in a number of areas, again ranging from Ames northward.

Madison County

1 N Winterset	24	0600CST			0	0	0.00K	0.00K	Heavy Rain
	25								

CoCoRaHS observer reported heavy rainfall of 2.30 inches over the last 24 hours.

Union County

1 E Lorimor	24	0600CST			0	0	0.00K	0.00K	Heavy Rain
	25								

Coop observer reported heavy rainfall of 3.0 inches over the last 24 hours.

Clarke County

1 ESE Murray	24	0630CST			0	0	0.00K	0.00K	Heavy Rain
	25								

Trained spotter reported heavy rainfall of 2.3 inches over the last 24 hours.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Central

Union County

4 SSE Thayer

24	0700CST				0	0	0.00K	0.00K	Heavy Rain
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25

CoCoRaHS observer reported heavy rainfall of 2.22 inches over the last 24 hours.

Clarke County

1 ESE Murray

24	0830CST				0	0	0.00K	0.00K	Heavy Rain
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25

Trained spotter reported heavy rainfall of 3.93 inches over the last 24 hours. Measured with a CoCoRaHS gage.

Clarke County

1 SW Murray

24	0830CST				0	0	0.00K	0.00K	Heavy Rain
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25

Trained spotter reported heavy rainfall of 2.52 inches over the last 24 hours.

Leading up to this event, a low pressure system was slowly working its way northeast through the Dakotas and into southern Canada. The associated fronts made their presence felt within Iowa on the 24th and 25th. The warm front worked its way up through the state on the 24th with little consequence, followed by the cold front and leading storms overnight the 24th into the 25th. While no damaging winds or hail were associated with storms, areas across portions of central and southern Iowa received heavy rainfall and localized flooding. The heaviest rainfall was seen across southern Iowa where 3.93 inches was reported in Murray.

Black Hawk County

1 N Evansdale

1 NE Castle Hill

24	1000CST								
25	2322CST				0	0	0.00K	0.00K	Flood

Black Hawk Creek at Hudson crested at 14.51 feet on 26 September 2016 at 7:45 am CDT.

Several rivers went into flood across central and northern Iowa due to heavy rains received during the month of September, especially during the middle to latter portion of the month. Two of the rivers, the Iowa River at Tama Highway E49 and the Cedar River at Cedar Falls, remained in flood until early October.

Clarke County

1 SSE Murray

24	2200CST								
25	0300CST				0	0	20.00K	0.00K	Flash Flood

Trained spotter reported flooding in Murray, including 6 to 8 inches of standing water in the City Park at the time of the report, a driveway culvert destroyed by water, a mobile home surrounded by 1 foot of standing water, and ditches with several feet of water.

Leading up to this event, a low pressure system was slowly working its way northeast through the Dakotas and into southern Canada. The associated fronts made their presence felt within Iowa on the 24th and 25th. The warm front worked its way up through the state on the 24th with little consequence, followed by the cold front and leading storms overnight the 24th into the 25th. While no damaging winds or hail were associated with storms, areas across portions of central and southern Iowa received heavy rainfall and localized flooding. The heaviest rainfall was seen across southern Iowa where 3.93 inches was reported in Murray.

Hamilton County

2 N Stratford

4 N Stanhope

25	1943CST								
26	0322CST				0	0	0.00K	0.00K	Flood

The Boone River at Webster City crested at 14.20 feet on 25 September 2016 at 1015 pm CDT.

Tama County

3 NW Montour

5 SSE Irving

27	0015CST								
30	2359CST				0	0	0.00K	0.00K	Flood

The Iowa River at Tama Highway E49 crested at 13.26 feet on 29 September 2016 at 10:30 pm CDT. The river remained in flood into early October.

Several rivers went into flood across central and northern Iowa due to heavy rains received during the month of September, especially during the middle to latter portion of the month. Two of the rivers, the Iowa River at Tama Highway E49 and the Cedar River at Cedar Falls, remained in flood until early October.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, East Central and Southeast

Des Moines County

1 SSE Lenox Park 07 1900CST 0 0 Thunderstorm Wind (52EG)
 The county Emergency Manager reported several trees and large branches were down. The time of the event was estimated by radar.
 Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Des Moines County

**1 WNW Burlington
Lenox Park** 07 1930CST
2030CST 0 0 2.00K 0.00K Flash Flood
 The county Emergency Manager reported a rock slide on Bluff Road making it impassable, the time and exact location are estimated.

Des Moines County

**1 WNW Lenox Park
1 WNW (BRL)Burlington Muni** 07 1940CST
2140CST 0 0 1.00K 0.00K Flash Flood
 The local Burlington Hawkeye sports editor filed a twitter report relaying police scanner traffic of 4 people in a car stuck in flood waters. Also flooding reported near the Burlington Police Department.

Linn County

**2 SW Hiawatha
4 ENE Beverly** 08 0100CST
0200CST 0 0 1.00K 0.00K Flash Flood
 Local law enforcement reports high water caused a driver to abandon his car. Ellis Boulevard was barricaded at 4 locations due to high water. The time of the event was estimated.

Clinton County

**2 NNW Bleidorn
4 SW Grand Mound** 08 0230CST
0830CST 0 0 25.00K 0.00K Flash Flood
 Much of the county had 2.5 to 4.5 inches of rain in less than 2 hours producing numerous flooding of urban streets and water in houses. At least a half dozen roads and streets were closed for several hours due to water and road damage due to moving water.
 An area of thunderstorms and showers moved across the region bringing a couple of damaging wind reports and localized, short term and one medium term flash flooding.

Dubuque County

1 E Asbury 21 0744CST 0 0 0.00K 0.00K Hail (0.75)
 A trained spotter reported dime sized hail.

Dubuque County

2 E Asbury 21 0745CST 0 0 0.00K 0.00K Hail (0.88)
 A trained spotter reported hail the size of nickels, and a few near but still below 1 inch in diameter.
 Scattered thunderstorms developed in the afternoon along a stalled frontal boundary. A couple of large hail reports were reported.

Dubuque County

Dyersville 22 2128CST
2328CST 0 0 2.00K 0.00K Flash Flood
 The county emergency manager reported flash flooding was flowing into some homes basements. The fire department is responding to the incident.

Dubuque County

Worthington 22 2308CST
23 0108CST 0 0 2.00K 0.00K Flash Flood
 The county emergency manager reported a couple of washed out roads in southwest Dubuque county from flooding.

Iowa County

**1 SW East Amana
Amana** 23 0343CST
0943CST 0 0 0.00K 0.00K Flash Flood
 The emergency manager reported flooding along the Price Creek river for several hours in the Amana Colonies.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, East Central and Southeast

Linn County

2 SW Cedar Rapids	23	0413CST 0613CST			0	0	1.00K	0.00K	Flash Flood
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Local law enforcement reported Ellis Road west of Edgewood Road was under water and impassable.

Thunderstorms developed along a nearly stalled front with very warm and moist air to the south. A few reports of short term flash flooding occurred from these storms. One medium term flash flooding event occurred.

Delaware County

3 SW Dundee 1 NE Buck Creek	23	1200CST 1600CST			0	0	150.00K	0.00K	Flood
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Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Maquoketa River to rise above major flood stage levels. Manchester rose above its major flood stage level of 20.0 feet on September 23rd, 2016 at approximately 12 PM CST. It crested around 20.3 feet at approximately 3 PM CST on September 23rd, 2016. It fell below major flood stage on September 23rd around 4 PM CST.

Buchanan County

2 SSW Fairbank 2 W Littleton	24 26	0900CST 2200CST			0	0	100.00K	0.00K	Flood
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Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Wapsipinicon River to rise above major flood stage levels. Independence rose above its major flood stage level of 15.0 feet on September 24th, 2016 at approximately 9 AM CST. It crested around 19.4 feet at approximately 11 AM CST on September 25th, 2016. It fell below major flood stage on September 26th around 11 PM CST.

Benton County

6 NW Mt Auburn 3 NE Atkins	25 28	0500CST 0900CST			0	0	100.00K	0.00K	Flood
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Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Cedar River to rise above major flood stage levels. Vinton rose above its major flood stage level of 19.0 feet on September 25th, 2016 at approximately 5 AM CST. It crested around 21.8 feet at approximately 8 AM CST on September 26th, 2016. It fell below major flood stage on September 28th around 9 AM CST. Approximately 20 residences were inundated with water. State Highway 150 was closed at Vinton. Additional roads in the city of Vinton and secondary roads across the county were closed.

Linn County

3 W Covington 21 SSE Lisbon	26 30	2100CST 0600CST			0	0	2200.00K	0.00K	Flood
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Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Cedar River to rise above major flood stage levels.

Cedar Rapids rose above its major flood stage level of 16.0 feet on September 25th, 2016 at approximately 10 PM CST. It crested around 22.0 feet at approximately 8 AM CST on September 26th, 2016. It fell below major flood stage on September 30th around 6 AM CST.

Over 100 buildings and homes were impacted by the flooding. Dozens of blocks were closed of due to temporary barriers related to the flooding for a few to several days.

Local agencies reported 27 roads were closed across the county.

Roughly 100 homes were evacuated in Palo, a community near Cedar Rapids along the Cedar River.

All the bridges except for the I-380 were closed. All schools in Cedar Rapids were closed for 3 days.

This was the second highest crest on record, surpassed only by the crest of 31.12 feet in 2008.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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IOWA, East Central and Southeast

Significant record to near record heavy rainfall in North Central and Northeast Iowa from 21 to 23 September of 4 to over 10 plus inches caused major river flooding on many forecast points on the Iowa tributaries of the Wapsipinicon, Cedar, lower Iowa, and Maquoketa rivers. Then major river flooding occurred downstream on the Mississippi River from the Iowa River and Mississippi River convergence and south.

Jones County 13 NW Stone City

27	1945CST								
28	1315CST				0	0	100.00K	0.00K	Flood

Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Wapsipinicon River to rise above major flood stage levels. Anamosa rose above its major flood stage level of 21.5 feet on September 27th, 2016 at approximately 11 PM CST. It crested around 22.8 feet at approximately 7 PM CST on September 27th, 2016. It fell below major flood stage on September 28th around 4 pm CST. Flooding continued into October.

Significant record to near record heavy rainfall in North Central and Northeast Iowa from 21 to 23 September of 4 to over 10 plus inches caused major river flooding on many forecast points on the Iowa tributaries of the Wapsipinicon, Cedar, lower Iowa, and Maquoketa rivers. Then major river flooding occurred downstream on the Mississippi River from the Iowa River and Mississippi River convergence and south.

Cedar County 2 NW Cedar Bluff

27	2100CST								
30	2359CST				0	0	250.00K	0.00K	Flood

The county Emergency Manager reported roughly 10 homes under water. There were 4 campgrounds that were evacuated. Numerous road closures occurred near the river.

Significant record to near record heavy rainfall in North Central and Northeast Iowa from 21 to 23 September of 4 to over 10 plus inches caused major river flooding on many forecast points on the Iowa tributaries of the Wapsipinicon, Cedar, lower Iowa, and Maquoketa rivers. Then major river flooding occurred downstream on the Mississippi River from the Iowa River and Mississippi River convergence and south.

Muscatine County 5 NNW Atalissa 3 SW Conesville

28	0615CST								
30	2359CST				0	0	150.00K	0.00K	Flood

Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Cedar River to rise above major flood stage levels. Conesville rose above its major flood stage level of 16.5 feet on September 28th, 2016 at approximately 5 AM CST. It crested around 18.2 feet at approximately 9 AM CST on September 29th, 2016. It fell below major flood stage on October 1st around 11 pm CST. Major flooding continued into October.

Louisa County 3 SSE Gladwin 4 NNE Cairo

28	1200CST								
30	2359CST				0	0	100.00K	0.00K	Flood

Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Iowa River to rise above major flood stage levels. Columbus Junction rose above its major flood stage level of 23.0 feet on September 28th, 2016 at approximately 12 PM CST. It crested around 25.3 feet at approximately 2 AM CST on September 30th, 2016. It fell below major flood stage on October 2nd around 8 AM CST. Major flooding continued into October.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, East Central and Southeast

Louisa County

4 ESE Fredonia	29	0000CST							
3 NNE Cairo	30	2359CST			0	0	100.00K	0.00K	Flood

Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Iowa River to rise above major flood stage levels.

Wapello rose above its major flood stage level of 25.0 feet on September 29th, 2016 at approximately 12 AM CST. It crested around 27.2 feet at approximately 9 AM CST on September 30th, 2016. It fell below major flood stage on October 2nd around 1 PM CST.

Major flooding continued into October.

Clinton County

3 WNW Lost Nation	29	0700CST							
3 NW Wheatland	30	2359CST			0	0	100.00K	0.00K	Flood

Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Wapsipinicon River to rise above major flood stage levels.

De Witt rose above its major flood stage level of 12.5 feet on September 29th, 2016 around 7 AM CST. It crested around 13.9 feet at approximately 4 PM CST on October 1st, 2016. It fell below major flood stage on October 5th around 5 PM CST.

Major flooding continued into October.

Des Moines County

2 NE Lenox Park	30	1845CST							
4 SSW Spring Grove		2359CST			0	0	100.00K	0.00K	Flood

Heavy rainfall of 4 to over 10 inches over significant areas from 21 to 23 September in extreme North Central and Northeast Iowa moved downstream causing the Mississippi River to rise above major flood stage levels.

Burlington rose above its major flood stage level of 18.0 feet on September 30th, 2016 at approximately 7 PM CST. It crested around 18.93 feet on October 3rd, 2016. It fell below major flood stage on October 6th around 1 pm CST.

Major flooding continued into October.

Significant record to near record heavy rainfall in North Central and Northeast Iowa from 21 to 23 September of 4 to over 10 plus inches caused major river flooding on many forecast points on the Iowa tributaries of the Wapsipinicon, Cedar, lower Iowa, and Maquoketa rivers. Then major river flooding occurred downstream on the Mississippi River from the Iowa River and Mississippi River convergence and south.

IOWA, Northeast

Howard County

2 WSW Bonair	06	1650CST							
		1651CST	0.02	25	0	0	0.20K	0.00K	Tornado (EF0)

A tornado briefly touched down southeast of Lime Springs with little to no damage reported.

As thunderstorms moved across northeast Iowa during the afternoon of September 6th, a brief tornado touched down southeast of Lime Springs (Howard County). The tornado was on the ground for less than a minute with little to no damage reported.

Winneshiek County

Calmar	07	0400CST			0	0	30.00K	0.00K	Lightning
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A house fire in Calmar was started by a lightning strike. The fire was contained to the attic with the house suffering moderate damage.

A house fire in Calmar (Winneshiek County) was started from a lightning strike during the early morning hours of September 7th. The fire was confined to the attic with the house sustaining moderate damage.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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IOWA, Northeast

Allamakee County 3 S Chester

07	0830CST								
08	1155CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rains pushed the Upper Iowa River out of its banks near Dorchester. The river crested two and a half feet above the flood stage at 16.55 feet.

Winneshiek County 1 NE Spillville

08	1140CST								
	1605CST				0	0	0.00K	0.00K	Flood

Heavy rains in the upper reaches of the Turkey River caused a short period of flooding in Spillville. The river crested just over the flood stage at 9.14 feet.

Heavy rain in the upper reaches of the Upper Iowa and Turkey Rivers produced a short period of flooding near Dorchester (Allamakee County) and in Spillville (Winneshiek County) in early September.

Floyd County 2 ENE Floyd

09	0700CST								
	1518CST				0	0	0.00K	0.00K	Heavy Rain

Near Floyd, 3.85 inches of rain fell.

Floyd County Charles City

09	0700CST								
	1730CST				0	0	0.00K	0.00K	Heavy Rain

The COOP observer in Charles City measured 3.35 inches of rain.

Chickasaw County New Hampton

09	0730CST								
	1116CST				0	0	0.00K	0.00K	Heavy Rain

In New Hampton, three inches of rain fell.

Winneshiek County 1 NE Spillville

09	1305CST								
11	0125CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Turkey River out of its banks in Spillville. The river crested five feet above the flood stage at 13.99 feet. This was the second time in two days that flooding occurred at this site. It had crested at 9.14 feet the day before.

Fayette County 2 ESE Eldorado

09	1320CST								
11	1645CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rains pushed the Turkey River out of its banks near Eldorado. The river crested almost four feet above the flood stage at 16.75 feet.

Allamakee County 1 NW Ludlow

09	1330CST								
	1500CST				0	0	12.00K	0.00K	Flash Flood

Flood waters covered Pole Line Road northeast of Frankville.

Floyd County 1 ENE Charles City Arpt 1 NE Carrville

09	1359CST								
	1700CST				0	0	6.00K	0.00K	Flash Flood

Flood waters covered some county roads east of Charles City.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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IOWA, Northeast

Chickasaw County

3 ENE Lawler
1 SW Boyd

09	1408CST				0	0	35.00K	0.00K	Flash Flood
	1715CST								

Flood waters covered State Highway 24 northeast of Lawler. Many other roads across Chickasaw County were reported to be under water as well.

Allamakee County

3 S Chester

09	1410CST				0	0	40.00K	0.00K	Flood
11	0045CST								

Runoff from heavy rains caused the Upper Iowa River to go out of its banks near Dorchester. The river crested three feet over the flood stage at 17.04 feet. This was the second time in two days that flooding occurred at this site. The river had crested at 16.55 feet during the evening of Sept.7th.

Clayton County

Elkader

09	2210CST				0	0	0.00K	0.00K	Flood
12	0630CST								

Runoff from heavy rain pushed the Turkey River out of its banks in Elkader. The river crested over five feet above the flood stage at 17.17 feet.

Fayette County

1 NW Clermont

10	1225CST				0	0	5.00K	0.00K	Flood
11	0710CST								

Runoff from heavy rain pushed the Turkey River out of its banks near Clermont. The river crested less than a foot over the flood stage at 16.95 feet.

Clayton County

1 N Garber

10	2310CST				0	0	0.00K	0.00K	Flood
12	0355CST								

Runoff from heavy rain pushed the Turkey River out of its banks in Garber. The river crested over two feet above the flood stage at 19.22 feet.

Rainfall amounts of 2 to 4 inches were common across northeast Iowa during the afternoon of September 9th. This rain fell fast enough and on soils that were already saturated leading to more flash flooding. Water covered roads across parts of Floyd, Chickasaw and Allamakee Counties.

Fayette County

2 ESE Eldorado

16	0505CST				0	0	0.00K	0.00K	Flood
	1215CST								

Runoff from heavy rains pushed the Turkey River out of its banks in Eldorado. The river crested just over the flood stage at 13.15 feet.

Clayton County

Elkader

16	1045CST				0	0	0.00K	0.00K	Flood
17	1055CST								

Runoff from heavy rain pushed the Turkey River out of its banks in Elkader. The river crested over a foot above the flood stage at 13.36 feet.

Flooding occurred along the Turkey River in the middle of September after rain fell on already saturated ground. The river briefly went out of its banks in both Eldorado (Fayette County) and Elkader (Clayton County).

Clayton County

4 NNW Osterdock

19	1414CST				0	0	5.00K	0.00K	Hail (1.75)
	Golfball sized hail fell southeast of Garnavillo.								

Clayton County

1 S Guttenberg Arpt

19	1419CST				0	0	1.00K	0.00K	Hail (1.75)
	Up to golfball sized hail fell north of Guttenberg.								

As a line of thunderstorms moved across northeast Iowa during the afternoon of September 19, some of the stronger storms dropped large hail. Golfball sized hail fell near Garnavillo (Clayton County) and Guttenberg (Clayton County).

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Northeast

Allamakee County 2 E New Albin

21	0630CST				0	0	13.00K	33.00K	Flash Flood
22	0830CST								

At least two mudslides occurred along State Highway 26 between New Albin and Lansing.

Floyd County 3 S Nora Spgs

21	1420CST				0	0	0.00K	0.00K	Heavy Rain
22	0600CST								

Near Nora Springs, 9.36 inches of rain fell.

Floyd County 2 ESE Charles City

21	1500CST				0	0	0.00K	0.00K	Heavy Rain
22	0600CST								

The COOP observer in Charles City measured 6.35 inches of rain.

Floyd County 2 SSW Nora Spgs

21	1513CST				0	0	0.00K	0.00K	Thunderstorm Wind (57MG)
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A wind gust of 66 mph was measured south of Nora Springs.

Note: The measured wind gust of 57 knots is equivalent to 66 mph.

Floyd County 1 W Charles City Arpt

21	1515CST				0	0	0.00K	0.00K	Heavy Rain
22	0555CST								

The automated weather observing equipment at the Charles City airport measured 4.79 inches of rain.

Floyd County 1 SW Nora Spgs

21	1525CST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was blown down onto a house in Nora Springs.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Chickasaw County Chickasaw

21	1535CST				0	0	0.00K	0.00K	Heavy Rain
22	0645CST								

Near Ionia, 6.38 inches of rain fell.

Floyd County 1 NE Rockford

21	1606CST				0	0	0.00K	0.00K	Hail (1.50)
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Ping pong ball sized hail fell in Rockford.

Floyd County Nora Spgs

21	1606CST				0	0	1.00K	0.00K	Thunderstorm Wind (52EG)
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Trees were blown down in Nora Springs.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Floyd County 1 W Rockford

21	1610CST				0	0	1.00K	0.00K	Thunderstorm Wind (52EG)
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Trees were blown down west of Rockford.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Chickasaw County 1 SE New Hampton

21	1625CST				0	0	0.00K	0.00K	Heavy Rain
22	0600CST								

In New Hampton, 3.59 inches of rain fell.

Mitchell County 1 E St Ansgar

21	1630CST				0	0	0.00K	0.00K	Heavy Rain
22	0604CST								

In St. Ansgar, 3.00 inches of rain fell.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
IOWA, Northeast									
Floyd County 3 W Aureola	21	1633CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
	An estimated wind gust of 70 mph occurred west of Marble Rock.								
	Note: The estimated wind gust of 61 knots is equivalent to 70 mph.								
Floyd County 6 SSE Carrville	21	1635CST 2200CST			0	0	0.00K	0.00K	Heavy Rain
	West of Nashua, 7.55 inches of rain fell.								
Floyd County 1 SE Marble Rock	21	1650CST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
	Trees, two to three foot in diameter, were blown down just southeast of Marble Rock.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Howard County 3 NE Riceville	21 22	1710CST 0704CST			0	0	0.00K	0.00K	Heavy Rain
	Near Riceville, 4.54 inches of rain fell.								
Floyd County 2 SE Marble Rock	21	1720CST			0	0	50.00K	0.00K	Thunderstorm Wind (52EG)
	Machine sheds were blown down and destroyed southeast of Marble Rock.								
	Note: The estimated wind gust of 52 knots is equivalent to 60 mph.								
Floyd County 2 WSW Powersville	21	1732CST 1735CST	1.65	50	0	0	3.00K	3.00K	Tornado (EF0)
	A weak tornado touched down west of Nashua. The tornado moved through rural areas producing only some crop damage.								
Fayette County 1 S Waucoma	21 22	1825CST 0500CST			0	0	0.00K	0.00K	Heavy Rain
	In Waucoma, 3.91 inches of rain fell.								
Floyd County 6 N Folkerts Fld Arpt 7 E Powersville	21 22	1830CST 0930CST			0	0	0.00K	0.00K	Flash Flood
	Heavy rain caused water to go over several roads in the southwest two-thirds of Floyd County. The roads were impassable making travel not possible. Water was reported to still be rising southwest of Charles City after sunrise on the 22nd.								
Allamakee County 3 S Dorchester	21 22	1830CST 0700CST			0	0	0.00K	0.00K	Heavy Rain
	The COOP observer near Dorchester measured 4.21 inches of rain.								
Floyd County 1 W Aureola	21	1844CST			0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
	A wind gust of 60 mph occurred just west of Marble Rock.								
	Note: The measured wind gust of 52 knots is equivalent to 60 mph.								
Floyd County 1 E Marble Rock	21	1844CST			0	0	0.00K	0.00K	Thunderstorm Wind (61MG)
	A wind gust of 70 mph occurred just east of Marble Rock.								
	Note: The measured wind gust of 61 knots is equivalent to 70 mph.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Northeast

Mitchell County

4 NNW Otranto
5 WSW Meroa

21	1900CST 2315CST				0	0	0.00K	0.00K	Flash Flood
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Flood waters covered several rural roads in the western sections of Mitchell County.

Winneshiek County

5 N Decorah Tatso Arpt
1 NNE Freeport

22	0105CST 0400CST				0	0	56.00K	0.00K	Flash Flood
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Heavy rain caused flooding to occur in the Bluffton area along the Upper Iowa River and Pine and Silver Creeks. Street flooding occurred in Decorah.

Allamakee County

5 S Waukon Jct

22	0334CST 1130CST				0	0	10.00K	0.00K	Flash Flood
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Runoff from heavy rain caused 4 to 5 mudslides to occur across Allamakee County. Mudslides north of Lansing sent downed trees on to some roads. Flooding in the Yellow River State Forest prompted officials to close all the campgrounds.

Mitchell County

70 W Quandahl
Stacyville

22	0339CST 0745CST				0	0	0.00K	0.00K	Flood
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Runoff from heavy rains caused water to cover the roads in Carpenter. Water was also over roads near Stacyville.

Allamakee County

3 S Chester

22	0350CST				0	0	0.00K	0.00K	Flood
24	2015CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Upper Iowa River out of its banks near Dorchester. The river crested over three feet above the flood stage at 17.19 feet.

Fayette County

1 NNW Hawkeye
2 NNE Donnan

22	0351CST 1315CST				0	0	200.00K	0.00K	Flash Flood
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Flood waters from Crane Creek covered U.S. Highway 18 northeast of Hawkeye and the streets were flooded in Hawkeye. Numerous roads between West Union and Sumner had water over them.

Fayette County

2 ESE Eldorado

22	0355CST				0	0	0.00K	0.00K	Flood
24	1350CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Turkey River out of its banks near Eldorado. The river crested over four feet above the flood stage at 17.12 feet.

Chickasaw County

1 WNW Nashua
2 ESE Horn Fld Arpt

22	0356CST 0900CST				0	0	48.00K	5.00K	Flash Flood
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The fire department had to pump water out of basements in Nashua and volunteers helped sandbag homes in both Nashua and Ionia. Flood waters from the Wapsipinicon River covered U.S. Highway 18 west of New Hampton. For the second time this month, school was canceled in the New Hampton school district because of flooding.

Howard County

3 WNW Vernon Spgs
2 ENE Davis Corners

22	0534CST 0845CST				0	0	5.00K	0.00K	Flood
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Roads west of Cresco had water over them because of runoff from heavy rain. Water also covered roads around Vernon Springs.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Northeast

Winneshiek County

1 NE Spillville

22	0555CST								
23	2120CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Turkey River out of its banks in Spillville. The river crested almost five above the flood stage at 13.73 feet.

Thunderstorms with high winds and extremely heavy rain moved across northeast Iowa during the evening of September 21st into the early morning of the 22nd. Winds of 60 to 70 mph occurred near Rockford (Floyd County) and Nora Springs (Floyd County). A small tornado touched down west of Nashua (Floyd County) and produced some crop damage. Flash flooding caused water to cover most roads over the southern two-thirds of Floyd County along with the southern sections of Chickasaw County and mudslides occurred across Allamakee County. The Governor of Iowa signed a disaster proclamation because of all the flooding in September for Allamakee, Chickasaw, Clayton, Fayette, Floyd, Howard, Mitchell and Winneshiek Counties and a federal disaster declaration was made for the same counties.

Fayette County

Oelwein

22	0600CST								
23	0225CST				0	0	0.00K	0.00K	Heavy Rain

The COOP observer in Oelwein measured 4.47 inches of rain.

For the second night in a row, thunderstorms with heavy rain moved across northeast Iowa on September 23rd. While the rain was not as heavy or as widespread as the previous night, due to the wet ground, flash flooding quickly occurred as the rainfall turned into runoff. Otter Creek went out of its banks in Oelwein (Fayette County) and a road was washed out on the northeast side of town. A total of 16 roads were closed across Fayette County from the two days of flooding that occurred on September 22nd and 23rd.

Fayette County

1 NW Clermont

22	0635CST								
24	1335CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Turkey River out of its banks in Clermont. The river crested a foot and a half above the flood stage at 17.66 feet.

Clayton County

1 E Monona

1 N St Olaf

22	0643CST								
	1100CST				0	0	10.00K	0.00K	Flash Flood

Sections of County Highway B45 were washed out near Monona. Sandbagging occurred in Farmersburg to protect the community from flood waters on Howard Creek.

Clayton County

Elkader

22	0725CST								
25	1905CST				0	0	2.00K	5.00K	Flood

Runoff from heavy rain pushed the Turkey River out of its banks in Elkader. The river crested over eight feet above the flood stage at 20.65 feet.

Floyd County

1 E Charles City

22	0810CST								
25	2040CST				0	0	15.00K	0.00K	Flood

Runoff from heavy rain pushed the Cedar River out of its banks in Charles City. The river crested nine feet above the flood stage at 21 feet.

Mitchell County

2 WNW Osage

22	1230CST								
25	0035CST				0	0	2.00K	0.00K	Flood

Runoff from heavy rain pushed the Cedar River out of its banks near Osage. The river crested almost six feet above the flood stage at 27.78 feet.

Clayton County

1 N Garber

22	1310CST								
25	1255CST				0	0	12.00K	0.00K	Flood

Runoff from heavy rain pushed the Turkey River out of its banks in Garber. The river crested over eight feet above the flood stage at 25.15 feet.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Northeast

Thunderstorms with high winds and extremely heavy rain moved across northeast Iowa during the evening of September 21st into the early morning of the 22nd. Winds of 60 to 70 mph occurred near Rockford (Floyd County) and Nora Springs (Floyd County). A small tornado touched down west of Nashua (Floyd County) and produced some crop damage. Flash flooding caused water to cover most roads over the southern two-thirds of Floyd County along with the southern sections of Chickasaw County and mudslides occurred across Allamakee County. The Governor of Iowa signed a disaster proclamation because of all the flooding in September for Allamakee, Chickasaw, Clayton, Fayette, Floyd, Howard, Mitchell and Winneshiek Counties and a federal disaster declaration was made for the same counties.

Fayette County

2 ENE Oelwein Muni Arpt

22	2323CST								
23	0230CST				0	0	125.00K	0.00K	Flash Flood

Heavy rain caused Otter Creek to go out of its banks in Oelwein flooding several city parks. A road was washed out on the northeast side of the city and street flooding occurred in other parts of the city.

For the second night in a row, thunderstorms with heavy rain moved across northeast Iowa on September 23rd. While the rain was not as heavy or as widespread as the previous night, due to the wet ground, flash flooding quickly occurred as the rainfall turned into runoff. Otter Creek went out of its banks in Oelwein (Fayette County) and a road was washed out on the northeast side of town. A total of 16 roads were closed across Fayette County from the two days of flooding that occurred on September 22nd and 23rd.

Clayton County

1 NNE Mc Gregor

26	1600CST								
30	2359CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Mississippi River out of its banks in McGregor. The river crested less than a foot above the flood stage at 16.87 feet. The flooding continued into early October.

Clayton County

Guttenberg Arpt

28	0200CST								
30	2200CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Mississippi River out of its banks in Guttenberg. The river crested just over the flood stage at 15.22 feet. The flooding continued into early October.

The excessive amount of rain that fell over the region during September caused flooding to occur along the Mississippi River. Both McGregor and Guttenberg (Clayton County) experienced flooding that continued into early October.

IOWA, Northwest

Sioux County

5 SE Lebanon

05	0032CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds caused tree damage, including a 4 inch diameter limb blown down.

A thunderstorm produced damaging winds in Sioux County of northwest Iowa a little after midnight on September 5th. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

IOWA, Southwest

Harrison County

3 SE Little Sioux

09	1145CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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The observed reported wind gusts to 60 mph and small hail with the line of thunderstorms.

A cold front moved southeast across western Iowa and eastern Nebraska during the day on September 9th. The front led to widespread thunderstorms across the area during the day. The majority of these storms were non-severe, but isolated strong winds were observed from a storm in west central Iowa. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Monona County

2 WSW Blencoe

15	1705CST				0	0	0.00K	0.00K	Hail (0.75)
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Monona County

1 SW Blencoe

15	1723CST				0	0	0.00K	0.00K	Hail (1.50)
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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IOWA, Southwest

Fremont County 2 NW Payne

16	0032CST				0	0	0.00K	0.00K	Thunderstorm Wind (55MG)
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Measured by a Iowa State department of transportation road weather sensor.

Note: The measured wind gust of 55 knots is equivalent to 63 mph.

Monona County Blencoe

16	0827CST 1030CST				0	0	0.00K	0.00K	Flash Flood
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Heavy rainfall in excess of 5 inches led to water over a couple of county roadways.

As an upper level storm system moved into the northern Plains, a warm front retreated through eastern Nebraska and western Iowa during the afternoon. Unseasonably warm and humid air lifted into the region creating marginal instability by mid afternoon, but with the warm front in the area environmental shear was strong. Thunderstorms developed across northeast and east-central Nebraska by mid afternoon. Initially isolated supercells were the dominate mode with large hail the main threat. A small short-lived tornado did develop from one of the supercells in Washington County. Thunderstorms then moved into western Iowa as they continued to produce large hail. By mid evening the thunderstorms developed a common outflow in a west to east orientation and allowed for training, especially over northeast Nebraska. This continued regeneration of thunderstorms over the same area led to significant river and flash flooding over parts of the through the night.

KANSAS, East

Anderson County 1 E Kincaid

09	0345CST 0515CST				0	0	0.00K	0.00K	Flash Flood
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Underpass on K-31 near Kincaid has water overflowing the road. One car was stranded, the highway is now closed.

Brown County 2 NNE Baker

13	1722CST 1900CST				0	0	0.00K	0.00K	Flash Flood
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Video of water running across the road at the intersection of 190th and Kestrel Road. Water looks to be 6 to 12 inches deep. Video via social media.

Nemaha County 2 N Centralia

13	2011CST 2145CST				0	0	0.00K	0.00K	Flash Flood
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Highway 187 is closed 2 miles north of Centralia due to water across the road.

Nemaha County 2 N Centralia

13	2011CST 2145CST				0	0	0.00K	0.00K	Flash Flood
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Highway 187 is closed 2 miles north of Centralia due to water across the road.

Brown County 3 SW Padonia 2 ESE Hiawatha Arpt

14	0042CST 0215CST				0	0	0.00K	0.00K	Flash Flood
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Several rural roads closed due to high water across the road.

The month of September saw no severe reports of wind, hail or tornadoes. However, a few events caused heavy rainfall resulting in flash-flooding.

Nemaha County 2 SW Centralia

24	1740CST 1910CST				0	0	0.00K	0.00K	Flash Flood
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Flooding is ongoing in several parts of Nemaha County, including Centralia. K-187 is closed between MM-3 and MM-4, a county road is closed near Seneca, and portions of Tennessee Creek and Nemaha River are out of their banks near Seneca.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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KANSAS, East

Shawnee County 4 SW Menoken

24	1941CST 2111CST				0	0	0.00K	0.00K	Flash Flood
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Law enforcement reports water over the road at 21st and Indian Hills.

Shawnee County 5 SE Valencia

24	1954CST 2124CST				0	0	0.00K	0.00K	Flash Flood
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Flooding reported in the 3000 block of Auburn Road.

Lyon County 2 N Admire

24	2010CST 2140CST				0	0	0.00K	0.00K	Flash Flood
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Road closed near K-99 and 340 Road.

Shawnee County 2 NE Silver Lake 2 NW Kiro

24	2026CST 2156CST				0	0	0.00K	0.00K	Flash Flood
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Driveway was washed out by flash-flooding.

Jackson County 1 NW Hoyt

24	2110CST 2240CST				0	0	0.00K	0.00K	Flash Flood
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Several roads are closed due to flooding in the town of Hoyt. Also the intersection of 102 Road and S Road is closed.

Jackson County 1 N Denison

24	2110CST 2140CST				0	0	0.00K	0.00K	Flash Flood
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The intersection of Highway 198 and V Road is closed due to water across the road.

Lyon County 1 WSW Bushong

24	2123CST 2253CST				0	0	0.00K	0.00K	Flash Flood
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The 1400 block of road F and the 3100 block of road F are closed due to water across the road.

Wabaunsee County 2 SSE Bradford 3 WSW Harveyville

24	2130CST 2300CST				0	0	0.00K	0.00K	Flash Flood
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Road is closed near the intersection of K-99 and K-31.

Wabaunsee County 2 SW Maple Hill

24	2130CST 2300CST				0	0	0.00K	0.00K	Flash Flood
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Creek is flooding out of its bank and nearly over-topping the road. the same creek is also producing minor flooding near Willard. K-30 is also closed near Maple Hill.

Several rounds of heavy rainfall resulted in numerous flash-flooding reports.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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KANSAS, Extreme Southeast

Bourbon County 3 S Petersburg

15	2205CST								
16	0005CST				0	0	0.00K	0.00K	Flash Flood

Excessive rainfall caused Prong Creek to flood a section of Highway 3.

A slow moving storm produced localized heavy rainfall and caused one report of flash flooding in southeast Kansas.

KANSAS, North Central

Osborne County Natoma

03	1800CST								
04	0600CST				0	0	0.00K	0.00K	Heavy Rain

A storm total rainfall amount of 3.78 inches was reported, most of which fell between 8 p.m. and 2 a.m. CST.

Osborne County 7 NNE Natoma

03	1800CST								
04	0600CST				0	0	0.00K	0.00K	Heavy Rain

A storm total rainfall amount of 3.28 inches was reported, most of which fell between 8 p.m. and 2 a.m. CST.

Phillips County Logan

03	1800CST								
04	0600CST				0	0	0.00K	0.00K	Heavy Rain

A storm total rainfall amount of 4.10 inches was reported, most of which fell between 8 p.m. and 2 a.m. CST.

Phillips County Prairie View

03	1800CST								
04	0600CST				0	0	0.00K	0.00K	Heavy Rain

A storm total rainfall amount of 4.18 inches was reported, most of which fell between 8 p.m. and 2 a.m. CST.

Phillips County Logan

03	1800CST								
04	0600CST				0	0	0.00K	0.00K	Heavy Rain

A storm total rainfall amount of 3.50 inches was reported, most of which fell between 8 p.m. and 2 a.m. CST.

Rooks County 4 WNW Plainville

03	1800CST								
04	0600CST				0	0	0.00K	0.00K	Heavy Rain

A storm total rainfall amount of 5.80 inches was reported, most of which fell between 8 p.m. and 2 a.m. CST.

Rooks County Damar

03	1800CST								
04	0600CST				0	0	0.00K	0.00K	Heavy Rain

A storm total rainfall amount of 5.52 inches was reported, most of which fell between 8 p.m. and 2 a.m. CST.

Rooks County Plainville

03	1800CST								
04	0600CST				0	0	0.00K	0.00K	Heavy Rain

A storm total rainfall amounts up to 6 to 6.50 inches were reported around town, most of which fell between 8 p.m. and 2 a.m. CST.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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KANSAS, North Central

Rooks County

4 N Damar

03	1800CST								
04	0600CST				0	0	0.00K	0.00K	Heavy Rain

A storm total rainfall amount of 4.14 inches was reported, most of which fell between 8 p.m. and 2 a.m. CST.

Rooks County

4 ESE Palco

03	1800CST								
04	0600CST				0	0	0.00K	0.00K	Heavy Rain

A storm total rainfall amount of 5.10 inches was reported, most of which fell between 8 p.m. and 2 a.m. CST.

Rooks County

1 SE Palco

03	1800CST								
04	0600CST				0	0	0.00K	0.00K	Heavy Rain

A storm total rainfall amount of 4.55 inches was reported, most of which fell between 8 p.m. and 2 a.m. CST.

Phillips County

5 NW Logan

03	2300CST								
04	0500CST				0	0	75.00K	500.00K	Flash Flood

Storm total rainfall amounts of 3 to 5 inches of rain were reported. Emergency management reported that numerous county roads were covered in water, as was portions of Highway 9 in the Logan area. Though the flash flood threat waned, flooding along the North Fork of the Solomon River continued on for a couple days due to very heavy rainfall upstream of Phillips County.

Rooks County

3 NNW Damar 7 NE Codell

04	0215CST								
	0815CST				0	0	75.00K	500.00K	Flash Flood

Storm total rainfall amounts of 4 to 7 inches were reported. Emergency management reported numerous county roads covered in water across the area and a few culverts were washed out.

Phillips County

3 WSW Logan 2 WNW Speed

04	1535CST								
06	0647CST				0	0	75.00K	500.00K	Flood

Very heavy rain fell over the southern half of Norton County, the northern half of Graham County and far western portions of Phillips County during the late night hours of September 3rd and into the morning of the 4th. The runoff from this rain resulted in major flooding of the North Fork Solomon River. The river gauge located just south of Glade was above flood stage of 11 feet for almost 48 hours, and a new record crest occurred with a stage of 18.55 feet at 1:45 a.m. CST on September 5th. Area roads already affected by flash flooding during the early morning hours of the 4th saw no relief as the water upstream passed through, and a Labor Day event in the town of Logan was cancelled due to area road conditions.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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KANSAS, North Central

Excessive rainfall resulted in flash flooding and river flooding on this Saturday night, with the river flooding lasting into Tuesday. Isolated thunderstorms initiated over northwest Kansas late Saturday afternoon, near the Nebraska state line. Initially, the first storms moved to the northeast, but then they slowed and began drifting to the southeast. Other storms began developing around 6 p.m. CST, and exhibited multi-cell characteristics. By 8 p.m. CST, multiple cell mergers had resulted in a pair of small thunderstorm clusters oriented west-northwest to east-southeast, from Hitchcock County Nebraska to Graham County Kansas. Shortly thereafter, other storms erupted between these two clusters, resulting in the completion of a common cold pool. The westernmost cluster, over Hitchcock and Red Willow Counties in Nebraska, became mobile and accelerated to the southeast, merging with downstream storms, and eventually evolving into a short squall line affecting Rooks and Osborne Counties in north central Kansas. The southern edge of the cold pool remained quasi-stationary, with storms propagating southeastward along and to the north of it. Repeated thunderstorm activity, as well as the slow movement of the storms, resulted in excessive rainfall over Rooks and Osborne Counties as well as several other counties to the south, west, and northwest. The squall line took nearly 2.5 hours to cross Rooks County, moving at a speed near 16 mph. Three to seven inches of rain fell across portions of Phillips, Rooks, and Osborne Counties in less than six hours. Flash flooding resulted in numerous roads covered by water in Phillips and Rooks Counties. Some culverts were even washed out in parts of Rooks County. The runoff into the basin of the North Fork of the Solomon River resulted in rapid rises. At the river gauge near the town of Glade, the river had been running a little below 3 feet in the preceding days. Water levels began rising at that gauge early Sunday afternoon. In less than 3 hours, the river reached bankfull and went into flood at 11 feet. The crest occurred Sunday night with major flooding occurring. Soil moisture had been at or above normal preceding this event, with above normal rainfall over much of north central Kansas in the month of August.

This event occurred in the warm sector of a low pressure system over central Canada. Its trailing cold front was well-upstream from the Dakota's southwest into the Nebraska Panhandle, then west through Wyoming into Utah. High pressure was over the Northeast United States. An anomalous moisture plume existed in the return flow over the Plains. The 00Z Dodge City sounding indicated a precipitable water value of 1.46 inches, which was above the 90th percentile of all PW observations for the date. West-southwest flow prevailed aloft from the Desert Southwest to the Great Lakes, with a longwave trough along the West Coast, and a ridge over the eastern United States. A weak/subtle shortwave trough appeared to be moving through. Just prior to the thunderstorms moving into north central Kansas, temperatures were in the 70s, with dewpoints in the lower to middle 60s. Mid-level lapse rates were poor, but MUCAPE was still 1000-1500 J/kg. The low-level jet was 35-40 knots over western Kansas. Effective deep layer shear was between 40 and 45 knots, despite weak mid-level winds.

KANSAS, Northeast

Johnson County **1 NW Zarah**

09	2035CST							
	2036CST			0	0	0.00K	0.00K	Hail (1.00)

Johnson County **1 NE Zarah**

09	2035CST							
	2038CST			0	0			Thunderstorm Wind (60EG)

A medium to large tree of around 8 to 10 inches in diameter was down in Shawnee. This report was received via social media.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Johnson County **De Soto**

09	2039CST							
	2041CST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG)

This report was taken from a home weather station and was reported via Twitter.

Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Johnson County **2 NW Provence Vlg**

09	2045CST							
	2048CST			0	0			Thunderstorm Wind (70EG)

A large oak tree was split in half, with an estimated diameter of about 24 inches. The condition of the tree is unknown.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Johnson County **3 N Olathe Johnson Co Ar**

09	2055CST							
	2355CST			0	0	0.00K	0.00K	Flood

There were about 6 inches of water flowing in the roadways near Gardner.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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KANSAS, Northeast

Johnson County

1 W Olathe Provence Vlg	09	2055CST 2355CST			0	0	0.00K	0.00K	Flood
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There was standing water at the intersection of Highway 7 and Elm in Olathe.

Miami County

2 ESE Osawatomie	09 10	2100CST 0000CST			0	0	0.00K	0.00K	Flood
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A road was washed out at 351st and Lonestar Road. It's unclear what time the road washed out, but it was closed for a portion of the night. Damages are also unknown.

Johnson County

4 SE Gardner Arpt 4 W Ocheltree	09	2240CST 2340CST			0	0	0.00K	0.00K	Flash Flood
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There was a water rescue near 203rd and Cedar Niles Road. This was reported via social media.

Miami County

5 W Antioch 5 SW O Brien	10	0945CST 1245CST			0	0	0.00K	0.00K	Flood
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Dispatch reported several roads around the county were closed due to water over them.

On the evening of September 9th widespread thunderstorms moved through eastern Kansas, producing areas of marginally severe hail, as well as strong winds. While there were no reports of flash flooding, the heavy rains overnight produced some scattered areal flooding, mainly in the form of flooded roads, forcing several closures.

Leavenworth County

Wadsworth Station	13	1427CST 1727CST			0	0	0.00K	0.00K	Flash Flood
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Water was running over Highway K-5 in northeast Lansing. The road was closed. The amount of damages to the highway is unknown.

Doniphan County

1 N Leona	13	2005CST 2305CST			0	0	0.00K	0.00K	Flash Flood
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There was waist-deep water reported over the bridge along Ashpointe Road. The amount of damages to the highway is unknown.

Johnson County

1 NE Olathe	13	2010CST			0	0	0.00K	0.00K	Hail (0.75)
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On the evening of September 13, widespread thunderstorm activity brought areas of flooding across northern Missouri and eastern Kansas. The extent of the impacts were several roads closed as a result of flowing and standing water. Rainfall amounts were very excessive, with some area reporting over 7 inches of rain. The highest report was in Doniphan County Kansas where over 11 inches of rain fell. Fortunately, there were no injuries and damage appeared to be minimal.

KANSAS, Northwest

Logan County

6 NW Mc Allaster	02 03	2300CST 0200CST			0	0	0.00K	0.00K	Flash Flood
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Generally roads west of CR 270, south of CR Apache Acre and north of CR Indian were covered in water from the heavy rainfall. Up to four inches of rain fell in this part of the county.

Logan County

6 NW Mc Allaster	03	0200CST 1030CST			0	0	0.00K	0.00K	Flood
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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KANSAS, Northwest

Generally roads west of CR 270, south of CR Apache Acre and north of CR Indian were still covered in water from the heavy rainfall on the morning of the 3rd. Up to four inches of rain fell in this part of the county.

During the late evening a strong thunderstorm producing heavy rainfall moved across Logan County. The majority of the heavy rainfall occurred over the west half of the county. Most of the roads in that part of the county were flooded, even well into the morning.

Sherman County

Goodland Arpt

03	1802MST								
	1814MST			0	0	0.00K	0.00K	Thunderstorm Wind (51MG)	

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Cheyenne County

16 NNE Bird City

03	1825CST								
				0	0	0.00K	0.00K	Hail (1.00)	

Sherman County

Goodland Arpt

03	1833MST								
	1837MST			0	0	0.00K	0.00K	Thunderstorm Wind (50MG)	

Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Cheyenne County

16 NNE Bird City

03	1845CST								
				0	0	0.00K	0.00K	Hail (0.88)	

Hail was accompanied by estimated wind gusts of 50 MPH.

Norton County

4 SW New Almelo

3 SW Lenora

03	2200CST								
04	0400CST			1	0	0.00K	0.00K	Flash Flood	

The North Fork of the Solomon River was out of its banks causing all of Lenora to be flooded, along with a stretch of Highway 9 coming into town as well as elsewhere in the southern part of the county. Swift water rescues occurred in the southern part of Norton county during the late evening of the third. One of these rescues involved a couple who underestimated the depth of the water over the highway and drove through the flood waters on Highway 9. The vehicle was washed off the road and caught in a tree. The couple escaped from the vehicle and climbed into the tree, remaining there until rescuers arrived. There was one direct fatality from the flooding. The individual was driving north from Graham County on county roads toward Lenora. He drove into flood waters, underestimating their depth. His vehicle was washed off the road. His body was found a quarter mile away from the vehicle. In general, the majority of the rainfall fell south of CR W. Rainfall amounts of five to seven inches were common across southern Norton County. No information was given for property damage. M581W

Decatur County

1 NW Jennings

03	2220CST								
04	0400CST			0	0	0.00K	0.00K	Flash Flood	

The bridge north of Jennings was reported to be underwater the following morning due to heavy rainfall from the nighttime. No damage was reported.

Graham County

105 ESE Bird City Arpt

12 N Nicodemus

03	2220CST								
04	0400CST			0	0	0.00K	0.00K	Flash Flood	

Bow Creek in the north part of the county is out of its banks. There is extensive flooding of county roads in the north part of the county, with an estimated seven inches of water over the roads early in the event. Water is covering Highway 283 in several locations in the northern part of the county, with debris floating across the highway. No report was given for property damaged by flooding.

Cheyenne County

12 WNW St Francis

03	2245CST								
04	0045CST			0	0	0.00K	0.00K	Flash Flood	

Prolonged heavy rainfall caused runoff to erode a three to three and a half feet deep ditch along the side of the road near the CR R/CR 3 intersection exposing a gas line.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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KANSAS, Northwest

Cheyenne County

13 N Wheeler

03	2245CST									
04	0045CST				0	0	40.00K	0.00K		Flash Flood

Eight feet of road was washed out around a culvert on CR 19 between CR BB and CR AA. The washout also exposed a phone line running under the road. The culvert had to be replaced.

Cheyenne County

14 N Wheeler

03	2245CST									
04	0045CST				0	0	0.00K	0.00K		Flash Flood

Runoff from prolonged heavy rainfall caused a draw on the east side of CR 19 to washout back across onto the road. The washout was eight to twelve feet deep.

Cheyenne County

15 N Wheeler

03	2245CST									
04	0045CST				0	0	0.00K	0.00K		Flash Flood

Runoff from prolonged heavy rainfall caused the roadway, which cuts several feet into the hill, to be washed out. The washout was two and a half to three feet deep down the hill. This is in the vicinity of CR 19 and CR CC.

Cheyenne County

8 NNW St Francis

03	2245CST									
04	0045CST				0	0	0.00K	0.00K		Flash Flood

Runoff from prolonged heavy rainfall carved a three to three and a half feet deep ditch down the hill along the south side of CR W just east of the CR W/CR 12 intersection. The ditch was deep enough to expose fiber tape near the gas line that crossed under the road.

Cheyenne County

8 W St Francis

03	2245CST									
04	0045CST				0	0	0.00K	0.00K		Flash Flood

Prolonged heavy rainfall caused the east half of a 42 culvert to be washed out just south of the CR P/CR 6 intersection. The resulting hole around the culvert was four to five feet deep.

Decatur County

1 NW Jennings

04	0400CST									
	1800CST				0	0	0.00K	0.00K		Flood

During the morning the bridge north of Jennings was reported to be underwater. Estimated the flooding to have receded close to the same time the flood waters in Norton and Graham county receded. No damage was reported.

Graham County

12 N Nicodemus

04	0400CST									
	2000CST				0	0	0.00K	0.00K		Flood

Around sunrise campers at Antelope Lake reported flood waters up to the steps of their camper, almost covering the tires. Estimated the water to be at least a foot deep. Roads in southern Norton County, where similar amounts of rain fell, were reported to still covered in water by mid afternoon. Using this report as a proxy, roads in northern Graham County were likely to still be covered by flood waters for a similar period of time. No information was given for estimates of property damage.

Norton County

**4 SW New Almelo
3 SW Lenora**

04	0400CST									
	2000CST				0	0	0.00K	0.00K		Flood

As of 2 PM CST water is still covering many roads and bridges in the south part of the county. Prairie Dog Creek and the North Fork of the Solomon River continue to be out of their banks. No information was given for property damage.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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KANSAS, Northwest

During the late afternoon and through most of the night strong to severe thunderstorms developed and trained along a surface boundary. The storms slowly moved east across parts of Northwest Kansas. The largest hail reported was quarter size in far northern Cheyenne County. The highest wind gust reported was 59 MPH at Goodland. The main impact from these storms was flash flooding over Cheyenne, Decatur, Norton, and Graham counties where estimated rainfall amounts of up to ten inches fell. Many roads in northern Cheyenne County had washouts three to four feet deep, with a few washouts eight to twelve feet deep. Road crews had to remove silt off Highway 36 west of Bird City where water flowed over the road. The worst of the flooding was over southern Norton and northern Graham counties where numerous roads were washed out and Lenora was flooded. The flash flooding transitioned to flooding during the overnight hours as the moderate to heavy rainfall moved to the east. Swift water rescues were conducted in southern Norton County. One fatality was reported from the flooding in Norton County. The flooding persisted into the evening of the fourth.

**Greeley County
Tribune**

04	1413MST				0	0	0.00K	0.00K	Hail (0.75)
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**Greeley County
Tribune**

04	1413MST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Estimated wind gusts of 60 MPH occurred along with dime size hail.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

**Sherman County
2 ENE Goodland Arpt**

04	1446MST				0	0	0.00K	0.00K	Thunderstorm Wind (51MG)
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Note: The measured wind gust of 51 knots is equivalent to 59 mph.

**Sherman County
Goodland Arpt**

04	1451MST				0	0	0.00K	0.00K	Hail (0.75)
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**Wichita County
8 NNE St Theresa**

04	1626CST				0	0	0.00K	0.00K	Hail (1.75)
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**Wichita County
7 NNE St Theresa**

04	1629CST				0	0	0.00K	0.00K	Hail (1.50)
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**Logan County
5 SSE Russell Spgs**

04	1743CST				0	0	0.00K	0.00K	Hail (1.00)
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**Logan County
6 ESE Monument**

04	1815CST				0	0	0.00K	0.00K	Hail (1.00)
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**Greeley County
5 SW Horace**

04	1830MST 2130MST				0	0	0.00K	0.00K	Flash Flood
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Flash flooding was reported on CR 12 near Highway 96. Most likely location is roughly half a mile south of the CR S/CR 12 intersection where CR 12 dips down into a low spot.

**Greeley County
1 NNE Horace**

04	1830MST 2130MST				0	0	0.00K	0.00K	Flash Flood
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Flash flooding was reported along CR O. Most likely location is roughly a half mile west of Highway 27 where White Woman Creek flows under CR O.

**Greeley County
5 N Whitelaw**

04	1830MST				0	0	31.50K	0.00K	Thunderstorm Wind (70EG)
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Three or four power poles blown down. Estimated time of report from radar.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

**Logan County
6 ESE Monument**

04	1906CST				0	0	0.00K	0.00K	Hail (1.00)
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Second round of quarter size hail.

During the afternoon and into the early evening a group of severe thunderstorms moved northeast across West Central Kansas. The largest hail size reported was golf ball north of Leoti near the county line. Winds from the thunderstorms broke three or four power poles northeast of Tribune. The very strong winds and dry ground conditions caused near zero visibility roughly 10 miles north of Marienthal. Flash flooding was reported near Tribune where a southwest to northeast corridor of up to three inches of rainfall, according to radar estimates, fell. A car was reported to be stalled in flood waters on one of the county roads in the corridor of heavy rainfall.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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KANSAS, Northwest

Decatur County

5 S Traer 05 1709CST 0 0 0.00K 0.00K Hail (1.00)

Decatur County

3 SW Traer 05 1714CST 0 0 0.00K 0.00K Hail (0.75)

Also received 0.75 of rainfall with the hail. Estimated time of the report from radar.

Decatur County

8 E Cedar Bluffs 05 1740CST 0 0 0.00K 0.00K Hail (1.25)

During the late afternoon a couple strong to severe thunderstorms moved northeast across Northwest Kansas. The largest hail size reported was half dollar near the state line south of Danbury.

Graham County

9 S Bogue 06 1750CST 0 0 Hail (0.88)

Dispatch relayed spotter report. Winds estimated at 40 to 50 mph were also reported.

Graham County

11 SSE Bogue 06 1800CST 0 0 Thunderstorm Wind (52EG)

Dime sized hail was reported along with 50 to 60 mph wind gusts. Storm produced an estimated 3 inches of rain.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Graham County

10 SSW Bogue 06 2002CST 0 0 0.00K 0.00K Flash Flood

A blocked culvert combined with persistent heavy rain led to flooding on county road H, between 320th and 330th ave. No damage was reported.

Thunderstorms formed along a stationary boundary on the afternoon of September 6th, along with reports of hail and gusty winds, flooding was reported due to slow storm movement. A flash flood watch was issued early in the morning in anticipation of flash flooding.

Gove County

2 WSW Campus 13 0125CST
0131CST 0 0 0.00K 0.00K Hail (1.00)

Shortly after midnight a severe thunderstorm produced quarter size hail near Oakley.

Sherman County

3 SE Kanorado Arpt 15 1620MST 0 0 0.00K 0.00K Hail (2.00)

Sherman County

11 NE Kanorado Arpt 15 1626MST
1636MST 0 0 0.00K 0.00K Hail (0.88)

The hail damaged crops.

Sherman County

1 WNW Caruso 15 1627MST 0 0 0.00K 0.00K Thunderstorm Wind (55MG)

Note: The measured wind gust of 55 knots is equivalent to 63 mph.

Sherman County

1 N Caruso 15 1630MST 0 0 0.00K 0.00K Hail (2.00)

Estimated hen egg size hail.

Sherman County

4 WNW Goodland Arpt 15 1633MST 0 0 0.00K 0.00K Hail (2.50)

Sherman County

1 E Goodland 15 1637MST
1646MST 0 5 0.00K 0.00K Hail (2.75)

Hail sizes ranged from golf ball to baseball size. Siding on the west side of houses and west facing windows in buildings across the north half of town were broken out due to the combined effect of the very large hail and 70 MPH winds. Many vehicles had dents and broken windows from the hail. Two adults and a child were treated at Goodland Regional Hospital for injuries to the face, head, and arms. Several students were also injured walking from school and were not treated. The worst of the damage was confined to the north half of town where the hail was the largest.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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KANSAS, Northwest

Sherman County Goodland Arpt

15	1644MST 1701MST				0	0	0.00K	0.00K	Thunderstorm Wind (61MG)
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A maximum wind gust of 70 MPH was reported during this time frame. Sustained winds up to 55 MPH were also reported.

Note: The measured wind gust of 61 knots is equivalent to 70 mph.

Sherman County 3 N Goodland Arpt

15	1645MST				0	0	0.50K	0.00K	Hail (2.75)
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At least two windows were broken from the hail and wind. The hail also damaged the trees.

Sherman County 3 N Goodland Arpt

15	1645MST				0	0	0.00K	0.00K	Thunderstorm Wind (70EG)
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Estimated wind speeds of 80 MPH occurred with the baseball size hail.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Sherman County 3 NNE Edson

15	1700MST				0	0	0.00K	0.00K	Hail (2.50)
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Thomas County 6 NNE Brownville

15	1711CST				0	0	0.00K	0.00K	Thunderstorm Wind (58MG)
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Note: The measured wind gust of 58 knots is equivalent to 67 mph.

Sheridan County 6 NNW Hoxie

15	1745CST				0	0	0.00K	0.00K	Hail (1.00)
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Thomas County 2 SSE Brewster

15	1810CST				0	0		0.00K	Hail (2.50)
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A home lost all of the windows in it from the hail. The glass was blown into the house.

Thomas County 1 SSE Brewster

15	1810CST				0	0	0.00K	0.00K	Hail (2.50)
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The hail ranged from half dollar to tennis ball size. Many downtown businesses lost windows. The school lost 34 windows. Some of the glass was embedded in the gym floor from the hail and wind. At least one corn field near town was completely destroyed.

Decatur County 7 NW Leoville

15	1821CST				0	0	0.00K	0.00K	Hail (1.75)
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Thomas County 2 S Levant

15	1821CST				0	0	0.00K	0.00K	Hail (2.50)
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Thomas County Levant

15	1821CST				0	0	0.00K	0.00K	Hail (1.00)
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Graham County 1 SE Bogue

15	1825CST				0	0	0.00K	0.00K	Hail (1.00)
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Thomas County 6 W Mingo

15	1826CST				0	0	0.00K	0.00K	Thunderstorm Wind (55MG)
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Note: The measured wind gust of 55 knots is equivalent to 63 mph.

Thomas County 4 WNW Altair

15	1830CST 1850CST				0	0	0.00K	0.00K	Hail (2.00)
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The hail started out golf ball in size then grew to hen egg size.

Thomas County 4 W Altair

15	1830CST 1850CST				0	0	1.00K	0.00K	Thunderstorm Wind (70EG)
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A large tree limb was blown down and round hay bales were blown across the highway.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
KANSAS, Northwest									
Thomas County 2 E Levant	15	1832CST			0	0	0.00K	0.00K	Hail (1.75) The hail ranged from pea to golf ball in size.
Thomas County 4 E Levant	15	1839CST			0	0	0.00K	0.00K	Hail (2.00)
Thomas County 1 S Colby	15	1840CST 1856CST			0	0	0.00K	0.00K	Hail (1.50) The hail ranged from half dollar to ping-pong ball size.
Thomas County Gem	15	1848CST			0	0	3.00K	0.00K	Thunderstorm Wind (78EG) Two trees were blown down, one was split in half. Note: The estimated wind gust of 78 knots is equivalent to 90 mph.
Thomas County Menlo	15	1905CST			0	0	5.00K	0.00K	Hail (2.00) A house in town had the siding severely damaged from the hail. The exact size of the hail is unknown.
Sheridan County 7 S Selden	15	1918CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG) Estimated wind gusts of 60-70 MPH occurred with the storm. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.
Sheridan County 4 NNE Hoxie	15	1920CST			0	0	0.00K	0.00K	Thunderstorm Wind (62MG) Note: The measured wind gust of 62 knots is equivalent to 71 mph.
Graham County Hill City	15	1929CST 1931CST			0	0	0.00K	0.00K	Hail (1.75) A plethora of quarter to golf ball size hail fell.
Sheridan County 7 E Selden	15	1945CST 2245CST			0	0	0.00K	0.00K	Flash Flood Flash flooding was reported near the intersection of CR 130 N and Highway 23. Law enforcement reported the flash flooding was impacting Highway 23. Radar estimates around two inches of heavy rainfall occurred from the repeated rounds of storm activity over this location. During the late afternoon and through the evening a severe thunderstorm moved into Northwest Kansas. The storm had a history of producing hail up to baseball size, which continued into Kansas. The storm continued producing hail up to baseball size as it approached Goodland. The storm also began to produce severe winds not long after crossing the state line. Wind speeds ranged from a measured 63 MPH to an estimated 90 MPH. The strongest wind gusts occurred in Gem where a tree was split in half. The most unusual effects of the severe winds included round bales of hay being blown up and over Highway 25 south of Colby and glass from broken windows being embedded in the gym floor in Brewster. Flash flooding near Leoville also occurred due to repeated rounds of heavy rainfall moving over the same location.
Sherman County 3 E Kanorado Arpt	17	1410MST 1420MST			0	0	0.00K	0.00K	Hail (1.50)
Sherman County 3 N Goodland Arpt	17	1420MST 1425MST			0	0	0.00K	0.00K	Hail (1.75) The hail was primarily dime size with some golf ball size hail mixed in.
Sherman County 7 N Goodland Arpt	17	1428MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG) A dark wall of dirt blew toward the driver on Highway 27, nearly blowing the vehicle off the highway. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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KANSAS, Northwest

Sherman County

12 NNE Goodland Arpt	17	1438MST			0	0	0.00K	0.00K	Hail (1.00)
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The hail ranged from nickel to quarter in size, stopping at the time of the report.

Rawlins County

3 NNW Atwood Muni Arpt	17	1617CST			0	0	0.00K	0.00K	Thunderstorm Wind (57MG)
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Note: The measured wind gust of 57 knots is equivalent to 66 mph.

Rawlins County

1 NE Atwood	17	1630CST			0	0	0.00K	0.00K	Hail (0.88)
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During the afternoon a line of severe thunderstorms moved east from Colorado. Large hail up to golf ball size was reported near Goodland. In the same vicinity a line of wind gusts estimated at 60 MPH blew a dark wall of dirt across Highway 27 north of Goodland. The winds were strong enough to nearly blow a vehicle off the highway. The strongest wind gust reported was 66 MPH near Atwood.

KANSAS, Southeast

Kingman County

Zenda	08	1700CST			0	0			Hail (1.00)
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Kingman County

3 S Rago	08	1717CST			0	0	15.00K		Thunderstorm Wind (61EG)
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Law enforcement reports three foot diameter cottonwood trees were blown down.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Kingman County

4 NW Norwich	08	1747CST			0	0	15.00K		Thunderstorm Wind (56EG)
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Law enforcement reported six diameter tree limbs were reported down at a farm. Shingles were reported off of the roof as well.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Montgomery County

1 E Independence	08	1847CST			0	0			Hail (1.00)
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Picture of nickel to quarter size hail.

Sedgwick County

2 SSE Haysville	08	1905CST			0	0			Thunderstorm Wind (52EG)
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Picture on twitter reported a four inch diameter tree top came down on a house.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Sedgwick County

1 E Haysville	08	1914CST			0	0			Hail (1.00)
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Hail ranged in size from pea to quarter size hail.

Sedgwick County

5 E Peck	08	1925CST			0	0			Thunderstorm Wind (52EG)
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A trained spotter reported 60 mph winds.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Greenwood County

5 SSE Quincy	09	0147CST 0547CST			0	0	0.10K	0.10K	Flash Flood
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The Greenwood County Emergency Manager reported water flowing over Highway 54, one mile west of the Greenwood/Woodson county line.

Sedgwick County

4 N Clearwater	09	0150CST 0550CST			0	0	0.10K	0.10K	Flash Flood
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A National Weather Service Employee reported a rainfall amount of 9.13 inches, which caused water to flow across 71st Street just south of 135th Street.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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KANSAS, Southeast

Allen County

**2 WSW Humboldt
1 WNW Petrolia**

09	0205CST 0705CST				0	0	0.10K	0.10K	Flood
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The Allen County Sheriff reported all ditches and low lying areas were flooded with 6 inches of water being the greatest depth.

Sumner County

5 ENE Riverdale

09	0211CST 0511CST				0	0	0.10K	0.10K	Flood
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Water was overflowing the Kansas Turnpike at mile marker 29 just west of Belle Plaine.

Kingman County

1 E Kingman

09	0219CST 0419CST				0	0	0.10K	0.10K	Flood
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Street flooding was reported in the city of Kingman.

Sedgwick County

4 SSE Derby

09	0235CST 0535CST				0	0	500.00K	0.10K	Flash Flood
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Significant flash flooding occurred in the town of Mulvane, Kansas. Three buildings in downtown were flooded. Styx Creek ran out of banks and caused extensive flooding to homes along it. A water rescue occurred in town due the high water. A woman is safe after fast-moving water swept her vehicle into a ditch. She had been standing on top of her car and holding onto a tree while she was on the phone with 911.

Sedgwick County

**2 E Peck
2 SSE Haysville**

09	0335CST 0635CST				0	0	0.10K	0.10K	Flash Flood
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Numerous reports of closed roads were reported to the west of Mulvane, Kansas and southwest of Haysville, Kansas, due high water.

Butler County

2 S Rose Hill

09	0412CST 0812CST				0	0	0.10K	0.10K	Flash Flood
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Significant road flooding occurred a few miles south of Rose Hill, Kansas.

Sedgwick County

**4 N Goddard
4 SW Colwich**

09	0440CST 0640CST				0	0	0.10K	0.10K	Flash Flood
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The fire department reported a water rescue from water over the road at west 21st street and North 199th street.

Woodson County

3 N Yates Center

09	0451CST 0951CST				0	0	0.10K	0.10K	Flash Flood
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Numerous rural roads were flooded across the county, especially just to the east of Yates Center. Rainfall amounts of 3 to 4 inches were reported.

Allen County

1 SE Humboldt

09	0452CST 0952CST				0	0	0.10K	0.10K	Flash Flood
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Numerous county roads were flooded due to high water.

Sedgwick County

1 SE (ICT)Wichita Arpt

09	0546CST				0	0	20.00K	0.10K	Flash Flood
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A pickup truck was swept off highway K42 near the Cessna entrance. Report relayed by Kwch TV.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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KANSAS, Southeast

Butler County

2 E Rose Hill

09	0559CST 0859CST				0	0	10.00K	0.10K	Flash Flood
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A water occurred 2 miles east of Rose Hill for a vehicle trapped in high water.

Sumner County

2 SSE Mulvane

09	0915CST 1215CST				0	0	45.00K	0.10K	Flash Flood
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Three water rescues occurred south of Mulvane, Kansas, due to cars being swept off the roadways by high water.

Cowley County

3 WSW Rock

09	0919CST 1219CST				0	0	0.10K	0.10K	Flash Flood
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Roads were closed due to high water across the northern part of Cowley county.

Woodson County

4 E Yates Center

09	1147CST 1447CST				0	0	0.10K	0.10K	Flash Flood
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High water led to the temporary closure of Highway 54 east of Yates Center.

Mcpherson County

7 WNW Mc Pherson

09	1705CST 1710CST				0	0			Hail (1.00)
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Sedgwick County

3 N Haysville

09	1837CST 2037CST				0	0	0.10K	0.10K	Flood
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Street flooding reported in Haysville, Kansas on south Kessler Road.

Harper County

1 W Anthony

09	1900CST				0	0	2.00K		Thunderstorm Wind (52EG)
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Numerous four inch tree limbs were down across Anthony, Kansas.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Sedgwick County

4 SSW Maize

09	1904CST 2104CST				0	0	0.10K	0.10K	Flash Flood
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Water was flowing over the road on west 13th street between 119th and 135th streets.

Sedgwick County

**3 NNW (IAB) McConnell
Arpt 2 E (ICT)Wichita Arpt**

09	1904CST 2104CST				0	0	0.10K	0.10K	Flash Flood
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Flooding was reported over 79th street on Kansas highway 42.

Sedgwick County

**5 SSW Maize
4 NNW (ICT)Wichita Arpt**

09	1910CST 2110CST				0	0	0.10K	0.10K	Flash Flood
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A vehicle was stalled in high water near 13th and Firefly in Northwest Wichita.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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KANSAS, Southeast

Sedgwick County

1 SW Wichita	09	1931CST			0	0	0.10K	0.10K	Flash Flood
1 ESE Eastborough		2231CST							

Numerous stalled vehicles and stranded motorists were reported across the Wichita metro area.

Harper County

3 NE Harper	09	1932CST			0	0	0.10K	0.10K	Flash Flood
		2232CST							

Water was reported flowing over Kansas Highway 2 northeast of Harper, Kansas.

Sedgwick County

1 SSW Eastborough	09	1949CST			0	0	0.10K	0.10K	Flash Flood
2 SE Wichita		2149CST							

Water rescue was reported near 2nd street and Bleckley.

Butler County

1 E El Dorado	09	1958CST			0	0	0.10K	0.10K	Flash Flood
2 N Towanda	10	0900CST							

Several streets were flooded across the county, including in the communities of El Dorado, Andover and Augusta.

Sedgwick County

2 WSW Eastborough	09	2002CST			0	0	20.00K	0.10K	Flash Flood
		2302CST							

Water was reported over the road at 2nd Street and Bleckley with stalled vehicles and water rescues in progress.

Sedgwick County

3 S Eastborough	09	2015CST			0	0	20.00K	0.10K	Flash Flood
		2315CST							

Water was reported over the road at east Harry and Rock Road. One vehicle was overturned in the water with two occupants rescued by fire units.

Cowley County

1 SSE Arkansas City	09	2018CST			0	0			Thunderstorm Wind (52EG)
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Two utility poles were downed on the Cowley county community college campus.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Greenwood County

4 SE Reece	09	2200CST			0	0	0.00K	0.00K	Flash Flood
2 WNW Walton	10	0535CST							

Significant flooding was being reported across the county due to the heavy rains. The heavy rain combined with the terrain was causing very treacherous conditions across much of the county. The rocky soil conditions were not allowing for water penetration and most of the rain was running off into area creeks and streams producing several water covered roads across the county.

Harper County

1 NNE Harper	09	2325CST			0	0	0.10K	0.10K	Flash Flood
	10	0225CST							

Four to five feet of water was covering northeast 100 road, due to Sand creek being out of its banks.

Sedgwick County

1 N Oaklawn	10	0110CST			0	0	0.10K	0.10K	Flash Flood
		0310CST							

Briar Creek ran out of its banks just east of 47th and Woodlawn. The water was flowing rapidly across the bridge at a depth of 4 feet.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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KANSAS, Southeast

Sedgwick County 1 W Clearwater

10	0516CST 0816CST				0	0	100.00K	0.10K	Flash Flood
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Three water rescues occurred near Clearwater, Kansas due to rising water from the Ninnescah River getting close to homes.

An unusually moist atmosphere (courtesy of Hurricane Newton remnants over western Mexico) in concert with subtle upper level disturbances approaching from the southwest combined to produced several bouts of very heavy rainfall across large portions of the area during the evening and overnight of September 8th and again during the evening of September 9th, 2016. Severe storms with quarter size hail and wind gusts to 60 mph during the evening hours of September 8th, eventually evolved into an extreme rainfall event.

Rainfall amounts proved extreme, with widespread 3 to 6 inch amounts across much of the southeast quarter of Kansas. Localized rainfall amounts even exceeded 8 to 10 inches during the evening of September 9th. Much of the rainfall came in relatively short periods, with rainfall rates at times exceeding 3 inches per hour.

Wilson County 3 NE Buxton

15	1643CST 1644CST				0	0	0.00K	0.00K	Hail (1.00)
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Forty mph winds were also reported.

Allen County 6 WNW Elsmore

15	1721CST 1722CST				0	0	0.00K	0.00K	Hail (0.75)
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An estimated 60 plus mph winds were also reported.

Allen County 6 WNW Elsmore

15	1721CST 1722CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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Dime size hail was also noted with this storm.

A small severe weather outbreak occurred across southeast Kansas. Minor wind and hail were noted with these storms. Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Reno County 1 E Hutchinson

24	1510CST 1511CST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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No damage was reported.

Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Mcpherson County Marquette Roxbury

24	1729CST				0	0	0.00K	0.00K	Flood
25	1315CST				0	0	0.00K	0.00K	Flood

Flooding occurred along rural roads across McPherson County. In McPherson, flooding occurred near Lakeside Park. The flooding had since receded. This was a delayed report.

A strong mid-upper level perturbation moved northeast from the Southern Rockies to the Northern Plains. This character found high octane moisture residing across the Kansas Neighborhood to produce very heavy rains across Central and South-Central Kansas from late in the afternoon of the 24th until late in the night of the 24th/early morning of the 25th. Rainfalls from 2 to 4 inches deluged most of these areas. A predominantly dry period from the 10th to the 23rd prevented what would certainly have been a significant flooding event, as only McPherson County experienced any flooding. One thunderstorm did produce an isolated 50 knot gust that was measured by the Hutchinson Airport ASOS at the beginning of the event.

KANSAS, Southwest

Ellis County 6 W Turkville

03	2130CST				0	0	0.00K	0.00K	Flood
04	0830CST				0	0	0.00K	0.00K	Flood

Widespread flooding of roads occurred from heavy rainfall. There was one water rescue reported.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<u>KANSAS, Southwest</u>									
Ellis County 4 NNE Ellis	04	0013CST 0713CST			0	0	0.00K	0.00K	Heavy Rain
									Rainfall of 5.56 inches was observed.
Trego County 10 NNE Ogallah	04	0015CST 0715CST			0	0	0.00K	0.00K	Heavy Rain
									Rainfall of 5.50 inches was observed.
Ellis County 4 WNW Catharine	04	0020CST 0520CST			0	0	100.00K	0.00K	Flash Flood
									Water about 80 yards wide was rushing over several roads along Little Big Creek.
Ellis County 4 NW Catharine	04	0034CST 0734CST			0	0	0.00K	0.00K	Heavy Rain
									Rainfall of 7.34 inches was observed.
Ellis County 5 WNW Emmeram	04	0101CST 0801CST			0	0	0.00K	0.00K	Heavy Rain
									Rainfall of 7.57 inches was observed. Thunderstorms producing heavy rainfall caused some flooding across Ellis county.
Kiowa County 4 NNE Belvidere Jct	08	1540CST			0	0			Hail (1.00)
Kiowa County 1 SW Haviland	08	1550CST			0	0			Thunderstorm Wind (52EG) Winds were estimated to be gusting to 60 MPH. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Pratt County 4 NNW Coats	08	1606CST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG) Winds were estimated to be near 60 MPH. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Stafford County 8 S Macksville Smith Arp	08	1615CST			0	0			Hail (1.00) Thunderstorms developed along a cold front that was sweeping across the area. A few became severe.
Kiowa County 7 SSE Mullinville	09	1645CST			0	0			Hail (2.50)
Clark County 1 N Ashland	09	1700CST			0	0			Hail (2.50)
Clark County 1 N Ashland	09	1710CST			0	0			Hail (1.00) Hail covered the ground. Another cold front advancing into an unstable atmosphere was the catalyst for severe thunderstorm development.
Trego County 5 SW Wakeeney	15	1740CST			0	0			Hail (1.75) One severe thunderstorm was reported during the early evening.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<u>KANSAS, Southwest</u>									
Comanche County									
4 ENE Protection	16	1655CST			0	0			Hail (1.00)
Clark County									
5 SSE Sitka	16	1709CST			0	0			Hail (1.00)
Comanche County									
1 NNW Buttermilk	16	1745CST			0	0			Hail (0.75)
A few thunderstorms developed along a weak boundary during the late afternoon. A few became severe.									
Hamilton County									
13 N Coolidge	17	1415MST			0	0			Hail (1.25)
Hamilton County									
12 NNE Mayline	17	1455MST			0	0			Hail (1.25)
Kearny County									
18 NNW Lake Mc Kinney	17	1526CST			0	0			Hail (1.00)
The hail was mostly nickel size with a few larger stones.									
Kearny County									
15 NNW Lake Mc Kinney	17	1530CST			0	0			Hail (1.25)
An upper level short wave trough with cold advection aloft was enough to destabilize the boundary layer to produce scattered thunderstorms. A few of the storms became severe.									
Barber County									
1 N Medicine Lodge	24	1256CST			0	0			Thunderstorm Wind (56MG)
An isolated severe thunderstorm produced high wind in Barber county. Note: The measured wind gust of 56 knots is equivalent to 64 mph.									
<u>KENTUCKY, Central</u>									
Logan County									
3 SSW Licksillet	10	1429CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Local law enforcement reported a tree down on James Rose Road.									
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Trimble County									
2 S Hisle	10	1501EST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Trees were reported down on US Highway 421 at the bottom of Bedford Hill. This resulted in one lane of the roadway blocked.									
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Trimble County									
5 S Abbott	10	1506EST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Local broadcast media reported a 10 inch diameter oak tree down near Pendleton near the Henry and Trimble County line.									
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Bullitt County									
1 NNE Shepherdsville	10	1515EST			0	0	3.00K	0.00K	Thunderstorm Wind (52EG)
Broadcast media reported power lines down in downtown Shepherdsville.									
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Hardin County									
1 N Elizabeth Town	10	1515EST			0	0	8.00K	0.00K	Thunderstorm Wind (52EG)
Local broadcast media reported that trees were down around Elizabethtown with one tree damaging a vehicle on Diecks Drive.									
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Franklin County									
2 SW Peaks Mill	10	1557EST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Local officials reported trees down around the county including one on Old Stewart Road.									
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
<u>KENTUCKY, Central</u>									
Franklin County 1 ESE Frankfort	10	1557EST			0	0	20.00K	0.00K	Thunderstorm Wind (52EG)
									Officials reported a tree down on the Dollar General store. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Fayette County 1 S Jonestown	10	1650EST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
									The public reported several 3 to 4 inch diameter branches snapped. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Fayette County 3 S Mattoxton	10	1655EST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
									The public reported trees down at Kingston Road and Pierson Drive. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Barren County 2 WNW Glasgow	10	1700CST			0	0	15.00K	0.00K	Lightning
									A trained spotter reported that a lightning strike caused a tree to split, and part of it fell onto a house on Cleveland Avenue. A strong cold front swept across central Kentucky during the afternoon hours on September 10. Warm and moist air ahead of this boundary interacted with this frontal boundary and resulted in a line of strong to severe storms. The primary hazard was damaging winds which brought down some power lines and trees.
<u>KENTUCKY, Eastern</u>									
Powell County 1 SW Waltersville	18	0620EST 0815EST			0	0	0.01K	0.00K	Flash Flood
									Dispatch relayed a report from a citizen of flood waters across Adams Ridge Road just off of Highway 15 in Clay City, making the roadway impassable.
Powell County 1 SE Stanton	18	0815EST 0930EST			0	0	0.05K	0.00K	Flash Flood
									A Kroger employee reported the store parking lot was inundated with water. Nearby ditches and Judy Creek overspilled their banks. Water rose over semi truck wheel wells as approximately three to four feet of water flooded loading dock ramps. A line of showers and thunderstorms developed early this morning ahead of a cold front and upper level disturbance. While widespread rainfall amounts of half an inch to one inch were generally realized, amounts of three to five inches fell in and around Stanton and Clay City, leading to localized instances of flash flooding.
<u>KENTUCKY, Northern</u>									
Carroll County 2 SW Carrollton	10	1447EST 1449EST			0	0	0.50K	0.00K	Thunderstorm Wind (45EG)
									A tree was downed on Mound Hill Road. Note: The estimated wind gust of 45 knots is equivalent to 52 mph.
Boone County 3 W Burlington	10	1502EST 1504EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
									A tree was downed along Easton Lane. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Boone County 1 S Burlington	10	1509EST 1511EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
									A large tree was split in half by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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KENTUCKY, Northern

Kenton County 1 SE Villa Hills

10	1513EST 1515EST				0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
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A large tree fell onto Collins Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Carroll County 3 NNE Eagle Station

10	1517EST 1519EST				0	0	0.50K	0.00K	Thunderstorm Wind (45EG)
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A tree was downed on Briar Fork Road.
Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

Campbell County 2 N Newport

10	1518EST 1522EST				0	0	4.00K	0.00K	Thunderstorm Wind (50EG)
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Several trees were downed in the Newport area.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Boone County 2 SW Walton

10	1539EST 1541EST				0	0	0.50K	0.00K	Thunderstorm Wind (45EG)
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A tree was downed along Salem Creek Road.
Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

Pendleton County 1 N Boston

10	1555EST 1557EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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A few trees were downed at Fuqua Road and Burlew Lane.
Showers and thunderstorms developed during the afternoon hours as a cold front moved through the region. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

KENTUCKY, Southwest

KYZ010-014>016-018>021

Crittenden - Daviess - Henderson - Hopkins - McLean - Muhlenberg - Union - Webster

18	0300CST 0800CST				0	0	0.00K	0.00K	Dense Fog
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Widespread dense fog formed across northwest Kentucky, mainly along and north of a line from Marion to Madisonville to Central City. Visibility was reduced to one-quarter mile or less. The fog formed under weak high pressure that followed in the immediate wake of a cold front.

KYZ004-007-010-014>015-018

Ballard - Crittenden - Henderson - Livingston - McCracken - Union - Webster

19	0100CST 0600CST				0	0	0.00K	0.00K	Dense Fog
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Widespread dense fog formed across northwest Kentucky, mainly in counties bordering the Ohio River. Visibility was reduced to one-quarter mile or less. The fog formed in association with a weak high pressure ridge that extended from southeast Missouri to northwest Indiana.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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LOUISIANA, Northwest

Webster Parish

1 NE Shreveport Jct

10	1734CST 2000CST				0	0	0.00K	0.00K	Flash Flood
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Water was reported over 1 lane of I-20 under the bridge of exit 52 just south of Minden, Louisiana. A vehicle ran off the road but no injuries were reported.

Webster Parish

1 SW Minden

10	1758CST 2000CST				0	0	30.00K	0.00K	Flash Flood
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Heavy rainfall resulted in high water on Hwy. 80 just south of the intersection of Hwy. 79 near downtown Minden, Louisiana. The highway had to be closed with several cars stalled out in the high water.

A slow moving cold front across northwest Louisiana encountered a moderately unstable airmass and a moist airmass with the result being slow moving thunderstorms. These thunderstorms produced excessive heavy rainfall amounts, especially across Webster Parish. Flash flooding was reported in the town of Minden, Louisiana.

LOUISIANA, Southeast

Orleans Parish

2 ESE (NEW)Lkfrnt Arpt New

05	0900CST				0	0	10.00K	0.00K	Thunderstorm Wind (55EG)
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Roof damage was reported to one home in East New Orleans.

A trough of low pressure over southeast Louisiana aided the development of thunderstorms during the morning hours. One report of wind damage was received from the New Orleans area. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

LOUISIANA, Southwest

Calcasieu Parish

1 S Lake Charles

4 NNW (LCH)Lk Charles Muni

05	1223CST 1253CST				0	0	15.00K	0.00K	Flash Flood
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The Calcasieu Parish Emergency Manager reported several streets flooded in Southeast Lake Charles from heavy rain. Some vehicles were flooded with a few roadways having hip deep water.

A slow moving thunderstorm moved through Lake Charles causing flooding of some roadways.

MAINE, North

Aroostook County

1 WNW Skerry

7 W Trafton

19	1715EST 2000EST				0	0	0.00K	0.00K	Flash Flood
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An estimated 4.00 to 5.00 inches of rain fell in a localized area around Ashland during the evening of the 19th. The heavy rain produced flash flooding which closed a portion of State Route 227 for several hours with water depths of up to around 3 feet covering the road. Around a dozen driveways were also damaged...and 2 were washed out.

An upper level disturbance and moist airmass combined to produce slow moving showers and thunderstorms with heavy rain during the evening of the 19th. The slow moving showers and thunderstorms produced an isolated area of an estimated 4.00 to 5.00 inches of rain in around 2 hours in the Ashland area which led to flash flooding. State Route 227 near Ashland was closed for several hours due to the flash flooding...with water depths of up to around 3 feet covering the road. Around a dozen driveways were also damaged...with another two washed out.

MAINE, South

Oxford County

7 NW North Newry

11	0845EST 0849EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed a tree in North Newry.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
MAINE, South									
Oxford County Norway	11	0910EST 0915EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
									A severe thunderstorm downed trees in Norway. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Oxford County 2 NW Otisfield	11	0912EST 0917EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
									A severe thunderstorm downed a large Oak branch in Otisfield. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Sagadahoc County 1 S Bowdoinham	11	0920EST 0925EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
									A severe thunderstorm downed large branches in Bowdoinham. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
York County 1 E Berwick	11	0925EST 0930EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
									A severe thunderstorm downed trees and wires in Berwick. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
York County 1 N Buxton	11	0930EST 0935EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
									A severe thunderstorm downed trees in Buxton. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
York County 1 N York Harbor	11	0935EST 0940EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
									A severe thunderstorm downed trees and wires in York Harbor. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
York County 1 S Saco	11	0940EST 0945EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
									A severe thunderstorm downed a large tree in Saco. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Cumberland County 1 W Cumberland Mills	11	0945EST 0950EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
									A severe thunderstorm downed trees on wires in Cumberland Mills. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
York County 1 E Saco	11	0945EST 0950EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
									A severe thunderstorm downed trees on area roads in Saco. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MAINE, South

York County

Old Orchard Beach

11	0945EST 0950EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed multiple trees on roads and wires in Old Orchard Beach.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Kennebec County

1 NE Monmouth

11	1010EST 1015EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed large branches on power lines in Monmouth.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Sagadahoc County

1 S Bowdoinham

11	1020EST 1025EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed large branches in Bowdoinham.

A line of strong to severe thunderstorms formed ahead of a strong and fast-moving cold front on the morning of September 11th. Numerous reports of wind damage were associated with these storms as they raced through western Maine during the late morning and early afternoon hours. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

MARYLAND, Central

Montgomery County

2 WSW Georgetown Jct

07	1609EST				0	0			Thunderstorm Wind (50EG)
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Large tree limbs were down in an apartment complex off Connecticut Avenue.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Montgomery County

1 SW Goshen

07	1641EST				0	0			Thunderstorm Wind (50EG)
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A large tree was down blocking Appleridge Drive near Montgomery Village Avenue.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Montgomery County

1 SE Westmore

07	1649EST				0	0			Thunderstorm Wind (50EG)
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Large tree limbs were down near the intersection of North Horners Lane and Southlawn Lane.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Montgomery County

1 N Glen

07	1705EST				0	0			Thunderstorm Wind (50EG)
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A large tree was down on power lines in the 10000 Block of Boswell Lane.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Charles County

2 NNE Grayton

07	1757EST				0	0			Thunderstorm Wind (50EG)
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A tree was down in the 9000 Block of Ironsides Road.

An upper-level low remained nearby while a surface trough was overhead. Warm and humid conditions led to an unstable atmosphere and some thunderstorms developed due to the surface trough and upper-level low. A few thunderstorms produced damaging wind gusts. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

MDZ003>005

Carroll - Frederick - Washington

20	0230EST 0735EST				0	0			Dense Fog
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Radiational cooling along with high amounts of low-level moisture resulted in areas of dense fog during the early morning hours.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MARYLAND, Central

Charles County 2 W Woodzell

28	0446EST				0	0			Thunderstorm Wind (65EG)
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Multiple trees were snapped and uprooted along Colleen Drive.

A cold front from the north and east moved through southern Maryland during the morning of the 28th. A cutoff upper-level low also approached from the Midwest during this time. A few thunderstorms developed ahead of the cold front, and were able to mix down strong winds from aloft ahead of the upper-level low. Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Anne Arundel County 1 SSE Crofton 1 WNW Lusby Xrds

29	0703EST				0	0	0.00K	0.00K	Flood
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Defense Highway was flooded and closed in both directions in vicinity of Bell Branch and North River.

Montgomery County 1 N Takoma Park

29	0727EST				0	0	0.00K	0.00K	Flood
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Sligo Creek Parkway was flooded and closed between Maple Avenue and Carroll Avenue.

An upper level low was over Kentucky for an extended period of time and southerly flow led to persistent moisture advection across the Mid-Atlantic region. Showers and thunderstorms moved from south to north and led to multiple rounds of heavy rain. Flooding occurred across the Mid-Atlantic region.

MARYLAND, Northeast

Caroline County 2 N Hillsboro

19	0616EST				0	0			Heavy Rain
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Two a three quarters of an inch of rainfall was measured.

Queen Anne's County 1 S Ruthsburg

19	0653EST				0	0			Heavy Rain
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Two a third inches of rainfall was measured.

Queen Anne's County 1 E Ruthsburg

19	1300EST				0	0			Heavy Rain
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Just under three and a half inches of rainfall was measured.

Caroline County 1 NW Greensboro

19	1305EST				0	0			Heavy Rain
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Over five and a half inches of rain was measured with 4 inches in two hours.

Caroline County 2 SE American Corners

19	1318EST				0	0			Heavy Rain
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Just over 5 inches of rain was measured with 4 inches in 3 hours.

Caroline County 3 W Williston

19	1324EST				0	0			Heavy Rain
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Three and a half inches of rain fell in 90 minutes.

Talbot County 2 SE Bozman

19	1324EST				0	0			Heavy Rain
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One inch of rain in 15 minutes, Three and a half inches total.

Talbot County 5 S Barber

19	1333EST				0	0			Heavy Rain
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Over six inches of rainfall was measured.
The remnants of tropical storm Julia and a frontal boundary interacted leading to several rounds of rainfall over the region.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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MARYLAND, Northeast

Caroline County 1 WNW Denton

29	0600EST 0800EST				0	0	0.00K	0.00K	Flash Flood
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Three to five inches of rain fell mostly in a short duration. Flooding closed River landing road.

Caroline County Choptank

29	0809EST				0	0	0.00K	0.00K	Flood
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Intersection of waterstreet and shoptank roads closed due to flooding.

Caroline County 1 NW Greensboro

29	1038EST				0	0			Heavy Rain
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Three inches of rain fell.

Caroline County 1 N Federalsburg

29	1401EST				0	0			Heavy Rain
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Four and a half inches of rain fell.

Queen Anne's County 1 S Centreville

30	0527EST				0	0			Heavy Rain
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Four inch storm total.

A slow moving frontal boundary coupled with tropical moisture advecting northward ahead of the front led to rounds of heavy showers in Maryland from the 27th into the next couple of days. Several occurrences of both nuisance and flash flooding were also reported.

MARYLAND, South

MDZ021>025

Dorchester - Inland Worcester - Maryland Beaches - Somerset - Wicomico

02	2100EST								
05	0900EST				0	0	0.00K	0.00K	Tropical Storm

Tropical Storm Hermine moving northeast along the Southeast Coast then off the Mid Atlantic Coast produced a few tropical storm force wind gusts, minor coastal flooding, and locally heavy rainfall across portions of the Lower Maryland Eastern Shore from Friday evening, September 2nd into early Monday morning, September 5th.

Dorchester County East New Market

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 1 inch to 5 inches across the county. East New Market reported 5.34 inches of rain. Bucktown (3 WSW) reported 4.32 inches of rain. Linkwood (2 SE) reported 4.30 inches of rain. Cambridge (3 E) reported 3.48 inches of rain. Wingate (1 N) reported 1.34 inches of rain.

Somerset County 2 SSW Princess Anne

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 1 inch to 3 inches across the county. Princess Anne (2 SSW) reported 1.77 inches of rain. Deal Island reported 1.77 inches of rain. Oriole (2 E) reported 1.02 inches of rain.

Wicomico County Delmar

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 1 inch to 4 inches across the county. Delmar reported 3.31 inches of rain. Hebron (1 SSW) reported 3.15 inches of rain. Pittsville (2 SSW) reported 3.12 inches of rain. Salisbury Wicomico Airport (SBY) reported 2.15 inches of rain.

Worcester County Snow Hill

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 1 inch to 5 inches across the county. Snow Hill reported 3.51 inches of rain. Bishopville (3 E) reported 2.61 inches of rain. Ocean City Municipal Airport (OXB) reported 1.81 inches of rain. Public Landing (6 SE) reported 1.73 inches of rain. Ocean Pines (1 E) reported 1.47 inches of rain.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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MARYLAND, South

The combination of a stalled frontal boundary and the remnant low pressure area that was Tropical Storm Julia, produced heavy rain across much of the Lower Maryland Eastern Shore from Monday, September 19th into Thursday, September 22nd.

Worcester County 1 E Pocomoke City

19	1415EST				0	0	0.00K	0.00K	Flood
	1715EST								

Several roads in and around Pocomoke City were closed due to high water.

Scattered thunderstorms along a frontal boundary produced heavy rain which caused flooding across portions of the Lower Maryland Eastern Shore.

Dorchester County East New Market

28	2100EST				0	0	0.00K	0.00K	Heavy Rain
30	0600EST								

Rainfall totals generally ranged from 1 inch to 5 inches across the county. East New Market reported 4.76 inches of rain. Cambridge (2.1 ESE) reported 3.89 inches of rain. Cambridge (1 NW) reported 3.81 inches of rain. Bucktown (3 WSW) reported 3.47 inches of rain.

Somerset County 2 SSW Princess Anne

28	2100EST				0	0	0.00K	0.00K	Heavy Rain
30	0600EST								

Rainfall totals generally ranged from 2 to 8 inches across the county. Princess (2 SSW) reported 8.13 inches of rain. Oriole (2 E) reported 6.16 inches of rain. Manokin (1 NNE) reported 6.12 inches of rain. Deal Island reported 4.55 inches of rain.

Wicomico County 2 SSW Pittsville

28	2100EST				0	0	0.00K	0.00K	Heavy Rain
30	0600EST								

Rainfall totals generally ranged from 3 to 9 inches across the county. Pittsville (2 SSW) reported 9.29 inches of rain. Hebron (1 SSW) reported 8.65 inches of rain. Salisbury (5.5 SW) reported 8.27 inches of rain. Parsonsburg (1 W) reported 5.88 inches of rain. Salisbury Wicomico Airport (SBY) reported 4.25 inches of rain. Delmar reported 3.26 inches of rain.

Worcester County Snow Hill

28	2100EST				0	0	0.00K	0.00K	Heavy Rain
30	0600EST								

Rainfall totals generally ranged from 3 to 12 inches across the county. Public Landing (6 SE) reported 11.94 inches of rain. Snow Hill reported 8.76 inches of rain. Bishopville (3 E) reported 6.20 inches of rain. Berlin reported 6.01 inches of rain. Ocean City Municipal Airport (OXB) reported 4.68 inches of rain. Ocean Pines (1 E) reported 3.76 inches of rain.

Waves of low pressure moving along a stalled frontal boundary over the Mid Atlantic region produced periodic showers and thunderstorms with heavy rain across much of the Lower Maryland Eastern Shore from Wednesday morning, September 28th into Friday morning, September 30th.

Somerset County Crisfield

28	2300EST				0	0	0.00K	0.00K	Flood
29	0000EST								

Water was reported over Spruce and Myrtle Streets in Crisfield.

Somerset County Crisfield

29	0100EST				0	0	0.00K	0.00K	Flash Flood
	0130EST								

Numerous roads were closed in and around Crisfield. Some areas were isolated due to flood waters.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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MARYLAND, South

Somerset County

1 N Princess Anne

29	0100EST				0	0	0.00K	0.00K	Flash Flood
	0130EST								

Widespread flooding was reported around Princess Anne. Numerous roads were closed including several State Highways including Somerset Avenue. There was also flooding reported around the University of Maryland Eastern Shore.

Wicomico County

1 E Salisbury

29	0100EST				0	0	20.00K	0.00K	Flood
	0200EST								

Several cars were stalled in high water across roadways in Salisbury. Water was also reported in some structures.

Wicomico County

2 W Salisbury

29	0400EST				0	0	50.00K	0.00K	Flash Flood
	0445EST								

Numerous roads were closed around Salisbury and in areas across the county. Several evacuations occurred. Several homes were flooded and dams were at emergency water levels.

Worcester County

1 E Boxiron

29	1453EST				0	0	0.00K	0.00K	Flood
	1600EST								

Water was reported over Scotts Landing Road and Taylor Landing Road.

Worcester County

4 NNE Snow Hill

29	1458EST				0	0	0.00K	0.00K	Flash Flood
	1600EST								

Water was reported rushing across Whiton Road near Porters Crossing Road.

Wicomico County

1 NNW Mt Hermon

29	2031EST				0	0	0.00K	0.00K	Flood
	2200EST								

Tilghman Road was closed due to flooding.

Waves of low pressure moving along a stalled frontal boundary over the Mid Atlantic region produced periodic showers and thunderstorms with heavy rain that caused flash flooding and flooding across portions of the Lower Maryland Eastern Shore.

MDZ021-022

Dorchester - Wicomico

30	0000EST				0	0	0.00K	0.00K	Coastal Flood
	1600EST								

Persistent east to northeast winds caused water levels to reach minor to moderate levels on the Maryland waters of the Chesapeake Bay. Highest levels extended from southern and central Dorchester county southward into Wicomico county.

MASSACHUSETTS, Central and East

MAZ003>022-026

Barnstable - Eastern Essex - Eastern Franklin - Eastern Hampden - Eastern Hampshire - Eastern Norfolk - Eastern Plymouth - Northern Bristol - Northern Worcester - Northwest Middlesex County - Southeast Middlesex - Southern Bristol - Southern Plymouth - Southern Worcester - Suffolk - Western Essex - Western Hampden - Western Hampshire - Western Middlesex - Western Norfolk - Western Plymouth

01	0000EST								
30	2359EST				0	0	0.00K	0.00K	Drought

September brought more dry weather and continued drought conditions to much of southern New England. For many, the drought began in July 2016. At this point, this is a drought categorized largely by well below normal precipitation and groundwater and agricultural impacts. Most of the region experienced below normal rainfall during the month of September.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MASSACHUSETTS, Central and East

The Massachusetts Executive Office of Energy and Environmental Affairs expanded the drought warning into the southeastern portion of the state, and a drought watch was expanded into Cape Cod and the Islands on September 9th. Soil moisture (measured by the Climate Prediction Center) was abnormally dry or drier. Groundwater conditions (measured by the United States Geological Survey) were found to be below to well below normal for most of Massachusetts. Cape Cod and the Islands were normal at this time. River and streamflow conditions were below to well below normal with 16 gage sites in southern New England at record low levels.

Farmers have had to irrigate their crops much more than normal for September. Losses were started to be reported by producers in the Connecticut River valley area of Massachusetts. In addition, sources of irrigation have been dwindling. While data thus far has been anecdotal, many farmers are having to choose which fields to irrigate and which to let go, as well as not doing 2nd and 3rd plantings of late summer crops. Known losses, according to the Massachusetts Farm Bureau Federation, include a total loss of the peach crop, reduced apple and cranberry crops, and no second and third cut hay. The Massachusetts state government declared on September 7th to make up to \$1 million in microloan funds available to small, family owned farms who suffered losses due to the drought. Eleven counties in Massachusetts were declared primary disaster counties due to the drought. They include: Barnstable, Berkshire, Bristol, Essex, Franklin, Hampden, Hampshire, Middlesex, Norfolk, Plymouth, and Worcester Counties. Farms in these counties are eligible for assistance from the Farm Service Agency and the Livestock Forage Disaster Program.

More than 160 public water systems in Massachusetts have imposed some sort of water use restrictions, 70 of those have the strictest parameters in place, allowing residents to use outdoor water one day a week or less. One of these was Worcester, the second largest city in Massachusetts. Worcester banned outdoor water use in early September and ordered restaurants to stop serving tap water unless requested by a customer because their reservoir system had dropped to 55 percent of capacity. It's reservoirs are typically at 80 percent of capacity going into the fall. In addition, Worcester officials activated an emergency connection to draw water from the Massachusetts Water Resources Authority (MWRA) at a cost of \$1.7 million per month. Other communities that already rely on the MWRA for a portion of their water have increased their demand by 38 percent this year.

MAZ020-023

Dukes - Southern Bristol

05	0910EST				0	0	74.0K	0.00K	Strong Wind
	1945EST								

MAZ024

Nantucket

05	1153EST				0	0	40.0K	0.00K	Tropical Storm
	1348EST								

MAZ005-007-013-016-019-021

Eastern Essex - Eastern Norfolk - Eastern Plymouth - Southern Plymouth - Western Middlesex - Western Norfolk

05	1207EST				0	0	85.0K	0.00K	Strong Wind
	2010EST								

Hermine was named on August 31st as it intensified to a tropical storm in the Gulf of Mexico. She meandered about in the eastern Gulf of Mexico before moving northeastward across the Florida panhandle, through Georgia and then along the coast of North and South Carolina. She was a hurricane as she made landfall in Florida, then weakened to a tropical storm and finally a tropical depression as she moved off the coast of North Carolina. After moving off the coast of North Carolina, Hermine moved northeast, then north, then west, meandering south of southern New England for several days in early September.

While classified as a tropical system, Hermine's effects on southern New England were rather minimal. Rainfall added up to less than an inch for most locations and winds were generally below tropical storm force. Because trees were still fully leaved and we had higher wind gusts, there was some wind damage. Storm surge was highest during low tide so we had minimal coastal flooding impacts.

Hampshire County

Goshen

11	0734EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was downed onto wires.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Franklin County

Shelburne

11	0740EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was downed onto wires.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
MASSACHUSETTS, Central and East									
Franklin County Montague	11	0743EST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
	Multiple trees were downed onto Old Sunderland Road and Taylor Hills Road.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Franklin County Deerfield	11	0745EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto wires on Stillwater Road.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Hampden County Chester	11	0745EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto Skyline Trail by thunderstorm winds.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Hampden County Chester	11	0745EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto Route 20 by thunderstorm winds.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Hampshire County 1 W Bay State	11	0745EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto wires on Route 9.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Hampshire County Williamsburg	11	0746EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto Route 9 near Florence Road.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Franklin County Sunderland	11	0748EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed, blocking Plumtree Road.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Franklin County Sunderland	11	0748EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A large tree was downed onto a house on School Street.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Hampshire County 1 W Hatfield	11	0753EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	Wires were downed onto Chestnut Street.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Franklin County Bernardston	11	0755EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed by thunderstorm winds.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Franklin County Bernardston	11	0755EST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
	Multiple trees were downed on Huckle Hill Road by thunderstorm winds.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Hampshire County 1 NW Granby	11	0800EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	Large branches were downed by thunderstorm winds.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Hampshire County Amherst	11	0805EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto a house on Allen Street in Amherst.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
MASSACHUSETTS, Central and East									
Hampshire County									
1 W Hatfield	11	0808EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	Wires were downed on Chestnut Street. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Hampshire County									
1 W Hatfield	11	0808EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto Moore Avenue by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Hampshire County									
1 S Belchertown	11	0814EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto Route 9 by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Hampshire County									
Amherst	11	0814EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto Phillips Road by thunderstorm winds. A tree was downed onto a house on Chestnut Street. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Worcester County									
1 W Barre	11	0821EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto Sunrise Avenue. Wires were downed onto High Street, near Peach Street. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Worcester County									
1 N West Brookfield	11	0822EST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
	Trees and wires were downed by thunderstorm winds. An amateur radio operator recorded a 67 mph wind gust on their home weather station. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Franklin County									
Erving	11	0828EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Trees were downed in the state forest. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Worcester County									
Oakham	11	0830EST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
	Trees downed on multiple streets throughout Oakham. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Worcester County									
1 SW Lunenburg	11	0830EST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
	Several trees were downed throughout Lunenburg. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Worcester County									
1 S Rutland	11	0831EST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
	Trees and wires were downed on Campbell Street, Pleasantdale Road, and Lincoln Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Middlesex County									
1 S Groton	11	0835EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Several trees were downed onto Riverbend Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Worcester County									
Hubbardston	11	0835EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	Wires were downed on several streets throughout town. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Middlesex County									
Townsend	11	0836EST			0	0	20.00K	0.00K	Thunderstorm Wind (50EG)
	Trees and wires were downed on Pearly Brook Road, Route 13, Brookline Road, and Meadow Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
MASSACHUSETTS, Central and East									
Middlesex County									
1 SE Hovey Corner	11	0840EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A large limb was downed onto River Street by thunderstorm winds.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Middlesex County									
1 S Groton	11	0845EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto power lines by thunderstorm winds.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Middlesex County									
1 S Groton	11	0845EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Trees and wires on Jenkins Road were downed by thunderstorm winds.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Worcester County									
1 NW Fitchburg	11	0845EST			0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
	A large branch was downed onto a car, blocking Hope Street.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Worcester County									
1 W Whalom	11	0853EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed on Wachusett Street, near Pleasant Street.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Worcester County									
1 W Whalom	11	0853EST			0	1	0.00K	0.00K	Thunderstorm Wind (50EG)
	A branch was blown down onto a man, injuring him.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Middlesex County									
1 SSE West Chelmsford	11	0855EST			0	0	20.00K	0.00K	Thunderstorm Wind (50EG)
	Trees were downed onto Chelmsford Street. Large limbs were downed throughout town. An air conditioning unit was blown off its support on an office roof, but remained on the roof. Trees were downed on Route 110 near Interstate 495.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Middlesex County									
Ashland	11	0900EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed by thunderstorm winds.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Worcester County									
Hubbardston	11	0900EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed on Barre Road by thunderstorm winds.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Middlesex County									
1 W Newton Center	11	0915EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto a car on Washington Street.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Middlesex County									
1 SW Beaver Brook	11	0915EST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
	Trees and wires were downed in the Warrendale section of the city.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Essex County									
1 N Amesbury	11	0920EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A tree was downed onto a house on Orchard Street.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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MASSACHUSETTS, Central and East

Essex County

1 E Salisbury

11	0925EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was downed onto a house on Rabbit Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Middlesex County

Concord

11	0925EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Trees and wires were downed on Powder Mill and Sudbury Roads.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Middlesex County

1 W Newton Center

11	0930EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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A tree was downed onto Waban Avenue.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Middlesex County

North Somerville

11	0932EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed on Concord Avenue.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Plymouth County

1 W Brockton

11	1000EST				0	0	1.00K	0.00K	Thunderstorm Wind (40EG)
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A large limb was downed in the north end of Brockton.
A cold front moved through during the morning hours, producing showers and thunderstorms. Some of these storms became strong enough to produce wind damage. Note: The estimated wind gust of 40 knots is equivalent to 46 mph.

MAZ002-023

Dukes - Western Franklin

13	0700EST								
30	2359EST				0	0	0.00K	0.00K	Drought

September brought more dry weather and continued drought conditions to much of southern New England. For many, the drought began in July 2016. At this point, this is a drought categorized largely by well below normal precipitation and groundwater and agricultural impacts. Most of the region experienced below normal rainfall during the month of September. The Massachusetts Executive Office of Energy and Environmental Affairs expanded the drought warning into the southeastern portion of the state, and a drought watch was expanded into Cape Cod and the Islands on September 9th. Soil moisture (measured by the Climate Prediction Center) was abnormally dry or drier. Groundwater conditions (measured by the United States Geological Survey) were found to be below to well below normal for most of Massachusetts. Cape Cod and the Islands were normal at this time. River and streamflow conditions were below to well below normal with 16 gage sites in southern New England at record low levels.

Farmers have had to irrigate their crops much more than normal for September. Losses were started to be reported by producers in the Connecticut River valley area of Massachusetts. In addition, sources of irrigation have been dwindling. While data thus far has been anecdotal, many farmers are having to choose which fields to irrigate and which to let go, as well as not doing 2nd and 3rd plantings of late summer crops. Known losses, according to the Massachusetts Farm Bureau Federation, include a total loss of the peach crop, reduced apple and cranberry crops, and no second and third cut hay. The Massachusetts state government declared on September 7th to make up to \$1 million in microloan funds available to small, family owned farms who suffered losses due to the drought. Eleven counties in Massachusetts were declared primary disaster counties due to the drought. They include: Barnstable, Berkshire, Bristol, Essex, Franklin, Hampden, Hampshire, Middlesex, Norfolk, Plymouth, and Worcester Counties. Farms in these counties are eligible for assistance from the Farm Service Agency and the Livestock Forage Disaster Program.

More than 160 public water systems in Massachusetts have imposed some sort of water use restrictions, 70 of those have the strictest parameters in place, allowing residents to use outdoor water one day a week or less. One of these was Worcester, the second largest city in Massachusetts. Worcester banned outdoor water use in early September and ordered restaurants to stop serving tap water unless requested by a customer because their reservoir system had dropped to 55 percent of capacity. It's reservoirs are typically at 80 percent of capacity going into the fall. In addition, Worcester officials activated an emergency connection to draw water from the Massachusetts Water Resources Authority (MWRA) at a cost of \$1.7 million per month. Other communities that already rely on the MWRA for a portion of their water have increased their demand by 38 percent this year.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
MASSACHUSETTS, West									
Berkshire County									
1 NW Farnams	11	0645EST			0	0			Thunderstorm Wind (50EG)
A tree and wires were downed in the Farnams section of Cheshire due to thunderstorm winds.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Berkshire County									
1 E Adams	11	0645EST			0	0			Thunderstorm Wind (50EG)
A tree and wires were downed in Adams due to thunderstorm winds.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Berkshire County									
2 SW Lanesborough	11	0656EST			0	0			Thunderstorm Wind (50EG)
Trees were downed on wires in Lanesborough due to thunderstorm winds.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Berkshire County									
2 E Richmond Furnace	11	0658EST			0	0			Thunderstorm Wind (50EG)
Trees were downed in Richmond due to thunderstorm winds.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Berkshire County									
2 W North Egremont	11	0700EST 0705EST			0	0			Thunderstorm Wind (74EG)
A National Weather Service Storm Survey found damage to numerous hardwood and softwood trees in North Egremont from the New York State line to near Baldwin Hill Road due to a series of thunderstorm microbursts. Some homes, powerlines and a boat dock on Prospect Lake were all damaged by falling trees.									
Note: The estimated wind gust of 74 knots is equivalent to 85 mph.									
Berkshire County									
1 NNE North Otis	11	0719EST			0	0			Thunderstorm Wind (50EG)
A tree was down on wires near North Otis due to thunderstorm winds. The tree caught on fire as a result of the downed wires.									
A mild and humid air mass was in place over western Massachusetts during the early morning hours on Sunday, September 11th. A cold front was crossing through the region around sunrise and a potent line of thunderstorms accompanied the passage of this boundary. Some of these storms were severe, producing damaging winds to trees and power lines. The thunderstorms didn't last long, but produced a swath of damage across Berkshire County. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
MICHIGAN, East									
Wayne County									
1 NE Wyandotte	07	1400EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
Large tree limb reported down.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Washtenaw County									
1 NW Hudson Mills	07	1507EST			0	0	4.00K	0.00K	Thunderstorm Wind (52EG)
Numerous trees and power lines reported blown down.									
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Washtenaw County									
2 SE Dover	07	1510EST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Multiple trees reported blown down.									
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Wayne County									
2 NW Romulus	07	1630EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
Wires reported down.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Wayne County									
2 N Woodhaven	07	1654EST			0	0	0.00K	0.00K	Hail (0.88)
A couple of of severe thunderstorms developed in Wayne and Washtenaw counties.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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MICHIGAN, East

Genesee County

1 W Clio	10	1538EST			0	0	3.00K	0.00K	Thunderstorm Wind (52EG)
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Several trees and wires reported down.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Genesee County

1 SW Flint	10	1542EST			0	0	3.00K	0.00K	Thunderstorm Wind (52EG)
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Several trees and wires reported down.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Genesee County

1 N Grand Blanc	10	1552EST			0	0	3.00K	0.00K	Thunderstorm Wind (52EG)
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Several trees and wires reported down.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Lapeer County

Lapeer	10	1620EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A large tree was reported down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Oakland County

1 E Oxford	10	1621EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Tree damage reported.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

St. Clair County

1 W Capac	10	1632EST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A tree was reported blown down.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Sanilac County

1 N Peck	10	1632EST			0	0	4.00K	0.00K	Thunderstorm Wind (54EG)
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Trees and power lines reported down.
A cold front triggered a few severe thunderstorms along the M-59 and I-69 corridors. Note: The estimated wind gust of 54 knots is equivalent to 62 mph.

Macomb County

3 W Sterling Hgts	29	0715EST			0	0	0.50M	0.00K	Flash Flood
3 SSW Pleasant Ridge		1100EST							

Oakland County

2 N Wixom Spencer Arpt	29	0715EST			0	0	0.50M	0.00K	Flash Flood
4 W Oakwood		1100EST							

Wayne County

2 N Grosse Pt Farms	29	0715EST			0	0	1.00M	0.00K	Flash Flood
1 NNW Westmore		1100EST							

Heavy rain fell across the Detroit Metro Area during the morning hours, with rainfall totals of 2 to 5 inches, heaviest rain centered in Downtown Detroit. Widespread urban flooding was reported, with many roads and interstates closed. Many basements were also flooded.

MICHIGAN, North

Antrim County

3 NW Chestonia	06	1415EST			0	0	4.00K	0.00K	Thunderstorm Wind (50EG)
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Power lines were downed. A tractor-trailer was overturned near the intersection of M-66 and Bartholomew Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Charlevoix County

1 E Boyne Mtn Arpt	06	1420EST			0	0	12.00K	0.00K	Thunderstorm Wind (52EG)
7 ESE Boyne Falls		1430EST							

Scattered trees and power lines downed from Boyne Falls to Coash Road in far southeast Charlevoix County. A few utility poles were snapped.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MICHIGAN, North

Cheboygan County

Indian River

06	1428EST				0	0	1.50K	0.00K	Thunderstorm Wind (50EG)
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Several large tree limbs were downed at the Indian River Golf Club.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Otsego County

1 ESE Vanderbilt

06	1440EST				0	0	7.00K	0.00K	Thunderstorm Wind (54EG)
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One utility pole and multiple power lines were downed at the Vanderbilt Area School. Multiple trees were downed at the intersection of Grant and Elm Streets.

Note: The estimated wind gust of 54 knots is equivalent to 62 mph.

Manistee County

4 E High Bridge

06	1530EST				1	0	0.00K	0.00K	Lightning
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A Texas man was struck and killed by lightning while on the North Country Trail in Dickson Township. M710U

Roscommon County

1 SW St Helen

06	1649EST				0	0	5.00K	0.00K	Thunderstorm Wind (54EG)
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Several trees and power lines were downed.

A line of strong to severe thunderstorms crossed northern lower Michigan during the afternoon. Note: The estimated wind gust of 54 knots is equivalent to 62 mph.

Roscommon County

1 ESE Prudenville

10	1330EST				0	0	2.50K	0.00K	Thunderstorm Wind (51EG)
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A tree and multiple power lines were downed near Lake James.

A line of showers and thunderstorms crossed northern lower Michigan. One storm produced isolated wind damage. Note: The estimated wind gust of 51 knots is equivalent to 59 mph.

MICHIGAN, West

Clare County

Harrison

06	1750EST				0	0	5.00K	0.00K	Thunderstorm Wind (52EG)
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A 911 call center reported that several trees were blown down near Budd Lake.

An isolated severe storm brought down several trees near Budd Lake in Clare county. Some blocked area roads and hundreds of people lost power in the area. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Ingham County

Stockbridge

07	1430EST				0	0	10.00K	0.00K	Thunderstorm Wind (55EG)
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Ingham county emergency management reported that many trees and power lines were blown down in Stockbridge.

Damaging wind gusts from an isolated severe storm near Stockbridge brought down numerous trees and power lines. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

MINNESOTA, Central and South Central

Sherburne County

4 NE Big Lake

06	0340CST				0	0	25.00K	0.00K	Thunderstorm Wind (56EG)
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A 20 foot trailer was picked up and blown into a pickup truck and spread across a yard. There was damage to a shed and siding from the debris.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Sherburne County

4 NE Big Lake

06	0342CST				0	0	2.00K	0.00K	Hail (1.50)
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Hail occurred in the Aspen Hills area of Big Lake Township. Damage occurred to a vehicle in this location.

Several thunderstorms developed after midnight, Tuesday, September 6th in southern Minnesota. These storms were mainly non-severe and produced occasional strong winds, hail and torrential rainfall. One of the storms developed southwest of Big Lake, and moved northeast and produced damaging winds to a trailer and vehicle northeast of Big Lake. Half dollar size hail also accompanied the damaging winds.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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MINNESOTA, Central and South Central

Morrison County

2 NNW Darling	07	2128CST							
2 NNE Camp Ripley Jct		2137CST	7.28	100	0	0	1.00M	0.00K	Tornado (EF1)

A NWS storm survey concluded that an EF1 tornado with estimated winds of 90 mph, damaged several buildings and uprooted trees in Camp Ripley. One concrete block apartment style living quarters had its roof completely removed, and another one had its roof partially removed. Another high-roof garage building was mostly destroyed, with debris landing in an array of solar panels, which sustained significant damage. One car was lofted and deposited about 50 feet away. The tornado started just southeast of Randall and moved east, damaging a resort and a number of lake homes on the northwest side of Green Prairie Fish Lake. It then turned northeast and hit Camp Ripley. The core of the tornado tracked just north of the KRYM AWOS at the Camp Ripley airfield, which measured a peak gust of 56 knots. Specific wind measurements (in knots) were 14016G24 at 0333Z, 19034G56 at 0334Z, 24048G56 at 0335Z, 28048G56 at 0336Z, 33036G56 at 0337Z, and 30018G56 at 0338Z. The tornado intensified shortly thereafter, taking the roof off the buildings, lofting a car, and bending six metal light poles in half.

The evening of Wednesday, September 7th, an area of showers, with embedded thunderstorms developed across western Minnesota, and moved northeast across central Minnesota. Effective shear and ample instability was able to produce a tornado that hit Morrison County, including Camp Ripley. No one was injured during this event.

Blue Earth County

2 ESE Mankato	20	2128CST			0	0	0.00K	0.00K	Hail (1.75)
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Dakota County

2 WSW Randolph	20	2210CST			0	0	0.00K	0.00K	Hail (0.75)
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Dakota County

1 N Eagan	20	2230CST			0	0	0.00K	0.00K	Hail (0.88)
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Dakota County

1 N Eagan	20	2230CST			0	0	0.00K	0.00K	Hail (1.25)
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Dakota County

3 S Mendota	20	2230CST			0	0	0.00K	0.00K	Hail (0.88)
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Dakota County

2 WNW Eagan	20	2235CST			0	0	0.00K	0.00K	Hail (0.88)
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Dakota County

1 S Inver Grove Heights	20	2245CST			0	0	0.00K	0.00K	Hail (1.00)
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Washington County

Newport	20	2250CST			0	0	0.00K	0.00K	Hail (0.88)
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Most of the hail that fell was pea to penny size.

Washington County

3 WSW Cottage Grove	20	2300CST			0	0	0.00K	0.00K	Hail (0.75)
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Washington County

2 E St Paul Park	20	2305CST			0	0	0.00K	0.00K	Hail (1.00)
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Washington County

Cottage Grove	20	2311CST			0	0	0.00K	0.00K	Hail (0.88)
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Goodhue County

1 NW Zumbrota	21	0130CST			0	0	0.00K	0.00K	Hail (0.75)
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Anoka County

1 S Lexington	21	1500CST							
	22	0600CST			0	0	0.00K	0.00K	Heavy Rain

A retired NWS employee measured 7.17 inches of rainfall in Spring Lake Park between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Anoka County

1 SW Lexington	21	1500CST							
	22	0600CST			0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 7.65 inches of rainfall in far northern Fridley between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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MINNESOTA, Central and South Central

Hennepin County

1 E Crystal Arpt

21	1500CST								
22	0300CST				0	0	0.00K	0.00K	Heavy Rain

A local mesonet station measured 6.15 inches of rainfall in northern Brooklyn Center between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Hennepin County

Crystal

21	1500CST								
22	0300CST				0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 5.88 inches of rainfall in southwestern Brooklyn Park, just west of Crystal. This was between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Hennepin County

1 NNE Hamel

21	1500CST								
22	0300CST				0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 6.21 inches of rainfall near Hamel between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Hennepin County

2 NNW Loretto

21	1500CST								
22	0300CST				0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 5.78 inches of rainfall north of Loretto between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Hennepin County

3 SW Osseo

21	1500CST								
22	0600CST				0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 8.11 inches of rainfall in Maple Grove (on the western edge of Fish Lake) between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Hennepin County

3 S Maple Grove

21	1500CST								
	2300CST				0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 9.86 inches of rainfall in Maple Grove (just east of Weaver Lake) during the afternoon and evening of Wednesday, September 21st.

Hennepin County

3 SW Osseo

21	1500CST								
22	0600CST				0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 9.76 inches of rainfall in Maple Grove (just west of Fish Lake) between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Hennepin County

3 ESE Corcoran

21	1500CST								
22	0600CST				0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 9.05 inches of rainfall in southwestern Maple Grove between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Hennepin County

2 ESE Osseo

21	1500CST								
22	0600CST				0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 7.20 inches of rainfall in Brooklyn Park (just east of Osseo) between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MINNESOTA, Central and South Central

Hennepin County 3 SW Osseo

21	1500CST				0	0	0.00K	0.00K	Heavy Rain
22	2030CST								

A local trained weather observer measured 7.15 inches of rainfall in Maple Grove, just west of the intersection of Interstates 94, 494, and 694. This was during the afternoon and evening of Wednesday, September 21st.

Hennepin County 2 SE Maple Grove

21	1500CST				0	0	0.00K	0.00K	Heavy Rain
22	0300CST								

A local trained weather observer measured 6.44 inches of rainfall in northern Maple Grove between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Hennepin County 3 N Plymouth

21	1500CST				0	0	0.00K	0.00K	Heavy Rain
22	0300CST								

A local trained weather observer measured 6.27 inches of rainfall in southern Maple Grove between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Ramsey County 3 N Shoreview

21	1500CST				0	0	0.00K	0.00K	Heavy Rain
22	0500CST								

A local trained weather observer measured 5.22 inches of rainfall in northern Shoreview between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Ramsey County 1 N Arden Hills

21	1523CST				0	0	0.00K	0.00K	Hail (0.88)
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Ramsey County Shoreview

21	1525CST				0	0	0.00K	0.00K	Hail (1.00)
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Ramsey County 1 NE North Oaks

21	1530CST				0	0	0.00K	0.00K	Hail (1.00)
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Wright County 1 NW Buffalo Muni Arpt

21	1725CST				0	0	0.00K	0.00K	Hail (0.75)
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Hennepin County 2 ENE Rockford

21	1728CST				0	0	0.00K	0.00K	Hail (0.88)
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Blue Earth County 1 W Eagle Lake

21	1800CST				0	0	0.00K	0.00K	Heavy Rain
22	0600CST								

A local trained weather observer measured 5.25 inches of rainfall near Eagle Lake between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Faribault County 4 W Frost

21	1800CST				0	0	0.00K	0.00K	Heavy Rain
22	0800CST								

A local trained weather observer measured 5.10 inches of rainfall near Frost between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Faribault County 1 W Wells

21	1800CST				0	0	0.00K	0.00K	Heavy Rain
22	0600CST								

A local trained weather observer measured 5.15 inches of rainfall near Wells between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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MINNESOTA, Central and South Central

Goodhue County

Kenyon

21	1800CST								
22	0500CST				0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 5.16 inches of rainfall near Kenyon between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Steele County

5 SSW Lemond

21	1800CST								
22	0500CST				0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 5.22 inches of rainfall south of Lemond between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Waseca County

1 SW Waseca

21	1800CST								
22	0800CST				0	0	0.00K	0.00K	Heavy Rain

A National Weather Service coop observer measured 7.64 inches of rainfall southwest of Waseca between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Waseca County

1 NE Waseca

21	1800CST								
22	0600CST				0	0	0.00K	0.00K	Heavy Rain

A local trained weather observer measured 6.55 inches of rainfall near Waseca between Wednesday afternoon, September 21st, to the early morning of Thursday, September 22nd.

Wright County

1 W Rockford

21	1807CST								
					0	0	0.00K	0.00K	Hail (1.00)

Wright County

Rockford

21	1819CST								
					0	0	0.00K	0.00K	Hail (1.00)

Anoka County

1 NW Lexington

21	1845CST								
	2145CST				0	0	0.00K	0.00K	Flash Flood

One foot of flowing water closed University Avenue and County Road 47 near North Town Mall.

Hennepin County

1 NW Brooklyn Park

21	1945CST								
	2245CST				0	0	0.00K	0.00K	Flash Flood

Flood waters caused parts of Noble Parkway to close along Shingle Creek. Several cars were stalled along Noble Parkway.

Hennepin County

1 S Edina

21	2000CST								
					0	0	0.00K	0.00K	Thunderstorm Wind (56EG)

A large tree, 28 inches in diameter, was blown down at Highway 100 and 70th, in Edina.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Hennepin County

2 ESE Osseo

4 NE Hamel

21	2045CST								
	2245CST				0	0	0.00K	0.00K	Flash Flood

Local law enforcement officials closed numerous roads in northern Hennepin county due to flooded roadways. Officials indicated that numerous vehicles stalled and became submerged in the flood waters, especially in the cities of Maple Grove and Brooklyn Park where locally 7 to 10 inches of rain fell in less than 6 hours.

Waseca County

1 W Waseca

21	2100CST								
22	0230CST				0	0	0.00K	0.00K	Flash Flood

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MINNESOTA, Central and South Central

Several roads in Waseca had one to two feet of flowing water. In addition, an unverified report of 10 inches of rain fell in the northeast part of Waseca late Wednesday night. Several homes and businesses in Waseca had flooded basements and other structural problems due to the flood waters.

Anoka County

1 NW Lexington

21	2115CST								
22	0015CST				0	0	1.00M	0.00K	Flash Flood

Flood waters caused numerous roads to become impassable on either side of University Avenue, between Highway 610 at Coon Rapids Blvd, and I-694. Water was several feet deep in far northern Fridley, with significant damage at the SpringBrook apartments, where flood waters entered seven of the nine buildings and adjacent garages, resulting in damage to many dozens of apartments. Other homes and buildings in the area also had flood waters inside their structures.

Freeborn County

(AEL)Albert Lea Arpt

21	2214CST				0	0	0.00K	0.00K	Thunderstorm Wind (58MG)
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Note: The measured wind gust of 58 knots is equivalent to 67 mph.

Waseca County

1 S Waseca

21	2330CST								
22	0230CST				0	0	0.00K	0.00K	Flash Flood

Highway 13 near Highway 14 was closed due to flood waters.

Waseca County

Waseca

22	0230CST								
	0430CST				0	0	0.00K	0.00K	Flash Flood

The city of Waseca continued to receive torrential rainfall that caused several roads to close. The flood waters started to affect homes that had to be evacuated.

Waseca County

1 SSW Waseca

22	0430CST								
	0600CST				0	0	0.00K	0.00K	Flash Flood

Flood waters continued to affect the city of Waseca with the community arena reported of 6-8 inches of standing water on their ice rink.

Blue Earth County

3 ENE Minnesota Lake

3 NNE Madison Lake

22	0600CST								
23	1800CST				0	0	0.00K	0.00K	Flood

Runoff from torrential rainfall that occurred across most of eastern and southern Blue Earth County Wednesday night, September 21st, caused numerous roads to remain impassable and closed.

Freeborn County

4 NNW Freeborn

2 WNW Conger

22	0600CST								
23	1800CST				0	0	280.00K	0.00K	Flood

Runoff from torrential rainfall that occurred across most of northern Freeborn County Wednesday night, September 21st, caused numerous roads to remain impassable and closed. Local officials indicated that nearly 300 properties in Freeborn County had reported flood damage. Repair work for regrading and re-rocking gravel roads, replacing riprap and reimbursing cost were estimated at \$280,000.

Goodhue County

5 SSW Kenyon

4 ESE Pine Is

22	0600CST								
23	1800CST				0	0	0.00K	0.00K	Flood

Runoff from torrential rainfall that occurred across most of southern Goodhue County Wednesday night, September 21st, caused numerous roads to remain impassable and closed.

Le Sueur County

4 SSW Kasota

4 W Elysian

22	0600CST								
23	1800CST				0	0	0.00K	0.00K	Flood

Runoff from torrential rainfall that occurred across most of southern Le Sueur County Wednesday night, September 21st, caused numerous roads to remain impassable and closed.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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MINNESOTA, Central and South Central

Rice County

4 WSW Morristown	22	0600CST							
Moland	23	1800CST			0	0	700.00K	0.00K	Flood

Runoff from torrential rainfall that occurred across most of southern Rice County Wednesday night, September 21st, caused numerous roads to remain impassable and closed. The flooding incident created over \$700,000 in property damage amounts, according to Rice County Emergency Management.

Steele County

6 N Meriden	22	0600CST							
5 W Ellendale	23	1800CST			0	0	0.00K	0.00K	Flood

Runoff from torrential rainfall that occurred across most of Steele County Wednesday night, September 21st, caused numerous roads to remain impassable and closed.

Waseca County

6 SE New Richland	22	0600CST							
9 NNE Waseca	23	1800CST			0	0	0.00K	0.00K	Flood

Runoff from torrential rainfall that occurred across most of Waseca County Wednesday night, September 21st, caused numerous roads to remain impassable and closed.

On the evening of September 20th, a warm front was stretched west to east across southern Minnesota originating from a developing low pressure system across the South Dakota and Nebraska border. The weather pattern, and associated boundaries were nearly stationary through early Thursday morning, September 22nd. The atmosphere was very moist, which was evident in the soundings as near record high Precipitable Water (PWAT) values were noted.

Although the most significant part of this weather event was flooding, some large hail was observed the evening of September 20th, and during the afternoon and evening of Wednesday, September 21st.

The evening of Tuesday, September 20th, an area of thunderstorms formed along and north of the warm front in southern Minnesota. Heavy rain fell in south central Minnesota, especially near Waseca. A Flash Flood Warning was issued for portions of southern Minnesota but no major issues were reported. Ultimately, 2 to 3 inches of rain fell in a rather short period of time near Janesville and Waseca late Tuesday night. This rainfall event, although localized, created very wet antecedent conditions before the main heavy rainfall event developed the evening of Wednesday, September 21st.

The evening and overnight of September 21st-22nd saw much more and widespread heavy rainfall across southern Minnesota. Two areas that were hit the hardest occurred across Hennepin and Anoka counties, in the Twin Cities metro area, and around Mankato, Waseca and Owatonna.

The worst and most significant flash flood event occurred between Greenfield, Corcoran in Hennepin County, eastward to Spring Lake Park, Fridley, Lexington and Lino Lakes in Anoka County. The first heavy rainfall event occurred between 5 PM and 8 PM CST. This event produced between 3 and 6 inches of rainfall in less than 3 hours, with some areas receiving 3 to 4 inches of rain in less than 90 minutes based on local observations. The second event produced an additional 2 to 4 inches after 9 PM CST in the same areas which prompted a small region to have a Flash Flood Emergency issued. Upwards of 7, to nearly 10 inches of rain fell before midnight. Due to this extreme event, there were hundreds of abandoned cars with water reaching the car windows in northwest metro suburbs during the height of the storm. Interstate 94 in the north metro was closed for a period that night. Five private residents had 3-4 feet of water in their basements, and two homes had water completely filled to the top in Maple Grove. In addition to the homes, there were 15 county roads closed at one point around Maple Grove and Brooklyn Park based on reports from the Hennepin County Emergency Management. A small part of Highway 169 near the border of Maple Grove and Brooklyn Park was closed for 4 days due to the runoff from earlier torrential rainfall.

The other flash flood event occurred near Mankato (northeast Blue Earth County) eastward through Waseca and Steele Counties. Thunderstorms that developed Wednesday evening were much more widespread, and trained over the same areas along and north of the front. Rainfall amounts ranged from 4 to 6 inches from Mankato, to Albert Lea, Kenyon and Faribault. The highest 24-hour total ending on the morning of September 22 was 7.64 inches at the U of M Southern Research and Outreach Center in Waseca. This brought the two-day total at that location to 10.16 inches, including the 2.52 inches of rain that fell with the first wave on September 20-21. This is the highest two-day total ever recorded in Waseca.

Due to the ground that was already saturated from earlier torrential rainfall the day before, the flooding situation became extreme, with ongoing areal flooding lasting for the next several days as the runoff continued.

There were many reports of basements flooded, closed roads and washouts, and standing water in Waseca and other locations as well. There were a few homes in Waseca that were evacuated due to the flood waters. The indoor ice arena in Waseca had six inches of water on the freshly-iced rink. Loon Lake in Waseca rose over its banks and flooded nearby streets in town. The rising waters of Fountain Lake in Albert Lea encroached into town during the day on September 23, detouring Highway 65 (Main Street) near the lake.

According to the emergency manager at least 75 percent of the homes in the Waseca area were damaged by flooding. A line nearly 200 yards long of trucks and cars filled with wet carpets, furniture and waterlogged TVs and appliances was lined up at the City of Waseca debris dump site.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MINNESOTA, Central and South Central

There was major flooding on rivers and creeks across portions of southern Minnesota that lasted for several days beyond the event. The North Fork Zumbro River near Wanamingo reached a record flood stage of 23.38 feet during the morning of 9/22. The previous record was 23.2 feet. Other rivers, and streams that rose significant or crested above flood stage were the Straight, Cannon, Cobb and Le Sueur.

During the height of the flood event, I-694, I-90, and Highway 169 in Minnesota were closed for a time due to high water. Dozens of county roads were also closed near Waseca, Minnesota in south central MN. Many stalled vehicles, flooded basements and a few localized evacuations took place around southern Minnesota.

Reports from the Minnesota Department of Transportation had numerous state roads closed through Thursday, September 22nd as runoff continued. Some of the major roads that were affected by the flood waters in south central Minnesota included; Highways 13, 14, 30, 71, 83, 22, 28, and 15.

Several of the main roads didn't reopen until Friday morning, September 23rd. Plus, a few didn't open until the following week.

In addition to the road closures, several gravel roads experienced erosion. Within the Blue Earth County Park System, Wildwood Park and the Fort Le Hillier Canoe Landing had been closed.

Several daily rainfall records were broken which included; Waseca at 7.64 inches, 5.15 inches at Wells, 3.70 inches at Zumbrota, and 3.09 inches at Winnebago.

Due to the extreme event, the President of the United States officially declared the significant storm and flooding in September a major disaster. This declaration brought federal and state aid to the following counties: Blue Earth, Freeborn, Goodhue, Le Sueur, Rice, Steele, Waseca, and others in southeast Minnesota.

The widespread flooding caused significant damage to roads, buildings, and infrastructure. According to a preliminary damage report completed in October 2016, officials determined \$8.3 million in public infrastructure damage and \$10.1 million in estimated individual needs were noted. Over 6,000 homes and businesses were affected by the flood waters across southern Minnesota.

MINNESOTA, Northeast

St. Louis County **1 SE Mc Kinley**

05	1043CST			0	0			Thunderstorm Wind (52EG)
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There were large branches blown down with reported power outages in the area.

Thunderstorm winds blew down trees and branches and caused local power outages in the area of McKinley. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

St. Louis County **Mountain Iron**

05	2230CST			0	0			Thunderstorm Wind (52EG)
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Winds blew down power lines contributing to power outages in the area.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

St. Louis County **1 N Rainy Jct**

05	2237CST			0	0			Hail (1.00)
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St. Louis County **1 NNE Biwabik**

05	2250CST			0	0			Thunderstorm Wind (52EG)
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There were large branches blown down and power outages in the area.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

St. Louis County **1 S Parkville**

05	2250CST			0	0			Thunderstorm Wind (52EG)
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Large trees were blown down causing damage to homes in the area.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Cook County **5 NNE Marais**

06	0050CST			0	0			Hail (0.75)
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Evening thunderstorms produced strong wind and small hail in portions of the Iron Range of the Arrowhead of Minnesota. The thunderstorm winds blew down trees, branches, and power lines contributing to local areas losing power. Some homes were damaged from the downed trees.

Aitkin County **2 NE Cutler**

21	1536CST			0	0			Hail (0.75)
	1538CST							

A trained spotter reported hail ten miles south of Aitkin, Minnesota on the afternoon of September 21, 2016.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MINNESOTA, Northwest

Wilkin County

4 NE Mc Cauleyville

07	1525CST				0	0			Thunderstorm Wind (52EG)
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Several large tree branches and limbs were blown down in shelterbelts.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Otter Tail County

Pelican Rapids

07	1602CST				0	0			Hail (0.75)
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Hubbard County

1 SE Nevis Arpt

07	1710CST				0	0			Thunderstorm Wind (52EG)
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Large tree branches were blown down and one spruce tree was snapped along 8th Crow Wing Lake. Intense squalls produced very heavy rain throughout the evening.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Wilkin County

1 SW Rothsay

07	1830CST				0	0			Thunderstorm Wind (52EG)
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Trees were blown down and a home was damaged.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Otter Tail County

1 N Battle Lake

07	1910CST				0	0			Hail (0.75)
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Pea to dime sized hail was reported.

Cloud cover helped to hold down afternoon temperatures on August 7th, so highs stayed mainly in the low to mid 70s with dew points around 60. However, there was a decent upper level disturbance that worked into the area as well. Thunderstorms across western and central North Dakota spread east through the late morning and early afternoon, and formed several bowing segments as they did so. One bowing segment started in northwest Sargent County, ND, then tracked northeast into southern Cass County, ND, and northern Wilkin County, MN. This storm produced very strong winds, large hail, and brief heavy rain.

Beltrami County

8 W Shooks

09	1634CST				0	0	0.00K	0.00K	Funnel Cloud
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A couple of brief funnel clouds were reported over southern Cormant Township, or east of the Lower Red Lake.

Beltrami County

5 ENE Redby

09	1720CST				0	0			Tornado (EF0)
	1724CST	0.35	50		0	0			

A waterspout-type tornado formed over the southeast corner of the Lower Red Lake, staying mainly over open water. Peak winds were estimated at 65 mph.

A thunderstorm cell formed along a cold frontal boundary, producing several funnel clouds and a weak tornado.

MINNESOTA, Southeast

Houston County

2 ENE Willington

06	1705CST								
07	0700CST				0	0	0.00K	0.00K	Heavy Rain

The COOP observer near Eitzen measured 5.35 inches of rain.

Fillmore County

1 E Mabel

06	1720CST								
07	0540CST				0	0	0.00K	0.00K	Heavy Rain

The COOP observer in Mabel measured 4.61 inches of rain.

Houston County

Caledonia

06	1720CST								
07	0600CST				0	0	0.00K	0.00K	Heavy Rain

The COOP observer in Caledonia measured 4.41 inches of rain.

Fillmore County

1 ESE Mabel

07	0555CST								
	0900CST				0	0	0.00K	0.00K	Flash Flood

Steam Engine Park in Mabel was flooded by water from Riceford Creek.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MINNESOTA, Southeast

Houston County 2 NNW Newhouse

07	0555CST 0915CST				0	0	40.00K	0.00K	Flash Flood
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A mudslide north of Brownsville caused boulders to tumble down the side of a bluff. One of these boulders hit a house causing considerable damage. Numerous roads in the southern sections of Houston County had water over them prompting officials to close some of them, including State Highway 16 near La Crescent. Flood waters from Winnebago Creek damaged a road in Camp Winnebago south of Caledonia and covered County Highway 5 in the extreme southern part of the county.

Flash flooding impacted parts of southeast Minnesota during the early morning hours of September 7th. Thunderstorms with heavy rain dumped 4 to 7 inches of rain that caused the flash flooding in Fillmore and Houston Counties. A mudslide near Brownsville (Houston County) sent boulders tumbling down the side of a bluff and into a house causing significant damage. Numerous roads in the southern sections of Houston County had water over them prompting officials to close some of them. Flooding from Riceford Creek sent water into Steam Engine Park in Mabel (Fillmore County).

Olmsted County 2 NW Marion

21	0030CST				0	0	30.00K	0.00K	Lightning
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Lightning started a house fire on the southeast side of Rochester. The fire was contained to the attic with the house sustaining moderate damage.

Dodge County 1 NE Hayfield

21	0053CST				0	0	0.00K	0.00K	Hail (0.75)
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Winona County 2 WNW Lamoille 2 S Homer

21	0425CST 0700CST				0	0	4.00K	0.00K	Flash Flood
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A mudslide sent trees onto one of the southbound lanes of U.S. Highway 61 near Pickwick. The heavy rain also caused water to go over some private driveways along County Highway 19.

Olmsted County 2 SSW Rochester

21	1050CST				0	0	0.00K	0.00K	Hail (0.75)
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Mower County 1 E Rose Creek

21	1055CST				0	0	0.00K	0.00K	Hail (0.88)
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Winona County 2 NNW Dakota

21	1144CST				0	0	0.00K	0.00K	Hail (0.88)
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Winona County 1 W Winona

21	1152CST				0	0	0.00K	0.00K	Hail (0.75)
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Mower County 1 NE Austin Acres

21 22	1640CST 0609CST				0	0	0.00K	0.00K	Heavy Rain
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Near Austin, 4.60 inches of rain fell.

Fillmore County Lanesboro

21 22	1830CST 0730CST				0	0	0.00K	0.00K	Heavy Rain
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The automated mesonet station in Lanesboro measured 5.55 inches of rain.

Fillmore County 1 W Whalan

21 22	1835CST 0600CST				0	0	0.00K	0.00K	Heavy Rain
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The COOP observer near Lanesboro measured 6.47 inches of rain.

Fillmore County 2 S Peterson

21 22	1900CST 0605CST				0	0	0.00K	0.00K	Heavy Rain
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Near Peterson, 4.57 inches of rain fell.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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MINNESOTA, Southeast

Olmsted County

2 SSW Genoa	21	2230CST							
3 E Rock Dell	22	0145CST			0	0	2.00K	0.00K	Flash Flood

Flood waters covered County Road 105 near Oxbow Park north of Byron and County Road 126 east of Rock Dell.

Mower County

1 NW Mapleview	21	2327CST							
1 WNW Austin Acres	22	0145CST			0	0	4.50K	0.00K	Flash Flood

Heavy rain caused street flooding to occur in Austin. Interstate 90 had to be closed because of the flooding between Oakland Ave NW and 6th Ave NE. One person had to be rescued after driving into flood waters and the car became stuck.

Houston County

1 SSE Freeburg	21	2330CST							
3 ENE Caledonia	22	0145CST			0	0	44.00K	0.00K	Flash Flood

Heavy rain caused more water than normal to flow over the Freeburg spillway and produced flooding along Crooked Creek. The flooding washed out a portion of Whitetail Drive.

Fillmore County

2 NNE Rushford	21	2355CST							
3 ESE Mabel	22	0145CST			0	0	1.60M	0.00K	Flash Flood

Heavy rain caused Sugar Creek to flood with water going over County Highway 8 west of Fountain. Flooding on Duschee Creek caused State Highway 16 to be closed southwest of Lanesboro. State Highway 16 was also closed west of Whalan due to a mudslide. Downed trees blocked U.S. Highway 52 south of Chatfield and State Highway 43 near Rushford. Ox Cart Road suffered severe damage from a mudslide. Flood waters completely covered Riverside Campground and 70 campers had to be evacuated from the Highway 250 Campground. Numerous township roads were also damaged by the flooding.

Dodge County

9 WNW Hayfield	22	0011CST 0145CST			0	0	2.00K	0.00K	Flash Flood
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Runoff from heavy rains caused water to go over several roads across the southern sections of Dodge County.

Fillmore County

1 NE Lanesboro	22	0134CST 0345CST			0	0	10.00K	0.00K	Flash Flood
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Flooding along the Root River washed out roads just outside of Lanesboro. State Highway 16 was closed southwest of Lanesboro because of a mudslide.

Winona County

5 NNW St Charles	22	0140CST 0425CST			0	0	0.00K	0.00K	Flood
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Runoff from heavy rain pushed the Whitewater River out of its banks in the Whitewater State Park. The river crested a little over the flood stage at 13.68 feet.

Mower County

1 NW Mapleview	22	0145CST			0	0	0.00K	0.00K	Flood
1 WNW Austin Acres	23								

Flood waters caused officials to close several city streets in Austin. Austin schools canceled classes on the 22nd because of the flooding.

Mower County

3 W Mapleview	22	0240CST			0	0	0.00K	0.00K	Flood
	27	0330CST			0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed Turtle Creek out of its banks near Austin. The creek crested three feet above the flood stage at 13.58 feet.

Storm Data and Unusual Weather Phenomena

September 2016

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MINNESOTA, Southeast

Mower County

1 NW Austin

22	0425CST 2215CST				0	0	0.00K	0.00K	Flood
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Runoff from heavy rain pushed Dobbins Creek out of its banks in Austin. The creek crested just over a foot above the flood stage at 12.63 feet.

Mower County

1 ESE Lansing

22	0440CST				0	0	0.00K	0.00K	Flood
23	1525CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Cedar River out of its banks near Lansing. The river crested over two feet above the flood stage at 20.29 feet.

Mower County

1 ENE Austin Acres

22	1000CST				0	0	0.00K	0.00K	Flood
23	2035CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Cedar River out of its banks in Austin. The river crested almost five feet above the flood stage at 19.8 feet.

Houston County

**2 N Black Hammer
1 E Eitzen**

22	1500CST				0	0	800.00K	750.00K	Flood
23	1800CST				0	0	800.00K	750.00K	Flood

Flooding along Winnebago Creek caused officials to close County Highway 5 over the southern portions of the county. The flooding also caused the lower portion of Camp Winnebago to be closed where the road was washed out. Flood waters also covered Cutacross Road and Yucatan Road.

Olmsted County

3 N Rochester

22	1655CST				0	0	0.00K	0.00K	Flood
23	0205CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the South Fork Zumbro River out of its banks in Rochester. The river crested just about a foot over the flood stage at 14.95 feet.

Wabasha County

1 NNW Zumbro Falls

22	1940CST				0	0	0.00K	0.00K	Flood
24	0720CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Zumbro River out of its banks in Zumbro Falls. The river crested over four feet above the flood stage at 22.22 feet.

Houston County

Houston

22	2225CST				0	0	0.00K	0.00K	Flood
25	0040CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Root River out of its banks near Houston. The river crested two feet over the flood stage at 17.01 feet.

Several rounds of thunderstorms with heavy rain moved across southeast Minnesota from the early morning hours of September 21st into the morning of the 22nd. The heavy rain led to flash flooding across portions of Mower, Fillmore, Houston and Winona Counties. One person had to be rescued in Austin (Mower County) after driving into flood waters. A mudslide near Pickwick (Winona County) sent trees sliding onto U.S. Highway 61. Several roads were closed in Fillmore and Houston Counties as a result of water over the roads, mudslides or downed trees. Between Fillmore and Houston Counties, damages from the flooding totaled just over \$3 million. A state of emergency was declared in Fillmore County. A federal disaster declaration was made for Fillmore and Houston Counties.

MINNESOTA, Southwest

Cottonwood County

1 SE Windom Muni Arpt

05	0119CST				0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
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A thunderstorm produced a damaging wind gust at Windom Minnesota airport in Cottonwood County of southwest Minnesota after midnight on the early morning of September 5th. Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MINNESOTA, Southwest

Lyon County

Russell

06	0026CST				0	0	0.00K	0.00K	Hail (0.88)
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A thunderstorm produced nickel size hail at Russell in Lyon County of southwest Minnesota shortly after midnight on the morning of September 6th.

Nobles County

1 N Round Lake

15	1400CST				0	0	0.00K	0.00K	Heavy Rain
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Rainfall of 3 inches was estimated.

Rock County

2 SW Luverne Arpt

3 NW Kanaranzi

15	1430CST				0	0	0.00K	0.00K	Flash Flood
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Heavy rain caused flash flooding of ditches and small streams in the Luverne area. A few small creeks were also flooded.

Thunderstorms produced heavy rain of several inches during the afternoon of September 15th in Rock and Nobles Counties of southwest Minnesota. The heavy rain caused flash flooding in and near Luverne in Rock County of southwest Minnesota. There was also a report of heavy rain in Nobles County.

Pipestone County

Edgerton

24	1435CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds caused tree damage, including numerous 2 inch diameter branches blown down.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Murray County

1 E Currie

24	1456CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Thunderstorm winds caused tree damage and created huge waves on Lake Sarah.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Murray County

3 N Currie

24	1456CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds caused tree damage, including a few trees blown down at a campground.

Thunderstorms produced damaging winds in Pipestone and Murray Counties of southwest Minnesota during the afternoon of September 24th. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

MISSISSIPPI, Central

MSZ030-031

Clay - Lowndes

01	0000CST								
30	2359CST				0	0	0.00K	90.0K	Drought

Dry conditions continued into September. This continued severe(D2) drought conditions for portions of the Golden Triangle region.

Simpson County

4 N Martinville

11	1318CST				0	0	0.00K	0.00K	Hail (0.75)
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Dime to penny size hail fell in northeast Simpson County.

Jasper County

2 ESE Heidelberg

11	1340CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter size hail fell near Heidelberg.

Forrest County

1 ESE Petal

11	1354CST				0	0	0.00K	0.00K	Hail (0.75)
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Copiah County

3 ENE Stronghope

11	1445CST				0	0	6.00K	0.00K	Thunderstorm Wind (50EG)
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Multiple trees were blown down on King Road.

A cold front was stalled across southern Mississippi and a moist airmass was in place. This, along with daytime heating, allowed for storms to develop in the afternoon. Some of these storms were strong to severe. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
MISSISSIPPI, Central									
Jones County 1 ENE Ovett	25	1447CST			0	0	0.00K	0.00K	Hail (0.75)
Dime sized hail fell near Ovett.									
Jones County 3 N Service	25	1605CST			0	0	10.00K	0.00K	Thunderstorm Wind (46EG)
A few trees were snapped and limbs blown down as well as very minor gutter damage to a home on Welch Road.									
Note: The estimated wind gust of 46 knots is equivalent to 53 mph.									
Forrest County 2 NW Glendale	25	1640CST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
A power line was blown down on Eatonville Road near the Jones County line.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Lamar County 1 WNW Wardwell Station	25	1654CST			0	0	5.00K	0.00K	Lightning
Lightning struck a house on West 4th Street and resulted in minor damage.									
Lamar County 2 NNE Okahola	25	1655CST			0	0	3.00K	0.00K	Thunderstorm Wind (39EG)
A tree was blown down at RD Hartfield Road and Morgan Lane.									
Note: The estimated wind gust of 39 knots is equivalent to 45 mph.									
Covington County 2 NNE Pickering 2 NE Sanford	25	1700CST 1710CST			0	0	8.00K	0.00K	Thunderstorm Wind (50EG)
A few trees were blown down around Sanford across a few roads, which included Cascio Taormina Road, Bethel Church Road, and Homer Folkes Road.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Lamar County 2 WSW Purvis	25	1705CST 1710CST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
Scattered trees were blown down in the county, including a tree that was blown down on Mitchell Road near Purvis.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Lamar County Lumberton	25	1715CST			0	0	3.00K	0.00K	Thunderstorm Wind (48EG)
A tree was blown down across Highway 13/West Main Street.									
Note: The estimated wind gust of 48 knots is equivalent to 55 mph.									
Lamar County 5 NE Epley	25	1715CST			0	0	4.00K	0.00K	Thunderstorm Wind (48EG)
A tree was blown down at Epley Road and Highway 42.									
Note: The estimated wind gust of 48 knots is equivalent to 55 mph.									
Lamar County 3 NNW Oak Grove	25	1715CST 1720CST			0	0	12.00K	0.00K	Thunderstorm Wind (54EG)
A tree was blown down across Pompano Drive and Mackerel Lane in West Hattiesburg. Multiple trees were also blown down across Old Highway 11 at Ben Smith Road and Ladner Lane.									
Note: The estimated wind gust of 54 knots is equivalent to 62 mph.									
Lamar County 2 W Epley	25	1735CST			0	0	5.00K	0.00K	Thunderstorm Wind (48EG)
A tree was blown down across Oloh Road.									
Note: The estimated wind gust of 48 knots is equivalent to 55 mph.									
Lamar County 4 ENE Baxterville	25	1740CST			0	0	120.00K	0.00K	Lightning
Lightning struck a house on JE Entrekin Lane and resulted in a total loss of the house.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MISSISSIPPI, Central

Kemper County

2 SW Porterville

26	1330CST				0	0	20.00K	0.00K	Thunderstorm Wind (53EG) Half of a tin roof blew off of a building near Highway 45. Also, a large pine tree fell through a church. Four homes also had some minor shingle damage.
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Note: The estimated wind gust of 53 knots is equivalent to 61 mph.

Jones County

1 NW Sandersville

26	1510CST				0	0	9.00K	0.00K	Thunderstorm Wind (45EG) A tree brought down a powerline and some limbs were also blown down.
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Moisture combined with daytime heating to produce storms on the 25th of September. These storms produced some instances of wind damage and small hail. A cold front passed through the ArkLaMiss region on the 26th, which helped instigate additional storms ahead of it in a moist, warm airmass. A few of these storms also produced strong wind gusts. Note: The estimated wind gust of 45 knots is equivalent to 52 mph.

MISSISSIPPI, North

MSZ012-016>017-020>021-023>024

Chickasaw - Itawamba - Lafayette - Lee - Monroe - Panola - Tallahatchie - Yalobusha

01	0000CST								
30	2359CST				0	0	0.00K		Drought

Abnormally dry weather during the month of September continued moderate(D2) drought conditions over portions of North Mississippi. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. The drought caused river and lake levels to be at low levels.

MSZ010-015

Coahoma - Pontotoc - Quitman

27	0600CST								
30	2359CST				0	0	0.00K		Drought

Abnormally dry weather during the month of September fueled the spread of moderate(D2) drought conditions over portions of North Mississippi. A semi-permanent upper ridge of high pressure resulted in little rainfall which continued the drought conditions. The drought caused river and lake levels to be at low levels.

MISSOURI, East

MOZ061-063-064

St. Charles - St. Louis - St. Louis (Central)

06	1100CST								
07	1800CST				0	7			Heat

Maximum temperatures rose into the middle 90s with the Heat Index up to 105 degrees. The St. Louis County Health Department reported 7 heat related injuries.

Cole County

**Jefferson City
1 NW Osage City**

10	0000CST								
	0630CST				0	0	0.00K	0.00K	Flash Flood

Up to 3 inches of rain fell in a short amount of time causing flash flooding. Numerous roads were flooded. Also, some streets in Jefferson City had up to a foot of water over them.

Storms trained across central Missouri during the evening hours of September 9th through the morning hours of September 10th. Widespread 2 to 3 inches of rain fell, with locally higher amounts.

MISSOURI, Northwest

Atchison County

5 N Watson

09	1744CST				0	0	0.00K	0.00K	Hail (0.75)
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Cass County

2 W Harrelson

09	2113CST				0	0	0.00K	0.00K	
	2116CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)

Several tree limbs of unknown size or condition were down in Belton.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MISSOURI, Northwest

Cass County Raymore

09	2126CST 2129CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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A trained spotter on the southside of Raymore reported a 65 mph wind gust.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Johnson County Vly City

10	0950CST 1250CST				0	0	0.00K	0.00K	Flood
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There was a road closure near State Highway E and 541st Road near the bridge to Blackjack Creek.

On the evening of September 9, 2016 widespread thunderstorms moved through northwest Missouri. Some of these storms were severe, causing some marginal hail and some minor wind damage. There was some flooding from these storms in nearby portions of Kansas, but only isolated flood reports in Missouri.

Buchanan County St Joseph

13	1830CST 1930CST				0	0	0.00K	0.00K	Flash Flood
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After 5 to 7 inches of rain fell across the area several area roads were closed. A car was submerged on S Belt Highway south of US Highway 36 in St. Joseph. While the damage was largely minimal the amount of damage was unknown.

Caldwell County 2 ESE Hamilton

13	2143CST				0	0	0.00K	0.00K	Flood
14	0043CST				0	0	0.00K	0.00K	Flood

State Route F was closed due to flooding on Shoal Creek. While the damage was largely minimal the amount of damage was unknown.

Carroll County 1 NW Plymouth

13	2143CST				0	0	0.00K	0.00K	Flood
14	0043CST				0	0	0.00K	0.00K	Flood

Route N east of Braymer was closed due to flooding. While the damage was largely minimal the amount of damage was unknown.

Caldwell County 4 WSW Barwick

13	2153CST				0	0	0.00K	0.00K	Flood
14	0053CST				0	0	0.00K	0.00K	Flood

Ten inches of water was reported over tri-county line road and 324th St over a 100 yard span. While the damage was largely minimal the amount of damage was unknown.

De Kalb County 3 SSE Fairport

13	2245CST				0	0	0.00K	0.00K	Flood
14	0145CST				0	0	0.00K	0.00K	Flood

Route W was closed at Middle Fork Lost Creek due to flooding. While the damage was largely minimal the amount of damage was unknown.

Buchanan County 4 SSE Frazier

14	0448CST 0748CST				0	0	0.00K	0.00K	Flood
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State Route DD was closed due to flooding on Malden Creek. While the damage was largely minimal the amount of damage was unknown.

Ray County 3 NNE Union

14	0530CST 0830CST				0	0	0.00K	0.00K	Flood
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State Route D was closed along the Crooked River due to flooding. While the damage was largely minimal the amount of damage was unknown.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MISSOURI, Northwest

Caldwell County 11 E Braymer

14	0646CST 0946CST				0	0	0.00K	0.00K	Flood
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State Routes C, D, DD were closed from Utica to Plymouth. While the damage was largely minimal the amount of damage was unknown.

Buchanan County 1 NNW St Joseph 1 WNW San Antonio

14	0754CST 1054CST				0	0	0.00K	0.00K	Flood
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The intersection of Belt Highway and Highway 36 had 1 to 2 feet of water over the road. While the damage was largely minimal the amount of damage was unknown.

Caldwell County 1 NW Black Oak 1 S Braymer

14	0754CST 1054CST				0	0	0.00K	0.00K	Flood
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State Route E was closed in both directions due to flooding on Mud Creek. While the damage was largely minimal the amount of damage was unknown.

Carroll County 1 NW Plymouth

14	0943CST 1243CST				0	0	0.00K	0.00K	Flood
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Route N was closed along Shoal Creek due to flooding. While the damage was largely minimal the amount of damage was unknown.

Carroll County 6 N Norborne

14	1030CST 1330CST				0	0	0.00K	0.00K	Flood
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Route E along Turkey Creek was closed due to flooding. While the damage was largely minimal the amount of damage was unknown.

De Kalb County 3 WNW Weatherby

14	1045CST 1345CST				0	0	0.00K	0.00K	Flood
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Route W along Middle Fork Lost Creek was closed due to flooding. While the damage was largely minimal the amount of damage was unknown.

On the evening of September 13, widespread thunderstorm activity brought areas of flooding across northern Missouri and eastern Kansas. The extent of the impacts were several roads closed as a result of flowing and standing water. Rainfall amounts were very excessive, with some area reporting over 7 inches of rain. The highest report was in Doniphan County Kansas where over 11 inches of rain fell. Fortunately, there were no injuries and damage appeared to be minimal.

Putnam County 1 E Powersville

19	1812CST				0	0	0.00K	0.00K	Hail (0.88)
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Putnam County 1 E Powersville

19	1812CST 1815CST				0	0	5.00K	0.00K	Thunderstorm Wind (52EG)
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There were a few tree limbs of unknown size and conditions and a few powerlines down in Powersville.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Linn County 31 NNW Haseville

19	1820CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Several trees of unknown size and condition were down near Princeton.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Mercer County 8 E Half Rock

19	1820CST 1823CST				0	0			Thunderstorm Wind (52EG)
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Several trees of unknown size and condition were down near Princeton.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MISSOURI, Northwest

Sullivan County 3 W Milan

19	1848CST 1851CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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There was a reported 60 mph wind gust west of Milan.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Sullivan County 2 E Humphreys

19	1910CST 1913CST				0	0			Thunderstorm Wind (65EG)
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A porch was blown off of a house as a strong storm went through the area.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Grundy County 2 SE Parkerton 2 S Trenton Arpt

19	1926CST 1932CST				0	0			Thunderstorm Wind (65EG)
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Multiple trees and limbs were down in Trenton. There was a roof blown off an industrial building.

On the evening of September 19 a strong storm pushed out of Iowa into northern Missouri. Several areas received strong wind and experienced some minor structural damage. Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

MISSOURI, Southeast

Cape Girardeau County Allenville 2 E Dutchtown

14	1402CST 1552CST				0	0	0.00K	0.00K	Funnel Cloud
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A narrow, rope-like funnel cloud was photographed by at least two witnesses over flat farmland. The funnel cloud was observed and reported by control tower personnel at the Cape Girardeau airport. The funnel cloud was not directly associated with a thunderstorm. It occurred along the leading edge of outflow winds from a thunderstorm several miles to the north.

Scattered thunderstorms developed during the heat of the afternoon along a southward-moving cold front over southeast Missouri. The storms did not reach severe levels, however a funnel cloud was observed along the gust front of a strong storm.

Bollinger County 3 S Lutesville 3 ENE Hahn

15	1415CST 1535CST				0	0	0.00K	0.00K	Flash Flood
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Rushing water was over Highway 51 just south of N Highway, or about 3 miles south of Marble Hill.

Scott County Blodgett 3 ESE Kelso

15	1420CST 1535CST				0	0	0.00K	0.00K	Flood
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Several roads were covered with water, including portions of Route A and Highway 61.

Carter County Ellsinore

15	1605CST 1745CST				0	0	0.00K	0.00K	Flood
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A trained spotter reported 3.2 inches of rain in 45 minutes near Ellsinore. There was standing water in low-lying areas.

Ripley County 3 WNW Doniphan 1 SSW Hill Top

15	1730CST 1930CST				0	0	0.00K	0.00K	Flood
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Street flooding occurred in Doniphan. An automated rain gage measured 2.25 inches in less than an hour.

A couple of thunderstorm complexes developed over southeast Missouri to the north of a stationary front over northeast Arkansas. A light south to southeast wind flow at 850 mb provided abundant moisture for locally torrential rainfall. The storms moved very slowly beneath a mid-level ridge, where winds were only 10 to 15 knots at 500 mb.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MISSOURI, Southeast

MOZ076-086-111

Bollinger - Cape Girardeau - Perry - Scott

18	0100CST 0800CST				0	0	0.00K	0.00K	Dense Fog
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Widespread dense fog formed across parts of southeast Missouri, mainly from the Cape Girardeau area north and west. Visibility was reduced to one-quarter mile or less. The fog formed under weak high pressure that followed in the immediate wake of a cold front.

19	0100CST 0700CST				0	0	0.00K	0.00K	Dense Fog
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MOZ086-100-111

Bollinger - Cape Girardeau - Scott - Wayne

19	0100CST 0700CST				0	0	0.00K	0.00K	Dense Fog
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Widespread dense fog formed across parts of southeast Missouri, mainly from Cape Girardeau north and west. Visibility was reduced to one-quarter mile or less. The fog formed in association with a weak high pressure ridge that extended from southeast Missouri to northwest Indiana.

MISSOURI, Southwest

Barry County

5 NE Seligman

08	1712CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A large tree was blown down on Highway 112 near Roaring River State Park.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Jasper County

2 SSW Morgan Hgts

08	1844CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A large tree was blown down southwest of Carthage.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Texas County

2 SE Dent

09	1750CST				0	0	5.00K	0.00K	Thunderstorm Wind (52EG)
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There were multiple power lines blown down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Texas County

2 SSW Maples

09	1751CST				0	0	5.00K	0.00K	Thunderstorm Wind (52EG)
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A large tree was blown down on Highway C. Numerous power lines were blown down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Greene County

3 W Republic

09	1800CST				0	0	0.00K	0.00K	Hail (0.88)
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Texas County

4 S Prescott

09	1813CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A few trees were blown down on State Highway E.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Morgan County

1 E Florence

09	2300CST				0	0	0.00K	0.00K	Flash Flood
10	0100CST				0	0	0.00K	0.00K	Flash Flood

Grabriel Creek at State Highway BB was closed due to flooding.

Morgan County

Versailles

10	0000CST 0200CST				0	0	10.00K	0.00K	Flash Flood
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Water was reported over Marvin Road east of Versailles. Several basements in the city of Versailles were flooded.

Strong to severe thunderstorms produced a few reports of wind damage and flash flooding.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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MISSOURI, Southwest

Dent County

2 WNW Jack

14	1900CST								
15	0100CST				0	0	0.00K	0.00K	Flash Flood

Water was reported over the road several inches deep on Highway H near Barnitz Prong Creek. The highway was closed for a brief time to traffic due to the high water.

Howell County

1 E Mountain View

15	1409CST				0	0	25.00K	0.00K	Flash Flood
	2000CST								

Flash flooding occurred in Mountain View due to heavy rainfall. Numerous city streets had water flowing over them 8-10 inches deep at times. State Highway 17, on the southern edge of town was also closed. Jam Up Creek near town was reported as approaching bank full.

Pulaski County

3 ESE Helm

16	1306CST				0	0	0.00K	0.00K	Flash Flood
	1900CST								

The Sheriff reported that Highway O at Jones Creek was flooded and impassable.

Laclede County

2 W Abo

16	1500CST				0	0	0.00K	0.00K	Flash Flood
	2100CST								

A water rescue was performed to remove two occupants from a vehicle on Salem Drive located along Mill Creek just before it connects with the Gasconade River. The occupants were safely removed from vehicle.

Jasper County

2 ESE Dudenville

16	1515CST				0	0	0.00K	0.00K	Flash Flood
	2115CST								

Flash flooding was reported along Baseline Road and State Highway 37. The Dry Fork, Coon and Stoney Branch Creeks were all reported as flooding out of their banks.

Stone County

2 NNE Kimberling City

16	1525CST				0	0	0.00K	0.00K	Hail (0.88)
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Penny to nickle size hail was reported via social media photo.

Webster County

3 NW Elkland

16	1528CST				0	0	0.00K	0.00K	Flash Flood
	2130CST								

Greasy Creek was flowing out of its banks along Greasy Creek Road.

Greene County

2 S Nichols

16	1650CST				0	0	0.00K	0.00K	Flash Flood
	2300CST								

Wilson's Creek flooded over the road at Farm Roads 146 and 123.

Dallas County

2 SSE March

16	1700CST				0	0	0.00K	0.00K	Flash Flood
	2300CST								

Greasy Creek spilled out of its banks and over State Highway UU. One car was swept off the road at the location but the driver escaped safely on their own.

Dallas County

4 ENE Windyville

16	1731CST				0	0	0.00K	0.00K	Flash Flood
	2300CST								

The Niangua River was out of its banks at Bennett Springs State Park along Highway 64.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MISSOURI, Southwest

Dallas County

1 WNW Leadmine

16	1840CST								
17	0030CST				0	0	0.00K	0.00K	Flash Flood

State Highway E at the Little Niangua River was closed due to flooding.

Howell County

1 S Willow Spgs

16	1940CST								
17	0130CST				0	0	0.00K	0.00K	Flash Flood

Heavy rainfall produced flash flooding that made portions of Short and Springfield Streets in town impassable.

Wright County

1 N Jerktail

16	1940CST								
17	0130CST				0	0	0.00K	0.00K	Flash Flood

State Highway Z at Elk Creek was closed due to flooding.

Laclede County

1 WSW Hazelgreen

16	2032CST				0	0	0.00K	0.00K	Heavy Rain
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The observer measured 6.56 inches of rainfall since 9am.

Pulaski County

1 SE Dixon

16	2035CST				0	0	0.00K	0.00K	Heavy Rain
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The observer measured 4.01 inches of rainfall since the morning.

Shannon County

1 N Akers

17	0455CST				0	0	0.00K	0.00K	Flood
	1100CST								

A water rescue occurred along the Current River when occupants camping along the river were trapped by quickly rising water. The campers were rescued safely with no injuries reports.

Oregon County

1 SE Koshkonong

18	1425CST				0	0	0.00K	0.00K	Hail (0.75)
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Penny size hail was reported in the city limits of Koshkonong.

Oregon County

1 WSW Thayer

18	1440CST				0	0	0.00K	0.00K	Thunderstorm Wind (58EG)
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Several trees were reported down west of town along US Highway 142 by the public via social media.

Note: The estimated wind gust of 58 knots is equivalent to 67 mph.

Howell County

5 E Siloam Spgs

18	1500CST								
	2100CST				0	0	0.00K	0.00K	Flash Flood

Water was reported over the road making it briefly impassable on State Highway 14 6 miles west of Highway 63.

Howell County

1 ENE South Fork

18	1515CST								
	2100CST				0	0	0.00K	0.00K	Flash Flood

Two water rescues occurred along US Highway 160 2 miles northeast of South Fork due to flash flooding. The highway was impassable. No injuries were reported.

Howell County

4 S West Plains

18	1530CST								
	2130CST				0	0	0.00K	0.00K	Flash Flood

South State Highway 17 south of West Plains was briefly impassable and closed due to flash flooding.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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MISSOURI, Southwest

Howell County

1 WNW West Plains Arpt	18	1605CST			0	0	0.00K	0.00K	Heavy Rain
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The observer measured 2.94 inches of rainfall during the event.

Howell County

2 N Arditta	18	1740CST 2330CST			0	0	0.00K	0.00K	Flash Flood
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State Highway MM was closed due to flash flooding along Spring Creek.

Several rounds of strong to severe thunderstorms produced reports of hail and wind damage across the Missouri Ozarks. Heavy rainfall led to reports of flash flooding as well.

MONTANA, East

Phillips County

1 SE Malta South Dot	01	2001MST			0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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A 60 mph wind gust was recorded at the Malta South US-191 DOT site. Scattered thunderstorms were in the area.

An approaching strong low pressure system from the west combined with temperatures just hot enough to set of a few thunderstorms - one of which produced severe downdraft winds in southwest Phillips County. Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Dawson County

1 NE Glendive	02	1921MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Off-duty NWS employee reported a 60 mph wind gust.
A large low pressure trough approaching from the west set up a distinct dry-line boundary near the eastern edge of Montana and provided the focus for a few strong thunderstorms to develop - one of which became severe as it moved over Glendive. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Valley County

15 ESE Opheim	21	1300MST			0	0	0.00K	0.00K	Funnel Cloud
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Public reported, via social media, a cold air funnel amid low clouds and scattered rain showers in the area.
A large upper-level low pressure system moving through the Great Basin and central Rockies regions, directed multiple periods of moderate rainfall, low clouds and weak instability over portions of northeast Montana.

MONTANA, West

MTZ001-003>005-043

Flathead/Mission Valleys - Kootenai/Cabinet Region - Lower Clark Fork Region - Missoula/Bitterroot Valleys - Potomac/Seeley Lake Region

	13	0130MST 0700MST			0	0			Frost/Freeze
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A deep trough stretched from Saskatchewan to central California, allowing for ridging, clearing skies, and light winds over the Northern Rockies. All this occurred with an unseasonably cold air mass. This early cold spell with high 20s affected gardens and agriculture, as low temperatures reached values not typical until 2 or 3 weeks later in autumn. News media reported early harvest of crops near Missoula, including: lettuce, tomatoes, and squash.

NEBRASKA, Central

Keith County

7 W Brule	04	1615MST			0	0	0.00K	0.00K	Hail (1.75)
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Keith County

Brule	04	1615MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Estimated 60 mph wind gusts.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Keith County

7 WSW Brule	04	1615MST			0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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Mesonet Observation from 515 PM MDT.
Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
NEBRASKA, Central									
Sheridan County									
10 SW White Clay	04	1625MST			0	0	0.00K	0.00K	Hail (1.25)
Keith County									
6 W Lemoyne	04	1625MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
									Estimated wind gust of 60 mph. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Sheridan County									
6 SSE White Clay	04	1631MST			0	0	0.00K	0.00K	Hail (1.00)
Arthur County									
6 NNW Arthur	04	1700MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
									Estimated wind speeds of 60 mph. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Logan County									
14 NW Stapleton	04	1715CST			0	0	0.00K	0.00K	Hail (1.00)
Grant County									
6 SE Whitman	04	1735MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
									Estimated 60 mph wind gust with trees bending over and small limbs broken off. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Mcpherson County									
3 ENE Tryon	04	1945CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
									Trees bending over from the wind, along with pea size hail. Several severe thunderstorms developed across western and north central Nebraska and pushed northeastward during the evening hours. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Lincoln County									
(LBF)Bird Fld North	04	1955CST			0	0	0.00K	0.00K	Hail (1.00)
									Scattered severe thunderstorms developed across western and southwest Nebraska and pushed northeastward during the evening hours.
Logan County									
10 NNW Stapleton	04	2012CST	0.01	10	0	0	0.00K	0.00K	Tornado (EF0)
									Brief tornado 10 miles north northwest of Stapleton, reported by storm chasers located approximately 2 miles north of Stapleton on highway 83 looking west.
Logan County									
7 NW Stapleton	04	2013CST			0	0	0.00K	0.00K	Hail (1.25)
Mcpherson County									
17 WSW Tryon	04	2020CST			0	0	0.00K	0.00K	Hail (1.50)
									Several severe thunderstorms developed across western and north central Nebraska and pushed northeastward during the evening hours.
Frontier County									
6 NW Hugh Butler Lake	05	1745CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
									Winds estimated at 60 mph. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Frontier County									
10 SSW Curtis	05	1755CST			0	0	0.00K	0.00K	Hail (1.00)
Hayes County									
10 SSE Hayes Center	05	1850CST			0	0	0.00K	0.00K	Hail (1.25)
									Reports of 50 mph wind and 0.90 inches in rainfall along with 1.25 inch hail.
Frontier County									
8 SW Harry Strunk Lake	05	1851CST			0	0	0.00K	0.00K	Hail (1.00)
Frontier County									
Harry Strunk Lake	05	1906CST			0	0	0.00K	0.00K	Hail (1.75)

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
NEBRASKA, Central									
Frontier County									
Harry Strunk Lake	05	1915CST			0	0	0.00K	0.00K	Hail (1.50)
Frontier County									
1 SE Harry Strunk Lake	05	1923CST			0	0	0.00K	0.00K	Hail (1.00)
Frontier County									
10 S Eustis	05	1944CST			0	0	0.00K	0.00K	Hail (1.00)
Report of 1.00 inch hail along with wind gust up to 55 mph.									
Frontier County									
4 NE Stockville	05	1945CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Report of pea size hail along with trees bending over from the wind.									
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Lincoln County									
1 S Keith	05	2002CST			0	0	0.00K	0.00K	Hail (1.00)
Frontier County									
4 S Eustis	05	2018CST			0	0	0.00K	0.00K	Hail (1.00)
Lincoln County									
6 NNE (LBF)Bird Fld North	05	2024CST			0	0	0.00K	0.00K	Hail (1.00)
Scattered severe thunderstorms developed across western and southwest Nebraska and pushed northeastward during the evening hours.									
Keya Paha County									
5 NNW Springview	08	2220CST			0	0	0.00K	0.00K	Hail (1.00)
An isolated severe storm developed across southern South Dakota and moved southeast across Keya Paha County.									
Cherry County									
12 NNE Brownlee	15	1820CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
Report of small hail along with severe thunderstorm wind gust.									
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.									
Hayes County									
1 S Hayes Center	15	1835CST			0	0	0.00K	0.00K	Hail (1.75)
Reported ground covered in hail.									
Frontier County									
10 N Hugh Butler Lake	15	1928CST			0	0	0.00K	0.00K	Hail (1.00)
Frontier County									
Stockville	15	1935CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Small hail was reported along with the high wind gust.									
A few thunderstorms developed across southwest Nebraska and became severe. These storms pushed off to the east northeast where they became a line of thunderstorms across central Nebraska. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
NEBRASKA, East									
Douglas County									
2 WSW Bennington	15	1514CST			0	0	0.00K	0.00K	Hail (1.75)
Douglas County									
2 WSW Bennington	15	1514CST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
The observer noted wind gusts to near 60 mph. Some small tree branches were noted down in the area.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Washington County									
1 E Washington	15	1524CST			0	0	0.00K	0.00K	Hail (1.75)
Washington County									
1 S De Soto	15	1550CST			0	0	0.00K	0.00K	Hail (1.00)

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEBRASKA, East

Washington County 5 SW Ft Calhoun

15	1600CST 1601CST	0.06	10	0	0	0.00K	0.00K	Tornado (EF0)
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A storm chaser captured video of a brief tornado touchdown. Some small branches and some debris were noted in the area, but no significant damage occurred.

Washington County 1 S Ft Calhoun

15	1602CST			0	0	0.00K	0.00K	Hail (1.50)
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Stanton County 10 S Pilger

15	1605CST			0	0	0.00K	0.00K	Hail (1.75)
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Dodge County 1 W Uehling

15	1725CST			0	0	0.00K	0.00K	Hail (1.00)
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Burt County 1 W Arizona

15	1747CST			0	0	0.00K	0.00K	Hail (1.00)
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Burt County 3 ENE Oakland

15	1832CST 2032CST			0	0	0.00K	0.00K	Flash Flood
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Law enforcement reported flooding of roadways in the area with at least 1 car stalled in the flood waters.

Cuming County Beemer

15	1834CST 2034CST			0	0	0.00K	0.00K	Flash Flood
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A spotter reported flash flooding in Beemer with at least 8 inches of water over some roadways in town at the time.

Stanton County 10 SE Stanton

15	1859CST 2100CST			0	0	0.00K	0.00K	Flash Flood
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Emergency management reported that water was flooding the eastbound lanes of Highway 32 and the roadway was closed.

Burt County 1 E Tekamah

15	1936CST 2200CST			0	0	0.00K	0.00K	Flash Flood
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The local COOP observer indicated that water over roadways in town were reaching up to 2 feet deep.

Colfax County 1 E Clarkson

15	1945CST			0	0	0.00K	0.00K	Hail (0.75)
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Stanton County 16 SSE Stanton

15	1947CST			0	0	0.00K	0.00K	Hail (0.88)
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Nemaha County 4 WNW Brock

16	0000CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Farm outbuilding and corn cribs were reported damaged.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Otoe County

1 NE Nebraska City Arprt

16	0025CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A large tree was reported uprooted within the city of Nebraska City.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Dodge County 2 W Scribner

16	0140CST 1810CST			0	0	0.00K	0.00K	Flood
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Heavy rainfall caused the Pebble Creek to rise into major flood near the town of Scribner. The flooding necessitated the closing of the flood gates that protect the town of Scribner, which also closes US Highway 275 through town. Outside of town significant low-land flooding was observed which closed numerous county roadways. The river crested at 22.35 ft before quickly falling on the 16t.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEBRASKA, East

Colfax County

7 N Leigh

16	0827CST 1030CST				0	0	0.00K	0.00K	Flash Flood
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The emergency manager indicated that in excess of 6 inches of rainfall had fallen over the northern half of the county. This had inundated many county roadways, damaged several bridges and culverts.

Cuming County

1 E Beemer

16	0827CST 1027CST				0	0	0.00K	0.00K	Flash Flood
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The emergency manager indicated that 4 to 6 inches of rainfall had led to inundation of several county roads.

Platte County

2 NW Platte Center

16	0827CST 1030CST				0	0	0.00K	0.00K	Flash Flood
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The emergency manager reported that heavy rainfall in excess of 4 inches led to flooding of Central Highway.

Stanton County

1 S Pilger

16	0827CST 0930CST				0	0	0.00K	0.00K	Flash Flood
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The emergency manager reported that between 7 and 9 inches of rainfall fell around and south of the town of Pilger. This led to significant flash flooding inundating numerous county roadways, damaging or washing many of them out.

Dodge County

2 NW Nickerson

16	2246CST				0	0	0.00K	0.00K	Flood
17	1204CST				0	0	0.00K	0.00K	Flood

Heavy rainfall caused the Maple Creek to go into moderate flooding. This created significant low-land flooding of agricultural areas along both bands of the creek, also county roads north of Nickerson, and flooded the US Highway 275 bridge closing the highway. The creek crested at 14.38 before quickly falling on the 17th.

As an upper level storm system moved into the northern Plains, a warm front retreated through eastern Nebraska and western Iowa during the afternoon. Unseasonably warm and humid air lifted into the region creating marginal instability by mid afternoon, but with the warm front in the area environmental shear was strong. Thunderstorms developed across northeast and east-central Nebraska by mid afternoon. Initially isolated supercells were the dominate mode with large hail the main threat. A small short-lived tornado did develop from one of the supercells in Washington County. Thunderstorms then moved into western Iowa as they continued to produce large hail. By mid evening the thunderstorms developed a common outflow in a west to east orientation and allowed for training, especially over northeast Nebraska. This continued regeneration of thunderstorms over the same area led to significant river and flash flooding over parts of the through the night.

NEBRASKA, Extreme Southwest

Red Willow County

3 S Mc Cook

03	1705CST				0	0	0.00K	0.00K	Hail (0.75)
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Red Willow County

3 S Mc Cook

03	1722CST				0	0	0.00K	0.00K	Hail (1.75)
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Red Willow County

Mc Cook

03	1750CST 1756CST				0	0	0.00K	0.00K	Hail (1.25)
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Red Willow County

2 SE Perry

7 SSE Mc Cook Culbertson A

03	1830CST				0	0	0.00K	0.00K	Flash Flood
04	0400CST				0	0	0.00K	0.00K	Flash Flood

Prolonged heavy rainfall occurred over Red Willow County, mainly southeast of McCook. Radar estimates of four to ten inches rain fell, with the highest amounts east of Highway 83 between Highways 89 and 34. Highway 83 was closed in McCook due to flood waters causing vehicles to stall and become abandon on the highway. Numerous other roads were also reported to be closed. McCook was the only town in the county affected by the flooding. No specific property damage information from the flooding was given.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEBRASKA, Extreme Southwest

Red Willow County

2 SE Perry	04	0400CST					0.00K	0.00K	Flood
7 SSE Mc Cook Culbertson A		0700CST			0	0	0.00K	0.00K	Flood

Repeated rounds of moderate to heavy rainfall continued over the flood area into the overnight hours. Highway 83 was closed due to stalled vehicles being stalled and abandoned on the highway. Numerous other roads were also closed due to the flooding. No specific information was given regarding property damage.

During the late afternoon and through most of the night strong to severe thunderstorms moved east across Red Willow County. The thunderstorms developed near a surface boundary and moved slowly northeast as they increased in intensity. Large hail up to golf ball size was reported near McCook. The main impact with these storms was the prolonged heavy rainfall that occurred. The majority of the rainfall fell east of Highway 83 between Highways 34 and 89. However McCook was close enough to the long lasting rainfall for flash flooding to occur in town where Highway 83 was closed along with numerous other roads. The water was so deep that cars stalled and were abandoned.

Red Willow County

3 W Mc Cook	05	1720CST					0.00K	0.00K	Hail (1.75)
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Red Willow County

2 E Perry	05	1720CST					0.00K	0.00K	Hail (1.25)
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The hail was very brief.

Red Willow County

Mc Cook	05	1805CST					0.00K	0.00K	Hail (1.00)
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Red Willow County

7 NNW Bartley	05	1845CST					0.00K	0.00K	Hail (1.00)
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Could hear the hail falling over the phone.

Red Willow County

5 NNW Bartley	05	1849CST					0.00K	0.00K	Hail (1.00)
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Could hear the hail falling over the phone.

During the late afternoon and early evening a few severe thunderstorms moved northeast across Southwest Nebraska. The largest hail reported was golf ball size near McCook.

NEBRASKA, South Central

York County

Bradshaw	12	2031CST					0.00K	0.00K	Hail (0.88)
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York County

2 W York	12	2042CST					125.00K	0.00K	Hail (1.75)
		2047CST			0	0	125.00K	0.00K	Hail (1.75)

York County

3 NE York Arpt	12	2058CST					0.00K	0.00K	Hail (0.75)
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Hail up to the size of golf balls occurred in and around York on this Friday evening. In the early evening hours, scattered post-frontal showers began to develop over south central Nebraska, east of Highway 281. Just after 7 p.m. CST, several small thunderstorms developed over southern Hamilton County, and they expanded as the small cluster headed northeast into York and Polk Counties. The strongest storm was on the southern fringe of this cluster, and it appeared to be a mini-supercell as it moved to the right (due east) of all the other cells through central York County. This storm affected the County between 815 and 915 p.m. CST. The first report of hail was the size of nickels in the town of Bradshaw, around 830 p.m. CST. Between 840 and 900 p.m. CST, hail from three-quarters of an inch up to golf ball size was reported in and around York. Through the rest of the evening, the narrow swath of showers and embedded thunderstorms expanded southwestward to the Holdrege area, but there were no other strong or severe storms.

A wavy quasi-stationary front extended from the lower Great Lakes to weak low pressure near Sioux Falls, South Dakota. A cold front then extended southwest from this low across Nebraska into Colorado. Both of these fronts gradually sank south into Kansas through the day, with high pressure building in from the northwest. In the upper-levels, west-southwest flow was over the Country, with a trough over the northwest U.S., and a slight tendency for higher heights over the Gulf Coast States. These storms developed from the release of elevated instability. In the preconvective environment, surface temperatures were in the lower 60s and dewpoints were in the upper 50s, and winds were gusting up to 20 kts from the north. However, because mid-level lapse rates were at least 7.5 deg C/km, MUCAPE was around 2000 J/kg. Effective deep layer shear was 30-35 kts and effective SRH was 200-300 m2/s2.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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NEBRASKA, South Central

Howard County

5 NE Cushing

15 0600CST 0 0 0.00K 0.00K Heavy Rain
16
Rainfall total from the past 24 hours was 3.80 inches.

Merrick County

3 NNE Palmer

15 0600CST 0 0 0.00K 0.00K Heavy Rain
16
Rainfall total from the past 24 hours was 3.49 inches.

Nance County

7 WSW Fullerton

15 0600CST 0 0 0.00K 0.00K Heavy Rain
16
Rainfall total from the past 24 hours was 5.02 inches.

Dawson County

6 NW Sumner

15 0900CST 0 0 0.00K 0.00K Heavy Rain
16
Rainfall total from the past 24 hours was 3.75 inches.

Phelps County

7 N Holdrege

15 1745CST 0 0 25.00K 125.00K Hail (1.50)

Dawson County

2 W Sumner

15 1928CST 0 0 2.00K 125.00K Hail (1.00)
Highway 40 was covered in hail.

Harlan County

Orleans

15 1940CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)
Penny size hail accompanied the winds.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Howard County

5 E Boelus

15 2015CST 0 0 0.00K 0.00K Hail (0.88)

Webster County

9 NW Red Cloud

15 2034CST 0 0 2.00K 0.00K Thunderstorm Wind (59MG)
Note: The measured wind gust of 59 knots is equivalent to 68 mph.

York County

York Arpt

15 2218CST 0 0 0.00K 0.00K Thunderstorm Wind (53MG)

Widespread thunderstorms produced a few severe wind gusts and hail, along with heavy rain on this Thursday. The evolution of thunderstorms was complex during this event. Initially, two separate areas of thunderstorms initiated and organized during the late afternoon hours; one was over northeast Nebraska and the other was over northwest Kansas. In the latter location, the increasing number of storms, some of which were splitting-supercells, resulted in the eventual formation of a small bow echo over south central Nebraska by mid- to late-evening. Meanwhile, the storms over northeast Nebraska back-built into south central Nebraska in a linear fashion, intersecting with the developing bow echo comma-head. The first reported severe hail occurred at 5:45 p.m. CST near Holdrege, from an isolated right-moving supercell just after the split. The second report of hail occurred near Sumner and was associated with a left-moving supercell soon after the split. The first report of estimated severe winds occurred in Harlan County around 7:40 p.m. CST, just as the squall line was forming. The subsequent bow echo produced winds a couple other reports of severe winds in Webster and York Counties as well, but there was nothing in the way of damage reported. In fact, this bow echo did not produce severe winds in most locations. Significant rainfall occurred in a few locations, but it was most concentrated where Howard, Merrick, and Nance Counties meet. This is where the stationary line back-built to the western MCS. The heavy rain ended in this area as northern bookend vortex from the bow echo moved through. Rainfall of 3 to 5 inches was common in this area.

These MCSs formed in the warm sector of a weak low pressure system over South Dakota. The western storms formed along and ahead of the cold front, while the eastern storms formed in vicinity of the warm front. In the upper-levels, west-southwest flow was over the region, with a trough from the Northern Rockies back into Utah. A ridge was over the Ohio Valley and Great Lakes. Before the convection moved in, temperatures had cooled into the upper 70s, with dewpoints in the middle to upper 60s. Mid-level lapse rates were modest, slightly less than 7 deg C/km. Resultant MLCAPe was around 2500 J/kg. Effective deep layer shear was 30 to 40 kts, primarily in the initiation regions, but less in areas where the MCS activity matured. While low-level winds were not extraordinary, there was enough veering and increasing speed with height to result in effective SRH between 150 and 200 m²/s². Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
NEBRASKA, West									
Kimball County									
11 SSW Bushnell	03	1340MST 1350MST			0	0	0.00K	0.00K	Hail (1.00)
									Dime to quarter size hail covered the ground near Panorama Point.
Cheyenne County									
(SNY)Sidney Arpt	03	1553MST			0	0	0.00K	0.00K	Thunderstorm Wind (58MG)
									The wind sensor at the Sidney Airport measured a peak gust of 67 mph.
									Note: The measured wind gust of 58 knots is equivalent to 67 mph.
Dawes County									
7 SSW Bordeaux	03	1600MST 1610MST			0	0	0.00K	0.00K	Hail (1.00)
									Dime to quarter size hail covered the ground seven miles east of Red Cloud Campground.
Cheyenne County									
Sidney	03	1600MST 1605MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
									Estimated wind gusts of 60 mph were reported at Sidney.
									Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Cheyenne County									
1 E Sidney	03	1614MST 1619MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
									Estimated wind gusts of 60 mph were reported a mile east of Sidney. There were numerous broken tree limbs.
									Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Dawes County									
6 SSE Chadron	03	1640MST 1642MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
									Estimated wind gusts of 60 mph were reported at Red Cloud Campground.
									Thunderstorms produced damaging winds and large hail across portions of the Nebraska Panhandle. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Kimball County									
20 NE Kimball	04	1420MST 1422MST			0	0	0.00K	0.00K	Hail (1.00)
									Quarter size hail was reported 20 miles northeast of Kimball.
Kimball County									
Kimball	04	1441MST 1443MST			0	0	0.00K	0.00K	Hail (1.75)
									Golf ball size hail was reported at Kimball.
Kimball County									
5 NE Kimball	04	1445MST 1448MST			0	0	0.00K	0.00K	Hail (1.75)
									Golf ball size hail was reported five miles northeast of Kimball.
Morrill County									
6 S Bridgeport	04	1445MST 1448MST			0	0	0.00K	0.00K	Hail (2.75)
									Baseball size hail was reported six miles south of Bridgeport.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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NEBRASKA, West

Scotts Bluff County Mc Grew

04	1450MST 1453MST				0	0	0.00K	0.00K	Hail (1.00)
----	--------------------	--	--	--	---	---	-------	-------	-------------

Quarter size hail was reported at McGrew.

Morrill County 8 SW Bridgeport

04	1452MST 1455MST				0	0	0.00K	0.00K	Hail (2.50)
----	--------------------	--	--	--	---	---	-------	-------	-------------

Tennis ball size hail was reported eight miles southwest of Bridgeport.

Morrill County 6 SW Bridgeport

04	1455MST 1458MST				0	0	0.00K	0.00K	Hail (2.50)
----	--------------------	--	--	--	---	---	-------	-------	-------------

Tennis ball size hail was reported six miles southwest of Bridgeport.

Scotts Bluff County Lake Minatare

04	1515MST 1518MST				0	0	0.00K	0.00K	Hail (1.50)
----	--------------------	--	--	--	---	---	-------	-------	-------------

Ping pong ball size hail was reported at Lake Minatare Recreation Area.

Morrill County Northport

04	1530MST				0	0	0.00K	0.00K	Hail (1.25)
----	---------	--	--	--	---	---	-------	-------	-------------

Half dollar size hail was reported at Northport.

Morrill County 6 SE Bridgeport

04	1600MST 1604MST				0	0	0.00K	0.00K	Hail (3.00)
----	--------------------	--	--	--	---	---	-------	-------	-------------

Three inch diameter hail was reported six miles southeast of Bridgeport.

Thunderstorms produced large to very large hail over portions of the Nebraska Panhandle.

Sioux County 17 NE Harrison

23	1510MST 1512MST				0	0	0.00K	0.00K	Hail (1.75)
----	--------------------	--	--	--	---	---	-------	-------	-------------

Golf ball size hail was reported 17 miles northeast of Harrison.

Dawes County 2 E Whitney

23	1531MST 1535MST				0	0	0.00K	0.00K	Hail (1.25)
----	--------------------	--	--	--	---	---	-------	-------	-------------

Half dollar size hail was reported two miles east of Whitney.

Sioux County Harrison

23	1625MST 1630MST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Estimated 60 mph wind gusts were reported at Harrison, with scattered power outages. A rotating wall cloud was sighted south of Harrison.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Sioux County 4 NE Harrison

23	1630MST 1633MST				0	0	0.00K	0.00K	Hail (1.00)
----	--------------------	--	--	--	---	---	-------	-------	-------------

Quarter size hail was reported four miles northeast of Harrison.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEBRASKA, West

Sioux County **9 NE Harrison**

23	1635MST 1638MST				0	0	0.00K	0.00K	Hail (1.75)
----	--------------------	--	--	--	---	---	-------	-------	-------------

Pea to golf ball size hail covered the ground nine miles northeast of Harrison.

Thunderstorms produced large hail and damaging winds across the northern Nebraska Panhandle.

NEVADA, South

Clark County **4 WSW Pittman** **3 NNE Las Vegas Hndrsn Sky**

01	1230PST 1245PST				0	0	2.00K	0.00K	Thunderstorm Wind (63MG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down two large mesquite trees near the intersection of Green Valley and Paseo Verde Parkways. Three stations measured gusts of 61 to 73 mph.

A trough along the West Coast interacted with a tongue of moisture to produce scattered showers and thunderstorms over the Mojave Desert. One storm produced high winds. Note: The measured wind gust of 63 knots is equivalent to 72 mph.

NVZ020

Las Vegas Valley

12	1200PST 1600PST				2	0	0.00K	0.00K	Heat
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One man died in Las Vegas of heat-related causes. M86VE

22	1145PST 1430PST				0	0	1.0K	0.00K	High Wind
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Clark County **1 SSW Echo Bay**

22	1350PST 1355PST				0	0	0.00K	0.00K	Hail (0.88)
----	--------------------	--	--	--	---	---	-------	-------	-------------

A cold front passing through the Mojave Desert brought a band of thunderstorms well ahead of it, and strong winds with dust storm conditions immediately ahead of it.

NEW HAMPSHIRE, North and Central

Coos County **1 NW Stratford**

11	0704EST 0708EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed numerous trees and wires in Stratford.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Coos County **2 ENE North Stratford**

11	0704EST 0709EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed numerous trees and wires in North Stratford.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Coos County **1 N Lancaster**

11	0710EST 0715EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees on Main Street in Lancaster.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW HAMPSHIRE, North and Central

Cheshire County 1 N Chesterfield

11	0725EST 0730EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed trees and wires in Chesterfield.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Sullivan County Claremont

11	0725EST 0730EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees in Claremont.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Cheshire County 2 NW Keene

11	0730EST 0734EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees in Keene.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Sullivan County 1 SE Unity

11	0735EST 0740EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees in Unity.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Sullivan County Goshen

11	0740EST 0745EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees and wires in Goshen.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Grafton County 1 W Woodstock

11	0745EST 0749EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed power lines in Woodstock.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Sullivan County 1 SE Lempster

11	0745EST 0750EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees and wires in Lempster.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Sullivan County Washington

11	0750EST 0755EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees and wires in Washington.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Cheshire County 1 E Mill Vlg

11	0752EST 0757EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees and power lines in Stoddard.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW HAMPSHIRE, North and Central

Sullivan County

Claremont

11	0752EST 0756EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees in Claremont.
 Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Carroll County

Moultonboro

11	0820EST 0825EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed large branches in Moultonboro.
 Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Hillsborough County

1 S Weare

11	0820EST 0824EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed multiple trees through town in Weare.
 Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Hillsborough County

1 SW Hudson

11	0830EST 0835EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees in Hudson.
 Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Belknap County

Gilmanton

11	0832EST 0837EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed trees and wires in Gilmanton.
 Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Hillsborough County

1 W Bedford

11	0835EST 0840EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees and wires in Bedford.
 Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Merrimack County

Epsom

11	0840EST 0844EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed multiple trees in Epsom.
 Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Belknap County

Alton

11	0845EST 0850EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed large branches in Alton.
 Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Carroll County

1 W Brookfield

11	0850EST 0854EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed multiple trees and power lines in Brookfield.
 Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW HAMPSHIRE, North and Central

Strafford County

1 N New Durham

11	0855EST 0859EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed trees and power lines in New Durham.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Strafford County

Strafford

11	0855EST 0859EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A severe thunderstorm downed numerous trees in Strafford.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Rockingham County

Windham

11	0900EST 0905EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees and wires in Windham.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Strafford County

1 SE Milton

11	0905EST 0910EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed multiple trees and wires in Milton.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Strafford County

Rochester

11	0910EST 0914EST				0	0		0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	--	-------	--------------------------

A severe thunderstorm downed trees on homes in Rochester.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Rockingham County

1 E Portsmouth

11	0930EST 0935EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed trees and power lines in Portsmouth.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Rockingham County

1 W New Castle

11	0931EST 0936EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm downed multiple trees on Pierce Island.

A line of strong to severe thunderstorms formed ahead of a strong and fast-moving cold front on the morning of September 11th. Numerous reports of wind damage were associated with these storms as they raced through New Hampshire during the mid to late morning hours. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

NEW JERSEY, South and Northwest

Sussex County

1 E Newton

14	1524EST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were downed by thunderstorm wind gusts closing a few roads.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Sussex County

Cranberry Lake

14	1525EST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Several trees were taken down due to thunderstorm winds. One large tree fell onot and downed power lines.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW JERSEY, South and Northwest

Sussex County

1 W Hopatcong	14	1530EST			0	0			Thunderstorm Wind (52EG)
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Estimated thunderstorm wind gust.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Sussex County

1 E Lake Mohawk	14	1531EST			0	0			Thunderstorm Wind (63MG)
-----------------	----	---------	--	--	---	---	--	--	--------------------------

Measured wind gust by a trained spotter.
Note: The measured wind gust of 63 knots is equivalent to 72 mph.

Sussex County

Lake Mohawk	14	1531EST			0	0			Thunderstorm Wind (63EG)
-------------	----	---------	--	--	---	---	--	--	--------------------------

Several trees taken down due to thunderstorm winds blocking access to the local marina. Two boats broke anchor as the attachment was torn off from thunderstorm winds.
Note: The estimated wind gust of 63 knots is equivalent to 72 mph.

Sussex County

2 E Sparta	14	1533EST			0	0			Thunderstorm Wind (52EG)
------------	----	---------	--	--	---	---	--	--	--------------------------

Several trees were taken down due to thunderstorm wind gusts.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Morris County

1 S Lake Telemark	14	1543EST			0	0			Thunderstorm Wind (52EG)
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Large portions of trees taken down due to thunderstorm winds.

A cluster of thunderstorms developed ahead of a cold front and moved across northern New Jersey during the late afternoon hours of the 14th. Some of the thunderstorms produced damaging winds. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

NJZ026

Eastern Ocean

18	1639EST				2	0			Rip Current
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A man was caught in a rip current and drowned. Still awaiting medical examination info. M73IW

Gloucester County

1 ENE Williamstown	19	0753EST			0	0	0.00K	0.00K	Flood
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Water a foot or two deep on some roads.

Cumberland County

1 E Vineland	19	0801EST			0	0			Heavy Rain
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Rainfall of 2.27 inches was measured.

Gloucester County

1 N Williamstown	19	0820EST			0	0	0.00K	0.00K	Heavy Rain
------------------	----	---------	--	--	---	---	-------	-------	------------

Twenty four hour rainfall.

Camden County

1 E Sicklerville	19	0940EST			0	0			Heavy Rain
------------------	----	---------	--	--	---	---	--	--	------------

Two and a quarter inches of rainfall was measured.

Monmouth County

1 SW Rumson	19	0942EST			0	0			Heavy Rain
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Two and two tenths of an inch of rain was measured.

Ocean County

1 S Surf City	19	0945EST	1245EST		0	0	0.00K	0.00K	Flood
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Several inches of water on streets.

Camden County

1 N Grenloch	19	0945EST			0	0			Heavy Rain
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Two a quarter inches of rainfall was measured.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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NEW JERSEY, South and Northwest

Atlantic County

1 SE Atlantic City	19	0951EST 1251EST			0	0	0.00K	0.00K	Flood
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Street flooding observed at 1900 boardwalk.

Cape May County

1 ENE Cape May	19	1023EST			0	0	0.00K	0.00K	Flood
1 ENE West Cape May		1323EST							

Water about a foot deep on streets.

Ocean County

1 N Ship Bottom	19	1140EST			0	0			Heavy Rain
-----------------	----	---------	--	--	---	---	--	--	------------

Two and a third inches of rain was measured.

Cumberland County

Newport	19	1312EST			0	0			Heavy Rain
---------	----	---------	--	--	---	---	--	--	------------

Three inches of rain was measured. Ponding of water on roads as well.

Cape May County

Ocean City Muni Arpt	19	1330EST 1630EST			0	0	0.00K	0.00K	Flood
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Haven avenue was covered with water for a time period.

Cape May County

North Wildwood	19	1335EST 1635EST			0	0	0.00K	0.00K	Flood
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Water was about a foot deep on 14th street.

Cape May County

1 N Ocean City	19	1345EST			0	0			Heavy Rain
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Two and three quarters of an inch of rainfall was measured.

Cape May County

1 N North Wildwood	19	1346EST			0	0			Heavy Rain
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Three and two thirds inches of rainfall was measured.

Cape May County

Ocean City Muni Arpt	19	1400EST			0	0			Heavy Rain
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Just over two and a half inches of rain was measured.

Cape May County

1 W Wildwood May Co Arpt	19	1410EST			0	0			Heavy Rain
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Three and three quarters of an inch of rainfall was measured.

Cumberland County

1 W Port Norris	19	1415EST			0	0			Heavy Rain
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Just over three inches of rainfall was measured.

Atlantic County

2 NNE Da Costa	19	1420EST			0	0			Heavy Rain
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Two and a quarter inches of rainfall was measured.

Cape May County

1 S West Cape May	19	1422EST			0	0			Heavy Rain
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Four and two thirds of an inch of rainfall was measured.

Cape May County

1 SE Sea Isle City	19	1425EST			0	0	0.00K	0.00K	Heavy Rain
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Just over three inches of rainfall was measured.

Atlantic County

3 N Corbin City	19	1511EST			0	0			Heavy Rain
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Rainfall of two and three quarters of an inch was measured.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW JERSEY, South and Northwest

Cape May County

1 N West Cape May 19 1515EST 0 0 Heavy Rain
Just over four a third inches of rainfall was measured.

Morris County

1 S Boonton 19 1815EST 0 0 Heavy Rain
Just under three and a quarter inches of rain was measured.

Cape May County

1 E Cape May Court House 19 1830EST 0 0 0.00K 0.00K Heavy Rain
Three and two thirds of an inch of rainfall was measured.

Cape May County

1 S Cold Spg 19 1842EST 0 0 Heavy Rain
Almost 4 inches of rain fell in 12 hours.

Atlantic County

2 SSE Conovertown 19 1851EST 0 0 Heavy Rain
Just over 3 inches of rain fell in 12 hours.

Cape May County

1 E North Cape May 19 1858EST 0 0 Heavy Rain
Just over 3 inches of rain fell in 12 hours.

Ocean County

1 N Ship Bottom 19 1902EST 0 0 Heavy Rain
Just under 4 inches of rain fell in 12 hours.

Cape May County

1 ENE Cape May 19 2200EST 0 0 0.00K 0.00K Heavy Rain
Four and a half inches of rainfall were measured.

Cape May County

1 ESE Goshen 20 0530EST 0 0 Heavy Rain
Three and three quarters of an inch of rainfall was measured.

Cape May County

1 NE Ocean City 20 0600EST 0 0 Heavy Rain
Three inches of rain fell in 24 hours.

Cape May County

1 S Cold Spg 20 0632EST 0 0 Heavy Rain
Just under 4 inches of rain fell in 24 hours.

Cape May County

1 SW Wildwood Crest 20 0640EST 0 0 Heavy Rain
Just under 5 inches of rain fell in 24 hours.

Atlantic County

2 SSE Conovertown 20 0652EST 0 0 Heavy Rain
Just over three inches of rain fell in 24 hours.

Cape May County

1 SW Rio Grande 20 0656EST 0 0 Heavy Rain
Just under 4 inches of rain fell in 24 hours.

Atlantic County

1 N Atlantic City 20 0700EST 0 0 0.00K 0.00K Heavy Rain
Just over 4 inches of heavy rain fell in 24 hours.

Cape May County

1 N Wildwood 20 0726EST 0 0 Heavy Rain
Just under 4 inches of rain fell in 24 hours.
The remnants of tropical storm Julia and a frontal boundary interacted leading to several rounds of rainfall over the region.

Cape May County

2 SE Goshen 29 0629EST 0 0 Heavy Rain
Almost two inches of rain fell in twenty four hours.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW JERSEY, South and Northwest

NJZ026

Eastern Ocean

29	1800EST								
30	1500EST				0	0	0.00K	0.00K	Coastal Flood

Cumberland County

Bridgeton

29	2157EST				0	0			Heavy Rain
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Two inches of rain fell.

Cape May County

1 ENE Cape May

29	2300EST				0	0			Heavy Rain
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Four inches of rain with ponding of water on roadways.
A stalled frontal boundary led to rounds of heavy rain across the southern portion of the state.

NEW MEXICO, Central and North

Mckinley County

Tohatchi

02	1745MST				2	0	0.00K	0.00K	Flash Flood
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Father and daughter killed after entering a flooded arroyo. F21IW, M46IW

A strong thunderstorm developed over the Chuska Mountains and moved northeast toward Tohatchi shortly before sunset. Locally heavy rainfall associated with this storm quickly filled arroyos in the area. Ashley Levier, 21, jumped into the arroyo to save a family dog that had fallen into the water. Witnesses say she had trouble with the strength of the water and her father, Jay Levier, 46, jumped in to save her. More than 100 volunteers searched for them through the overnight. Eventually they found the bodies of Ashley and Jay. The dog was found alive. F21IW, M46IW

Harding County

1 S Roy

03	1548MST				0	0	0.00K	0.00K	Hail (1.25)
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Half dollar size hail in Roy.

A thunderstorm developed over Harding County during the late afternoon hours of the 3rd. The storm moved slowly east and impacted the area around Roy. Half dollar size hail was reported by the local COOP observer. No damage was noted.

Lincoln County

8 SSE Arabela

04	1605MST				0	0	0.00K	0.00K	Flash Flood
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High water flooding over low water crossings. Roads impassable.

Lincoln County

9 NNE Sunset

04	1615MST				0	0	0.00K	0.00K	Funnel Cloud
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Spotter observed a well-defined wall cloud with a funnel east of Arabela.

An otherwise benign day for showers and thunderstorms across New Mexico was interrupted by a very impressive stationary thunderstorm east of Arabela. Rainfall estimates of almost 6 inches occurred just east of highway 368. Emergency management officials indicated significant amounts of hail fell with this thunderstorm. Arroyos in this area were flooded with dangerously high water and impassable. Officials were not able to assess weather impacts farther upstream.

Mora County

4 NE Shoemaker

26 SE Wagon Mound

05	2200MST				0	0	0.00K	0.00K	Flash Flood
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Torrential rainfall and flooding of arroyos and streams within eastern Mora County led to a massive rise of nine feet in 15 minutes downstream on the Canadian River at Sanchez.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW MEXICO, Central and North

A deep fetch of tropical moisture streaming northeastward across New Mexico ahead of Hurricane Newton combined with strong afternoon heating and instability to produce several strong thunderstorms with heavy rainfall. Showers and storms moved over the same areas repeatedly as linear segments set up across the area. The most significant rainfall occurred over Mora County where several rounds of torrential rainfall occurred for several hours. A large swath of rainfall estimates of three to five inches east of Wagon Mound and Watrous led to a massive rise on the Canadian River near Sanchez. Arroyos, small streams, and culverts leading into the Canadian River upstream around state roads 271 and 120 were flooded. The flood wave reached the river gage nearly 12 hours later and resulted in a massive rise of nine feet in just 15 minutes.

Catron County

Pleasanton

06	1700MST								
07	2300MST				0	0	0.00K	0.00K	Heavy Rain

Pleasanton recorded 3.50 inches of rainfall from the remnants of Hurricane Newton. No significant flooding was reported in nearby creeks and streams.

Catron County

10 ESE Mogollon

06	1700MST								
07	2300MST				0	0	0.00K	0.00K	Heavy Rain

The Hummingbird Saddle rain gage reported 3.93 inches of rainfall from the remnants of Hurricane Newton. No flooding was observed.

A tropical depression that developed off the west coast of Mexico on September 4th rapidly intensified into Hurricane Newton on September 5th south of Cabo San Lucas. The storm moved north over the Gulf of California on the 6th then weakened over northern Sonora and southeastern Arizona through the 7th. Very heavy rain in association with the remnants of Newton fell over Catron County. Areas from Pleasanton to Mogollon and the nearby higher terrain picked up between three and four inches of rainfall. Notable rises were reported on several streams and rivers however no significant flooding occurred. The San Francisco River below Glenwood peaked close to five feet, which was well below flood stage. The U.S. Forest Service reported minor flooding in the West and Middle Forks of the Gila Region, prompting evacuation of the Gila Hot Springs Campground as a precautionary measure.

NMZ519-525

Albuquerque Metro Area - Lower Rio Grande Valley - Upper Tularosa Valley

10	0100MST								
	0700MST				0	0	0.00K	0.00K	High Wind

A potent back door cold front moved southwest across eastern New Mexico and surged through gaps in the central mountain chain. Many areas in the Rio Grande Valley below canyons from Placitas and Albuquerque southward reported high sustained winds and gusts near 60 mph. The strongest winds occurred below Tijeras Canyon, Abo Pass, and the Carrizozo area. A large tree branch was downed on the UNM north campus golf course. No significant damage or power outages were noted across the Albuquerque metro.

Torrance County

(CQC)Clines Corners

12	1603MST								
	1610MST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)

Clines Corners.

An upper level jet stream moving over New Mexico interacted with remnant low level moisture across New Mexico to produce a scattered crop of afternoon showers and thunderstorms. As drier air mixed into the area several thunderstorms produced strong to locally severe outflow wind gusts. The area around Farmington saw peak winds near 55 mph as a large scale outflow boundary moved through the area. Clines Corners experienced a peak wind gust to 58 mph from a storm that raced across the area during the late afternoon. Note: The measured wind gust of 50 knots is equivalent to 58 mph.

De Baca County

15 S Ft Sumner

13	2150MST								
	2200MST				0	0	0.00K	0.00K	Hail (1.25)

Half dollar size hail.

A powerful supercell thunderstorm that developed over the high plains of eastern New Mexico moved slowly east into De Baca County and produced large hail south of Fort Sumner. Half dollar size hail was reported along State Road 20 south of Fort Sumner along with two inches of rainfall. No significant damage was noted from the hail.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW MEXICO, Central and North

Colfax County

2 ESE Van Houten	14	1450MST			0	0	0.00K		Hail (1.75)
		1453MST							

Golf ball size hail at the Whittington NRA Center Founder's Post. This storm moved over Interstate 25 south of Raton and dumped two to three inches of pea size hail near mile marker 450. Several vehicle accidents were reported however no estimates are available on property damage.

De Baca County

5 ENE Yeso	14	1610MST			0	0	0.00K	0.00K	Hail (1.00)
		1615MST							

Quarter size hail near Yeso.

De Baca County

5 E Ft Sumner	14	2115MST			0	0	0.00K	0.00K	Hail (1.00)
		2117MST							

Quarter size hail four miles east of Fort Sumner.

De Baca County

8 SSE Ft Sumner	14	2129MST			0	0	0.00K	0.00K	Hail (1.00)
		2132MST							

Quarter size hail south of the Fort Sumner Historic Site.

A large scale upper level low pressure system developed over the Great Basin and moved slowly east-northeast toward the southern Rockies on the 14th. Low level moisture surged westward into eastern New Mexico and interacted with upper level forcing to generate scattered strong thunderstorms by early to mid afternoon. Several thunderstorms intensified as they move eastward off the high plains and produced very heavy rain, hail, and gusty winds. One storm just south of Vaughn covered U.S. Highway 54 with dime size hail. Golf ball size hail was reported with a storm just west of the Whittington NRA Center south of Raton. This storm moved east across Interstate 25 and dumped two to three inches of small hail on the highway, which led to several motor vehicle accidents. Another storm near Yeso produced quarter size hail. The area around Fort Sumner also experienced quarter size hail later that evening. More storms continued later that night when Clayton saw penny size hail.

Roosevelt County

11 SE Tolar 13 WNW Floyd	14	2307MST			0	0	0.00K		Tornado (EF0)
		2330MST	3.15	50					

A nearby resident reported a loud, distant roaring sound over the Melrose Bombing Range where radar indicated very intense rotation. A storm survey of this extremely remote location later revealed a 2000 pound mobile office trailer that was bolted and strapped down was lifted and moved eight to ten inches.

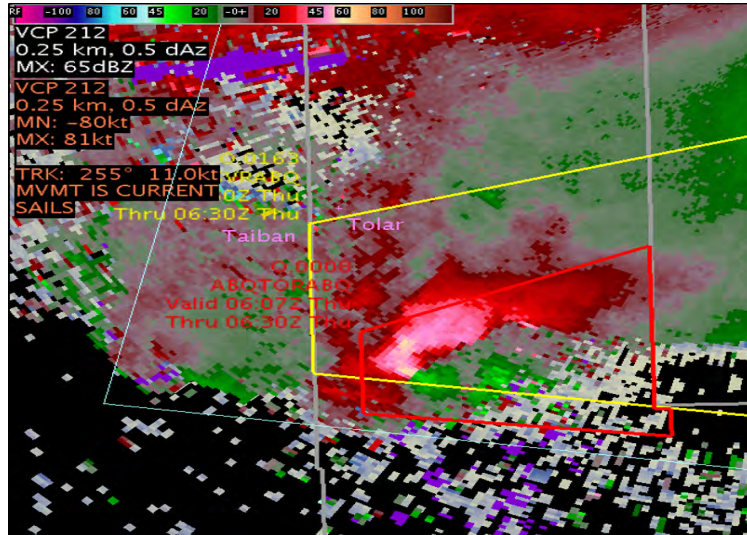
The upper level trough responsible for severe weather across the area on the 14th continued to impact New Mexico through the 15th. Abundant moisture and instability associated with southeasterly upslope flow and strong upper level dynamics generated an extended period of severe weather across the eastern plains. Severe thunderstorms from late on the 14th persisted past midnight before diminishing before sunrise. A powerful storm that moved south of Melrose just after midnight produced one of the best radar signatures of a tornado forecasters have ever observed in eastern New Mexico. A nearby resident reported a loud roaring sound in the distance. A persistent storm with torrential rainfall amounts over four inches in eastern San Miguel County produced flash flooding along Atarque Creek through sunrise. Storms fired up quickly again by late morning and moved east across the plains. A funnel cloud was observed just after the noon hour near Vaughn. Another storm that moved east across Lincoln County dumped nickel to quarter size hail in the area around Tinnie, Picacho, and Dunken. A tornado and golf ball size hail was then spotted from this storm over rural ranch lands to the northeast of Dunken. Many other storms that impacted eastern New Mexico generated hail, torrential rainfall, and gusty winds throughout the afternoon.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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NEW MEXICO, Central and North



An image of the Cannon Air Force Base Doppler radar (KFDX) indicating 161 knots of rotational shear from a thunderstorm over the Melrose Bombing Range near Melrose, New Mexico on September 15th, 2016. A nearby resident reported a loud, roaring sound over the bombing range. Image courtesy of KFDX.

Union County

1 NW (CAO)Clayton Arprt

14	2322MST 2325MST			0	0	0.00K	0.00K	Hail (0.75)
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Penny size hail in Clayton.

A large scale upper level low pressure system developed over the Great Basin and moved slowly east-northeast toward the southern Rockies on the 14th. Low level moisture surged westward into eastern New Mexico and interacted with upper level forcing to generate scattered strong thunderstorms by early to mid afternoon. Several thunderstorms intensified as they move eastward off the high plains and produced very heavy rain, hail, and gusty winds. One storm just south of Vaughn covered U.S. Highway 54 with dime size hail. Golf ball size hail was reported with a storm just west of the Whittington NRA Center south of Raton. This storm moved east across Interstate 25 and dumped two to three inches of small hail on the highway, which led to several motor vehicle accidents. Another storm near Yeso produced quarter size hail. The area around Fort Sumner also experienced quarter size hail later that evening. More storms continued later that night when Clayton saw penny size hail.

San Miguel County

7 NNE Bell Ranch

15	0200MST 0800MST			0	0	0.00K	0.00K	Flash Flood
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Ranchers reported water in creek rose 15 feet and was the highest they have observed in over 50 years. Precipitation gauges on the property measured 1.93 inches, 3.95 inches, and 4.15 inches from training thunderstorms. Several areas along the creek were out of bank and flooding nearby pasture. Several low water crossings were washed out.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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NEW MEXICO, Central and North



Atarque Creek Flash Flood near Bell Ranch, NM
September 15, 2016
Before & After Looking Across Stream
Courtesy Richard & Kristen Holmes

A picture of before and after imagery of flash flooding along Atarque Creek near Bell Ranch, New Mexico on September 15th, 2016. Photo courtesy of Richard & Kristen Holmes.

Guadalupe County 5 S Vaughn

15	1105MST 1110MST				0	0	0.00K	0.00K	Funnel Cloud
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Funnel cloud reported via local media on Twitter south of Vaughn.



A picture of a distant funnel cloud five miles south of Vaughn, New Mexico on September 15th, 2016. Photo courtesy of Razi Nasrullah.

Torrance County 3 SSW Encino

15	1145MST 1148MST				0	0	0.00K	0.00K	Funnel Cloud
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COOP observer reported a funnel cloud that may have touched down, but was difficult to tell in the distance.

Lincoln County 7 SSW Arabela

15	1206MST 1210MST				0	0	0.00K	0.00K	Hail (0.88)
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Nickel size hail eight miles north of Tinnie.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

NEW MEXICO, Central and North

Chaves County

5 WSW Flying H Ranch 15 1236MST
1239MST 0 0 0.00K 0.00K Hail (1.00)

Quarter size hail.

Lincoln County

6 N Sunset 15 1242MST
1245MST 0 0 0.00K 0.00K Hail (1.00)

Nickel to quarter size hail.

Chaves County

9 SSE Flying H Ranch 15 1310MST
1330MST 4.73 50 0 0 0.00K 0.00K Tornado (EF0)

Public reported a tornado on the ground just north of U.S. Highway 82 near Picacho Road. No damage observed.



A picture of a tornado along U.S. Highway 82 near Picacho Road north of Dunken, New Mexico on September 15th, 2016. Photos courtesy of Christopher Holman.

Chaves County

10 NNE Dunken 15 1315MST
1320MST 0 0 0.00K 0.00K Funnel Cloud

Funnel cloud reported by local media along U.S. Highway 82 and Picacho Road.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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NEW MEXICO, Central and North



A picture of a funnel cloud nearly touching down along U.S. Highway 82 near Picacho Road north of Dunken, New Mexico on September 15th, 2016. Photo courtesy of Bryce Elkins.

Chaves County

8 ESE Flying H Ranch

15	1400MST				0	0	0.00K	0.00K	Hail (1.75)
	1410MST								

Severe hail peaked out at golf ball size. No damage reported.

Chaves County

8 ESE Flying H Ranch

15	1555MST				0	0	0.00K	0.00K	Hail (0.88)
	1600MST								

Nickel size hail.

The upper level trough responsible for severe weather across the area on the 14th continued to impact New Mexico through the 15th. Abundant moisture and instability associated with southeasterly upslope flow and strong upper level dynamics generated an extended period of severe weather across the eastern plains. Severe thunderstorms from late on the 14th persisted past midnight before diminishing before sunrise. A powerful storm that moved south of Melrose just after midnight produced one of the best radar signatures of a tornado forecasters have ever observed in eastern New Mexico. A nearby resident reported a loud roaring sound in the distance. A persistent storm with torrential rainfall amounts over four inches in eastern San Miguel County produced flash flooding along Atarque Creek through sunrise. Storms fired up quickly again by late morning and moved east across the plains. A funnel cloud was observed just after the noon hour near Vaughn. Another storm that moved east across Lincoln County dumped nickel to quarter size hail in the area around Tinnie, Picacho, and Dunken. A tornado and golf ball size hail was then spotted from this storm over rural ranch lands to the northeast of Dunken. Many other storms that impacted eastern New Mexico generated hail, torrential rainfall, and gusty winds throughout the afternoon.

Torrance County

8 SE Cedarvale

16	1437MST				0	0	0.00K	0.00K	Hail (1.00)
	1440MST								

Quarter size hail.

Torrance County

1 NW Cedarvale

16	2210MST				0	0	0.00K	0.00K	Hail (1.00)
	2220MST								

Motorists inundated by hail storm. Leaves shredded from trees. Roadway was covered in a couple inches of hail. No damage noted to vehicle.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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NEW MEXICO, Central and North



A picture of motorists inundated by large hail, heavy rain, and shredded leaves during a severe thunderstorm near Cedarvale, New Mexico on September 16th, 2016. Photo courtesy of Justin King.

Torrance County
10 ESE Cedarvale

16	2250MST	2253MST			0	0	0.00K	0.00K	Hail (1.40)
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Quarter to just under ping pong ball size.

The upper level storm system responsible for several days of severe weather across eastern New Mexico began to pull away from the area on the 16th. Remnant low level moisture across the plains and afternoon instability was able to generate another round of strong to locally severe thunderstorms. The main focus area was over Torrance and Lincoln counties where large hail and heavy rainfall was reported once again. The largest hail reported was up to the size of quarters just southeast of Cedarvale.



A picture of quarter-sized hail near Corona, New Mexico on September 16th, 2016. Photo courtesy of Sandy Carr.

San Miguel County
1 S San Geronimo

17	0310MST	0313MST			0	0	0.00K	0.00K	Hail (0.88)
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Penny to nickel size hail.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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NEW MEXICO, Central and North

San Miguel County

Romeroville

17	0337MST 0343MST				0	0	0.00K	0.00K	Hail (1.00)
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Hail up to the size of quarters covering the ground at the Giant gas station along Interstate 25.

Rio Arriba County

Espanola

17	1245MST 1246MST				0	0	0.00K	0.00K	Hail (0.88)
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Nickel size hail.

De Baca County

12 NW Ft Sumner

17	1703MST 1706MST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter size hail.

Union County

1 W Clayton

17	1710MST 1712MST				0	0	0.00K	0.00K	Hail (0.75)
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Penny size hail.

Chaves County

19 E Flying H Ranch

17	2030MST 2040MST				0	0		0.00K	Hail (2.50)
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Tennis ball size hail. Trained spotter tweeted photo of a hail stone larger than the palm of an adult male.

The third in a series of back door cold fronts in less than a week moved southwest through eastern New Mexico and recharged the atmosphere for a final round of severe thunderstorms on the 17th. The break from the day before did not last long as storms starting firing up again along the front during the predawn hours. The first storm impacted the area around Las Vegas with nickel to quarter size hail shortly after 4 am. This area of storms developed into a line and produced heavy rainfall, small hail, and gusty winds as it pushed east across the high plains. The entire complex exited into the Texas panhandle after sunrise. Storms quickly redeveloped by early afternoon as heating destabilized the atmosphere. A very brief, yet strong thunderstorm over Espanola, dropped nickel size hail that covered the ground. Isolated thunderstorms drifted east across the plains through the remainder of the day. Sumner Lake picked up quarter size hail and Clayton saw penny size hail. Crisp, dry conditions developed across New Mexico for several days after this extended period of active weather.



A picture of tennis ball sized hail produced from a massive supercell thunderstorm along State Road 13 northwest of Hope, New Mexico on September 17th, 2016. Photo courtesy of Corey King.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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NEW MEXICO, South Central and Southwest

Grant County

1 NW Silver City

01	1415MST 1600MST				0	0	0.00K	0.00K	Flash Flood
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Significant street and stream flooding was reported throughout downtown Silver City.

Hidalgo County

3 W Lordsburg

01	1530MST 1535MST	0.38	20	0	0	0.00K	0.00K	Tornado (EFU)
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A landspout tornado was photographed just northwest of Lordsburg. No damage was reported and no survey was done to rate the tornado. Location and path are approximate based on photographer location.

A surface high over the plains states brought moist southeast flow into the region with dew points into the upper 50s to lower 60s. An upper ridge was located right over the Rockies with weak flow aloft keeping storm motion very slow with flash flooding reported in Silver City due to 1 to 3 inches of rain. A weak tornado was even reported near Lordsburg.

NMZ412

Central Tularosa Basin

06	1735MST 1900MST			0	0	0.00K	0.00K	Avalanche
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An upper trough was over the Great Basin with southerly flow tapping moisture from a hurricane moving through the Gulf of California. Slow moving thunderstorms developed along the western slopes of the Sacramento Mountains where over an inch of rain fell in less than an hour and caused flash flooding along Tularosa Creek.

Sierra County

1 NW Winston

07	2112MST 2300MST			0	0	0.00K	0.00K	Flash Flood
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Cuchillo Creek overflowed and flooded Highway 52 in Winston. Water was up to 2 feet deep across the highway.

The remnants of Hurricane Newton moved into the region which combined with an upper trough moving over the Rockies. With plenty of moisture and lift, heavy rain occurred across the region and caused some flash flooding around Winston.

NMZ414-417

Otero Mesa - West Slopes Sacramento Mountains Below 7500 Feet

10	0330MST 0600MST			0	0	0.00K	0.00K	High Wind
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An area of high pressure at the surface was located over the front range of the Rockies which pushed a strong back door cold front through the region. East winds gusted to 64 mph along the southwest slopes of the Sacramento Mountains.

Otero County

3 NW Pinto

15	1455MST			0	0	0.00K	0.00K	Hail (1.50)
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Otero County

1 W High Rolls

15	1515MST			0	0	0.00K	0.00K	Hail (1.00)
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Otero County

1 SW Cloudercroft

15	1530MST 1535MST			0	0	0.00K	0.00K	Hail (1.25)
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Hail was up to 2 inches deep.

Otero County

1 NE Boles

15	1545MST			0	0	0.00K	0.00K	Hail (1.25)
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Otero County

1 NNW Mescalero

15	1712MST			0	0	0.00K	0.00K	Hail (1.75)
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A surface low was located just south of the border with east winds keeping low level moisture in place across Otero County. An upper trough was moving over the Rockies with a 70+ knot jet approaching from the southwest. The moisture and sufficient wind shear contributed to severe thunderstorms developing over the area with hail up to golf ball size reported in Mescalero.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW MEXICO, South Central and Southwest

Sierra County

Winston

30	1730MST				0	0	0.00K	0.00K	Hail (0.75)
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Weak southerly flow brought mid 50s dew points into the region while a disturbance in zonal flow aloft provided enough shear for strong thunderstorms to develop around the Blacks Range.

NEW MEXICO, Southeast

Eddy County

2 WNW Hope

15	1500MST 1505MST				0	0	0.00K	0.00K	Funnel Cloud
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A storm moved across Eddy County and produced a funnel cloud one mile west of Hope. The funnel cloud was not reaching the ground but it became closer as they reported it on the phone.

Eddy County

1 W Hope

15	1506MST 1526MST	4	300	0	0	0.00K	0.00K	Tornado (EF0)
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A thunderstorm moved across Eddy County and produced a tornado near Hope. No damage survey was done but it is estimated that the tornado began around one mile west of Hope and ended around five miles west of Hope. This tornado was spotted by several Skywarn spotters in Eddy County. No damage was reported with this tornado and the path length and width were estimated.

Eddy County

2 S Artesia

15	1630MST 1640MST				0	0	3.00K		Hail (2.75)
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A storm moved across Eddy County and produced baseball sized hail two miles south of Artesia. The hail punctured holes in the walls of a home. The cost of damage is a very rough estimate.

Eddy County

Atoka

15	1640MST 1655MST				0	0	4.00K		Hail (1.50)
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A storm moved across Eddy County and produced ping pong ball sized hail in Atoka. The hail broke skylights and side mirrors on vehicles and also did damage to an RV. The cost of damage is a very rough estimate.

Eddy County

5 S Artesia

15	1649MST 1655MST				0	0			Hail (1.00)
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Eddy County

4 S Artesia

15	1650MST 1655MST				0	0			Hail (1.75)
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Eddy County

2 SW Dayton

15	1700MST 1705MST				0	0			Hail (1.75)
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Eddy County

Lakewood

15	2035MST 2040MST				0	0			Hail (1.75)
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Eddy County

4 SW Lakewood

15	2118MST 2125MST				0	0	3.00K		Hail (4.00)
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A thunderstorm moved across Eddy County and produced three to four inch hail in Seven Rivers. The hail beat a vehicle and broke the windshield. The cost of damage is a very rough estimate.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

NEW MEXICO, Southeast

Lea County

Eunice	16	0250MST 0255MST			0	0			Hail (1.00)
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An upper level trough was over the western half of the country with an upper ridge over the eastern half of the country which resulted in west to southwest winds over the region. An upper level disturbance moved over southeast New Mexico where there was a good supply of moisture and good surface heating. A boundary was lingering across the area, and an area of strong winds aloft was approaching which enhanced lift. These conditions, along with good wind shear values, resulted in severe thunderstorms developing. The storms produced large hail and a tornado in southeast New Mexico.

Eddy County

4 WNW Artesia	17	1500MST 1510MST			0	2			Hail (2.75)
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A thunderstorm moved across Eddy County and produced baseball sized hail from the Artesia Airport to two miles south of Artesia. There were two head injuries reported due to the hail between 4 and 4:30 pm MDT.

Eddy County

1 ESE Artesia Arprt	17	1515MST 1520MST			0	0			Hail (1.75)
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Eddy County

3 N Artesia	17	1515MST 1520MST			0	0			Hail (1.75)
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Eddy County

2 N Artesia	17	1517MST 1522MST			0	0			Hail (2.50)
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Eddy County

1 NW Artesia	17	1517MST 1522MST			0	0	1.00M		Hail (2.75)
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A thunderstorm moved across Eddy County and produced baseball sized hail in Artesia. The Artesia Airport Manager reported extensive damage to vehicles and hangars. There was also widespread damage to cars and homes in Artesia. The cost of damage is a very rough estimate.

Eddy County

2 ESE Artesia Arprt	17	1517MST 1522MST			0	0			Hail (1.75)
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Eddy County

2 WSW Illinois Camp	17	1521MST 1526MST			0	0	1.00K		Hail (2.75)
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A thunderstorm moved across Eddy County and produced baseball sized hail about one mile west of Artesia. There was a broken windshield on a car and a broken window in a house. The cost of damage is a very rough estimate.

Eddy County

1 W Artesia	17	1530MST 1535MST			0	0	1.50K		Hail (2.50)
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A thunderstorm moved across Eddy County and produced tennis ball sized hail in Artesia. The hail dented a car and damaged some trees. The cost of damage is a very rough estimate.

Eddy County

17 NNE Carlsbad 12 NE Avalon	17	1550MST 1553MST	0.92	200	0	0	0.00K	0.00K	Tornado (EF0)
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A supercell thunderstorm moved southeast across Eddy County and produced a weak tornado approximately 17 miles north northeast of Carlsbad, NM. Eyewitness reports from a storm spotter in the area indicate the tornado began around 5:50 pm CDT and lasted only a few minutes. This tornado, rated an EF0, touched down in open fields and no damage was reported.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW MEXICO, Southeast

Lea County

Jal	17	1845MST 1850MST			0	0	4.00K		Hail (1.75)
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A thunderstorm moved across Lea County and produced golf ball sized hail in Jal. The hail broke windows in buildings in Jal. The cost of damage is a very rough estimate.

Lea County

Jal	17	1845MST 1850MST			0	0	3.50M		Hail (2.50)
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A thunderstorm moved across Lea County and produced tennis ball sized hail in Jal. The hail caused widespread damage to homes and vehicles. The cost of damage is a rough estimate.

Lea County

1 SW Teague	17	1845MST 1850MST			0	0	0.50K		Hail (1.75)
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A thunderstorm moved across Lea County and produced golf ball sized hail ten miles north of Jal. A motorist reported that hail broke the windshield on a car. The cost of damage is a very rough estimate.

An upper level disturbance moved over the area, and a lingering frontal boundary was across parts of southeast New Mexico and the Permian Basin. Upper level lift associated with an area of intense winds aloft moved over the region. There was good wind shear, moisture, and instability across West Texas and southeast New Mexico. Two other boundaries were moving toward the area and possibly collided with the initial boundary. These conditions combined to create good lift in the atmosphere which resulted in widespread thunderstorms with large hail across southeast New Mexico and the Permian Basin. The wind shear created spin in the atmosphere which allowed for tornadoes to develop in the Permian Basin and southeast New Mexico.

NEW YORK, Central

**NYZ015-017-022>
025-044-055>056**

Broome - Chemung - Cortland - Onondaga - Schuyler - Southern Cayuga - Steuben - Tioga - Tompkins - Yates

01 30	0000EST				0	0	0.00K	0.00K	Drought
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Drought worsened over parts of the Finger Lakes region and Central Southern Tier of New York during September. September rainfall amounts were again considerably below the average long term monthly trends. According to the U.S. Drought Monitor, drought conditions continued to deteriorate, and more of the region was classified in extreme drought. Agricultural interests reported significant stress to non-irrigated crops, with many areas reporting expected losses to corn, soybean and hay yields. More communities began to place voluntary and mandatory water restrictions on their residents.

Otsego County

1 W Edmeston	08	1600EST 1610EST			0	0	3.00K	0.00K	Thunderstorm Wind (55EG)
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A thunderstorm developed over the region and quickly became severe. This thunderstorm produced severe winds which resulted in trees and wires being knocked over near the city of Edmeston.

A line of showers and thunderstorms developed within a very unstable and moist atmosphere Thursday afternoon. The activity extended from northern New York, southwest to central Ohio. Showers initiated along a pre-frontal trough, and as these storms moved east across New York, some of these storms became severe and produced damaging winds. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

NEW YORK, Coastal

Suffolk County

1 SW Babylon	01	1525EST 1555EST			0	0	0.00K	0.00K	Flash Flood
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Numerous roads were closed due to flooding in Babylon including Route 109, John Street, Montauk Highway, and the intersection of Park Avenue and Deer Park Avenue.

Heavy rain associated with a passing cold front resulted in isolated flash flooding in western Suffolk County.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW YORK, Coastal

NYZ079>081

Northeast Suffolk - Southeast Suffolk - Southwest Suffolk

03	1400EST								
06	1900EST				0	0	0.00K	0.00K	High Surf

Slow moving tropical cyclone Hermine caused several days of 8 to 12 feet of surf breaking on Atlantic ocean shorelines. The surf on top of storm tide September 3rd through the 6th caused significant beach erosion on Long Island ocean beaches.

Nassau County 2 WSW Jericho

14	1652EST								
					0	0	0.75K	0.00K	Thunderstorm Wind (52EG)

A large tree branch was downed at the intersection of the Northern State Parkway and Wantagh Parkway.

A cold frontal passage produced a severe thunderstorm over the area. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Suffolk County 1 ENE Shelter Is Hgts

19	1030EST								
	1235EST				0	0	0.00K	0.00K	Flash Flood

Cedar Avenue off of Bridge Street was closed due to flooding on Shelter Island.

Suffolk County 1 SE Patchogue

19	1205EST								
	1235EST				0	0	0.00K	0.00K	Flash Flood

Flooding closed the intersection of Carman Street and Bay Avenue in Patchogue.

A weakening cold front combined with favorable upper dynamics in a high precipitable water environment produced isolated flash flooding across portions of central and eastern Suffolk County.

NEW YORK, East

Herkimer County 2 NNW Ohio

08	1459EST								
					0	0			Thunderstorm Wind (50EG)

Trees and wires were downed on Harvey Bridge Road in the town of Ohio due to thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Herkimer County Ingham Mills

08	1545EST								
					0	0			Thunderstorm Wind (50EG)

A tree was downed and blocking Dockey Road in Manheim due to thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Herkimer County Ingham Mills

08	1545EST								
					0	0			Thunderstorm Wind (50EG)

Wires were downed on Dockey Road in Manheim due to thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Montgomery County 1 S Hagaman

08	1630EST								
					0	0			Thunderstorm Wind (50EG)

Trees and large limbs were downed in Amsterdam due to thunderstorm winds.

In the wake of a warm front, a very warm and humid air mass for early September was in place over Upstate New York on Thursday, September 8th. As the atmosphere became quite unstable, thunderstorms developed during the late afternoon hours ahead of an approaching cold front. A few of these storms became severe across the western Adirondacks and Mohawk Valley, producing damaging winds.

With the loss of daytime heating, thunderstorms ended during the evening hours, as the cold front crossed the area from west to east during the overnight hours. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Columbia County 1 WSW Hudson

11	0633EST								
					0	0			Thunderstorm Wind (50EG)

Trees were downed across State Route 9G near Mt. Merino Road in the town of Greenport due to thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW YORK, East

Columbia County

1 SSW Kinderhook

11	0636EST				0	0			Thunderstorm Wind (50EG)
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A tree was downed on Broad Street (U.S. Route 9) in the village of Kinderhook due to thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Columbia County

Brick Tavern

11	0638EST				0	0			Thunderstorm Wind (50EG)
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Six trees were downed near Route 9H in the town of Claverack due to thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Columbia County

Hudson Co Arpt

11	0639EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were downed on Gilligan Road near Lower Post Road in the town of Ghent due to thunderstorm winds. Trees were also downed nearby at the Columbia County Airport in the town of Ghent due to thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Columbia County

1 E Brick Tavern 2 NNW Mellenville

11	0640EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were downed on Gahbauer Road near Tipple Lane and Egan Lane in the town of Claverack due to thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Columbia County

1 NW Ghent Kline Kill Arp

11	0644EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were downed on County Route 21 (Church Street) near the intersection with Route 21B in the town of Ghent due to thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Columbia County

1 SSW Pulvers

11	0645EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were downed on Carpenter Road in the town of Ghent due to thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Columbia County

2 SW North Hillsdale 2 NE East Hillsdale

11	0655EST 0700EST				0	0			Thunderstorm Wind (74EG)
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A National Weather Service storm survey examined thunderstorm wind damage in the town of Hillsdale. Trees were downed on Hunt Road near Orchard Road. In addition, numerous other trees were downed in a northwest to southeast arc towards the Massachusetts State Line due to a series of thunderstorm microbursts. Some of the downed trees damaged homes and power lines as well.

A mild and humid air mass was in place over eastern New York during the early morning hours on Sunday, September 11th. A cold front was crossing through the region around sunrise and a potent line of thunderstorms accompanied the passage of this boundary. Some of these storms were severe, producing damaging winds to trees and power lines. The thunderstorms didn't last long, but produced a swath of damage across Columbia County. Note: The estimated wind gust of 74 knots is equivalent to 85 mph.

NEW YORK, North

St. Lawrence County

Hammond

10	1937EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Several trees downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

St. Lawrence County

1 E Brier Hill

10	1943EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Trees and powerlines downed by thunderstorm winds in Brier Hill.

Showers and a few thunderstorms developed ahead of a cold front during the evening of September 10th. One thunderstorm traveled along the St. Lawrence river and produced isolated damaging winds in Hammond and Morristown. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW YORK, West

**NYZ001>007-010>
014-019>021-085**

Allegany - Cattaraugus - Chautauqua - Genesee - Jefferson - Livingston - Monroe - Niagara - Northern Cayuga - Northern Erie - Ontario - Orleans - Oswego - Southern Erie - Wayne - Wyoming

01	0000EST								
30	0800EST				0	0			Drought

A weather pattern supporting dry conditions was prevalent across weather New York resulting in below normal precipitation. There were periodic showers and thunderstorms during this time but these were localized with precipitation generally coming from frontal boundaries rather than widespread rainfall from larger systems. Impacts have deteriorated due to hot summer temperatures which increased the evaporation rate and quickly dried out the soil. In addition, below normal snow pack from a mild winter left conditions drier than normal going into spring. These were the primary factors which led to the drought conditions. The driest conditions were across the Buffalo metro area and Niagara Frontier where lake shadowing reduced the frequency of showers and thunderstorms. The USGS ground water level network showed that numerous wells were in the driest 10th percentile. The dry conditions impacted crop production.

Oswego County

New Haven

08	1247EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lewis County

1 W Port Leyden

08	1409EST				0	0	25.00K	0.00K	Thunderstorm Wind (55EG)
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Trained spotters reported multiple trees downed by thunderstorm winds.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Chautauqua County

1 N Kennedy

08	1558EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported wires on Route 62 downed by thunderstorm winds.

Thunderstorms developed across the region during the afternoon hours ahead of an approaching cold front. In Chautauqua county, one of the thunderstorms produced damaging winds that downed tree limbs and wires. The wires fell on a car on Route 62 in Kennedy. There were no injuries. In Lewis county, another thunderstorm there produced damaging winds that downed trees and blew down a garage on McDonald Road. In Oswego county, thunderstorm winds downed wires in New Haven. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Erie County

1 W Lackawanna

10	1810EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed a light pole in Lackawanna.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Erie County

1 N Lackawanna

10	1814EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

Downed trees and power lines blocked Mariemont Street.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Niagara County

Lockport

10	1815EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

A tree fell onto a house on Prentice Street in Lockport.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Niagara County

1 SE Somerset

10	1823EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

A tree fell onto a garage in Barker.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Chautauqua County

1 S Portland

10	1827EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

Law enforcement reported trees and wires down by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Erie County

1 W Clarence

10	1827EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

Law enforcement reported trees and wires down by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
NEW YORK, West									
Niagara County									
Barker Central Arpt	10	1827EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Trees and wires were downed by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Erie County									
2 W Akron	10	1834EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Erie County									
1 W Akron	10	1837EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Orleans County									
1 NNW Lyndonville	10	1838EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Chautauqua County									
1 NW Clymer	10	1840EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Chautauqua County									
1 W Sheridan	10	1846EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Orleans County									
1 E Ridgeway	10	1848EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Chautauqua County									
1 NW Panama	10	1852EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Orleans County									
1 E Carlton	10	1906EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Chautauqua County									
Ellington	10	1912EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Cattaraugus County									
2 SE Conewango	10	1918EST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
	Downed trees and power lines fell on a house on John Darling Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Orleans County									
1 SW Holley	10	1918EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
NEW YORK, West									
Cattaraugus County 4 E Conewango	10	1921EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
									Trees and wires were downed by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Chautauqua County Falconer	10	1922EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
									Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Cattaraugus County Dayton	10	1924EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
									Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Cattaraugus County 1 NNW Otto	10	1932EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
									Trees and wires were downed by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Cattaraugus County 1 NNW South Vandalia	10	2030EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
									Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Cattaraugus County 1 N Franklinville	10	2043EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
									Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Jefferson County 1 SSE Philadelphia	10	2142EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
									Law enforcement reported trees and wires down by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Oswego County 2 NE Orwell	10	2310EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
									Law enforcement reported trees down on Waggoner Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Lewis County 1 NW Port Leyden	11	0028EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
									Law enforcement reported trees and wires down by thunderstorm winds. A strong cold front crossed the region during the evening hours. Thunderstorms that accompanied the front produced damaging wind gusts. The winds downed trees and power lines across the region with scattered power outages reported. Trees fell and damage homes and garages in Lockport, Barker and near Conewango. Several streets were reported blocked and closed by downed trees and wires. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Chautauqua County 1 W Westfield	17	1645EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
									Law enforcement reported trees and power lines downed by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Chautauqua County 1 S Portland	17	1650EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
									Law enforcement reported trees and power lines downed by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NEW YORK, West

Chautauqua County

1 W Sheridan

17	1655EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and power lines downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Genesee County

1 S Corfu

17	1720EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Trees and power lines were downed by thunderstorm winds.

Thunderstorms developed during the evening hours in a warm, moist and unstable atmosphere. A few of these storms produced damaging winds that downed some trees and power lines. In Contantia, a tree fell on and damaged a house. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Cattaraugus County

3 S Red House

18	0000EST 0230EST				0	0	25.00K	0.00K	Flash Flood
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Cattaraugus County

1 SSW Hinsdale

18	0000EST 0230EST				0	0	40.00K	0.00K	Flash Flood
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Allegany County

1 NNW Nile 2 WNW Friendship

18	0030EST 0230EST				0	0	35.00K	0.00K	Flash Flood
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Allegany County

1 W Cuba 1 ENE North Cuba

18	0200EST 0230EST				0	0	45.00K	0.00K	Flash Flood
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Showers and thunderstorms moved across the southern tier during the late evening dropping two to three inches of rain in three to four hours. Shortly after, another round of storms crossed the same area bringing additional rain that resulted in flash flooding. Flooding closed multiple roads in Hinsdale, Friendship and Cuba. Water rescues occurred near Friendship. In Cuba, forced evacuations occurred. In Allegany State Park widespread flooding occurred and campgrounds had to be evacuated. The flood waters slowly subsided during the early morning hours.

Oswego County

Constantia

18	1807EST				0	0	20.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and power lines downed by thunderstorm winds.

Thunderstorms developed during the evening hours in a warm, moist and unstable atmosphere. A few of these storms produced damaging winds that downed some trees and power lines. In Contantia, a tree fell on and damaged a house. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

NORTH CAROLINA, Central

Person County

3 SW Longs Store

01	1247EST 1248EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Multiple trees were reported down between the 4200 and 7300 blocks of Leasburg Highway.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Johnston County

1 S Benson

01	1813EST				0	0	5.00K	0.00K	Lightning
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A car was struck by lightning on I-95, near mile marker 78.

A cold front moved into northern portions of central North Carolina during the afternoon and interacted with a weak to moderately unstable air mass. This allowed for a broken band of scattered showers and storm to form along and in advance of the front. A few of these storms became strong to severe, with isolated damaging wind gusts.

NCZ021-073-083> 084

Anson - Forsyth - Montgomery - Richmond - Stanly

02	1830EST 1835EST				0	0	32.5K	0.00K	Tropical Storm
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, Central

Cumberland County

02	1840EST				0	0	10.00K	0.00K	Tropical Storm
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Trees and power lines were reported down throughout the county.

NCZ041-075-085> 086-089

Hoke - Lee - Moore - Sampson - Scotland - Wake

02	1840EST				0	0	70.0K	0.00K	Tropical Storm
	2245EST								

NCZ043

Wilson

03	0850EST				0	0	5.0K	0.00K	Tropical Storm
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Tropical Storm Hermine tracked along the Southeast United States coastline and across coastal portions of the Carolina's. Tropical Storm Hermine produced heavy rain across portions of central North Carolina. However, due to dry antecedent conditions, no flooding occurred despite rainfall amounts of up to 3 to 5 inches across southeastern portions of central North Carolina. Given the rain and gusty winds associated with Hermine there were numerous reports of trees down and wind damage and resultant power outages.

Johnston County

1 SE Emit	28	1411EST			0	0	0.00K	0.00K	Hail (0.75)
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Cumberland County

3 NW Wade	28	1415EST			0	0	0.00K	0.00K	Hail (1.00)
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Johnston County

4 ESE Emit	28	1415EST			0	0	0.00K	0.00K	Hail (1.00)
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Forsyth County

3 SE Guthrie	28	1430EST			0	0	0.00K	0.00K	Hail (1.25)
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Guilford County

Osceola	28	1537EST			0	0	0.00K	0.00K	Hail (1.00)
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Pea to quarter size hail was reported near the intersection of North Carolina Highways 61 and 150.

Durham County

1 W Lowes Grove	28	1545EST			0	0	0.00K	0.00K	Hail (1.00)
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Harnett County

4 S Dunn	28	1545EST			0	0	0.00K	0.00K	Hail (1.00)
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Vance County

1 W Middleburg	28	1605EST			0	0	0.00K	0.00K	Hail (1.00)
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Guilford County

1 S Greensboro	28	1625EST			0	0	0.00K	0.00K	Hail (1.75)
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Golf ball size hail was reported on Randleman Road.

Harnett County

1 SSW Dunn	28	1630EST			0	0	0.00K	0.00K	
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29	0430EST				0	0	0.00K	0.00K	Flash Flood
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Heavy rain caused flash flooding in and around the Dunn area. Several roads were flooded or closed, including George Perry Lee Road on the northeast side of Dunn.

Guilford County

1 S Sedalia	28	1700EST			0	0	0.00K	0.00K	Hail (1.00)
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One inch diameter hail was reported on I-85 at mile marker 134.

Guilford County

1 SE Sedalia	28	1703EST			0	0	0.00K	0.00K	Hail (1.25)
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Alamance County

2 SW Burlington	28	1710EST			0	0	0.00K	0.00K	Hail (1.00)
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, Central

Person County

2 SSE Longs Store	28	1719EST			0	0	0.00K	0.00K	Hail (1.50)
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Alamance County

1 E Mebane	28	1735EST			0	0	0.00K	0.00K	Hail (1.00)
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Person County

Roxboro	28	1753EST			0	0	0.00K	0.00K	Hail (1.75)
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Person County

1 S Paynes Tavern	28	1753EST			0	0	0.00K	0.00K	Hail (1.75)
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Quarter to golf ball size hail on Hurdle Mills Road.

Cumberland County

1 NW Manchester	28	1830EST							
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4 NW (FBG)Ft Bragg	29	0830EST			0	0	100.00K	0.00K	Flash Flood
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Heavy rain caused flash flooding at numerous locations across Cumberland County, including the areas of Fayetteville, Spring Lake, Godwin, and Hope Mills. Cross Creek Mall and other areas along Cross Creek were particularly hard hit. Also, Wapiti Drive on the north side of Spring Lake was closed due to flooding and Sykes Pond Road near Rockfish was washed out. Residents were stranded or needed to be rescued from their homes in the vicinity of South Reilly Road and Cliffdale Road.

Davidson County

3 SSE Wallburg	28	1845EST			0	0	0.00K	0.00K	Hail (1.00)
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Alamance County

1 W Burlington	28	2000EST							
		2200EST			0	0	0.00K	0.00K	Flash Flood

Vehicles were partially submerged due to flooded roadways.

Alamance County

1 WSW Burlington	28	2030EST							
1 SSE Glen Raven		2200EST			0	0	0.00K	0.00K	Flash Flood

Several road were closed in Burlington.

Hoke County

2 NNW Arabia	28	2030EST							
	29	0130EST			0	0	50.00K	0.00K	Flash Flood

Heavy rain resulted in flash flooding near residences on McLean Loop Road near Arabia Road. Several roads were also closed in that area. The shoulder was washed out on two of the roads, Golf Course Road between Ellis Road and Phillipi Church Road and Old Wire Road between Arabia Road and McGougan Road.

Alamance County

1 ESE Pleasant Grove	28	2130EST							
1 SW Just Xrds		2200EST			0	0	50.00K	0.00K	Flash Flood

A 14 foot section of Tangle Ridge Road was reported washout, due to flood waters.

Moore County

1 NNW Southern Pines Arpt	28	2320EST			0	0	40.00K	0.00K	Lightning
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The kitchen of a residence caught fire after lightning struck a tree and traveled along a fence and into the home. The strike also caused a gas leak in the home. The fire and was quickly contained and did minimal damage to the kitchen, however the lightning strike did considerable damage to the electrical circuits and possibly HVAC system.

Moore County

2 WNW Lobelia	29	0208EST							
1 SW Mt Pleasant		0730EST			0	0	100.00K	0.00K	Flash Flood

Heavy rain resulted in flash flooding southeast of Vass, mainly at residences along the Little River, but also near the intersection of Lobelia Road and McGill Road. Sections of Lobelia Road were either partially or completely washed out between McGill Road and Sarason Place.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, Central

Moore County

1 SW Pinehurst Vina Vista	29	0218EST 0620EST			0	0	0.00K	0.00K	Flash Flood
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Heavy rain resulted in flash flooding at the intersection of Morganton Road and Highway 5. The flood waters were up to the door of multiple vehicles.

Richmond County

3 SSE Derby 4 NNW Hoffman	29	0220EST 0630EST			0	0	0.00K	0.00K	Flash Flood
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Heavy rain resulted in Flash Flooding along short section of Derby Road near Old Leaf Farms Road. The road was completely under water and impassable.

Harnett County

4 E Pineview 2 E Overhills	29	0300EST 0830EST			0	0	25.00K	0.00K	Flash Flood
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Heavy rain resulted in flash flooding, which closed 10 to 15 roads in the Anderson Creek area. A section of Thompson Road was washed out by flood waters.

Hoke County

2 ENE Raeford Muni Arpt 5 NNW Rockfish	29	0300EST 0800EST			0	0	150.00K	0.00K	Flash Flood
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Numerous roads were closed due to flooding between Raeford and Rockfish. Johnson Mill Road was washed out in two places between Fayetteville Road and Pittman Grove Church Road, where the road goes over Black Branch and Puppy Creek. The shoulders of Lindsay Road and Galatia Church Road were also washed out.

Moore County

3 N Southern Pines Arpt	29	0300EST 0630EST			0	0	0.00K	0.00K	Flash Flood
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Lakeview drive at Thagard Lane was closed due to flash flooding.

Wayne County

3 WSW Pikeville 2 W Genoa	29	0915EST 1100EST			0	0	0.00K	0.00K	Flash Flood
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Several roads were flooded in the Goldsboro area, including Highway 55 and Wayne Memorial Drive.

Cumberland County

1 N Manchester	29 30	1000EST 0900EST			0	0	1.00M	0.00K	Flash Flood
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A large breach in Long Valley Farm Lake Dam near Carvers Creek State Park was reported. Water was reported surging into Jumping Run Creek and surrounding roads.

Hoke County

1 NNW Rockfish	29 30	1025EST 0900EST			0	0	1.00M	0.00K	Flash Flood
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Dam on a lake adjacent to McLaughlin Lake failed, dumping water into McLaughlin Lake which over topped it's dam and flooded surrounding roads.

A slow moving cold front moving into the area coupled with deep upper low settling southward into the Tennessee Valley region set the stage for multiple rounds of convection during the afternoon into the evening. Some of these storms produced large hail and flash flooding. Some of the flooding was significant across the Sandhills region, where 6 to 10 inches of rain fell. Multiple roads were flooded and/or washed out, homes and businesses flooded, and dams were topped or breached across the Sandhills region.

Wake County

2 N Banks	30	0842EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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One tree was reported down at Donny Brook Road and Ransdell Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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NORTH CAROLINA, Central

Wake County

3 NW Mc Cullers 30 0852EST 0 0 0.00K 0.00K Hail (0.75)
Dime size hail was reported at Penny Road and Dime Drive.

Wake County

1 ESE Wilders Grove 30 0911EST 0 0 5.00K 0.00K Thunderstorm Wind (50EG)
Siding was damage on a house and a small tree was damage in the Summer Place neighborhood.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wake County

Wilders Grove 30 0912EST 0 0 0.00K 0.00K Hail (0.88)
Penny to nickel size hail was reported near New Bern Avenue and New Hope Road.

Wake County

1 ENE Brentwood 30 0919EST 0 0 0.00K 0.00K Hail (0.88)
Penny to nickel size hail was reported at Southall Road and Buffaloe Road.

Wake County

1 NE Holly Spgs 30 1615EST 0 0 0.00K 0.00K Hail (0.75)
Isolated to widely scattered showers and storms developed across central NC along and in advanced of a cold front. One storm became severe and produced damaging wind, along with sub severe penny to nickel size hail.

NORTH CAROLINA, Central Coastal

NCZ047-080-093>
095-098-103>104

Beaufort - Carteret - Craven - Eastern Dare - Eastern Hyde - Onslow - Pamlico - Western Dare - Western Hyde

02 1800EST 0 0 5.405M Tropical Storm
03

Carteret County
Straits

02 2020EST
2021EST 0.15 50 0 0 150.00K 0.00K Tornado (EF1)

The National Weather Service in Newport/Morehead City NC has confirmed a tornado near Straits in Carteret County, North Carolina, on September 2, 2016. The tornado briefly touched down near Harkers Island Road, just north of the Harkers Island bridge, causing significant damage to a small boat storage facility, minor siding and window damage to a mobile home, and collapsed the garage door and caused moderate roof damage to a small business. In addition, several trees had their trunks snapped or had large branches broken. The EF1 tornado had winds estimated at 95 mph, a path width of 50 yards and path length of 240 yards.

Carteret County
1 ENE Marshallberg

02 2023EST
2024EST 0.35 50 0 0 75.00K 0.00K Tornado (EF1)

The National Weather Service in Newport/Morehead City NC has confirmed a tornado near Marshallberg in Carteret County, North Carolina, on September 2, 2016. The tornado briefly touched down near MacBry Road and Through the Woods Road causing significant roof and porch damage to one home and knocking down 5 nearby power poles. One mobile home had minor damage to its siding. Several boats were blown off their trailer with one being tossed approximately 100 yards. In addition, several trees had their trunks snapped or had large branches broken. The EF1 tornado had winds estimated at 95 mph, a path width of 50 yards and path length of 600 yards.

Onslow County
2 SSW Holly Ridge

02 2030EST
2130EST 0 0 0.00K 0.00K Flash Flood

Heavy rain produced flash flooding along Hudiburg Street in Holly Ridge. Water was high enough to close the road.

Onslow County
3 NNE Kellumtown

02 2030EST
2130EST 0 0 0.00K 0.00K Flash Flood

Heavy rain produced flash flooding over and east of Piney Green. Water was reported up to car windows in the neighborhood adjacent to Rocky Run Road.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, Central Coastal

Dare County

1 NNE (HAT)Cape Hatteras	03	0002EST	0.07	25	0	3	250.00K	0.00K	Tornado (EF0)
		0003EST							

The Hatteras Island Rescue and National Weather Service in Newport/Morehead City NC have confirmed a weak tornado briefly touched down at the Hatteras Sands RV resort near Hatteras Village in Dare County, North Carolina, around 1:02 am EDT on September 3rd, 2016. The EF0 tornado had winds estimated at 80 mph, a path width of 25 yards and path length of 100 yards. The tornado damaged or destroyed approximately 5 travel trailers and camping cabins, some which were not attached to the ground. Three injuries were reported from this tornado.

Dare County

2 W (HAT)Cape Hatteras	03	0030EST			0	0	0.00K	0.00K	Flash Flood
		0059EST							

Heavy rain led to widespread flooding in Hatteras Village. Many road flooded and impassable with water up to 3 feet deep in spots.

Hurricane Hermine made landfall in the Big Bend area of Florida during the early morning hours on September 2nd, and moved northeast along the Southeastern United States states on the 2nd. Hermine weakened slightly to Tropical Storm strength and crossed through Eastern North Carolina during the late evening on September 2nd, and exited off the North Carolina coast near Duck during the morning of September 3rd. The lowest pressure of 994.3 mb was measured on 03/0629 UTC at a mesonet site located at Fort Macon in Carteret county. Highest official winds were measured at the Duck tide gauge DUKN7 where sustained speeds of 71 mph with gusts to 84 mph occurred between 1447 and 1454 UTC on the 3rd. These strong winds led to sporadic power outages across eastern North Carolina. Official Storm surge flooding of 2 to 4 feet above ground level occurred along much of the coast. The highest surge of 3 to 4 feet was observed on the sound side of the Outer Banks on the morning of the 3rd as strong north winds developed on the backside of Hermine as it passed offshore. Preliminary damage from storm surge was estimated at 5.5 million dollars with the vast majority of this occurring across Outer Banks Dare County. Rain-bands associated with Hermine produced two EF1 tornadoes and one EF0 tornado that led to around 30 thousand in property damage. Bands of heavy rain associated with Hermine produced rainfall totals of 4 to 8 inches over most of the region, with the highest amounts near the coast. This heavy rain produced widespread poor drainage flooding with a few reports of flash flooding.

Carteret County

Beaufort	07	1500EST			0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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KMRH ASOS measured a peak wind gust of 58 mph in a thunderstorm.

An upper level disturbance moving southeast triggered scattered showers and thunderstorms along the coastal sections of eastern North Carolina during the afternoon of September 7th. One of the storms produced a wind gust to 58 mph in Carteret County. Note: The measured wind gust of 50 knots is equivalent to 58 mph.

NCZ103

Eastern Dare

	09	1338EST			4	0	0.00K	0.00K	Rip Current
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Two people drowned due to a rip current in Rodanthe. M70IW, M51IW

Beaufort County

1 S Washington Arpt 1 SE Washington	19	1630EST			0	0	0.00K	0.00K	Flash Flood
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Heavy rain has flooded numerous streets in Washington with many closed due to high water.

Beaufort County

1 S Washington Arpt 2 E Washington	19	1700EST 1800EST			0	0	0.00K	0.00K	Flash Flood
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Water up to 3 feet deep on some roads in Washington with vehicles stranded.

Beaufort County

1 N Old Ford	19	1700EST 1800EST			0	0	0.00K	0.00K	Flash Flood
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Flood waters up to 3 feet deep at intersection of Highway 17 and Highway 171 near Old Ford.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, Central Coastal

Beaufort County

1 W Washington Arpt	19	1955EST			0	0	0.00K	0.00K	Flash Flood
1 ENE Washington		2000EST							

Flood waters beginning to reach a few homes and businesses in Washington. A few people have been evacuated as a precaution.

The remnants of Tropical Storm Julia combined with a strong upper trough to produce numerous showers and a few thunderstorms across eastern North Carolina during the evening of September 19th. Very heavy rain led to flash flooding over parts of Beaufort County.

NORTH CAROLINA, North Coastal

NCZ015>017-030> 032

Bertie - Camden - Chowan - Pasquotank - Perquimans - Western Currituck

02		1100EST							
03		2100EST			0	0	5.0K	0.00K	Tropical Storm

Gates County

02		1100EST							
03		2100EST			0	0	0.00K	0.00K	Tropical Storm

Rain bands associated with Tropical Storm Hermine produced generally 3 to 6 inches of rainfall across the county. Gatesville (3.3 NE) reported 4.86 inches of rain.

NCZ012-102

Eastern Currituck - Hertford - Northampton

02		1100EST							
03		2100EST			0	0	10.0K	0.00K	Tropical Storm

Tropical Storm Hermine moving northeast along the Southeast Coast then off the Mid Atlantic Coast produced tropical storm force winds, minor to moderate coastal flooding, and locally heavy rainfall across portions of Coastal Northeast North Carolina from midday Friday, September 2nd into Saturday night, September 3rd.

Gates County

1 N Buckland

11		1600EST			0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed and fences were damaged on Willeyton Road between Gates Bank Road and Parker Road.

Isolated severe thunderstorm in advance of a cold front produced damaging winds across portions of northeast North Carolina. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Bertie County

3 ENE Windsor

19		0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 6 to 17 inches across the county. Windsor (3 ENE) reported 17.00 inches of rain.

Camden County

Pierceville

19		0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 5 to 10 inches across the county. Pierceville reported 9.73 inches of rain. Joyce Creek Intercoastal Waterway reported 5.80 inches of rain.

Chowan County

Edenton

19		0600EST			0	0	0.00K	0.00K	Heavy Rain
----	--	---------	--	--	---	---	-------	-------	------------

Rainfall totals generally ranged from 4 to 11 inches across the county. Arrowhead Beach reported 10.61 inches of rain.

Currituck County

Knotts Is

19		0600EST			0	0	0.00K	0.00K	Heavy Rain
----	--	---------	--	--	---	---	-------	-------	------------

Rainfall totals generally ranged from 6 to 13 inches across the county. Corolla reported 13.17 inches of rain. Knotts Island (3 NE) reported 9.68 inches of rain. Sligo reported 7.56 inches of rain.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, North Coastal

Gates County

Corapeake

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 5 to 12 inches across the county. Corapeake reported 11.17 inches of rain. Easons Crossroads (1 SSW) reported 5.34 inches of rain.

Hertford County

Ahoskie

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 5 to 12 inches across the county. Winton (Water Treatment Plant) reported 12.31 inches of rain.

Northampton County

Conway

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 4 to 9 inches across the county. Conway reported 9.11 inches of rain.

Pasquotank County

2 W Elizabeth City

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
----	---------	--	--	--	---	---	-------	-------	------------

Rainfall totals generally ranged from 4 to 10 inches across the county. Elizabeth City (2 W) reported 6.27 inches of rain. Spences Corner (3 WSW) reported 6.18 inches of rain. Burnt Mills (3 SSW) reported 5.61 inches of rain. Elizabeth City Coast Guard Air Station Regional Airport (ECG) reported 5.13 inches of rain. Mariners Wharf Park reported 4.40 inches of rain.

Perquimans County

Hertford

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
----	---------	--	--	--	---	---	-------	-------	------------

Rainfall totals generally ranged from 3 to 10 inches across the county. Hertford reported 9.59 inches of rain. Snug Harbor (1 NE) reported 6.82 inches of rain. Holiday Island (1 W) reported 6.73 inches of rain. Jacocks (2 WNW) reported 2.97 inches of rain.

The combination of a stalled frontal boundary and the remnant low pressure area that was Tropical Storm Julia, produced heavy rain across much of northeast North Carolina from Monday, September 19th into Thursday, September 22nd.

Bertie County

1 W Lewiston Colerain

21	0800EST				0	0	0.00K	0.00K	Flood
22	0200EST				0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Chowan County

Edenton 4 ENE St Johns

21	0800EST				0	0	0.00K	0.00K	Flood
22	0200EST				0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Perquimans County

2 SSE Nicanor 1 WNW Belvidere

21	0800EST				0	0	0.00K	0.00K	Flood
22	0200EST				0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Gates County

4 S Vivian 3 ENE Sany Cross

21	1100EST				0	0	0.00K	0.00K	Flood
22	0200EST				0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Hertford County

6 NNW Murfreesboro 4 N Bartonville

21	1100EST				0	0	0.00K	0.00K	Flood
22	0200EST				0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, North Coastal

Camden County

6 NNW South Mills	21	1200EST					0.00K	0.00K	Flood
6 N Pierceville	22	0200EST			0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Currituck County

Moyock	21	1200EST					0.00K	0.00K	Flood
1 NW Knotts Is	22	0200EST			0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Pasquotank County

7 SE Weeksville	21	1200EST					0.00K	0.00K	Flood
6 SSE Bob White Ford	22	0200EST			0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Northampton County

3 NNW Gaston	21	1600EST					0.00K	0.00K	Flood
2 WNW Turners Xrds	22	0200EST			0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

The combination of a stalled frontal boundary and the remnant low pressure area that was Tropical Storm Julia, produced heavy rain which caused flooding across much of northeast North Carolina from Wednesday morning, September 21st into early Thursday morning, September 22nd.

Bertie County

2 E Drew	21	2100EST					4.00M	1.00M	Flood
4 WSW Todds Xrds	25	1100EST			0	0	4.00M	1.00M	Flood

Numerous homes and businesses were flooded and damaged in and around Windsor, due to heavy rain over several days causing the Cashie River to exceed major flood stage. Numerous roads were flooded and closed.

Heavy rains from the combination of a stalled frontal boundary and remnant low pressure area that was Tropical Storm Julia from September 19th through September 21st, resulted in the Cashie River exceeding major flood stage. Widespread flooding occurred in and around Windsor from Wednesday, September 21st into Sunday, September 25th.

NORTH CAROLINA, Northwest and North Central

Wilkes County

1 W Millers Creek	26	1447EST					0.50K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds resulted in the downing of a tree along the 2000 block of Highway 16.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wilkes County

1 SE Radical	26	1454EST					0.50K	0.00K	Thunderstorm Wind (50EG)
--------------	----	---------	--	--	--	--	-------	-------	--------------------------

Thunderstorm winds resulted in a tree down at the intersection of Yellow Banks Road and Harold Mountain Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wilkes County

3 W Hunting Creek	26	1510EST					0.50K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds resulted in a tree blocking the road on Fox Run Drive.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wilkes County

1 E Traphill	26	1522EST					0.50K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds resulted in one tree down at the intersection of Traphill Road and Traphill Ridge Road.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, Northwest and North Central

Isolated to scattered thunderstorms formed along and ahead of a cold frontal boundary pushing east through the region during the evening of September 26th, 2016. While the main threat with these storms were heavy rainfall, a few did intensify to severe limits, producing isolated tree damage across portions of northwest North Carolina. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Caswell County
1 WSW Pelham

27	1950EST				0	0	1.50K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm wind gusts resulted in three trees down along Nunnely Road.

Isolated to scattered thunderstorms formed as a result of a stationary front that pushed to the northeast of the area, and a cold front approaching from the northwest that followed on September 27th. Instability increased in some parts of the area due to breaks in the cloud cover. As a result, storms initiated along the slowly moving frontal boundary along the North Carolina and Virginia border. One storm produced wind damage in Caswell County. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Rockingham County
1 E Mayfield

28	1341EST				0	0			Hail (0.88)
----	---------	--	--	--	---	---	--	--	-------------

Rockingham County
2 E Mayfield

28	1345EST				0	0			Hail (1.75)
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Rockingham County
4 SSW Bethany

28	1400EST				0	0			Hail (1.00)
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Caswell County
1 E Gatewood

28	1407EST				0	0			Hail (1.75)
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Caswell County
2 NW Blanch

28	1425EST				0	0			Hail (2.50)
----	---------	--	--	--	---	---	--	--	-------------

Wilkes County
2 WNW Boomer

28	1505EST				0	0			Hail (1.00)
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Yadkin County
1 E Boonville

28	1636EST				0	0			Hail (1.00)
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Caswell County
2 W Ridgeville

28	1710EST				0	0			Hail (1.00)
----	---------	--	--	--	---	---	--	--	-------------

Caswell County
1 NE Milton

28	1714EST				0	0			Hail (1.00)
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Stokes County
1 W Capella

28	1724EST				0	0			Hail (1.00)
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A quasi-stationary frontal boundary continued to produce bands of deep convection early in the morning on September 28th, as a strong upper low continued to deepen in parts of the Ohio Valley. Widespread severe weather began to occur in the mid afternoon hours, mainly in the form of large hail and isolated wind damage across mainly the northern piedmont counties of North Carolina, as the storms moved off of the Blue Ridge Plateau.

Surry County
2 W Toast

29	1333EST				0	0			Hail (1.75)
----	---------	--	--	--	---	---	--	--	-------------

Surry County
1 W Pilot Mtn

29	1340EST				0	0			Hail (1.00)
----	---------	--	--	--	---	---	--	--	-------------

Stokes County
2 SE Meadows

29	1530EST				0	0			Hail (1.00)
----	---------	--	--	--	---	---	--	--	-------------

Watauga County
4 SE Aho

29	1604EST				0	0			Hail (1.00)
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Yadkin County
1 E Yadkinville

29	1818EST				0	0	2.50K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds downed a few trees within the town of Yadkinville.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, Northwest and North Central

Yadkin County

1 E East Bend

29	1854EST				0	0	2.50K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds downed a few trees in the East Bend area.

A strong upper low situated across the Ohio River Valley continued its journey south, where it settled just to the west of the Appalachian Mountains. This low aided in the initiation of strong to severe thunderstorms during the afternoon hours of September 29th, which produced large hail and isolated wind damage across the higher elevations of northwest North Carolina before pushing just east of the Blue Ridge divide. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Wilkes County

1 N North Wilkesboro

30	0230EST				0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds resulted in a downed tree along Gentry Street.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wilkes County

1 W Moravian Falls

30	0230EST				0	0	1.00K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds resulted in two trees down along cemetery road and Old Farm Roads.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Wilkes County

1 S Mulberry

30	0235EST				0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds resulted in a tree down on Elledge Mill Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Stokes County

1 SE Danbury

30	0604EST				0	0	0.00K	0.00K	Hail (1.75)
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Showers and thunderstorms formed along a leading edge of a strong, nearly stationary low pressure system centered over Kentucky during the evening hours of September 30th. showers and thunderstorms initiated as a result of a very moist fall atmosphere with dew points in the 70's. Thunderstorm wind damage and large hail were recorded in parts of northwest North Carolina.

NORTH CAROLINA, South Coastal

NCZ087-108

Coastal New Hanover - Robeson

02	1530EST				0	0	26.0K	0.00K	Tropical Storm
	1705EST								

New Hanover County

1 SE New Bern Jct

02	1715EST				0	0	0.00K	0.00K	Flash Flood
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Heavy rain caused the road closure at 29th Street in Wilmington.

New Hanover County

Baymeade

02	1809EST				0	0	0.00K	0.00K	Flash Flood
----	---------	--	--	--	---	---	-------	-------	-------------

Flooding was reported in Ogden.

Bladen County

11 SSW Clarkton

02	1817EST				0	0	0.00K	0.00K	Flash Flood
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There was a report of water one foot deep in the yard.

Pender County

2 SE Woodside

02	1828EST				0	0	0.00K	0.00K	Flash Flood
----	---------	--	--	--	---	---	-------	-------	-------------

There was a report of running water on Azalea Drive.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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NORTH CAROLINA, South Coastal

New Hanover County 1 SE Wilmington

02	1843EST 2045EST				0	0	0.00K	0.00K	Flash Flood
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Flooding was reported at Columbus Circle off of Oleander Drive.

New Hanover County 1 ENE Wilmington

02	1847EST 2045EST				0	0	0.00K	0.00K	Flash Flood
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Reports of running water across Metts Drive, with some standing water in a yard.

Bladen County Abbottsburg

02	1915EST 2115EST				0	0	0.00K	0.00K	Flash Flood
----	--------------------	--	--	--	---	---	-------	-------	-------------

Around three feet of water was reported on Twisted Hickory Rd. The road was closed.

Bladen County 3 WSW Dublin

02	1915EST 2115EST				0	0	0.00K	0.00K	Flash Flood
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James Pait Rd was reported to be flooded. There were also reports of other roads flooded in that part of the county.

Pender County Burgaw

02	2000EST 2300EST				0	0	0.00K	0.00K	Flash Flood
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Numerous roads were flooded. Several roads were closed including Fremont St, Brown St, Smith St, Ball Park St, and Highway 53.

Pender County 1 NNW Penderlea

02	2000EST 2300EST				0	0	0.00K	0.00K	Flash Flood
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Raccoon Rd was closed due to high water.

Pender County 1 ESE Topsail

02	2000EST 2300EST				0	0	0.00K	0.00K	Flash Flood
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Numerous roads were flooded, including Azalea Dr, Country Club Rd, Ravenswood, and portions of Hwy 210.

New Hanover County Carolina Beach Wilmington Beach

02	2015EST 2315EST				0	0	0.00K	0.00K	Flash Flood
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There were reports of numerous roads flooded. South Lake Park Blvd was closed.

New Hanover County 1 NW Wilmington

02	2015EST 2330EST				0	0	0.00K	0.00K	Flash Flood
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Numerous streets were reported flooded. Some were completely impassable including Dock St and Gillette Dr.

NCZ087

Robeson

02	2045EST 2050EST				0	0	10.0K	0.00K	Tropical Storm
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH CAROLINA, South Coastal

Hurricane Hermine made landfall as a minimal category 1 hurricane near the Florida Panhandle the night of September 1st. The hurricane weakened to a tropical storm as it moved up the eastern seaboard. The storm entered southeast NC the morning of September 2nd, and moved rapidly northeast. The storm produced very heavy rainfall with flash flooding, as well as some scattered reports of wind damage. Rainfall amounts averaged around six inches, with isolated amounts around ten inches. The highest wind gusts were around 65 mph.

Bladen County 37 E East Arcadia

22	1746EST 2000EST				0	0	0.00K	0.00K	Flash Flood
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Both outside lanes of Hwy 17 were closed at the Topsail School complex.

Pender County 2 ESE Topsail

22	1803EST 2000EST				0	0	10.00K	0.00K	Flash Flood
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A portion of South Belvedere Dr was washed out.

Pender County 1 NW Watts Lndg 1 NW Sloop Pt

22	1838EST 2100EST				0	0	0.00K	0.00K	Flash Flood
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Flooded farm fields over-topped a berm, inundating neighborhood yards six inches deep.

A stationary boundary produced slow moving storms and heavy rain.

NORTH CAROLINA, Southwest

Cleveland County 3 ESE Shelby Patterson Spgs

01	1544EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Spotter reported a tree blown down on a house on Country Club Rd and a power pole snapped with lines down on Immanuel Church Rd.

Scattered to numerous afternoon thunderstorms developed across the western North Carolina ahead of a cold front. One storm became briefly severe across Cleveland County. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mecklenburg County 1 WNW Charlotte 2 SW North Charlotte

26	0600EST 0730EST				0	0	1.00K	0.00K	Flash Flood
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Stream gauges indicated the public and media confirmed that Little Sugar Creek overflowed its banks on the northeast side of Charlotte, while Stewart Creek flooded on the west side of the city after a small area of slow moving rain showers and embedded thunderstorms dumped 2 to 4 inches of rain over the area in a 3-4 hour period. North Tryon St was flooded and closed at Atando Ave while Stewart Creek flooded Freedom Dr near Morehead St.

A small area of showers and embedded thunderstorms developed during the morning across the Charlotte area in association with a stalled front. Marginal flash flooding developed in a couple of spots in the city after 2 to 4 inches of rain fell in a few hours.

Burke County 2 NE Morganton

27	1620EST				0	0			Hail (0.88)
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Media reported nickel size hail on Kirksey Dr.

Scattered thunderstorms developed ahead of a stalled frontal boundary across western North Carolina during the afternoon and evening. At least one strong storm produced hail.

Caldwell County 3 SSW Grandin

28	1442EST 1455EST				0	0			Hail (1.00)
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Multiple sources reported quarter size hail in northeast Caldwell County, from Bear Run to near Zacks Fork Rd to Grandlin Rd.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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NORTH CAROLINA, Southwest

Mecklenburg County

2 NNW Wilgrove

28	1815EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Ham radio operator reported multiple trees blown down off Robinson Church Rd.

Isolated afternoon and evening thunderstorms developed across western North Carolina ahead of a stalled cold front. A couple of these storms became briefly severe. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Burke County

2 NNW Bridgewater

29	1533EST				0	0			Hail (0.75)
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Spotter reported 3/4 inch hail near Lake James.

Alexander County

4 SSW Stony Pt

29	1625EST				0	0			Hail (0.75)
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County comms reported 3/4 inch hail at County Line Rd and Presley Farm Rd.

Caldwell County

1 ENE Collettsville

29	1625EST				0	0			Hail (0.75)
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Spotter reported 3/4 inch hail near Collettsville.

Alexander County

1 SSE Stony Pt

29	1638EST				0	0			Hail (1.00)
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Spotter reported quarter size hail on Highway 90.

Caldwell County

1 E Patterson

29	1648EST				0	0			Hail (0.88)
----	---------	--	--	--	---	---	--	--	-------------

Media reported nickel size hail near Highway 268.

Iredell County

4 N Scotts

29	1648EST				0	0			Hail (0.75)
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Spotter reported 3/4 inch hail.

Isolated late afternoon thunderstorms developed along a cold front across the North Carolina foothills. A few of the storms produced hail dime to quarter size hail.

NORTH DAKOTA, Central and West

Pierce County

1 NW Selz

04	0405CST				0	0	0.00K	0.00K	Hail (1.00)
	0408CST								

Morton County

New Salem

04	0615CST				0	0	2.00K	0.00K	Thunderstorm Wind (61EG)
	0622CST								

A trained spotter reported that thunderstorm wind gusts caused a power pole to lean over near New Salem.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Burleigh County

6 E Wilton

04	0715CST				0	0	100.00K	30.00K	Thunderstorm Wind (70EG)
	0725CST								

Five power poles were broken near mile marker 5 on Highway 36 east of Wilton. A blade was also blown off a wind turbine in the area. Several large ponderosa pine trees were blown down at a church site near mile marker 6.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Burleigh County

9 N Wing

04	0740CST				0	0	75.00K	10.00K	Thunderstorm Wind (65EG)
	0745CST								

A barn was destroyed, and a roof was damaged on another building.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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NORTH DAKOTA, Central and West

Stutsman County

1 S Buchanan	04	0820CST 0823CST			0	0	0.00K	0.00K	Hail (1.00)
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A strong low level jet pushing through a moisture rich atmosphere led to severe thunderstorms developing during the early to mid-morning hours. The greatest amount of damage occurred in Burleigh County.

Grant County

14 NNW Elgin	07	1025MST 1028MST			0	0	0.00K	0.00K	Hail (0.75)
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Grant County

7 NW Carson	07	1045MST 1048MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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The public estimated thunderstorm wind gusts of 60 mph.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Burleigh County

Sterling	07	1345CST 1348CST			0	0	0.00K	0.00K	Hail (1.00)
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Burleigh County

Sterling	07	1345CST 1349CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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The public estimated thunderstorm wind gusts of 60 mph.

A strong short wave trough approached central North Dakota and combined with a moist and unstable air mass to produce thunderstorms, with a few becoming severe over south central North Dakota. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

NORTH DAKOTA, East

Ramsey County

4 NE Garske	04	0440CST			0	0			Hail (1.50)
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Most of the hail was dime to nickel sized.

Cavalier County

2 W Nekoma	04	0530CST			0	0			Hail (1.00)
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Grand Forks County

1 W Grand Forks	04	2109CST			0	0			Heavy Rain
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Heavy rain fell near the intersection of Cherry street and 40th avenue south, causing a lot of runoff. A nearby Davis weather station measured 3.65 inches of rain.

Grand Forks County

Grand Forks	04 05	2200CST 0130CST			0	0	0.00K	0.00K	Flash Flood
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Heavy rain fell in multiple waves during the late afternoon and evening hours, with three to six inches measured at various locations across the city. The heavy rain produced widespread and deep flooding of streets and underpasses. A local area emergency was declared by the Grand Forks Police Department around 1030 CST, and residents were advised not to travel until the flood waters abated.

Early in the morning of September 4th, an area of surface low pressure was located near Mobridge, South Dakota. North-northeast of this low, a frontal boundary extended up into northeast North Dakota. With the aid of a low level jet and good moisture surge, thunderstorms formed around the Devils Lake region and tracked east-northeast, dropping large hail.

Sargent County

2 NNW Stirum	07	1400CST			0	0			Hail (1.75)
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Golf ball sized hail fell at Emmanuel Church near Stirum.

Sargent County

3 N Stirum	07	1400CST			0	0			Hail (1.75)
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Ping pong to golf ball sized hail fell.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH DAKOTA, East

Sargent County

5 NW Gwinner

07	1405CST				0	0			Thunderstorm Wind (78EG)
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Downburst winds caved in the side of a large steel grain bin, partially separating the bin from its concrete pad. Several large trees were snapped or uprooted in the nearby shelterbelt. Several sections of cropland across northern Vivian and Whitestone Hill townships were severely damaged by wind driven hail.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

Ransom County

7 SSE Elliott

07	1406CST				0	0			Thunderstorm Wind (100EG)
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Several sections of cropland across southern Bale Township were heavily damaged by downburst winds and wind driven hail. Several farmsteads were affected, with a machine shed and a pole barn completely destroyed. One tractor was tipped on its side and a half dozen power poles were snapped. Several large steel grain bins were crushed while numerous trees were snapped or uprooted. Widespread downburst winds of up to 115 mph were estimated at some locales.

Note: The estimated wind gust of 100 knots is equivalent to 115 mph.

Ransom County

7 SSE Lisbon

07	1412CST				0	0			Thunderstorm Wind (100EG)
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Over a dozen power poles were either cracked or snapped off along highway 32. Large steel grain bins were popped off their pads and crushed. Numerous large trees were snapped or uprooted in shelterbelts. One trailer home was tipped over. In addition, several sections of cropland across southern and central Aliceton Township were heavily damaged by wind driven hail. Widespread downburst winds of from 80 to 90 mph were likely with peak winds to 115 mph estimated at some locales.

Note: The estimated wind gust of 100 knots is equivalent to 115 mph.

Ransom County

9 WSW McLeod

07	1419CST				0	0			Thunderstorm Wind (56EG)
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A road sign was blown over and a few pieces of tin roofing were torn up on a nearby calf shed. Occasional large branches were blown down in area shelterbelts.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Ransom County

1 N McLeod

07	1434CST				0	0			Thunderstorm Wind (52EG)
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A few large tree branches and limbs were blown down in shelterbelts.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Richland County

14 WNW Colfax Kuruc Arpt

07	1442CST				0	0			Thunderstorm Wind (56EG)
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Several large tree branches were broken down in shelterbelts. In northern Freeman Township, one small shed was tipped over while some tin roofing was blown off a barn.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Richland County

8 N Wyndmere

07	1450CST				0	0			Hail (1.00)
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The hail fell along highway 18.

Richland County

11 WNW Colfax Kuruc Arpt

07	1450CST				0	0			Thunderstorm Wind (52EG)
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Several large tree branches and limbs were blown off in shelterbelts across southwest Viking Township.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Richland County

1 S Wyndmere

07	1500CST				0	0			Hail (2.00)
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Richland County

5 W Colfax

07	1505CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Several large tree branches were blown down in a shelterbelt. A nearby power pole was cracked and the power line was taken down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Cass County

3 SW Hickson

07	1510CST				0	0			Thunderstorm Wind (52EG)
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Large branches and power lines were blown down at a farmstead.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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NORTH DAKOTA, East

Cass County 2 WNW Fargo

07	1600CST 1630CST				0	0			Heavy Rain
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Over an inch of rain fell in thirty minutes, flooding poorly drained streets and underpasses.

Cloud cover helped to hold down afternoon temperatures on August 7th, so highs stayed mainly in the low to mid 70s with dew points around 60. However, there was a decent upper level disturbance that worked into the area as well. Thunderstorms across western and central North Dakota spread east through the late morning and early afternoon, and formed several bowing segments as they did so. One bowing segment started in northwest Sargent County, ND, then tracked northeast into southern Cass County, ND, and northern Wilkin County, MN. This storm produced very strong winds, large hail, and brief heavy rain.

OHIO, East

Coshocton County 1 SSW Plainfield

10	1820EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Local law enforcement reported trees down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Harrison County 1 WSW Robyville

10	1905EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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State official reported trees down along Foxes Bottom Road.

Line of showers and thunderstorms moved across the Upper Ohio valley in the evening on the 10th. With dry air and relatively strong winds aloft, wind damage was the main threat as lapse rates steepened. A few bowing segments produced wind damage across parts of Ohio and especially over Northwest Pennsylvania in Mercer County where trees were reported down county wide. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Belmont County 1 S Captina Is

29	1405EST				0	0	0.00K	0.00K	Hail (1.25)
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Belmont County 1 S Captina Is

29	1405EST				0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
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Social media reported 1 large tree snapped.

Stacked low pressure, pivoting over the Ohio valley, helped to sweep a boundary across the region on the 29th. With modest instability and deep layer shear, some storms were able to maintain themselves to severe thresholds. Both hail and wind damage was reported with storms over eastern Ohio and northern West Virginia. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

OHIO, North

Crawford County Bucyrus

10	1430EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds snapped a telephone pole.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Crawford County Galion

10	1438EST				0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed a tree.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Huron County Willard

10	1448EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed a couple trees and some large limbs. A power line was also knocked down causing some power outages.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lorain County Avon

10	1523EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds toppled a tree. The tree landed on a house causing damage.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lorain County Oberlin

10	1528EST				0	0	50.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed trees and large limbs in Oberlin. Scattered power outages were reported as well.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OHIO, North

Cuyahoga County

2 WSW North Olmsted Highland Hgts	10	1550EST 1610EST			0	0	200.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed trees and limbs across all of Cuyahoga County resulting in scattered power outages. At the peak of the storm several thousand customers were without power.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Richland County

2 NW Kings Corners	10	1555EST			0	0	0.00K	1.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed a tree.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Ashland County

2 NNE Five Pts	10	1557EST			0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed a tree.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lake County

Wickliffe	10	1615EST			0	0	25.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed a few trees and limbs resulting in some power outages.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Knox County

Fredericktown	10	1618EST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed several trees and large limbs.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lake County

Painesville Concord	10	1624EST 1632EST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed trees in Painesville and Concord Township.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Summit County

Copley	10	1640EST			0	0	0.00K	0.00K	Hail (0.88)
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Nickel sized hail was observed.

Summit County

Akron Stow	10	1640EST 1645EST			0	0	50.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed trees and limbs in the Akron and Stow areas resulting in scattered power outages. At the peak of the storm a few thousand customers were without power.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wayne County

1 W Wooster	10	1655EST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A trained spotter estimated thunderstorm wind gusts at 60 mph.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Geauga County

1 SE Newbury	10	1704EST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm wind gusts were estimated at 60 mph. A few tree limbs were reported down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Ashtabula County

Rock Creek 2 NE Pierpont	10	1711EST 1724EST			0	0	30.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed trees and limbs throughout Ashtabula County.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
<u>OHIO, North</u>									
Mahoning County									
Boardman	10	1815EST			0	0	20.00K	0.00K	Thunderstorm Wind (50EG)
	Thunderstorm winds downed trees and limbs resulting in scattered power outages.								
	A strong cold front moved across northern Ohio on September 10th causing a line of thunderstorm to develop. Portions of the line became severe and some damage was reported. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
<u>OHIO, Southwest</u>									
Butler County									
1 SE Mc Gonigle	08	2035EST 2037EST			0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
	A couple of trees were blown down. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Butler County									
Seven Mile	08	2145EST 2245EST			0	0	0.00K	0.00K	Flash Flood
	Over a foot of water was flowing across U.S. Route 127.								
Warren County									
1 W Lebanon	08	2205EST 2235EST			0	0	0.00K	0.00K	Flash Flood
	Moderate street flooding was reported in Lebanon.								
Butler County									
1 WNW Reily	08 09	2315EST 0015EST			0	0	0.00K	0.00K	Flash Flood
	Water was surrounding homes along Sample Road. Showers and thunderstorms moved slowly east along a stalled out boundary that was in place across the Ohio Valley.								
Butler County									
1 NW Okeana	09	0430EST 0630EST			0	0	0.00K	0.00K	Flood
	Residual high water was reported on a few roadways in the area. Flooding issues lingered through the day from heavy rainfall that fell the night before.								
Clark County									
1 NNW Crystal Lakes	10	1450EST 1452EST			0	0	0.50K	0.00K	Thunderstorm Wind (45EG)
	A tree was downed on Lake Shore Drive. Note: The estimated wind gust of 45 knots is equivalent to 52 mph.								
Montgomery County									
1 NNW Moraine	10	1457EST 1459EST			0	0	0.50K	0.00K	Thunderstorm Wind (45EG)
	A tree and powerline were downed on Richley Avenue. Note: The estimated wind gust of 45 knots is equivalent to 52 mph.								
Clark County									
1 SW Catawba	10	1509EST 1511EST			0	0	0.50K	0.00K	Thunderstorm Wind (45EG)
	A tree was downed on Runyon Road. Note: The estimated wind gust of 45 knots is equivalent to 52 mph.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
OHIO, Southwest									
Hamilton County									
Indian Hill Vlg	10	1527EST 1529EST			0	0	0.50K	0.00K	Thunderstorm Wind (45EG)
A tree was downed on Weil Road. Note: The estimated wind gust of 45 knots is equivalent to 52 mph.									
Union County									
1 N Marysville	10	1529EST 1531EST			0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
Several trees were downed in Marysville. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Butler County									
1 WNW Hamilton	10	1530EST 1630EST			0	0	0.00K	0.00K	Flash Flood
There were several reports of high water in Hamilton with street flooding as deep as 12 inches.									
Union County									
2 ESE Dipple	10	1536EST 1538EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
Several large tree limbs were downed. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Clermont County									
2 SSE Withamsville	10	1552EST 1602EST			0	0	8.00K	0.00K	Thunderstorm Wind (50EG)
Numerous trees were downed across west central portions of Clermont County. A tree fell onto a car, blocking Bradbury Road between 9 Mile Road and 10 Mile Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Clermont County									
2 NE Wiggonville	10	1615EST 1617EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
Several trees were downed near Sodom and Patterson Roads. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Scioto County									
1 WNW Portsmouth	10	1741EST 1743EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
Three large trees were downed in Portsmouth. Another tree was downed onto southbound U.S. Route 23. Showers and thunderstorms developed during the afternoon hours as a cold front moved through the region. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Pickaway County									
South Bloomfield	18	1745EST 1845EST			0	0	0.00K	0.00K	Flash Flood
State Routes 316 and 752 were closed due to high water in the South Bloomfield area.									
Licking County									
1 W Newark	18	1845EST 1945EST			0	0	0.00K	0.00K	Flash Flood
A passenger was stuck in a vehicle on Moull Street due to high water.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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OHIO, Southwest

Licking County

1 E Fleatown

18	1900EST 2000EST				0	0	0.00K	0.00K	Flash Flood
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An estimated 2 feet of water was covering Tammy Louise Drive.

Pickaway County

Ashville

18	2000EST 2100EST				0	0	0.00K	0.00K	Flash Flood
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Cromley Street was closed due to high water.

Isolated Thunderstorm developed in a warm and humid airmass over central Ohio during the late afternoon and evening hours.

Scioto County

1 ENE Pond Run

29	1734EST 1736EST				0	0	0.00K	0.00K	Hail (0.88)
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An upper level low pressure system rotating over the Ohio Valley produced isolated thunderstorms.

OKLAHOMA, Eastern

Pittsburg County

1 ESE Haileyville

14	1130CST				0	0	0.00K	0.00K	Hail (1.00)
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Thunderstorms developed across southeastern Oklahoma on the 14th, along and ahead of a slow moving cold front. The strongest storms produced large hail.

Sequoyah County

1 SE Sallisaw

16	1657CST				0	0	5.00K	0.00K	Thunderstorm Wind (56EG)
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Strong thunderstorm wind snapped large tree limbs, blew down power poles, and damaged portable buildings in Sallisaw.

Thunderstorms developed across portions of eastern Oklahoma during the afternoon of the 16th. The strongest storms produced damaging wind. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Pittsburg County

Pittsburg

17	1850CST				0	0	10.00K	0.00K	Thunderstorm Wind (52EG)
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Strong thunderstorm wind damaged the roof of a school.

Thunderstorms developed across southeast Oklahoma during the late afternoon of the 17th, as a cold front moved into the region. The strongest storms produced damaging wind. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

OKLAHOMA, Extreme Southeast

Mccurtain County

4 SE Ringold

17	2015CST				0	0	25.00K	0.00K	Thunderstorm Wind (65EG)
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Numerous trees were blown down along with power lines. A roof was blown off a home in the Ringold community.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Mccurtain County

2 SSE Slim

17	2035CST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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Numerous trees and powerlines were downed north of Valliant, Oklahoma.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Mccurtain County

1 W Boss

17	2110CST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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A 58 mph gust was measured by the Idabel, Oklahoma Mesonet station.

Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Mccurtain County

1 S Haworth

17	2115CST				0	0	0.00K	0.00K	Thunderstorm Wind (58EG)
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Numerous trees and powerlines were downed in the Haworth, Oklahoma community.

Note: The estimated wind gust of 58 knots is equivalent to 67 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OKLAHOMA, Extreme Southeast

McCurtain County 2 NE America

17	2135CST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
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Numerous trees and powerlines were downed east of Haworth, Oklahoma.

Scattered showers and thunderstorms developed during the afternoon across Northeast Texas, Southeast Oklahoma, and Southwest Arkansas, which ignited with strong afternoon heating along a weak surface boundary extending from East-Central Texas to along the Red River of Southeast Oklahoma and Northeast Texas, to just north of the Arkansas-Louisiana state line. An isolated severe thunderstorm moved across eastern Upshur County Texas, which downed a few trees and damaged a barn north of Ore City. Later in the evening, a complex of showers and thunderstorms developed over Central Oklahoma along a shortwave trough that traversed east into Eastern Oklahoma and Western Arkansas in a continued unstable air mass. These storms were frequently severe across Southeast Oklahoma, downing numerous trees and power lines across Southwest and Southern McCurtain County, with trees also falling on homes and vehicles just north of Valliant. These storms gradually weakened as they moved into Southwest Arkansas after midnight. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

OKLAHOMA, Panhandle

OKZ002

Texas

23	1223CST				0	0	0.00K	0.00K	Wildfire
	1600CST								

The Rd. C Command wildfire began around 1223CST about seven miles north of Hough Oklahoma in Texas county. The wildfire started just north and just east of the intersection of C Road and N0815 Road. The wildfire consumed approximately two hundred and sixty acres and spread into a dry uncut corn field. The wildfire was caused by a combine belt bearing coming in contact with corn stalk materials. There was one structure that was threatened by the wildfire but was saved and the corn field was also saved. However, no homes or other structures were damaged or destroyed and there were also no reports of any injuries or fatalities. The wildfire was contained around 1600CST and approximately four fire departments or other fire agencies responded to the wildfire including units from Guymon, Hooker, Hough, and Morton Kansas.

OKLAHOMA, Western Central and Southeast

Woods County

13 NNE Camp Houston

08	1805CST				0	0	0.00K	0.00K	Thunderstorm Wind (60MG)
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Storms formed near a front in Kansas and extended partly into northwest Oklahoma, producing a severe wind gust on the evening of the 8th. Note: The measured wind gust of 60 knots is equivalent to 69 mph.

Harper County

1 SW Buffalo

09	1800CST				0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Harper County

1 SW Buffalo

09	1805CST				0	0	0.00K	0.00K	Thunderstorm Wind (51MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Harper County

1 S Buffalo

09	1815CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Broadcast media via Twitter. Time estimated from tweet time and radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Woodward County

2 NW Woodward

09	1845CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

No damage reported.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Alfalfa County

2 W Burlington

09	1905CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The storm kicked up lots of dust.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Garfield County

1 NW Enid

09	2001CST				0	0	0.00K	0.00K	Hail (1.00)
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Garfield County

1 S (END)Vance Afb Enid

09	2014CST				0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
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Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OKLAHOMA, Western Central and Southeast

Garfield County

3 WSW (WDG) Woodring Arpt 09 2015CST 0 0 0.00K 0.00K Thunderstorm Wind (65MG)
 A 75 mph gust with 62 mph sustained wind was measured.
 Note: The measured wind gust of 65 knots is equivalent to 75 mph.

Kay County

8 E Newkirk 09 2040CST 0 0 0.00K 0.00K Thunderstorm Wind (53MG)
 Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Noble County

4 N Sumner 09 2055CST 0 0 0.00K 0.00K Thunderstorm Wind (52MG)
 Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Oklahoma County

2 S Nichols Hills 09 2130CST 0 0 1.00K 0.00K Thunderstorm Wind (52EG)
 Oklahoma City emergency manager reported power lines down near NW 48th street and Northwest Expressway. Time estimated by radar.
 Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Oklahoma County

1 E Luther 09 2136CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)
 Estimated 50 to 55 mph sustained winds and up to 60 mph gusts with blowing dust.
 Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Cleveland County

6 WNW Moore 09 2143CST 0 0 1.00K 0.00K Thunderstorm Wind (52EG)
 Oklahoma City emergency manager reported power lines down near South Meridian and I-44. Time estimated by radar.
 Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Grady County

2 SW Minco 09 2155CST 0 0 0.00K 0.00K Thunderstorm Wind (52MG)
 Storms formed along a southward moving cold front and traveled through Oklahoma and western north Texas on the evening of the 9th and overnight into the early hours of the 10th. A gust front formed ahead of these storms producing widespread gusty winds of 40 to 50 mph, with an occasional severe gust embedded. Note: The measured wind gust of 52 knots is equivalent to 60 mph.

OKZ031-041>043-047>048

Atoka - Coal - Hughes - Johnston - Murray - Pontotoc - Seminole

13 0000CST
 30 2359CST 0 0 0.00K Drought

Abnormally dry conditions allowed severe drought to reform over parts of south central Oklahoma, showing up on the drought monitor on the 13th and lasting into October.

Pontotoc County

1 NW Stonewall 15 1324CST
 1624CST 0 0 0.00K 0.00K Flash Flood

Several roads were closed due to flooding with some areas under two feet of water. No reports of flooding in homes or businesses.

Oklahoma County

(OKC)Will Rogers Apt 15 1428CST 0 0 0.00K 0.00K Thunderstorm Wind (59MG)
 Note: The measured wind gust of 59 knots is equivalent to 68 mph.

Caddo County

2 S Eakly 15 1716CST
 2016CST 0 0 0.00K 0.00K Flash Flood

Water covered the roadway at county road 2490 and highway 152.

Scattered storms formed across Oklahoma and north Texas on the 15th under the influence of an approaching upper low. Training storms resulted in some flooding.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OKLAHOMA, Western Central and Southeast

Beckham County

4 ESE Erick	17	1345CST			0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
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Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Caddo County

Carnegie	17	1518CST			0	0	2.00K	0.00K	Thunderstorm Wind (56EG)
----------	----	---------	--	--	---	---	-------	-------	--------------------------

Power poles were downed.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Oklahoma County

1 E (OKC)Will Rogers Apt	17	1540CST			0	0	0.00K	0.00K	Hail (1.00)
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Cleveland County

3 SSW Moore	17	1540CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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No damage reported.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Oklahoma County

3 ENE (OKC)Will Rogers Apt	17	1540CST			0	0	5.00K	0.00K	Thunderstorm Wind (65EG)
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An apartment roof was damaged and partially removed.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Cleveland County

2 SSW Moore	17	1541CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
-------------	----	---------	--	--	---	---	-------	-------	--------------------------

A few trees were snapped near SW 34th and Santa Fe.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Canadian County

Piedmont	17	1544CST			0	0	0.00K	0.00K	Hail (1.00)
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Blaine County

6 SSE Eagle City	17	1545CST			0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Cleveland County

1 S Moore	17	1545CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
-----------	----	---------	--	--	---	---	-------	-------	--------------------------

No damage reported.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Blaine County

2 SE Roman Nose St Park	17	1552CST			0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Cleveland County

3 SSW Moore	17	1552CST			0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
-------------	----	---------	--	--	---	---	-------	-------	--------------------------

No damage reported.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Mcclain County

Wayne	17	1640CST			0	0	10.00K	0.00K	Thunderstorm Wind (56EG)
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Two semi trucks were turned over on I-35 and power lines were downed near Highways 77 and 59.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Mcclain County

1 S Wayne	17	1640CST			0	0	5.00K	0.00K	Thunderstorm Wind (61EG)
-----------	----	---------	--	--	---	---	-------	-------	--------------------------

A business sustained roof damage.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Mcclain County

1 ESE Wayne	17	1640CST			0	0	10.00K	0.00K	Thunderstorm Wind (56EG)
-------------	----	---------	--	--	---	---	--------	-------	--------------------------

Winds caused tree damage to a Bradford Pear (8 inches) and an Oak (18 inches).

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Pontotoc County

Roff	17	1735CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
------	----	---------	--	--	---	---	-------	-------	--------------------------

Winds caused tree damage and power outages throughout the town of Roff.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OKLAHOMA, Western Central and Southeast

Johnston County

1 SSW Connerville

17	1811CST				0	0	5.00K	0.00K	Thunderstorm Wind (65EG)
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Winds partially removed a roof off a metal building.
Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Johnston County

Connerville

17	1813CST				0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Johnston County

4 WSW Bromide

17	1822CST				0	0	1.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Winds damaged a metal building.
Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Johnston County

2 WSW Bromide

17	1822CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Trees downed in camp Simpson.
Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Roger Mills County

1 W Cheyenne

17	2303CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

No damage reported.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Tillman County

3 W Grandfield

18	0140CST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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Two storm systems formed off the Rockies under the influence of an upper level trough and traversed across Oklahoma and western North Texas. The first came across during the afternoon and evening hours of the 17th as a disorganized area of storms. The second came across overnight into the early hours of the 18th as a line of storms. Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Beckham County

2 SE Elk City

24	1554CST 1854CST				0	0	0.00K	0.00K	Flash Flood
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Comanche County

2 SSW Lawton

24	1954CST 2254CST				0	0	0.00K	0.00K	Flash Flood
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Eight to ten inch deep water was flowing across SW 11th and Tennessee street in southern portions of Lawton.

Comanche County

2 WSW Lawton

24	2000CST 2300CST				0	0	0.00K	0.00K	Flash Flood
----	--------------------	--	--	--	---	---	-------	-------	-------------

Vehicle was stranded in high water at the intersection of Sheridan and Lee boulevard.

Comanche County

1 SSW Lawton

24	2010CST 2310CST				0	0	0.00K	0.00K	Flash Flood
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High water rescue at the intersection of SW 9th and SW Washington avenue.

As a large upper trough moved through and combined with some tropical moisture, abundant rainfall produced flooding across the area on the 24th.

OREGON, Central and East

ORZ506

Ochoco-John Day Highlands

01	0000PST								
07	2300PST				0	0	0.00K	0.00K	Wildfire

The Rail Fire, five miles west of Unity, Oregon, began on Sunday, July 31st. The cause is unknown and under investigation. The majority of the fuel in this area is mixed conifer with dead lodgepole. Portions of this area are part of the 2002 Monument fire. Over many weeks, in spite of suppression effort by the Wallowa-Whitman and Malheur National Forests, the fire grew to 41,716 acres. On September 7, 2016 it was 95% contained.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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OREGON, Southwest

ORZ029

Klamath Basin

04	0200PST 0600PST				0	0	0.00K	0.00K	Frost/Freeze
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Clearing skies and a cold air mass allowed temperatures to drop below freezing over portions of south central Oregon.

05	0200PST 0700PST				0	0	0.00K	0.00K	Frost/Freeze
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ORZ031

Central & Eastern Lake

05	0200PST 0700PST				0	0	0.00K	0.00K	Frost/Freeze
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Clearing skies and a cold air mass allowed temperatures to drop below freezing over portions of south central Oregon.

PENNSYLVANIA, Central

Warren County

Warren

10	1955EST				0	0	8.00K	0.00K	Thunderstorm Wind (52EG)
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A severe thunderstorm produced winds estimated near 60 mph, knocking down numerous trees and wires on Liberty Street in Warren.

A cold front pushed into an unseasonably warm and humid air mass during the evening hours, generating a line of thunderstorms that pushed into northwestern Pennsylvania. Gusty winds associated with a cell in this line of storms knocked down trees in parts of Warren County. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Warren County

1 ESE Scandia

17	1735EST				0	0	6.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm producing winds estimated near 60 mph knocked down trees and wires on Peterson Road near Scandia.

Modest instability combined with moderate deep-layer and low-level shear to produce an isolated severe thunderstorm over Warren County in an unseasonably humid air mass ahead of an approaching cold front. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Warren County

1 SE Scandia

2 ESE Russell Scandia Arprt

17	1735EST 1740EST	1.6	40	0	0	20.00K	0.00K	Tornado (EF1)
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The National Weather Service in State College confirmed an EF1 tornado occurred near Scandia in Warren County Pennsylvania on September 17, 2016. Most of the damage was in the EF0 category, with lots of trees down and snapped off above the ground. A few larger trees were uprooted. Half of a very large metal equipment garage which was bolted to the concrete was torn away and moved 150 to 200 yards to the north into a tree line. This damage is more-consistent with an EF1 tornado with peak wind speeds around 110 MPH.

The tornado touched down at approximately 635 PM EDT around one-half mile southeast of the intersection of Scandia and Peterson Roads in northeastern Warren County. The tornado progressed to the east, crossing Peterson Rd, making damage to trees before moving across a farm field. The tornado picked up half of a large pole barn/garage and moved the debris 200 yards to the north into a stand of trees. Substantial tree damage was observed along a line of trees bordering the farm field to the east of the pole barn. Additional sporadic tree damage was observed for another mile or so. The end-point of the damage was determined using GPS locations and photographs of damage from residents along trails leading through the woods to the North Branch of Hodge Run.

Modest instability combined with moderate deep-layer and low-level shear to produce a severe thunderstorm that spawned an EF1 tornado near Scandia, Warren County in an unseasonably humid air mass ahead of an approaching cold front.

Lycoming County

Elimsport

18	1727EST				0	0	4.00K	0.00K	Thunderstorm Wind (52EG)
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A severe thunderstorm producing winds estimated near 60 mph knocked down multiple wires near Elimsport.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
----------	------	----------------------------	---------------------------	--------------------------	--------------------------------	---------	---------------------------------	-------	--------------------

PENNSYLVANIA, Central

Lycoming County Elimsport

18	1730EST				0	0	1.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm producing winds estimated near 60 mph knocked down a large tree near Elimsport.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Lycoming County 1 SSW Montgomery

18	1745EST				0	0	8.00K	0.00K	Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A severe thunderstorm producing winds estimated near 80 mph knocked down multiple trees near Montgomery.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Lycoming County 1 ESE Muncy

18	1755EST				0	0	75.00K	0.00K	Thunderstorm Wind (78EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

A severe thunderstorm producing a wet microburst with straight line winds estimated near 90 mph knocked down numerous trees and wires in Muncy. Three buildings received significant roof damage as well.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

Lycoming County Muncy

18	1800EST				0	0	25.00K	0.00K	Thunderstorm Wind (78EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

A severe thunderstorm producing winds estimated near 90 mph knocked down numerous wires and damaged some roofs near Muncy High School.

A weak cold front encountered an unseasonably humid air mass over central Pennsylvania and produced isolated severe thunderstorms the evening of Sunday, September 18, 2016. Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

PENNSYLVANIA, East

Berks County (RDG)Spaatz Fld Read

19	0559EST				0	0			Heavy Rain
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Two a quarter inches of rain fell.

Berks County 1 SW Bernville

19	0600EST				0	0			Heavy Rain
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Three and a half inches of rain fell in 24 hours.

Berks County 1 NNW Hamburg

19	0600EST				0	0			Heavy Rain
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Just over 3 inches of rain fell in 24 hours.

Berks County 2 W Dauberville

19	0600EST				0	0			Heavy Rain
----	---------	--	--	--	---	---	--	--	------------

Three and a quarter inches of rain fell in 24 hours.

Monroe County 1 N Rossland

19	0600EST				0	0			Heavy Rain
----	---------	--	--	--	---	---	--	--	------------

Just over two inches of rain fell in 24 hours.

Monroe County 2 NE Rossland

19	0653EST				0	0			Heavy Rain
----	---------	--	--	--	---	---	--	--	------------

Just over 3 inches of rain fell in 24 hours.

Philadelphia County 2 ESE Manayunk 1 WNW Germantown

19	0654EST 0954EST				0	0	0.00K	0.00K	Flood
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Lincoln drive was flooded.

Berks County (RDG)Spaatz Fld Read

19	0654EST				0	0			Heavy Rain
----	---------	--	--	--	---	---	--	--	------------

Just over 3 inches of rain fell in 24 hours.

Berks County 1 N Hamburg

19	0751EST				0	0			Heavy Rain
----	---------	--	--	--	---	---	--	--	------------

Three inches of rain fell.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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PENNSYLVANIA, East

Chester County

Exton	19	0834EST			0	0			Heavy Rain
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Just over two inches of rain fell.

Chester County

1 W Atglen	19	0846EST			0	0			Heavy Rain
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Two inches of rain fell.

Carbon County

1 E Ashfield	19	0955EST			0	0			Heavy Rain
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Just over 2 inches of rain fell in 24 hours.

Carbon County

2 E Little Gap	19	1050EST			0	0			Heavy Rain
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Almost two and a half inches of rain fell in 24 hours.

Chester County

Marshallton	19	1327EST			0	0			Heavy Rain
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Just over 2 inches of rain fell.

Berks County

(RDG)Spaatz Fld Read	20	0133EST			0	0			Heavy Rain
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Just over 2 inches of rain fell.

The remnants of tropical storm Julia and a frontal boundary interacted leading to several rounds of rainfall over the region.

PENNSYLVANIA, Northwest

Erie County

2 SW Itley	08	1502EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds damaged a barn roof northeast of Edinboro.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Crawford County

Meadville Spartansburg	08	1522EST			0	0	8.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed a few trees in the Meadville and Spartansburg areas.

A cold front moved across western Pennsylvania on September 8th causing a line of thunderstorms to develop. Segments of the line became severe and some damage was reported. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Crawford County

Meadville	10	1810EST			0	0	25.00K	0.00K	Thunderstorm Wind (50EG)
------------------	----	---------	--	--	---	---	--------	-------	--------------------------

Thunderstorm winds downed a few trees and a couple power lines in the Meadville area.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Crawford County

2 SSE Blooming Vly	10	1824EST			0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed a tree.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Erie County

Mill Vlg	10	1828EST			0	0	12.00K	0.00K	Thunderstorm Wind (50EG)
-----------------	----	---------	--	--	---	---	--------	-------	--------------------------

Thunderstorm winds downed several trees.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Erie County

Wattsburg	10	1828EST			0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
------------------	----	---------	--	--	---	---	--------	-------	--------------------------

Thunderstorm winds downed several trees.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Crawford County

Meadville	10	1923EST			0	0	30.00K	0.00K	Thunderstorm Wind (50EG)
------------------	----	---------	--	--	---	---	--------	-------	--------------------------

Thunderstorm winds downed many trees across the county.

A strong cold front moved across western Pennsylvania on September 10th causing a line of thunderstorm to develop. Portions of the line became severe and some damage was reported. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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PENNSYLVANIA, Northwest

Crawford County

2 SW Meadville

17	1545EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed a few trees.
Showers and thunderstorms developed in advance of a cold front. Many of the thunderstorms became strong and at least one severe. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

PENNSYLVANIA, West

Venango County

1 E Cooperstown

08	1610EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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State official reported two trees down on Route 427.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Venango County

Oleopolis

08	1630EST				0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
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State official reported a large tree down on Eagle Rock Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Clarion County

2 W Mt Airy

08	1717EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Local 911 call center reported trees down on Callensburg Road, Cherry run Road, and Haley Lane.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Clarion County

Shippenville

08	1721EST				0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Local 911 reported a large tree down on Railroad Street in Shippenville.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Clarion County

1 SSE Clarion

08	1726EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Local 911 reported a tree down on wires on Bauer Road and a tree down at the intersection of Frampton Street and Campbell Avenue.
Weak shortwave and surface front supported the development of a line of showers and thunderstorms in the evening of the 8th. A portion of the thunderstorm line bowed out over Venango and Clarion counties, producing wind damage. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lawrence County

3 ESE New Wilmington

10	1836EST				0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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A trained spotter reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mercer County

1 E Hermitage

10	1837EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Local 911 reported trees down in Hermitage.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mercer County

2 NW Jackson Center

10	1845EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The public reported numerous trees and power lines down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mercer County

2 WNW Jackson Center

10	1845EST				0	0	10.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

Emergency manager reported 80-100 trees damaged/down near the intersection of Miller School Road and Coolspring Church Road. The damage is oriented SW to NE.
Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Mercer County

1 W Mercer

10	1845EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

Local 911 center reported trees down county wide.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mercer County

1 W Jackson Center

10	1847EST				0	0	2.50K	0.00K	Thunderstorm Wind (50EG)
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Amateur radio operator reported several trees down along Interest.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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PENNSYLVANIA, West

Venango County

1 WSW Mt Pleasant

10	1900EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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State official reported numerous trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Venango County

1 WNW Niles

10	1905EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

County official reported multiple trees down on Georgetown Road, which was closed.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Venango County

1 SE Franklin

10	1910EST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

State official reported multiple trees down county wide.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Venango County

1 ESE Reno

10	1913EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Trees were reported down on route 257 by a member of the public.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Forest County

1 E Tionesta

10	1933EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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The public reported a tree and wires down.
Line of showers and thunderstorms moved across the Upper Ohio valley in the evening on the 10th. With dry air and relatively strong winds aloft, wind damage was the main threat as lapse rates steepened. A few bowing segments produced wind damage across parts of Ohio and especially over Northwest Pennsylvania in Mercer County where trees were reported down county wide. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Butler County

2 ESE Bovard 1 SSW Arnandale

17	1840EST				0	0	10.00K	0.00K	Thunderstorm Wind (60EG)
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National Weather Service storm survey was conducted and several trees and large branches were found snapped and down along Branchton Road.
Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Lawrence County

Neshannock Falls

17	2010EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Local DOT reported trees down.
A northeast moving upper shortwave helped initiate scattered thunderstorms near a surface boundary. Good low level shear and marginal instability was enough to produce isolated wind damage in northwest Pennsylvania with cells that had supercellular structure. There was sporadic tree damage across northern Butler county as indicated by local county officials and by a local office storm survey. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

RHODE ISLAND

RIZ001

Northwest Providence

01	0000EST								
30	2359EST				0	0	0.00K	0.00K	Drought

September brought more dry weather and continued drought conditions to much of southern New England. For many, the drought began in July 2016. At this point, this is a drought categorized largely by well below normal precipitation and groundwater and agricultural impacts. Most of the region experienced below normal rainfall during the month of September. A drought advisory was in effect for the whole state of Rhode Island during the month of September. Soil moisture (measured by the Climate Prediction Center) was abnormally dry or drier. Groundwater conditions (measured by the United States Geological Survey) were found to be below to well below normal for most of Massachusetts. River and streamflow conditions were below to well below normal with 16 gage sites in southern New England at record low levels. Farmers have had to irrigate their crops much more than normal for September. While data thus far has been anecdotal, many farmers are having to choose which fields to irrigate and which to let go, as well as not doing 2nd and 3rd plantings of late summer crops. Providence County was declared a primary disaster county due to the drought. Farms in this county are eligible for assistance from the Farm Service Agency and the Livestock Forage Disaster Program.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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RHODE ISLAND

RIZ006

Washington

05	1233EST 1918EST				0	0	60.0K	0.00K	Tropical Storm
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RIZ001>005-007

Bristol - Eastern Kent - Newport - Northwest Providence - Southeast Providence - Western Kent

05	1301EST 1843EST				0	0	100.0K	0.00K	Strong Wind
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RIZ008

Block Island

05	1651EST 1751EST				0	0	0.00K	0.00K	Tropical Storm
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Hermine was named on August 31st as it intensified to a tropical storm in the Gulf of Mexico. She meandered about in the eastern Gulf of Mexico before moving northeastward across the Florida panhandle, through Georgia and then along the coast of North and South Carolina. She was a hurricane as she made landfall in Florida, then weakened to a tropical storm and finally a tropical depression as she moved off the coast of North Carolina. After moving off the coast of North Carolina, Hermine moved northeast, then north, then west, meandering south of southern New England for several days in early September.

While classified as a tropical system, Hermine's effects on southern New England were rather minimal. Rainfall added up to less than an inch for most locations and winds were generally below tropical storm force. Because trees were still fully leaved and we had higher wind gusts, there was some wind damage. Storm surge was highest during low tide so we had minimal coastal flooding impacts.

RIZ002>008

Block Island - Bristol - Eastern Kent - Newport - Southeast Providence - Washington - Western Kent

13	0700EST				0	0	0.00K	0.00K	Drought
30	2359EST				0	0	0.00K	0.00K	Drought

September brought more dry weather and continued drought conditions to much of southern New England. For many, the drought began in July 2016. At this point, this is a drought categorized largely by well below normal precipitation and groundwater and agricultural impacts. Most of the region experienced below normal rainfall during the month of September. A drought advisory was in effect for the whole state of Rhode Island during the month of September. Soil moisture (measured by the Climate Prediction Center) was abnormally dry or drier. Groundwater conditions (measured by the United States Geological Survey) were found to be below to well below normal. River and streamflow conditions were below to well below normal with 16 gage sites in southern New England at record low levels.

Farmers have had to irrigate their crops much more than normal for September. While data thus far has been anecdotal, many farmers are having to choose which fields to irrigate and which to let go, as well as not doing 2nd and 3rd plantings of late summer crops. Providence County was declared a primary disaster county due to the drought. Farms in this county are eligible for assistance from the Farm Service Agency and the Livestock Forage Disaster Program.

A somewhat unique situation to Tiverton is a lack of water to fight fires. Tiverton has no fire hydrants, so firefighters rely on nearby ponds and rivers for their tanker trucks. With ponds and rivers well below their normal levels, it has become more and more difficult for firefighters to draw water from these sources.

SOUTH CAROLINA, Central

SCZ030-035-041

Aiken - Bamberg - Barnwell - Orangeburg

02	0800EST 1900EST				0	1	0.00K	0.00K	High Wind
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH CAROLINA, Central

Lexington County

2 ESE Lexington

02	1130EST 1230EST				0	0	0.00K	0.00K	Flood
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Reported several roads closed due to high water. These included Edisto Drive at Pine Street...Burton Road at Railroad Avenue and Kleckley Road at Klapman Road.

SCZ027-031-038

Clarendon - Lexington - Richland - Sumter

02	1200EST 2300EST				0	0	15.0K	0.00K	High Wind
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Orangeburg County

2 NNW Orangeburg

02	1349EST 1549EST				0	0	10.00K	0.00K	Flash Flood
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County EM reported roadways due to rising water from creeks draining into Caw Caw Swamp Creek. These include Old Riley at Lakeside...Brookside Road...Myers Road at Caw Caw Creek and Railroad Corner Hwy. 601 and Russell Street.

Chesterfield County

1 WNW Chesterfield

02	1450EST 1550EST				0	0	2.00K	0.00K	Flash Flood
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Reported W. Main Street closed due to flooding in downtown Chesterfield.

Lexington County

Irmo

02	1501EST 1631EST				0	0	5.00K	0.00K	Flash Flood
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Spotter reported Kinley Creek in the Seven Oaks area exceeding its banks with water running over roadways.

Lexington County

2 WSW Irmo

02	1508EST 1700EST				0	0	5.00K	0.00K	Flash Flood
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Spotter reported Rawls Creek exceeding its banks in Irmo. Water approaching houses.

Richland County

1 WNW Myron Manor

02	1510EST 1610EST				0	0	2.00K	0.00K	Flash Flood
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Reported Trenholm Road closed between Wyndham Road and Tanglewood Road due to roadway flooding.

Aiken County

1 ENE Aiken

02	1516EST 1630EST				0	0	1.00K	0.00K	Flash Flood
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Reported the intersection of Richland Avenue and Gaston Road closed due to flooding.

Aiken County

1 N Aiken

02	1519EST				0	0	0.00K	0.00K	Heavy Rain
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Measured 5.0 inches of rain in Aiken.

Sumter County

2 WNW Sumter

02	1606EST 1700EST				0	0	0.50K	0.00K	Flash Flood
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The pond at Palmetto Park overflowed its banks and spilled into the Palmetto Pointe apartment complex parking lot.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH CAROLINA, Central

Sumter County 3 NW Sumter

02	1610EST 1700EST				0	0	5.00K	0.00K	Flash Flood
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Reported water covering the roadway near Clematis Trail and Shadow Trail. Water is 3 to 4 feet deep.

SCZ028

Richland

02	1625EST				0	0	1.0K		Strong Wind
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Sumter County 2 SW Quints Xrds

02	1643EST 1743EST				0	0	2.00K	0.00K	Flash Flood
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Reported that Law Enforcement closed portions of Hwy. 521 at the Hwy. 378 overpass due to flooding.

Clarendon County 1 ENE Panola

02	1705EST 1805EST				0	0	1.00K	0.00K	Flash Flood
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Reported flooding at Panola Road and Hardwood Drive.

Lexington County 2 WNW Swansea

02	1733EST 1833EST				0	0	5.00K	0.00K	Flash Flood
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Media reported Jones Wire Road was washed out.

Sumter County 3 NW Sumter

02	1755EST 1855EST				0	0	1.00K	0.00K	Flash Flood
----	--------------------	--	--	--	---	---	-------	-------	-------------

Media reported flooding along Sassafras Drive in Sumter. Water was 1 to 2 feet deep and covering the roadway. Roadway looked impassable from video.

Tropical Storm Hermine impacted the region, especially on the 2nd with heavy rain and strong gusty winds. The center of TS Hermine tracked to the NE across S and SE GA during the morning of Sept. 2nd, and across the coastal plain of SC during the afternoon and evening of the 2nd.

Lexington County Chapin

12	1519EST				0	0			Thunderstorm Wind (50EG)
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SC Highway Patrol reported a tree down near the intersection of Columbia Ave. and Peak St.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lexington County 1 WNW Arthur

12	1545EST 1600EST				0	0	0.10K	0.10K	Flood
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Street flooding reported on St Davids Church Rd and Bradley Dr.

Lexington County 2 NW Springdale 2 NE Arthur

12	1623EST 1638EST				0	0	0.10K	0.10K	Flood
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Street flooding on Hebron Drive and Leaphart Road.

Orangeburg County 2 E Orangeburg

12	1650EST 1830EST				0	0	400.00K	0.50K	Flash Flood
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Flash Flooding was reported in parts of Orangeburg. The water entered three county buildings, including the library, the courthouse and the law enforcement complex. The emergency manager estimates 40 structures were flooded, with 20 to 25 of them sustaining substantial damage. An apartment complex had 5 buildings with 2 to 3 feet of water in them. A daycare center also had 2 feet of water in the building. Numerous cars were also submerged.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH CAROLINA, Central

Lexington County

1 W Happy Town	12	1650EST 1705EST			0	0	0.10K	0.10K	Flood
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Street flooding reported on Hummingbird Drive and US 378.
Scattered thunderstorms developed along a stalled front over the area. An isolated severe thunderstorm produced wind damage. These thunderstorms also produced locally heavy rain and flooding.

Newberry County

1 N Boyds	19	1837EST			0	0			Thunderstorm Wind (60EG)
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County Dispatch reported trees and power lines down in the city of Newberry.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Lexington County

2 NE Lexington	19	1953EST			0	0			Thunderstorm Wind (55EG)
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Reported trees down along South Lake Drive and also along Old Chapin Road.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Lexington County

1 ENE Lexington	19	1959EST			0	0			Thunderstorm Wind (55EG)
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Lexington Police Department reported a tree down blocking travel near the intersection of Bellewood Drive and Harmon Street.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Richland County

1 SE Killian	19	2015EST			0	0			Thunderstorm Wind (55EG)
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Highway Patrol reported a tree down in the roadway along Hardscrabble Road near Sloan Road.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Richland County

1 NE Killian	19	2017EST			0	0			Thunderstorm Wind (55EG)
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Highway patrol reported a tree down along the 400 block of Longtown Road near Jilda Drive.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Richland County

1 NNE Pontiac Airstrip Arp	19	2020EST			0	0			Thunderstorm Wind (55EG)
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Skywarn spotter reported a tree down along Hickory Hills Trail near Pontiac.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Kershaw County

1 SW Elgin	19	2021EST			0	0			Thunderstorm Wind (55EG)
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Reported tree down along Hwy. 1 near the Richland County line.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Kershaw County

1 W Blaney	19	2027EST			0	0			Thunderstorm Wind (55EG)
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Highway Patrol reports a tree in the roadway on Steven Campbell Road near the intersection with Highway 1.

The Midlands and CSRA were between an approaching cold front and the remnants of Tropical Storm Julia. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Saluda County

2 S Mayson Saluda	28	0155EST 0400EST			0	0	35.00K	0.00K	Flash Flood
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Fruit Hill Road at Henley Road, Fruit Hill Road at Star Court, Larkin Rice Road between Gregory Lane and Old Chappells Ferry Road, and Hare Avenue at N. Bouknight Ferry Road all impassible and closed. Also, residents of 5 mobile homes were evacuated due to flooding at Mohawk Drive and S. Bouknight Ferry Road. A small amount of water entered 2 of the homes but no significant damage occurred.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH CAROLINA, Central

Fairfield County

Longtown

28	1513EST 1514EST				0	0			Thunderstorm Wind (50EG)
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Coop Observer reported a 50 foot pine tree downed by winds estimated between 55 and 60 mph. Also, reported dime size hail at the time.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Fairfield County

Longtown

28	1517EST 1518EST				0	0			Hail (1.00)
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Reported quarter size hail near Longtown.

Chesterfield County

2 NE Patrick

28	1632EST				0	0			Thunderstorm Wind (60EG)
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Reported trees blocking the roadway along Hwy. 1 east of Patrick.

A closed low across the Southeast and the associated surface low moved slowly across the area, producing locally heavy rainfall in parts of the western Midlands and northern Central Savannah River Area. An isolated strong to severe storm also occurred. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

SOUTH CAROLINA, North Coastal

Georgetown County

1 E Murrells Inlet

02	1400EST 1700EST				0	0	0.00K	0.00K	Flash Flood
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There was a partial washout of the road in front of Big Dave's Tackle.

Horry County

1 S Burgess

02	1445EST 1645EST				0	0	0.00K	0.00K	Flood
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Standing water was reported in the Shallow Creek Bay community. Water was covering sidewalks and some yards.

SCZ017-053-056

Coastal Georgetown - Coastal Horry - Inland Horry - Marlboro

02	1545EST 1639EST				0	0	18.0K	0.00K	Tropical Storm
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Hurricane Hermine made landfall as a minimal category 1 hurricane near the Florida Panhandle the night of September 1st. The hurricane weakened to a tropical storm as it moved up the eastern seaboard. The storm entered northeast SC the morning of September 2nd, and moved rapidly northeast. The storm produced very heavy rainfall with flash flooding, as well as some scattered reports of wind damage. Rainfall amounts averaged around six inches, with isolated amounts around ten inches. The highest wind gusts were around 55 mph.

Horry County

71 ESE Mechanicsville

14	1657EST 1900EST				0	0	0.00K	0.00K	Heavy Rain
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Over four inches of rain fell in the Lafayette Park Subdivision with some road flooding reported.

An old stationary frontal boundary produced heavy rain.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH CAROLINA, Northwest

SCZ004-010-019 Abbeville - Anderson - Greater Oconee - Greenwood

01	0000EST								
30	2359EST				0	0	0.00K		Drought

Drought conditions continued to deteriorate across western portions of Upstate South Carolina as the trend of well-below normal rainfall continued. Most locations within the drought stricken area saw less than a quarter inch of rainfall in September. The extremely dry weather combined with continued abnormally hot temperatures to produce significant impacts to agricultural interests, mainly to unirrigated corn crops and hay cutting operations. Stream flows and reservoir levels were well below normal across the area, and voluntary water restrictions remained in place in some communities.

Spartanburg County

Lyman
1 SW Inman

01	1610EST						0.00K	0.00K	Thunderstorm Wind (50EG)
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NWS employee reported a large tree blown down at Highways 292 and 29, and a couple of smaller trees down on Lyman Rd.

Scattered afternoon thunderstorms developed across Upstate South Carolina ahead of a cold front. One storm became briefly severe in Spartanburg County. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

SCZ012

Laurens

02	1600EST						20.0K	0.00K	Strong Wind
	1800EST				0	0			

Winds gusting to 25 to 40 mph in association with Tropical Storm Hermine, which was tracking across the South Carolina Coastal Plain, caused a few trees to fall across the Piedmont. One tree fell on a house on S Broad St in Clinton, while another fell on a house on Camp St in Laurens.

Anderson County

1 S Anderson

26	2020EST								Hail (0.75)
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Spotter reported 3/4 inch hail.

A line of showers and thunderstorms developed across Upstate South Carolina during the late afternoon and evening ahead of a cold front. One cell produced hail near Anderson.

Oconee County

2 ESE Westminster
Tokeena Xrds

27	1439EST						10.00K	0.00K	Thunderstorm Wind (50EG)
	1447EST				0	0			

Media reported a tree fell on a house on Seed Farm Rd in Westminster. County comms and public reported a couple of additional trees blown down in the Oakway area.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Cherokee County

6 NW Thicketty

27	1506EST						0.00K	0.00K	Thunderstorm Wind (52EG)
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NWS employee estimated 60 mph winds on Cashes Peach Rd.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Spartanburg County

2 NNW Sigsbee
2 NNW Whitney

27	1512EST								Hail (1.00)
	1524EST				0	0			

Public reported nickel to quarter size hail across the north side of Spartanburg, from Asheville Highway to the area just east of USC-Upstate.

Cherokee County

4 ESE Thicketty
5 SSW Draytonville

27	1558EST						0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	--	--	-------	-------	--------------------------

County comms reported a tree blown down on Owens Ln, and another tree down on Corinth Rd.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Anderson County

3 ENE Docheno

27	2210EST								Hail (1.25)
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Motorist reported at least half dollar sized hail.

Scattered afternoon and evening thunderstorms developed across Upstate South Carolina ahead of a stalled cold front. A few of the storms produced brief severe weather, mainly in the form of large hail, although a few damaging wind gusts also occurred.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH CAROLINA, South Coastal

SCZ040-042>045-048>050 **Allendale - Beaufort - Berkeley - Charleston - Dorchester - Hampton - Northern Colleton - Southern Colleton**

02	0500EST				0	1	250.0K	0.00K	Tropical Storm
	2200EST								

SCZ050

Charleston

02	1436EST				0	0		0.00K	Storm Surge/Tide
	1442EST								

Hermine developed as a Tropical Depression near the north coast of Cuba on August 28th. The depression then tracked westward into the central Gulf of Mexico and strengthened into a Tropical Storm. Hermine then tracked generally northeastward and strengthened into a Hurricane. According to the National Hurricane Center, Hermine made landfall as a Category 1 Hurricane at 1:30 am EDT on September 2nd along the Florida Big Bend coast just east of St. Marks, Florida, near the Wakulla-Jefferson County line. Hermine continued on a northeastward track across the Florida panhandle and into southeast Georgia and southeast South Carolina, gradually weakening back to a Tropical Storm. Across southeast Georgia and southeast South Carolina, the main impacts from Hermine included heavy rain and wind damage in the form of scattered to numerous trees being blown down. Storm total rainfall amounts generally ranged from 2 to 8 inches across the region, including a daily record rainfall of 2.32 inches at the Charleston International Airport. The wind damage produced numerous power outages and even some damage to homes and other structures throughout the area. Hermine spawned 2 tornadoes, and produced a 1.5 to 2.5 foot storm surge along the coast, though no flooding was reported.

Berkeley County
3 N Ladson

11	1705EST				0	0	5.00K	0.00K	Lightning
	1706EST								

Berkeley County dispatch reported that lightning hit a house in the Tall Pines subdivision and resulted in a fire in the attic.

Jasper County
3 WNW Ricetown

11	1806EST				0	0		0.00K	Thunderstorm Wind (50EG)
	1807EST								

Jasper County dispatch reported a tree down across power lines near the intersection of Grays Highway and Calf Pen Bay Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Jasper County
2 ESE Pineland

11	1808EST				0	0		0.00K	Thunderstorm Wind (50EG)
	1809EST								

South Carolina Highway Patrol reported a tree down near the intersection of Cohen Road and Calf Pen Bay Road.

A broken line of scattered thunderstorms developed in the afternoon hours across southeast South Carolina. These storms persisted and moved eastward into the evening with a few storms producing strong wind gusts and frequent lightning. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

SOUTH DAKOTA, Central and North

Stanley County
5 NW Ft Pierre

04	1601MST				0	0	0.00K	0.00K	Hail (1.00)
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Jones County
13 E Westover

04	1731CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Sixty mph winds were estimated.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Lyman County
5 W Presho

04	1755CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Sixty mph winds were estimated.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Campbell County
4 E Mound City

04	1856CST				0	0			Hail (1.75)
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH DAKOTA, Central and North

Hand County

1 NW Miller Arpt 04 1915CST 0 0 0.00K 0.00K Thunderstorm Wind (50MG)
Severe thunderstorms developed during the evening hours along a stationary front extending across central South Dakota. Large hail up to golf ball size along with wind gusts to sixty mph occurred with these storms. Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Faulk County

7 N Zell 07 1750CST 0 0 0.00K Hail (0.75)
Hail caused some minor damage to the bean crop.

Spink County

4 NNE Redfield 07 1806CST 0 0 Hail (2.50)

Spink County

4 SSW Ashton 07 1807CST 0 0 Hail (1.75)

Spink County

1 NW Deiter Arpt 07 1813CST 0 0 Hail (1.75)

Spink County

1 E Deiter Arpt 07 1820CST 0 0 0.00K 0.00K Hail (0.88)

Spink County

Frankfort 07 1825CST 0 0 0.00K 0.00K Hail (0.88)
A cold front moving across the region brought some thunderstorms which produced up to tennis ball size hail.

Lyman County

8 SSW Kennebec 08 1915CST 0 0 0.00K 0.00K Hail (1.25)
An isolated thunderstorm produced half dollar size hail.

SOUTH DAKOTA, Southeast

Minnehaha County

1 N Buffalo Trading Post 04 2311CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)
Thunderstorm winds caused tree damage, including up to 6 inch diameter branches blown down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Bon Homme County

1 WNW Springfield 04 2315CST 0 0 1.00M 0.00K Thunderstorm Wind (96EG)
Thunderstorms winds destroyed about 6 houses, severely damaged several other houses and shops, destroyed or damaged several unattached garages, destroyed farm outbuildings and other farm structures, caused widespread tree damage, including numerous trees blown down, moved a large boat 25 yards from a parked position, damaging the boat, and damaged or destroyed outdoor furniture.

Note: The estimated wind gust of 96 knots is equivalent to 110 mph.

Yankton County

1 S (YKN)Chan Gurney Arp 04 2345CST 0 0 0.00K 0.00K Thunderstorm Wind (53MG)
Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Turner County

1 E Irene 04 2351CST 0 0 0.00K Thunderstorm Wind (56EG)
Thunderstorm winds caused widespread tree damage.
Thunderstorms producing damaging winds affected part of southeast South Dakota, from the Missouri River to near Sioux Falls, around midnight between September 4th and 5th. The winds produced considerable damage at Springfield in Bon Homme County. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Clay County

1 E Davidson Arpt 07 0215CST 0 0 0.00K 0.00K Flash Flood
1 NE Vermillion 0400CST

Thunderstorms produced heavy rain, which caused flash flooding of several streets, especially at some intersections.

Thunderstorms caused flash flooding of streets in Vermillion in Clay County of southeast South Dakota before daybreak on the morning of September 7th.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH DAKOTA, Southeast

Beadle County

2 WSW Cavour 09 0040CST 0 0 0.00K 0.00K Hail (1.00)
Quarter size hail was accompanied by heavy rain.

Hutchinson County

1 S Freeman 09 0450CST 0 0 0.00K Hail (1.75)
Golf ball size hail was measured.
Thunderstorms produced large hail at two locations, one each in Beadle and Hutchinson Counties, between midnight and daybreak on September 9th.

Lincoln County

3 ENE Tea 15 1120CST 0 0 10.00K 0.00K Flash Flood
2 W Shindler 1600CST

Heavy rain of up to 6 inches caused flash flooding in southern Sioux Falls, and near Tea and Harrisburg. Several streets were flooded, especially at intersections, and several vehicles stalled in the water. Ditches, yards, and parkland were also flooded. The flooding affected one elementary school.

Bon Homme County

2 WSW Tyndall 15 1200CST 0 0 0.00K 0.00K Flash Flood
1330CST

Heavy rainfall of over 4 1/2 inches caused widespread street flooding in Tyndall.

Yankton County

1 SW Lesterville 15 1221CST 0 0 0.00K 0.00K Flash Flood
1500CST

Heavy rain caused widespread street flooding in and near Lesterville.

Minnehaha County

4 NNW Sioux Falls Sky Have 15 1223CST 0 0 10.00K 0.00K Flash Flood
3 SE Sioux Falls 1600CST

Heavy rain of up to 7 inches caused flash flooding in and near Sioux Falls. Several streets were flooded, especially at intersections, and several vehicles stalled in the water. Ditches, yards, and parkland were also flooded.

Yankton County

2 WSW Yankton 15 1357CST 0 0 0.00K 0.00K Flash Flood
1500CST

Heavy rain caused street and yard flooding in Yankton.

Thunderstorms produced heavy rain of several inches during the late morning and afternoon of September 15th. The heavy rain caused flash flooding in Bon Homme County, Yankton County, and in the Sioux Falls area in Minnehaha and Lincoln Counties.

SOUTH DAKOTA, West

Oglala Lakota County

5 SW Sharps Corner 03 1840MST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)
Wind gusts were estimated at 60 mph.
A severe thunderstorm developed across southern Oglala Lakota County and tracked northeastward before weakening. The storm produced strong wind gusts to 60 mph. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Oglala Lakota County

4 E Pine Ridge 04 1345MST 0 0 0.00K Hail (1.00)
1400MST

Oglala Lakota County

4 NNW Pine Ridge 04 1348MST 0 0 0.00K 0.00K Hail (0.88)
1400MST

A severe thunderstorm developed over southern Oglala Lakota County and tracked east into Bennett County. The storm produced hail around quarter size and strong wind gusts from the Pine Ridge area to west of Martin.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
SOUTH DAKOTA, West									
Jackson County									
5 SSW Wanblee	04	1424MST			0	0	0.00K		Hail (1.00)
A severe thunderstorm developed over southwestern Jackson County and tracked northeastward across Mellette County before weakening as it moved further east. This storm produced hail to quarter size and wind gusts around 60 mph.									
Bennett County									
3 SSE Allen	04	1445MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Small hail also fell with the storm. A severe thunderstorm developed over southern Oglala Lakota County and tracked east into Bennett County. The storm produced hail around quarter size and strong wind gusts from the Pine Ridge area to west of Martin. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Oglala Lakota County									
4 W Slim Butte	04	1610MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Wind gusts were estimated at 60 mph. A line of severe thunderstorms developed over Oglala Lakota County and tracked east across Jackson and Bennett Counties. Wind gusts of 60 to 65 mph were reported with the storms. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Mellette County									
1 NE Cedar Butte	04	1628CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Wind gusts were estimated around 60 mph. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Mellette County									
10 NNW White River	04	1655CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Wind gusts were estimated at 60 mph. A severe thunderstorm developed over southwestern Jackson County and tracked northeastward across Mellette County before weakening as it moved further east. This storm produced hail to quarter size and wind gusts around 60 mph. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Oglala Lakota County									
7 SSW Batesland	04	1701MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
The spotter estimated wind gusts at 60 mph. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Bennett County									
5 ENE Martin	04	1740MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Wind gusts were estimated at 60 mph. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Jackson County									
7 E Wanblee	04	1758MST			0	0	0.00K	0.00K	Thunderstorm Wind (58MG)
A line of severe thunderstorms developed over Oglala Lakota County and tracked east across Jackson and Bennett Counties. Wind gusts of 60 to 65 mph were reported with the storms. Note: The measured wind gust of 58 knots is equivalent to 67 mph.									
Haakon County									
1 NE Midland	04	1850MST			0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
A thunderstorm briefly became severe over eastern Haakon County, producing strong wind gusts in the Midland area. Note: The measured wind gust of 50 knots is equivalent to 58 mph.									
Todd County									
11 SW Parmelee	04	1858CST			0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
A line of severe thunderstorms developed over Oglala Lakota County and tracked east across Jackson and Bennett Counties. Wind gusts of 60 to 65 mph were reported with the storms. Note: The measured wind gust of 50 knots is equivalent to 58 mph.									
Tripp County									
5 NW Clearfield	04	2043CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Wind gusts snapped tree branches. A severe thunderstorm produced strong wind gusts over southern Tripp County. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Butte County									
10 N Belle Fourche Airport	05	1419MST 1425MST			0	0		0.00K	Hail (1.00)

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
SOUTH DAKOTA, West									
Butte County									
10 N Belle Fourche Airport	05	1419MST 1425MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Wind gusts were estimated at 60 mph. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Butte County									
13 NNE Belle Fourche Airport	05	1440MST			0	0		0.00K	Hail (1.50)
Butte County									
8 SE Hoover	05	1504MST 1514MST			0	0		0.00K	Hail (1.75)
A severe thunderstorm tracked eastward across central Butte County before weakening over northern Meade County. The storm produced hail to golf ball size and strong wind gusts.									
Meade County									
13 NNW Sturgis Muni Arpt	05	1552MST			0	0	0.00K	0.00K	Hail (1.00)
Meade County									
3 W Union Center	05	1653MST			0	0	0.00K	0.00K	Thunderstorm Wind (51MG)
Hail to quarter size and wind gusts near 60 mph accompanied a severe thunderstorm as it tracked across western and central Meade County. Note: The measured wind gust of 51 knots is equivalent to 59 mph.									
Todd County									
20 ESE St Francis	08	1910CST			0	0		0.00K	Thunderstorm Wind (61EG)
Wind gusts were estimated at 70 mph at the Rosebud Casino. A severe thunderstorm developed across southern Todd County and produced wind gusts to 70 mph. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.									
Lawrence County									
Spearfish Arpt	14	1815MST			0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
A thunderstorm produced wind gusts around 60 mph in the Spearfish area. Note: The measured wind gust of 54 knots is equivalent to 62 mph.									
Meade County									
3 NNW Black Hawk	15	1340MST 1345MST			0	0		0.00K	Hail (1.00)
A thunderstorm briefly became severe and produced quarter sized hail in Summerset.									
Harding County									
4 N Ludlow	18	1410MST			0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
A shower produced wind gusts over 60 mph near the North Dakota border. Note: The measured wind gust of 56 knots is equivalent to 64 mph.									
Fall River County									
15 NW Edgemont	23	1615MST 1618MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Wind gusts were estimated at 60 mph. A thunderstorm briefly became severe over southwestern portions of the Black Hills, producing strong wind gusts south and west of Custer. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Oglala Lakota County									
Oglala	23	1620MST 1630MST			0	0		0.00K	Thunderstorm Wind (61EG)
Strong winds damaged homes and buildings in Oglala. A severe thunderstorm produced strong wind gusts in the Oglala area. The Loneman School bus barn's roof was torn off. Two houses and a mobile home also lost roofs and another mobile home was blown on its side. Several other houses had shingle, siding, and window damage from the wind. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.									
Fall River County									
Angostura Reservoir	23	1642MST 1650MST			0	0	0.00K	0.00K	Hail (0.88)
Nickel sized hail covered the ground.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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SOUTH DAKOTA, West

Fall River County

Angostura Reservoir

23	1642MST 1650MST				0	0	0.00K		Thunderstorm Wind (61EG)
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The strong wind gusts blew over a swing set.

Hail and strong wind gusts accompanied a thunderstorm that moved across the Angostura Reservoir area. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Custer County

8 W Jewel Cave Natl Mon

23	1643MST				0	0	0.00K		Thunderstorm Wind (56MG)
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A thunderstorm briefly became severe over southwestern portions of the Black Hills, producing strong wind gusts south and west of Custer. Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Fall River County

12 E Oelrichs

23	1723MST				0	0	0.00K	0.00K	Thunderstorm Wind (59MG)
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A severe thunderstorm produced wind gusts near 70 mph in far eastern Fall River County. Note: The measured wind gust of 59 knots is equivalent to 68 mph.

Pennington County

9 SSW Caputa

23	1740MST 1755MST				0	0	0.00K		Hail (1.75)
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Pennington County

9 SSW Caputa

23	1740MST 1755MST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts were estimated at 60 mph.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Pennington County

1 NNW Farmingdale

23	1803MST				0	0	0.00K		Hail (1.75)
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Pennington County

6 N Scenic

23	1820MST 1825MST				0	0	0.00K		Hail (1.00)
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Pennington County

6 N Scenic

23	1820MST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts were estimated at 60 mph.

A line of severe thunderstorms tracked northeast across eastern Pennington County. The storms produced large hail to golf ball size and wind gusts around 60 mph. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

TENNESSEE, Central

Montgomery County

1 E Oakwood

10	1418CST				0	0	1.00K	0.00K	Thunderstorm Wind (48EG)
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A tree was blown down on Cooper Creek Road near Woodlawn.

Note: The estimated wind gust of 48 knots is equivalent to 55 mph.

Dickson County

1 N Bakersworks

10	1508CST				0	0	3.00K	0.00K	Thunderstorm Wind (48EG)
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A report from Twitter indicated dozens of 3 to 5 inch diameter trees were blown down in Montgomery Bell State Park.

Note: The estimated wind gust of 48 knots is equivalent to 55 mph.

Cheatham County

Kingston Spgs

10	1520CST				0	0	3.00K	0.00K	Thunderstorm Wind (48EG)
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A Facebook report indicated large tree limbs and a few trees were blown down in the Kingston Springs area.

Note: The estimated wind gust of 48 knots is equivalent to 55 mph.

Williamson County

Fairview

10	1526CST				0	0	3.00K	0.00K	Thunderstorm Wind (52EG)
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Trees and tree limbs were blown down on power lines in Fairview.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
TENNESSEE, Central									
Davidson County Old Hickory	10	1533CST			0	0	1.00K	0.00K	Thunderstorm Wind (52EG)
	A large tree was blown down at Riverside Road and 13th Street in Old Hickory.								
	Note: The estimated wind gust of 52 knots is equivalent to 60 mph.								
Davidson County 2 SW Nashville	10	1533CST			0	0	2.00K	0.00K	Thunderstorm Wind (48EG)
	Reports and photos from Twitter indicated a small tree was snapped and numerous tents were blown over near the Vanderbilt Stadium on the Vanderbilt University campus.								
	Note: The estimated wind gust of 48 knots is equivalent to 55 mph.								
Davidson County 2 NW Berry Hill	10	1535CST			0	0	3.00K	0.00K	Thunderstorm Wind (52EG)
	A Facebook photo showed a tree was blown down onto a car at 18th Avenue South at Magnolia Boulevard.								
	Note: The estimated wind gust of 52 knots is equivalent to 60 mph.								
Sumner County 1 SSW Kansas	10	1535CST			0	0	1.00K	0.00K	Thunderstorm Wind (48EG)
	A Twitter report indicated a tree was blown down across Hunters Horn Lane northeast of Gallatin.								
	Note: The estimated wind gust of 48 knots is equivalent to 55 mph.								
Williamson County 3 W Forest Home	10	1535CST			0	0	10.00K	0.00K	Thunderstorm Wind (52EG)
	A large downburst up to 3 miles wide struck far northwest Williamson County. Scattered trees were snapped or uprooted and large tree limbs blown down from the Natchez Trace Parkway eastward across Temple Road, Old Natchez Trace Parkway, and Old Hillsboro Road. One tree fell across and blocked the Old Natchez Trace Parkway. Maximum winds were estimated around 60 mph.								
	Note: The estimated wind gust of 52 knots is equivalent to 60 mph.								
Williamson County Leipers Fork	10	1535CST			0	0	3.00K	0.00K	Thunderstorm Wind (48EG)
	A few trees were blown down in the Leipers Fork area.								
	Note: The estimated wind gust of 48 knots is equivalent to 55 mph.								
Williamson County 3 W Forest Home	10	1536CST			0	0	1.00K	0.00K	Thunderstorm Wind (52EG)
	A tree was blown down and blocked the Natchez Trace parkway north of the Highway 96 bridge.								
	Note: The estimated wind gust of 52 knots is equivalent to 60 mph.								
Davidson County 1 NNE Woodbine	10	1540CST			0	0	1.00K	0.00K	Thunderstorm Wind (43EG)
	A large tree limb was blown down at Foothill Drive and Murfreesboro Road.								
	Note: The estimated wind gust of 43 knots is equivalent to 49 mph.								
Davidson County 1 NNW Tulip Grove	10	1540CST			0	0	1.00K	0.00K	Thunderstorm Wind (52EG)
	A large tree branch was blown down onto Andrew Jackson Parkway at Highland View Road in Hermitage.								
	Note: The estimated wind gust of 52 knots is equivalent to 60 mph.								
Williamson County 1 NW Berrys Chapel	10	1540CST			0	0	1.00K	0.00K	Thunderstorm Wind (48EG)
	A Twitter photo showed a tree was blown down on Hillsboro Road.								
	Note: The estimated wind gust of 48 knots is equivalent to 55 mph.								
Williamson County 3 N Berrys Chapel	10	1540CST			0	0	3.00K	0.00K	Thunderstorm Wind (52EG)
	A few trees were blown down in the Grassland area.								
	Note: The estimated wind gust of 52 knots is equivalent to 60 mph.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
TENNESSEE, Central									
Williamson County 1 WNW Berrys Chapel	10	1542CST			0	0	15.00K	0.00K	Thunderstorm Wind (52EG) A tree was blown down onto a power line at 313 Colt Lane, which caused the power line to be pulled out of a home causing substantial damage to the house. Red Cross was enroute to assist the family.
									Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Williamson County 1 N Franklin	10	1543CST			0	0	2.00K	0.00K	Thunderstorm Wind (48EG) A Twitter report indicated a tree and a power line were blown down on Del Rio Pike.
									Note: The estimated wind gust of 48 knots is equivalent to 55 mph.
Williamson County 4 NE Berrys Chapel	10	1543CST			0	0	1.00K	0.00K	Thunderstorm Wind (48EG) A tree was snapped on Murray Lane in Brentwood.
									Note: The estimated wind gust of 48 knots is equivalent to 55 mph.
Wilson County 2 SSW Green Hill	10	1543CST			0	0	1.00K	0.00K	Thunderstorm Wind (48EG) Power lines were blown down onto the roadway at Brisbane Drive and Port Kembla in Mount Juliet.
									Note: The estimated wind gust of 48 knots is equivalent to 55 mph.
Williamson County 3 N Mallorys	10	1545CST			0	0	1.00K	0.00K	Thunderstorm Wind (48EG) A Twitter report indicated a large tree branch was blown down on Franklin Road south of Concord Road.
									Note: The estimated wind gust of 48 knots is equivalent to 55 mph.
Williamson County 1 WSW Ewingville	10	1547CST			0	0	1.00K	0.00K	Thunderstorm Wind (52EG) A Twitter report indicated a large tree was blown down and blocked west Main Street at Forrest Street in Franklin.
									Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Wilson County Mt Juliet	10	1550CST			0	0	2.00K	0.00K	Thunderstorm Wind (52EG) A tree and power lines were blown down on 4th Avenue near West Division Street in Mount Juliet.
									Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Maury County 1 N Kedron	10	1555CST			0	0	5.00K	0.00K	Thunderstorm Wind (48EG) A Twitter report indicated a large tree was blown down onto a house on Creekside Lane in Spring Hill.
									Note: The estimated wind gust of 48 knots is equivalent to 55 mph.
Wilson County 1 ESE Lebanon	10	1601CST			0	0	2.00K	0.00K	Thunderstorm Wind (52EG) A tree and power line were blown down at High Street and Highland Court in Lebanon.
									Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Rutherford County Smyrna	10	1605CST			0	0	5.00K	0.00K	Thunderstorm Wind (52EG) Scattered trees were blown down across Rutherford County.
									Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Williamson County 2 ENE Cross Keys	10	1605CST			0	0	1.00K	0.00K	Thunderstorm Wind (48EG) A Facebook report indicated a tree was blown down on Pulltight Hill Road near Bethesda.
									Note: The estimated wind gust of 48 knots is equivalent to 55 mph.
Bedford County Shelbyville	10	1645CST			0	0	8.00K	0.00K	Thunderstorm Wind (48EG) Numerous tree were reportedly blown down across Bedford County in Shelbyville, Wartrace, Bell Buckle and Normandy, including at Highway 270 and Halls Mill Road, on Normandy Road, and on Highway 41A south. Power lines were also blown down on Lyncrest Drive, and on Richdale Road at Fairfield Pike.
									Note: The estimated wind gust of 48 knots is equivalent to 55 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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TENNESSEE, Central

Bedford County

2 SE Gray

10	1647CST				0	0	3.00K	0.00K	Thunderstorm Wind (48EG)
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Trees were blown down on US Highway 41A at Highway 64 in eastern Shelbyville.

A line of strong to severe thunderstorms moved across Middle Tennessee during the afternoon hours on September 10, with numerous reports of wind damage received in several counties. Note: The estimated wind gust of 48 knots is equivalent to 55 mph.

Lawrence County

5 WNW Henryville

13	1410CST				0	0	1.00K	0.00K	Thunderstorm Wind (48EG)
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Lawrence County SKYWARN reported a tree was blown down across Napier Road near the Lawrence County and Lewis County line. Time estimated based on radar.

Widely scattered strong to marginally severe thunderstorms affected parts of southwest Middle Tennessee during the afternoon hours on September 13. One report of wind damage was received in Lawrence County. Note: The estimated wind gust of 48 knots is equivalent to 55 mph.

TNZ079

Grundy

27	0000CST								
30	2359CST				0	0			Drought

Although no counties in the NWS Nashville portion of Middle Tennessee were in severe (D2) drought conditions at the beginning of September 2016, a lack of significant rainfall across southeastern areas of Middle Tennessee during the month led to severe (D2) drought conditions returning across parts of Grundy County. Effects of these drought conditions were generally minor and limited to agricultural interests.

TENNESSEE, East

Campbell County

1 S Fincastle

26	1315EST				0	0			Thunderstorm Wind (50EG)
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Two trees were reported down along Old Middlesboro Highway.

Showers and thunderstorms developed ahead of a cold frontal boundary that moved into the Southern Appalachian region during the afternoon. One storm produced enough wind energy to down a couple trees on the Cumberland Plateau. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

TENNESSEE, South Central

TNZ096-097

Franklin - Lincoln

06	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Drought Conditions Worsen during the month of September.

TNZ097

Franklin

13	0000CST								
30	2359CST				0	0	0.00K	0.00K	Drought

Drought Conditions worsen during the month of September.

TEXAS, Central

Coke County

Silver

16	1740CST								
	1745CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)

A member of the public estimated a thunderstorm wind gust in excess of 60 mph.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Jones County

5 E Abilene

16	1755CST								
	1758CST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)

The Abilene Corrections Department reported 58 mph winds using a hand held anemometer. A trained spotter also reported a church in Hamby lost a large portion of its roof in the damaging thunderstorm winds.

Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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TEXAS, Central

Coke County

1 N Robert Lee

16	1811CST				0	0	0.00K	0.00K	Hail (1.00)
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A late season severe weather event produced isolated supercells and a squall line. This resulted in a few severe weather reports of wind and hail. Most of these storms were over rural areas.

Fisher County

4 WSW Palava

24	1730CST 2000CST				0	0	0.00K	0.00K	Flash Flood
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Fisher County Sheriff's office reported water over U.S. Highway 70 about a couple of miles south of the U.S. Highway 70 and FM 2744 Intersection.

Nolan County

**2 SE Sweetwater Muni Arpt
3 SSW Sweetwater**

24	1900CST 2130CST				0	0	0.00K	0.00K	Flash Flood
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Numerous low water crossings along the service roads of Interstate 20 were covered by running water.

Nolan County

2 W Sweetwater

24	1945CST 2100CST				0	0	0.00K	0.00K	Flash Flood
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Numerous streets were barricaded throughout Sweetwater due to high water over the roads. A couple of stranded vehicles had to be towed out of high water.

Tom Green County

**1 ESE San Angelo Res
2 NNE San Angelo**

25	0042CST 0330CST				0	0	0.00K	0.00K	Flash Flood
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Four water rescue were reported from 142 AM through 230 AM in San Angelo. They occurred at the intersection of Beauregard and Howard and at the low water crossing on Pulliam Street.

Thunderstorms with very heavy rain moved across the Sweetwater and San Angelo metro areas and resulted in flooding of many low water crossings.

TEXAS, Central Southeast

Harris County

1 ESE Kingwood

09	0210CST 0213CST				0	0	0.00K	0.00K	Funnel Cloud
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The rope like funnel cloud was spotted at the intersection of East Mount Houston and Homestead Roads.

Harris County

2 S Northline Terrace

09	1250CST 1252CST				0	0			Thunderstorm Wind (50EG)
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Severe thunderstorm wind gusts downed power lines along Fulton Street.

Clustering thunderstorms over Harris County ahead of a weak frontal boundary produced severe downburst winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wharton County

3 N Dinsmore

20	1825CST 1828CST				0	0	0.00K	0.00K	Hail (0.75)
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Dime size hail was reported at the intersection of CR 131 and CR 152.

Thunderstorms that formed just ahead of weak northeasterly boundary produced dime size hail.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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TEXAS, Extreme West

El Paso County

7 ESE (ELP)El Paso Intl Ar	01	0820MST 1030MST			0	0	10.00K	0.00K	Flash Flood
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Cars and homes were reported flooded along Dick Mayers Dr between Victor Lopez and Chelita drives in east El Paso.

El Paso County

5 ESE (ELP)El Paso Intl Ar	01	0837MST 1030MST			0	0	0.00K	0.00K	Flash Flood
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Montwood Drive was closed in both directions near Lake Omega Drive due to flooded roads.

A surface high over the plains states brought moist southeast flow into the region with dew points into the lower to mid 60s. An upper ridge was located right over the Rockies with weak flow aloft keeping storm motion very slow. Rainfall totals of an inch and a quarter to over 2 inches were reported on the east side of El Paso where flash flooding was reported.

TXZ418

Western El Paso County

10		0600MST 0900MST			0	0	0.00K	0.00K	High Wind
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An area of high pressure at the surface was located over the front range of the Rockies which pushed a strong back door cold front through the region. East winds gusted to 59 mph along the west slopes of the Franklin Mountains.

TEXAS, Mid-South

San Patricio County

Angelita	02	1255CST 1256CST			0	0	12.00K	0.00K	Thunderstorm Wind (50EG)
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Wind blew down two power poles, damaged a fence, and blew over a semi-trailer on Highway 77 south of Odem.

A thunderstorm produced a wet microburst south of Odem during the afternoon. The thunderstorm downburst caused damage to a fence, blew down two power poles, and a truck was blown over on Highway 77. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

McMullen County

2 NNE Tilden	25	1738CST 1810CST			0	0	0.00K	0.00K	Flash Flood
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Sheriff Office reported heavy rain and flooding of roads around Tilden.

McMullen County

1 W Calliham 5 W Cahham	25	1800CST 1830CST			0	0	0.00K	0.00K	Flash Flood
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Heavy rain caused flooding around Calliham.

Scattered thunderstorms occurred over the Brush Country in advance of a slow moving frontal boundary. The storms were slow moving and produced locally heavy rainfall. Flooding occurred across portions of McMullen County during the late evening of the 25th and early morning hours of the 26th.

TEXAS, North

Tarrant County

3 WSW Ft Worth	25	0700CST			0	0	0.00K	0.00K	Flood
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High water (localized street flooding) near Hulen and I-30 in Fort Worth.

Dallas County

1 S Gribble 1 NNW Eagle Ford	26	0715CST			0	0	0.00K	0.00K	Flood
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Several locations in Dallas County reported high water.

Several impulses traversed the area through this time period generating multiple MCSs that caused flooding issues in Tarrant and Dallas Counties.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
TEXAS, North Panhandle									
Hartley County									
1 N (DHT)Dalhart Muni Ar	06	1709CST			0	0			Thunderstorm Wind (60MG)
	Note: The measured wind gust of 60 knots is equivalent to 69 mph.								
Hartley County									
1 N (DHT)Dalhart Muni Ar	06	1716CST			0	0			Thunderstorm Wind (60MG)
	Note: The measured wind gust of 60 knots is equivalent to 69 mph.								
Hartley County									
1 N (DHT)Dalhart Muni Ar	06	1742CST			0	0			Thunderstorm Wind (59MG)
	Upper level moisture form Hurricane Newton was moving NNE into the western Panhandles with the help of a trough over the Northern Rockies and a weakening ridge over the coastal southeastern US. Out ahead of the main batch of heavier rain and low topped thunderstorms, storms on the leading edge tapping into 2000-3000 J/kg which produced severe wind gusts in the NW TX Panhandle. Note: The measured wind gust of 59 knots is equivalent to 68 mph.								
Hansford County									
5 N Gruver	09	1720CST							
		1721CST	0.28	15	0	0			Tornado (EF0)
	Brief tornado, likely a landspout, touched down north of Gruver. The event was witnessed by numerous residents who were attending a high school football game. No damage was reported as the tornado likely remained over open country. The location based off of radar.								
	A cold front progressed south out of Kansas. It was heading towards an environment of 1500-2500 J/Kg and effective shear of 20-35 kts in the eastern Panhandles. As a result, a short lived tornado did occur over northern Hansford County, TX as seen with photographic evidence.								
Carson County									
Panhandle	17	1131CST			0	0			Hail (1.00)
Gray County									
1 NNE Mc Lean	17	1235CST			0	0			Hail (2.00)
Gray County									
Mc Lean	17	1235CST			0	0			Hail (1.00)
Gray County									
1 NNE Mc Lean	17	1235CST			0	0			Thunderstorm Wind (50ES)
	Numerous large tree limbs snapped around a farmhouse complex. One large tree was uprooted landing on pickup temporarily trapping a resident inside. Half of metal barn collapsed.								
	Note: The estimated wind speed of 50 knots is equivalent to 58 mph.								
Gray County									
Mc Lean	17	1235CST			0	0			Thunderstorm Wind (52MG)
	Note: The measured wind gust of 52 knots is equivalent to 60 mph.								
Dallam County									
5 SE Texline	17	1755CST			0	0			Hail (1.00)
	Pea to quarter size hail covering the ground with heavy rain for 20 minutes south-southeast of Texline.								
Dallam County									
Texline	17	1832CST			0	0			Hail (1.00)
Dallam County									
2 NW Dalhart	17	1854CST			0	0			Hail (1.25)
	Hail up to the size of half dollars 3 miles northwest of Dalhart on us 87.								
Dallam County									
5 E Dalhart	17	1913CST			0	0			Hail (1.50)
Dallam County									
3 ESE Dalhart	17	1913CST			0	0			Hail (1.75)
Hartley County									
1 N (DHT)Dalhart Muni Ar	17	1913CST			0	0			Thunderstorm Wind (52MG)
	Note: The measured wind gust of 52 knots is equivalent to 60 mph.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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TEXAS, North Panhandle

Hartley County

1 N (DHT)Dalhart Muni Ar	17	1915CST			0	0			Thunderstorm Wind (53MG)
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Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Moore County

1 ENE Dumas Muni Arpt	17	2007CST			0	0			Hail (1.75)
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Golf ball size hail on US 87 2 miles west of Dumas.

Moore County

6 WNW Four Way	17	2041CST 2042CST	0.01	15	0	0			Tornado (EF0)
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Rope tornado touched down briefly two times in rapid succession around 0941 PM. The event was witnessed by a trained spotter and deputy and was reported through the assistant Emergency Manager for Moore County.

Moore County

1 NW Four Way	17	2047CST 2054CST	1.17	150	0	0			Tornado (EF0)
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NWS survey team found 1.2 mile long damage path. Shed destroyed, widespread tree damage and roof damage to a mobile home.

Carson County

1 SSW Panhandle	17	2219CST			0	0			Thunderstorm Wind (55MG)
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Note: The measured wind gust of 55 knots is equivalent to 63 mph.

Carson County

4 WNW Groom	17	2309CST			0	0			Thunderstorm Wind (51MG)
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Winds gust of 59 MPH from the kvii schoolnet at friemel farms west-northwest of Groom.

Two rounds of storms worked their way through the northern and eastern TX Panhandle. The first round was bowed out MCS developed north of a stalled out boundary over the south Plains with an meso-environment of weak CAPE and moderate CIN across the eastern TX panhandle. Going into the afternoon and evening hours, an upper level low pressure impulse was moving SE out of NM. Out ahead of the trough axis, it was a high CAPE and moderate effective shear environment which indicated super cell convection in-conjunction with daytime heating. Going into the later evening hours, a supercell formed on the base of an eastward progressing line. This storm produced two EF0 tornadoes across Moore County. With the loss of daytime heating, the supercell generate a large cold pool and weakened as it turned left and heading more due east. Both complexes of storms also produce severe wind gusts and large hail. Note: The measured wind gust of 51 knots is equivalent to 59 mph.

TEXAS, Northeast

Rusk County

1 ESE Craig	05	1820CST			0	0	5.00K	0.00K	Lightning
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Two salt water tanks were stuck by lightning resulting in a fire.

Scattered thunderstorms developed due to late afternoon heating across portions of Northeast Texas. These storms were prolific cloud to ground lightning producers and as a result, there was a report of a lightning strike in Rusk County that struck a water tank.

Upshur County

Cedar Spgs	17	1400CST			0	0	5.00K	0.00K	Thunderstorm Wind (55EG)
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Several trees were downed and a barn was damaged along Hwy. 259 just north of Hwy. 155 north of Ore City, Texas.

Scattered showers and thunderstorms developed during the afternoon across Northeast Texas, Southeast Oklahoma, and Southwest Arkansas, which ignited with strong afternoon heating along a weak surface boundary extending from East-Central Texas to along the Red River of Southeast Oklahoma and Northeast Texas, to just north of the Arkansas-Louisiana state line. An isolated severe thunderstorm moved across eastern Upshur County Texas, which downed a few trees and damaged a barn north of Ore City. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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TEXAS, South

Willacy County 1 SE La Sara Raymondville

04	1237CST				0	0	2.00K	0.00K	Thunderstorm Wind (43EG)
	1241CST								

Willacy County Emergency Manager reported a telephone pole blown down on FM 1015 in the town of Lasara and a power line down in Raymondville, near the intersection of TX 186 and Business 77.

A surge of moisture combined with coastal troughing led to the development of scattered showers and thunderstorms across the Rio Grande Valley. Outflow winds from some of these thunderstorms moved across the region causing minor damage in Willacy County. Note: The estimated wind gust of 43 knots is equivalent to 49 mph.

TXZ255-257

Coastal Cameron - Inland Cameron

13	0000CST								
26	2359CST				0	0	0.00K	0.00K	Drought

Dry conditions that plagued southern Cameron County during July continued into August. Little rain fell during July, with only 0.18 inches of rainfall reported at Brownsville/South Padre Island International Airport. This lack of rain continued into August, resulting in drought conditions intensifying and Severe (D2) drought conditions returning to southern Cameron County.

Zapata County Zapata Arpt

25	1855CST				0	0	0.00K	0.00K	Heavy Rain
	2055CST								

KAPY AWOS reported 2.65 inches of rainfall in less than three hours.

Zapata County 3 SE Zapata Arpt

25	2000CST				0	0	0.00K	0.00K	Heavy Rain
	2200CST								

Zapata County Sheriff's Office reported several cars stalled in flooded streets in the city of Zapata.

Numerous showers and thunderstorms developed along a weak cold front that pushed across the Ranchlands and the Rio Grande Valley. Training convective activity moved slowly across Zapata County and produced heavy rainfall.

TEXAS, South Central

Wilson County 4 SSW Three Oaks

02	1715CST				0	0	100.00K	0.00K	Lightning
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A thunderstorm produced a lightning strike that ignited a tank battery fire in Falls City near the Atascosa-Wilson County Line. Four of twelve salt water batteries were destroyed and five site personnel had to shelter-in-place (SIP) as crews battled the fire.

A thunderstorm produced a lightning strike that ignited a tank battery fire in Falls City.

Uvalde County 7 NW North Uvalde

14	0731CST				0	0	0.00K	0.00K	Flash Flood
	0745CST								

Thunderstorms produced heavy rain that caused flash flooding closing parts of Hwy 55 northwest of Uvalde.

Uvalde County 9 NNE Knippa 3 ESE Concan

14	0731CST				0	0	0.00K	0.00K	Flash Flood
	0745CST								

Thunderstorms produced heavy rain that caused flash flooding closing Hwy 127 southeast of Concan.

Thunderstorms developed along an old outflow boundary in a very moist atmosphere. Steering flow was weak resulting in slow storm motion which led to heavy rainfall and flash flooding.

Edwards County 3 WSW Rocks Spgs

25	0845CST				0	0	0.00K	0.00K	Flash Flood
	1100CST								

Thunderstorms produced heavy rain that caused flash flooding closing the intersection of Hwy 377 and RR674 west of Rocksprings.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
TEXAS, South Central									
Real County 2 NNW Leakey	25	0900CST 1045CST			0	0	0.00K	0.00K	Flash Flood
									Thunderstorms produced heavy rain that caused flash flooding closing CR336 near the Frio River north of Leakey.
Real County 8 SSW Vance	25	0930CST 1045CST			0	0	0.00K	0.00K	Flash Flood
									Thunderstorms produced heavy rain that caused flash flooding closing Hwy 55 south of Barksdale.
Edwards County 1 ENE Rocks Spgs	25	1259CST 1645CST			0	0	0.00K	0.00K	Flash Flood
									Thunderstorms produced heavy rain that caused flash flooding closing all roads into and out of Rocksprings.
Kinney County 1 E Brackettville	25	1315CST 1515CST			0	0	0.00K	0.00K	Flash Flood
									Thunderstorms produced heavy rain that caused flash flooding closing FM674 and FM334 north of Brackettville.
Kinney County 9 NNE Standart	25	1441CST 1515CST			0	0	0.00K	0.00K	Flash Flood
									Thunderstorms produced heavy rain that caused flash flooding closing RM3008 in northwestern Kinney County.
Uvalde County 4 ENE Reagan Wells 5 N Concan	25	1529CST 1629CST			0	0	0.00K	0.00K	Flash Flood
									Thunderstorms produced heavy rain that caused flash flooding sending the Frio River out of its banks at Garner State Park.
Uvalde County 4 N Concan	25	1545CST 1645CST			0	0	0.00K	0.00K	Flash Flood
									Thunderstorms produced heavy rain that caused flash flooding sending the Frio River two to three feet over Old Leakey Rd at Magers Crossing south of Garner State Park.
Travis County 1 E Marshall Ford	25	1600CST			1	0	0.00K	0.00K	Lightning
									The Travis County Sheriff's Office reported that a woman was struck and killed by lightning in northwestern Austin. She was found dead on a hiking trail off of River Place Blvd. F370U
Bexar County 5 NNE Southton	26	0410CST 0845CST			0	0	0.00K	0.00K	Flash Flood
									Thunderstorms produced heavy rain that caused flash flooding leading to a high water rescue at the I-35 Frontage Road and Palo Alto Rd. in southwestern San Antonio.
Bexar County 2 NE Southton	26	0423CST 0845CST			0	0	0.00K	0.00K	Flash Flood
									Thunderstorms produced heavy rain that caused flash flooding leading to a high water rescue at 12280 Hwy 16 in southeastern San Antonio.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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TEXAS, South Central

Bexar County

2 SE Alamo Downs	26	0428CST			0	0	0.00K	0.00K	Flash Flood
2 NE (SKF) Kelly Afb San A		0845CST							

Thunderstorms produced heavy rain that caused flash flooding leading to a water rescue at S. Callaghan Rd. and Hwy 151 in western San Antonio.

Bexar County

3 N Brooks Afb	26	0435CST			0	0	0.00K	0.00K	Flash Flood
		0845CST							

Thunderstorms produced heavy rain that caused flash flooding leading to a water rescue at Prestwick Blvd. and Ferrington Dr. in southeastern San Antonio.

Bexar County

4 WSW San Antonio	26	0439CST			0	0	0.00K	0.00K	Flash Flood
		0845CST							

Thunderstorms produced heavy rain that caused flash flooding leading to a high water rescue at General Hudnell Dr. and Cupples Rd. in San Antonio.

Comal County

3 NNE Bracken	26	0654CST			0	0	0.00K	0.00K	Flash Flood
3 WNW Corbyn		0815CST							

Thunderstorms produced heavy rain that caused flash flooding closing low water crossings along Schoenthal Rd. near FM3009 near Bracken.

Comal County

4 ENE Bulverde	26	0654CST			0	0	0.00K	0.00K	Flash Flood
		0815CST							

Thunderstorms produced heavy rain that caused flash flooding closing Stahl Ln. near Smithson Valley Rd. east of Bulverde.

Comal County

4 NW New Braunfels	26	0654CST			0	0	0.00K	0.00K	Flash Flood
		0815CST							

Thunderstorms produced heavy rain that caused flash flooding closing Hueco Springs Loop Rd. at Elm Creek Rd. in northwestern New Braunfels.

Bexar County

2 E Olmos Park	26	0730CST			0	0	0.00K	0.00K	Flash Flood
		0845CST							

Thunderstorms produced heavy rain that caused flash flooding stranding a commercial garbage truck in approximately three and a half feet of water near the intersection of Holbrook Ln. and Aina Ln. along Salado Creek in northeastern San Antonio. The truck driver was rescued by firefighters.

Hays County

2 WSW San Marcos	26	1113CST			0	0	0.00K	0.00K	Flash Flood
		1245CST							

Thunderstorms produced heavy rain that caused flash flooding closing Aquarena Springs Dr. at Sessom Dr. near the San Marcos River in San Marcos.

An upper level trough brought a surface frontal system through South Central Texas. Thunderstorms formed along a prefrontal trough and produced heavy rainfall early on the 25th. The cold front brought another round of heavy rain later on the 25th and into the 26th.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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TEXAS, South Panhandle

Lynn County

2 WSW New Home 01 1615CST 0 0 0.00K 0.00K Funnel Cloud

Lubbock County

1 SW Reese Vlg 01 1810CST
1811CST 0 0 0.00K 0.00K Funnel Cloud



A picture of one of several funnel clouds spotted across the Texas South Plains in Lynn County and Lubbock County, Texas during the evening of September 1st, 2016. Photo courtesy of Shelly Smith.

Lubbock County

1 ESE Shallowater Arpt 01 1826CST 0 0 0.00K 0.00K Funnel Cloud

Hockley County

3 E Smyer 01 1838CST
1840CST 0 0 0.00K 0.00K Funnel Cloud

Hockley County

3 ESE Opdyke 01 1900CST 0 0 0.00K 0.00K Funnel Cloud

Late this afternoon, a pilot flying near Slide (southwest Lubbock County) reported a funnel cloud near New Home (northwest Lynn County) to the Lubbock Air Traffic Control. The pilot stated this later became a tornado, but no corroborating evidence was ever discovered. By early evening, trained spotters and the general public photographed multiple funnel clouds from a strong storm that moved slowly west along Texas Highway 114 from Lubbock to Levelland. These funnels were the byproduct of updrafts residing sufficiently long enough over an outflow boundary.

Hockley County

6 SSW Anton 15 2145CST 0 0 0.00K 0.00K Thunderstorm Wind (51MG)
A wind gust to 59 mph was measured at a Texas Tech University West Texas mesonet site near Anton.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Hockley County

6 NNW Ropesville 15 2201CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)
A meteorologist with Texas Tech University estimated wind gusts to 60 mph. No damage was reported.

Scattered thunderstorms developed for a second consecutive afternoon within a very moist and unstable environment. One of these storms was able to produce severe wind gusts in Hockley County. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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TEXAS, West

Andrews County Andrews

07	1815CST				0	0			Thunderstorm Wind (54MG)
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A thunderstorm moved across Andrews County and produced a 62 mph wind gust at the City of Andrews AWOS site.

There was an upper low centered over southeastern Arizona. Tropical Storm Newton was providing a plentiful supply of moisture across West Texas. These conditions resulted in thunderstorms with strong winds that developed across the Permian Basin. Note: The measured wind gust of 54 knots is equivalent to 62 mph.

TXZ258

Guadalupe Mountains of Culberson County

10	0651MST				0	0	0.00K	0.00K	High Wind
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Northeast winds behind an early season cold front resulted in strong, gap winds through Guadalupe Pass.

Terrell County Dryden

12	1758CST				0	0			Thunderstorm Wind (51MG)
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A thunderstorm moved across Terrell County and produced a 59 mph wind gust at the Dryden AWOS site.

There was an upper ridge which extended from Texas eastward into the Atlantic and an upper trough along the west coast. An upper level disturbance moved over West Texas which created lift. There was good surface heating and moisture across the area. These conditions resulted in thunderstorms with strong winds across West Texas. Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Culberson County 3 E Plateau

15	1800CST				0	0			Hail (1.00)
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An upper level trough was over the western half of the country with an upper ridge over the eastern half of the country which resulted in west to southwest winds over the region. An upper level disturbance moved over southeast New Mexico and West Texas where there was a good supply of moisture and good surface heating. A boundary was lingering across the area, and an area of strong winds aloft was approaching which enhanced lift. These conditions, along with good wind shear values, resulted in severe thunderstorms developing. The storms produced large hail in West Texas.

Scurry County 1 NW Winston

16	1555CST				0	0			Hail (1.00)
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Scurry County Snyder Winston Arpt

16	1555CST				0	0			Thunderstorm Wind (53MG)
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A thunderstorm moved across Scurry County and produced a 61 mph wind gust at the Snyder AWOS site.

Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Scurry County 1 W Snyder

16	1600CST				0	0			Hail (1.75)
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A thunderstorm moved across Scurry County and produced half dollar to ping pong ball size hail in Snyder.

Scurry County 1 NNE Winston

16	1600CST				0	0	70.00K	0.00K	Thunderstorm Wind (70EG)
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A thunderstorm moved across Scurry County and produced wind damage in Snyder. A storm survey was conducted and it was determined that the winds were 75 to 85 mph. There was heavy roof and carport damage in Snyder. There was a roof blown off of a business, and a store was filled with insulation and rain water. The cost of damage is a very rough estimate.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Scurry County 1 NW Winston

16	1600CST				0	0	20.00K	0.00K	Thunderstorm Wind (65EG)
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A thunderstorm moved across Scurry County and produced wind damage in Snyder. A damage survey was conducted and it was determined that the wind speed ranged from 60 to 85 mph. There was damage to power lines, telephone poles, and trees. The cost of damage is a very rough estimate.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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TEXAS, West

Scurry County

2 SSW Winston

16	1601CST				0	0			Thunderstorm Wind (70MG)
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A thunderstorm moved across Scurry County and produced a 81 mph wind gust at the Snyder Mesonet site.

Note: The measured wind gust of 70 knots is equivalent to 81 mph.

Scurry County

2 NNE Cemetary

16	1605CST				0	0			Thunderstorm Wind (60MG)
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A thunderstorm moved across Scurry County and produced a 69 mph wind gust at the Snyder Mesonet site.

Note: The measured wind gust of 60 knots is equivalent to 69 mph.

Ward County

1 NE Grandfalls

16	1640CST								
	1645CST				0	0			Hail (1.00)

Ector County

1 SSE Greenfield Acres

16	1752CST								
	1757CST				0	0			Hail (1.00)

Ector County

4 W Odessa Ector Co Arpt

16	1753CST								
	1755CST	0.35	200		0	0	0.00K	0.00K	Tornado (EF0)

A thunderstorm moved across Ector County and produced a brief tornado near Odessa in an open field. A local TV meteorologist sent a video and a photo of the tornado. No damage was reported with this tornado so there was not a damage survey and it was rated as an EF-0. The path length and width were estimated.

Mitchell County

Colorado City

16	1808CST								
	2000CST				0	0	0.50K	0.00K	Flash Flood

Heavy rain fell across Mitchell County and produced flash flooding in and south of Colorado City. Cones were put out for a section of highway South 208 at the Lake Champion turnoff. Rapid water is flowing over the road. The cost of damage is a very rough estimate.

Dawson County

Lamesa

16	2010CST								
	2015CST				0	0			Hail (1.75)

There was an upper level trough over much of the northern and western half of the nation which resulted in west to southwest winds aloft over West Texas. An upper level disturbance moved over the region where there was abundant moisture and instability in place. There was a cold front that moved southward toward West Texas from the Texas panhandle. A surface boundary was also in place across the Permian Basin. An area of intense winds aloft moved over the area and aided in lift. These conditions allowed for thunderstorms to develop across West Texas, and there was good wind shear present which contributed to these storms becoming severe with large hail, damaging winds, and a brief tornado. The abundant moisture combined with recent rainfall also resulted in flash flooding across the Western Low Rolling Plains.

Midland County

3 WSW Warfield

17	1659CST								
	1704CST				0	0			Hail (1.00)

Midland County

3 SW Warfield

17	1659CST				0	0			Thunderstorm Wind (52EG)
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A thunderstorm moved across Midland County and produced a 60 mph wind gust about thirteen miles southwest of Midland.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Midland County

3 SW Warfield

17	1700CST								
	1705CST				0	0			Hail (1.00)

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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TEXAS, West

Midland County 5 W Midland

17	1700CST 1705CST				0	0			Hail (1.00)
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A thunderstorm moved across Midland County and produced quarter sized hail and 60 mph wind gusts about five miles west of the City of Midland.

Midland County 3 SW Warfield

17	1700CST				0	0			Thunderstorm Wind (65EG)
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A thunderstorm moved across Midland County and produced a 70 to 80 mph wind gust about 13 miles southwest of the City of Midland.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Ector County Odessa

17	1705CST 1706CST				0	0	100.00K	0.00K	Thunderstorm Wind (61EG)
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A thunderstorm moved across Ector County and produced strong winds around 70 mph or higher in Odessa. An 18 wheel big rig flipped over on its side on eastbound Interstate 20 and there was a blackout affecting 6,000 homes and businesses. The cost of damage is a very rough estimate.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Glasscock County Lees

17	1723CST 1733CST				0	0			Hail (1.25)
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Howard County South Haven

17	1742CST 1747CST				0	0			Hail (1.75)
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Howard County Big Spring

17	1755CST 1800CST				0	0			Hail (1.00)
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Ector County 13 NNW Notrees

17	1813CST 1835CST	5.87	400	0	0	30.00K			Tornado (EF1)
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A supercell thunderstorm developed over Andrews County during the evening hours of September 17th. This storm encountered a stationary boundary and began moving southeast. The storm began to form a hook echo at 6:30 pm CDT as it moved toward Highway 115 in southwest Andrews County. Eyewitness reports from storm chasers and spotters in the area indicate that the initial tornado began at 7:13 pm CDT near the intersection of Andrews, Winkler and Ector Counties. Videos taken of the tornado show it touching down and lifting several times before eventually staying on the ground for several minutes over far northwest portions of Ector County. The tornado moved south southeastward across open fields of rural Ector County just west of FM 181. The damage assessment team looked at several different indicators to determine tornado intensity. The tornado snapped several electrical power poles and overturned a tank battery along its path. These damage indicators suggest EF1 intensity with wind speeds estimated at 90 to 105 mph. Near the end of the life cycle of the EF1 tornado, a weak anticyclonic circulation developed on the forward flank of the supercell around 7:25 pm CDT. This circulation moved southwest to the west of FM 181 and dissipated around 7:35 pm CDT. Storm chasers and spotters identified this funnel looking north from Goldsmith around 7:30 pm CDT. There was no evidence of damage or reports of the funnel cloud touching down. The tornado path width was estimated and the cost of damage is a very rough estimate.

An upper level disturbance moved over the area, and a lingering frontal boundary was across the Permian Basin. Upper level lift associated with an area of intense winds aloft moved over the region. There was good wind shear, moisture, and instability across West Texas and southeast New Mexico. Two other boundaries were moving toward the area and possibly collided with the initial boundary. These conditions combined to create good lift in the atmosphere which resulted in widespread thunderstorms with large hail across southeast New Mexico and the Permian Basin. The wind shear created spin in the atmosphere which allowed for tornadoes to develop in the Permian Basin and southeast New Mexico. Deep moisture across the area resulted in flash flooding that developed in the Permian Basin.

Mitchell County 2 S Buford 5 SSE Colorado City

17	1830CST 2030CST				0	0	0.00K	0.00K	Flash Flood
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Heavy rain fell across Mitchell County and produced flash flooding along Highway 208 and Highway 139.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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TEXAS, West

Moisture was moving over the region ahead of an upper trough that transitioned into a closed low and moved over the Northern Plains. An area of increased upper level winds as well as an upper level disturbance was over the area as a result of this upper pattern, and a surface trough was across West Texas. This good lift and moisture combined with good instability to produce thunderstorms with heavy rain across the area. The heavy rain lead to flash flooding across the Western Low Rolling Plains.

Ector County 2 E Goldsmith

17	1850CST 1855CST				0	0	100.00K		Hail (2.75)
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A thunderstorm moved across Ector County and produced baseball sized hail two miles east of Goldsmith. The hail severely damaged numerous homes and cars. The cost of damage is a very rough estimate.

Ector County 1 NNW West Odessa

17	1925CST 1930CST				0	0			Hail (1.00)
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Ector County 2 NW Odessa

17	1930CST 1935CST				0	0			Hail (1.50)
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Ector County 2 NE Odessa

17	1934CST 1940CST				0	0			Hail (1.00)
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Ector County 2 SE Odessa

17	1939CST 1945CST				0	0			Hail (1.00)
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Ector County 2 ESE Odessa Ector Co Arprt 4 NNW West Odessa

17	2000CST 2030CST				0	0	5.00K	0.00K	Flash Flood
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Heavy rain fell across Ector County and produced flash flooding in Odessa. There were three high water rescues in Odessa between 9 and 9:30 pm CDT. The cost of damage is a very rough estimate.

Ector County 2 NE Greenfield Acres

17	2130CST 2210CST				0	0	0.50K	0.00K	Flash Flood
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Heavy rain fell across Ector County and produced flash flooding in Odessa. The media reported two feet of water at the intersection of 42nd and Dixie Boulevard in Odessa. The cost of damage is a very rough estimate.

An upper level disturbance moved over the area, and a lingering frontal boundary was across the Permian Basin. Upper level lift associated with an area of intense winds aloft moved over the region. There was good wind shear, moisture, and instability across West Texas and southeast New Mexico. Two other boundaries were moving toward the area and possibly collided with the initial boundary. These conditions combined to create good lift in the atmosphere which resulted in widespread thunderstorms with large hail across southeast New Mexico and the Permian Basin. The wind shear created spin in the atmosphere which allowed for tornadoes to develop in the Permian Basin and southeast New Mexico. Deep moisture across the area resulted in flash flooding that developed in the Permian Basin.

TXZ258

Guadalupe Mountains of Culberson County

26	0051MST 1351MST				0	0	0.00K	0.00K	High Wind
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A strong cold front resulted in strong, northeast, gap winds through Guadalupe Pass.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
TEXAS, Western North									
Wilbarger County									
Vernon	10	0000CST 0200CST			0	0	30.00K	0.00K	Heavy Rain
									Roof collapsed due to heavy rain. 2 to 3 inches of rain was reported. Debris caused damage to a second building as well.
Wilbarger County									
Lockett	10	0024CST			0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
									Measured with a personal anemometer. Storms formed along a southward moving cold front and traveled through Oklahoma and western north Texas on the evening of the 9th and overnight into the early hours of the 10th. A gust front formed ahead of these storms producing widespread gusty winds of 40 to 50 mph, with an occasional severe gust embedded. Note: The measured wind gust of 56 knots is equivalent to 64 mph.
Foard County									
Crowell	15	1615CST			0	0	0.00K	0.00K	Hail (2.75)
									Scattered storms formed across Oklahoma and north Texas on the 15th under the influence of an approaching upper low. Training storms resulted in some flooding.
Wichita County									
1 S Burkburnett	18	0210CST			0	0	2.00K	0.00K	Thunderstorm Wind (56EG)
									Power line/poles downed. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.
Wichita County									
1 SW (SPS)Sheppard Afb	18	0225CST			0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
									Two storm systems formed off the Rockies under the influence of an upper level trough and traversed across Oklahoma and western North Texas. The first came across during the afternoon and evening hours of the 17th as a disorganized area of storms. The second came across overnight into the early hours of the 18th as a line of storms. Note: The measured wind gust of 50 knots is equivalent to 58 mph.
Foard County									
1 NW Thalia	24	1705CST 2005CST			0	0	0.00K	0.00K	Flash Flood
									Foard county sheriff's office reported numerous farm to market roads closed east and south of Crowell proper, including the closing of U.S. Highway 70 between Crowell and Thalia. Up to 6 inches of water were covering the highway.
Baylor County									
1 ESE Seymour	24	1735CST 2035CST			0	0	0.00K	0.00K	Flash Flood
									Water covering FM 114 near intersection with US highway 183/277.
Baylor County									
5 SSE Mabelle	24	1735CST 2335CST			0	0	0.00K	0.00K	Flash Flood
									Water covered the road at the intersection of FM 422 and 210.
Wichita County									
5 S Wichita Falls	24	2020CST 2320CST			0	0	0.00K	0.00K	Flash Flood
									Water flowed across state highway 79.
Baylor County									
1 SE Seymour	24	2030CST 2330CST			0	0	0.00K	0.00K	Flash Flood
									Water covered US highway 183/283.
Wichita County									
3 SSW Wichita Falls	24 25	2118CST 0018CST			0	0	0.00K	0.00K	Flash Flood
									Estimated 1 foot of flood waters near Midwestern State University.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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TEXAS, Western North

As a large upper trough moved through and combined with some tropical moisture, abundant rainfall produced flooding across the area on the 24th.

UTAH, West and Central

Tooele County

15 NNE Knolls

01	1425MST				0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
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The Diddle Knoll sensor in the Dugway Proving Ground mesonet recorded a maximum wind gust of 62 mph.

Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Box Elder County

6 S Lakeside

01	1430MST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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The Utah Test and Training Range sensor at the Thermal Treatment Unit recorded a maximum wind gust of 60 mph.

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Tooele County

21 WSW (DPG)Michael Aaf Du

01	1440MST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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A 60 mph wind gust was recorded at the West Granite site in the Dugway Proving Ground mesonet.

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Juab County

20 E Callao

01	1515MST				0	0	0.00K	0.00K	Thunderstorm Wind (61MG)
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The Fish Springs sensor in the Dugway Proving Ground mesonet recorded a maximum wind gust of 70 mph.

Note: The measured wind gust of 61 knots is equivalent to 70 mph.

Tooele County

17 WSW (DPG)Michael Aaf Du

01	1535MST				0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
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The Callao Gate sensor in the Dugway Proving Ground mesonet recorded a peak wind gust of 61 mph.

Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Tooele County

14 NNW (DPG)Michael Aaf Du

01	1620MST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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A peak wind gust of 60 mph was reported at the Upper Cedar Mountain sensor in the Dugway Proving Ground mesonet.

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Kane County

9 SSE Adairville

02	1730MST				0	0	0.00K	0.00K	Flash Flood
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Flash flooding was reported in the Lower Paria drainage.

Kane County

5 W Adairville

03	1100MST				0	0	0.00K	0.00K	Flash Flood
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Flash flooding was reported along the House Rock Valley Road and surrounding areas. This flooding closed the House Rock Valley Road and stranded multiple people for a period of time.

Carbon County

5 WNW Price 10 SE (PUC)Carbon Co Arprt

03	2000MST				0	0	0.00K	0.00K	Flash Flood
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Flash flooding was reported in Price and other surrounding areas, including near the Book Cliffs.

Thunderstorms formed across Utah in the first few days of September, producing strong gusty winds across northern Utah and flash flooding across central and southern Utah.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
UTAH, West and Central									
Utah County									
Provo	11	1640MST			0	0	2.00K	0.00K	Thunderstorm Wind (52EG) A dry microburst knocked down several power lines along Freedom Boulevard in Provo.
									Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Wasatch County									
2 E Keetley	13	1550MST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG) The State Route 248 sensor recorded a peak wind gust of 61 mph.
									Note: The measured wind gust of 53 knots is equivalent to 61 mph.
Beaver County									
1 SE (MLF)Milford Muni Ar	13	1630MST			0	0	0.00K	0.00K	Thunderstorm Wind (55MG) The Milford ASOS reported a maximum wind gust of 63 mph.
									Note: The measured wind gust of 55 knots is equivalent to 63 mph.
Tooele County									
18 S (DPG)Michael Aaf Dug	13	1700MST			0	0	0.00K	0.00K	Thunderstorm Wind (55MG) A 63 mph wind gust was reported at the Simpson Springs sensor in the Dugway Proving Ground mesonet.
									Note: The measured wind gust of 55 knots is equivalent to 63 mph.
Tooele County									
1 E (DPG)Michael Aaf Dug	13	1720MST			0	0	0.00K	0.00K	Thunderstorm Wind (54MG) The Ditto sensor in the Dugway Proving Ground mesonet recorded a peak wind gust of 62 mph.
									Note: The measured wind gust of 54 knots is equivalent to 62 mph.
Garfield County									
(BCE)Bryce Canyon Ar	13	1750MST			0	0	0.00K	0.00K	Thunderstorm Wind (58MG) The Bryce Canyon ASOS recorded a maximum wind gust of 67 mph.
									Widespread showers and thunderstorms developed across Utah ahead of a Pacific storm system, with several of these storms producing strong gusty winds. Note: The measured wind gust of 58 knots is equivalent to 67 mph.
Box Elder County									
7 N Blue Creek	21	1930MST			0	0	0.00K	0.00K	Thunderstorm Wind (68MG) The Promontory Point mesonet site recorded a maximum wind gust of 78 mph.
									Note: The measured wind gust of 68 knots is equivalent to 78 mph.
Cache County									
Logan	21	2020MST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG) Strong thunderstorm winds in Logan knocked over a tree that was a foot in diameter and approximately 50 feet tall. This tree fell onto a house and knocked out power in a 3 block radius.
									Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Cache County									
1 N (LGU)Logan-Cache Arp	21	2051MST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG) The Logan ASOS reported a peak wind gust of 61 mph.
									Note: The measured wind gust of 53 knots is equivalent to 61 mph.
Tooele County									
20 NW (DPG)Michael Aaf Dug	22	0050MST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG) The Salt Flats sensor in the Dugway Proving Ground mesonet measured a wind gust of 61 mph.
									Note: The measured wind gust of 53 knots is equivalent to 61 mph.
Washington County									
13 SSE Rockville	22	0300MST							Flash Flood Heavy rain caused widespread flash flooding across Washington County, including the town of Hildale. The gauge of the Virgin River at Virgin reported an increase from the normal flow of under 100 cfs to nearly 3300 cfs by late morning on September 22. The North Fork of the Virgin River, in Zion National Park, also rose from less than 50 cfs to over 2100 cfs.
9 SSE Hurricane Arpt		1800MST			0	0	0.00K	0.00K	

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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UTAH, West and Central

Kane County

8 SSW Adairville	22	0400MST			0	0	0.00K	0.00K	Flash Flood
5 NW Paria		1900MST							

Flash flooding was reported along the Paria River, with the gauge at Lees Ferry reporting a rise from 4 cfs to over 4200 cfs.

Carbon County

2 SSE East Carbon City	22	0500MST			0	0	4.00M	0.00K	Flash Flood
2 SE Wattis Jct		1700MST							

Multiple rounds of heavy rainfall brought widespread flooding to Carbon County. Significant flooding occurred in Wellington near 100 East, and severe damage was reported to approximately 10 homes. In Carbonville, the Pilling Trailer Park received extensive flooding, forcing the evacuation of 80 different mobile homes. Flooding also occurred in Sunnyside, with widespread street flooding causing manhole covers to pop up across the city. The Price River also experienced significant flooding, with flow along the river jumping from the normal flow of less than 10 cfs to greater than 8,000 cfs. In total across the county, flooding damaged over 140 private homes, several businesses, and many local roads. County officials reported uninsured damages of \$1,602,000 to infrastructure, \$971,000 in damage to businesses, and \$1,071,000 to private property.

Garfield County

5 WNW Escalante	22	0500MST			0	0	0.00K	0.00K	Flash Flood
7 S Boulder		1200MST							

Flash flooding was reported along the Escalante River, with readings at the river gauge increasing from under 50 cfs to over 1500 cfs in a short period of time.

Wayne County

3 E Fruita	22	0955MST			0	0	0.00K	0.00K	Flash Flood
		1155MST							

Widespread flash flooding was reported in Capitol Reef National Park, including along Sulphur Creek. The flooding also caused park rangers to close the Scenic Drive.

Duchesne County

2 WNW (U67)Roosevelt Muni	22	1000MST			0	0	100.00K	0.00K	Flood
1 WSW Roosevelt		1700MST							

Flash flooding was reported across Roosevelt, with the worst flooding along State Street. Multiple homes and businesses experienced flood damage, though most of the residential flooding occurred in yards and driveways. In addition, water flowed across U.S. Route 40, and water was over a foot deep in some locations as it crossed the highway.

Tooele County

1 NE Wendover Af Aux Arprt	22	1155MST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG)

The Wendover AWOS recorded a peak wind gust of 61 mph.
Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Tooele County

Clive	22	1250MST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG)

A 61 mph wind gust was measured at the Vernon Hill sensor.
Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Tooele County

16 WSW (DPG)Michael Aaf Du	22	1340MST			0	0	0.00K	0.00K	Thunderstorm Wind (52MG)

A 60 mph wind gust was reported at the Target R station in the Dugway Proving Ground mesonet.
Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Box Elder County

11 S Lakeside	22	1345MST			0	0	0.00K	0.00K	Thunderstorm Wind (55EG)

A 63 mph wind gust was reported at the Lakeside Mountain mesonet station.
Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
UTAH, West and Central									
Tooele County									
4 NNW Dugway	22	1355MST			0	0	0.00K	0.00K	Thunderstorm Wind (54EG)
	The Cedar Mountain mesonet site reported a peak wind gust of 62 mph.								
	Note: The estimated wind gust of 54 knots is equivalent to 62 mph.								
Box Elder County									
12 SSW Saline	22	1400MST 1415MST			0	0	0.00K	0.00K	Thunderstorm Wind (60MG)
	A 69 mph peak wind gust was recorded at the Hat Island mesonet sensor.								
	Note: The measured wind gust of 60 knots is equivalent to 69 mph.								
Box Elder County									
3 N Promontory Pt Arprt	22	1415MST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
	The Promontory Point sensor recorded a maximum wind gust of 61 mph.								
	Note: The measured wind gust of 53 knots is equivalent to 61 mph.								
Davis County									
1 E Laytona	22	1415MST			0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
	One large tree was snapped and knocked down in Layton, while another large tree in the same location was completely uprooted.								
	Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Tooele County									
2 WNW Pehrson Station	22	1415MST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
	The Vernon Hill sensor reported a peak wind gust of 61 mph.								
	Note: The measured wind gust of 53 knots is equivalent to 61 mph.								
Weber County									
1 ESE Washington Terrace	22	1415MST			0	0	0.00K	0.00K	Thunderstorm Wind (70MG)
	An 81 mph wind gust was reported in South Ogden.								
	Note: The measured wind gust of 70 knots is equivalent to 81 mph.								
Tooele County									
1 N Lake Pt	22	1420MST			0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
	A 60 mph wind gust was recorded at the Lake Point Interstate 80 sensor.								
	Note: The measured wind gust of 52 knots is equivalent to 60 mph.								
Davis County									
11 SSW Syracuse	22	1423MST			0	0	35.00K	0.00K	Thunderstorm Wind (65MG)
	A University of Utah sensor near Antelope Island recorded a peak wind gust of 75 mph. In addition, the roof of a barn at the Fielding Gar Ranch was severely damaged, and other standing structures, windows, and dumpsters were also damaged by the winds.								
	Note: The measured wind gust of 65 knots is equivalent to 75 mph.								
Weber County									
8 SSW Little Mtn	22	1430MST			0	0	0.00K	0.00K	Thunderstorm Wind (60MG)
	The Fremont Island mesonet site reported a maximum wind gust of 69 mph.								
	Note: The measured wind gust of 60 knots is equivalent to 69 mph.								
Davis County									
2 W West Pt	22	1437MST			0	0	0.00K	0.00K	Hail (1.75)
	Golf ball-sized hail was reported just west of West Point.								
Davis County									
1 S Clearfield	22	1445MST			0	0	0.00K	0.00K	Hail (1.00)
	One inch diameter hail was reported near Clearfield.								
Weber County									
1 SE Roy 1 ENE Washington Terrace	22	1445MST 1500MST	2.85	50	0	5	2.00M	0.00K	Tornado (EF1)

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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UTAH, West and Central

A tornado touched down in Riverdale in Weber County. The tornado moved rapidly to the northeast, but was not consistently on the ground. It skipped on several occasions in Riverdale, producing primarily EF0 damage to trees and a several homes. The tornado then produced a more continuous swath of damage through Washington Terrace producing EF1 damage to numerous homes, structures, as well as many trees. Finally, the tornado skipped briefly into South Ogden producing EF0 damage before dissipating. One person suffered a head injury and took private transportation to a hospital. A few others were cut by flying glass, but were not hospitalized. The many downed trees across the area caused widespread power outages, with over 37,000 customers impacted. Approximately 12 homes in Washington Terrace were so damaged that they were deemed uninhabitable until repaired, and a total of about 30 homes were damaged across Weber County.

Davis County

1 WNW Farmington

22	1450MST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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The US-89 and Park Lane sensor recorded a wind gust of 59 mph.

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Weber County

3 SE Uintah

22	1450MST				0	0	0.00K	0.00K	Thunderstorm Wind (51MG)
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The Weber Canyon Power Plant mesonet site reported a maximum wind gust of 59 mph.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Morgan County

3 NW Gateway

22	1500MST				0	0	0.00K	0.00K	Thunderstorm Wind (51MG)
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The Snowbasin-Straw Top sensor reported a peak wind gust of 59 mph.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Salt Lake County

2 SW Saltair

22	1500MST				0	0	0.00K	0.00K	Thunderstorm Wind (51MG)
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A 59 mph wind gust was reported at the Center Tailings mesonet site.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Weber County

4 SSW Huntsville

22	1500MST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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The Trappers Loops Road mesonet site reported a peak wind gust of 58 mph.

Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Weber County

4 SSE Hermitage

22	1500MST				0	0	0.00K	0.00K	Thunderstorm Wind (51MG)
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The Snowbasin Wildcat mesonet sensor reported a peak wind gust of 59 mph.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Weber County

3 NE Uintah

22	1500MST				0	0	0.00K	0.00K	Thunderstorm Wind (88MG)
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The Ogden Peak sensor recorded a maximum wind gust of 101 mph, with speeds significantly increased by a passing severe thunderstorm.

Note: The measured wind gust of 88 knots is equivalent to 101 mph.

Garfield County

1 N Panguitch

22	1754MST 1810MST	0.75	25	0	0	300.00K	0.00K	Tornado (EF1)
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A tornado touched down in Panguitch, producing an intermittent damage path which included EF1 damage to a business in town and EF0 damage to several homes and numerous trees. The most significant damage occurred to a business located at 609 North Main Street, where the tornado took off the roof of a building. The tornado also caused significant damage to numerous vehicles in the area and knocked down multiple power lines, leaving much of the community without power. No injuries were reported across the area.

A strong and moist Pacific storm brought widespread precipitation and severe weather to Utah. Two tornadoes were reported on September 22, and other significant impacts included strong gusty winds, large hail, and widespread flash flooding.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
VERMONT, North and Central									
Franklin County									
Franklin	11	0344EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	Trees downed on powerlines. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Chittenden County									
1 W Shelburne	11	0400EST			0	0	100.00K	0.00K	Lightning
	Lightning caused a fire that completely destroyed an Old Dairy Barn at Shelburne Farms.								
Orleans County									
2 SE Jay	11	0410EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	Several trees down on roads due to thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Grand Isle County									
Grand Isle	11	0411EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	A few trees downed on power lines. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Washington County									
2 WSW South Northfield	11	0550EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	Trees down due to thunderstorm winds along Route 12A. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Washington County									
Barre	11	0611EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Several trees and utility lines downed by thunderstorm winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Washington County									
Berlin	11	0611EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Trees on power lines in Berlin and Barre. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Orange County									
Randolph	11	0615EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	Trees fallen onto power lines. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Caledonia County									
1 S Groton	11	0625EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
	Trees down along Route 302 in Groton. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Windsor County									
Bridgewater Corners	11	0630EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
	Trees downed on power lines in Plymouth and Bridgewater. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								
Essex County									
1 S Lunenburg	11	0655EST			0	0	10.00K	0.00K	Thunderstorm Wind (55EG)
	Numerous trees and power lines downed by thunderstorm winds in Lunenburg/Guildhall community. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.								
Rutland County									
Pittsford	11	0655EST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
	Several trees downed power lines in Pittsford. A cold front moved across New York during the early morning hours and Vermont during the morning hours of September 11th. Preceding this cold front was a rather solid line of showers and thunderstorms that stretched from the Canadian border south to the Massachusetts border that moved across VT in the pre-dawn hours. Scattered severe thunderstorms knocked down numerous trees and caused subsequent power outages. In addition, numerous cloud to ground lightning strikes caused power outages and actually caused a fire that destroyed an historic dairy barn at the Shelburne Farms in Shelburne. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.								

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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VIRGINIA, East

VAZ077-084>086-089>090-092>093-095>100-523>525

Accomack - Chesapeake - Gloucester - Hampton/poquoson - Isle of Wight - James City - Lancaster - Mathews - Middlesex - Newport News - Norfolk - Northampton - Northumberland - Southampton - Suffolk - Surry - Virginia Beach - York

02	1500EST								
03	2300EST			0	0	35.0K	0.00K	Tropical Storm	

Tropical Storm Hermine moving northeast along the Southeast Coast then off the Mid Atlantic Coast produced tropical storm force winds, minor to moderate coastal flooding, and locally heavy rainfall across portions of Hampton Roads, the Middle Peninsula, and the Virginia Eastern Shore from Friday afternoon, September 2nd into Saturday night, September 3rd.

Accomack County Onley

19	0600EST								
22				0	0	0.00K	0.00K	Heavy Rain	

Rainfall totals generally ranged from 2 to 8 inches across the county. Onley reported 7.79 inches of rain. Tasley reported 3.94 inches of rain. Atlantic (1 NE) reported 3.38 inches of rain. Chincoteague (1 SW) reported 3.30 inches of rain. Accomac (3 ENE) reported 3.07 inches of rain. New Church reported 2.73 inches of rain.

Amelia County 1 NE Ammon

19	0600EST								
22				0	0	0.00K	0.00K	Heavy Rain	

Rainfall totals generally ranged from 1 inch to 3 inches across the county. Angola (2 SSE) reported 3.08 inches of rain. Ammon (1 NE) reported 1.41 inches of rain.

Brunswick County 5 N Alberta

19	0600EST								
22				0	0	0.00K	0.00K	Heavy Rain	

Rainfall totals generally ranged from 2 to 7 inches across the county. Alberta (5 N) reported 3.59 inches of rain.

Caroline County 3 NNW Burruss Corner

19	0600EST								
22				0	0	0.00K	0.00K	Heavy Rain	

Rainfall totals generally ranged from 1 inch to 3 inches across the county. Fort A.P. Hill (1 SSW) reported 2.98 inches of rain. Burruss Corner (3 NNW) reported 2.50 inches of rain. Port Royal (2 S) reported 2.49 inches of rain. Sparta (3 N) reported 2.09 inches of rain. Rappahannock Academy (2 N) reported 1.81 inches of rain.

Charles City (c) County Charles City

19	0600EST								
22				0	0	0.00K	0.00K	Heavy Rain	

Rainfall totals generally ranged from 1 inch to 4 inches across the county.

Chesterfield County 3 NNW Midlothian

19	0600EST								
22				0	0	0.00K	0.00K	Heavy Rain	

Rainfall totals generally ranged from 1 inch to 4 inches across the county. Midlothian (3 NNW) reported 3.67 inches of rain. Beach (2 WNW) reported 3.11 inches of rain. Moseley (3 E) reported 2.73 inches of rain. Chester (3 WSW) reported 2.66 inches of rain. Matoaca (4 N) reported 2.01 inches of rain.

Dinwiddie County Dinwiddie

19	0600EST								
22				0	0	0.00K	0.00K	Heavy Rain	

Rainfall totals generally ranged from 2 to 4 inches across the county. Walkers (1 SE) reported 3.62 inches of rain.

Essex County 2 NNE Dunnsville

19	0600EST								
22				0	0	0.00K	0.00K	Heavy Rain	

Rainfall totals generally ranged from 1 inch to 4 inches across the county. Dunnsville (2 NNE) reported 3.17 inches of rain.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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VIRGINIA, East

Gloucester County

2 ENE Ark

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 2 to 6 inches across the county. Ark (2 ENE) reported 5.86 inches of rain.

Goochland County

Crozier

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 4 inches across the county. Crozier reported 3.12 inches of rain. Sabot (2 NE) reported 2.55 inches of rain. Sabot reported 2.45 inches of rain.

Greensville County

Skippers

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 2 to 6 inches across the county. Cowie Corner (1 N) reported 3.58 inches of rain.

Hanover County

Hewlett

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 4 inches across the county. Hewlett reported 3.34 inches of rain. Highland Springs (2 NE) reported 2.57 inches of rain. Beaverdam (1 E) reported 2.56 inches of rain. Ashland reported 2.01 inches of rain. Mechanicsville (2 SE) reported 1.42 inches of rain.

Henrico County

1 SW Short Pump

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 4 inches across the county. Short Pump (1 SW) reported 2.71 inches of rain. Tuckahoe (1 NE) reported 2.38 inches of rain. Richmond International Airport (RIC) reported 2.02 inches of rain. Varina reported 1.62 inches of rain.

Isle Of Wight County

1 WSW Carrsville

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 2 to 7 inches across the county. Carrsville (1 WSW) reported 5.72 inches of rain. Smithfield (1 SSW) reported 5.41 inches of rain. Benns Church (1 NNW) reported 4.58 inches of rain. Carrollton (2 ESE) reported 4.50 inches of rain. Comet reported 3.46 inches of rain.

James City County

Five Forks

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 2 to 6 inches across the county. Five Forks reported 4.66 inches of rain. Centerville (1 ESE) reported 4.24 inches of rain. Lightfoot (1 WNW) reported 2.97 inches of rain.

King And Queen County

King & Queen Church

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 3 inches across the county. West Point (1 NE) reported 1.37 inches of rain.

King William County

West Pt

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 3 inches across the county.

Lancaster County

1 SW Kilmarnock

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 4 inches across the county. Kilmarnock (1 SW) reported 2.50 inches of rain. Mollusk (1 ESE) reported 2.07 inches of rain. Brook Vale (1 SSE) reported 2.03 inches of rain.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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VIRGINIA, East

Mathews County Port Haywood

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 2 to 6 inches across the county. Port Haywood reported 5.34 inches of rain. North reported 5.10 inches of rain. Fort Nonsense (1 S) reported 2.69 inches of rain.

Mecklenburg County 3 E Rogers Corner

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 2 to 8 inches across the county. Rogers Corner (3 E) reported 7.46 inches of rain. Clarksville reported 4.50 inches of rain. John H Kerr Dam reported 3.08 inches of rain.

Middlesex County 1 SSE Healys

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 2 to 6 inches across the county. Stampers reported 5.49 inches of rain. Healys (1 SSE) reported 3.55 inches of rain.

New Kent County New Kent

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 4 inches across the county.

Northampton County Oyster

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 3 to 6 inches across the county. Oyster reported 4.53 inches of rain.

Northumberland County 1 E Byrdton

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 4 inches across the county. Byrdton (1 E) reported 3.07 inches of rain. Fleeton (1 WSW) reported 1.75 inches of rain.

Prince George County 1 ENE Garysville

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 4 inches across the county. Carson (2 NE) reported 2.79 inches of rain. Garysville (1 ENE) reported 2.44 inches of rain. Disputanta (1 ESE) reported 1.18 inches of rain.

Richmond County Newland

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 3 inches across the county.

Southampton County Hunterdale

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 3 to 9 inches across the county. Hunterdale reported 8.90 inches of rain. Berlin (1 SSW) reported 5.36 inches of rain.

Surry County 1 WSW Scotland

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 2 to 5 inches across the county. Scotland (1 WSW) reported 4.18 inches of rain. Claremont reported 4.07 inches of rain.

Sussex County Wakefield Arpt

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 2 to 5 inches across the county. Wakefield Airport (AKQ) reported 4.39 inches of rain. Stony Creek (3 NE) reported 2.66 inches of rain.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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VIRGINIA, East

Westmoreland County

Montross	19 22	0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 1 inch to 4 inches across the county.

York County

Seaford	19 22	0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 3 to 8 inches across the county. Seaford reported 7.10 inches of rain. Tabb reported 4.42 inches of rain.

Chesapeake (c) County

1 W Great Bridge	19 22	0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 6 to 18 inches across the county. Great Bridge (1 W) reported 17.85 inches of rain. Fentress (1 WSW) reported 15.59 inches of rain. Naval Auxiliary Landing Field reported 12.22 inches of rain. Bowers Hill reported 10.14 inches of rain. Deep Creek reported 6.17 inches of rain.

Colonial Heights (c) County

Colonial Hgts	19 22	0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 1 inch to 3 inches across the county. City of Colonial Heights reported 1.31 inches of rain.

Emporia County

Emporia	19 22	0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 2 to 5 inches across the county.

Franklin (c) County

Franklin Muni	19 22	0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 3 to 6 inches across the county. Franklin Municipal Airport (FKN) reported 5.44 inches of rain.

Hampton (c) County

Hampton	19 22	0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 3 to 8 inches across the county. Phoebus (1 W) reported 7.45 inches of rain. Northampton (1 WNW) reported 5.82 inches of rain. Langley Air Force Base reported 4.47 inches of rain.

Hopewell (c) County

Hopewell	19 22	0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 1 inch to 3 inches across the county.

Newport News (c) County

Denbigh	19 22	0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 3 to 7 inches across the county. Denbigh reported 6.55 inches of rain. Fort Eustis (1 W) reported 4.92 inches of rain. Newport News/Williamsburg International Airport (PHF) reported 4.78 inches of rain.

Norfolk (c) County

Norfolk	19 22	0600EST			0	0	0.00K	0.00K	Heavy Rain
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Rainfall totals generally ranged from 6 to 12 inches across the county. Norview reported 11.27 inches of rain. Norfolk International Airport (ORF) reported 9.90 inches of rain. Ghent reported 9.62 inches of rain.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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VIRGINIA, East

Petersburg (c) County

Petersburg

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 3 inches across the county.

Portsmouth (c) County

Cradock

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 6 to 11 inches across the county. Churchland (2 NNE) reported 10.11 inches of rain. Cradock reported 10.06 inches of rain. Downtown Portsmouth (2 WNW) reported 8.64 inches of rain.

Richmond (c) County

Richmond

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 1 inch to 3 inches across the county.

Suffolk (c) County

Suffolk

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 5 to 11 inches across the county. Saunders (2 SE) reported 11.04 inches of rain. Suffolk reported 9.20 inches of rain. Hobson (2 ESE) reported 6.44 inches of rain. Downtown Suffolk reported 5.22 inches of rain.

Virginia Beach (c) County

2 W Kempsville

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 7 to 16 inches across the county. Kempsville (2 W) reported 15.61 inches of rain. Sigma (1 NNW) reported 14.35 inches of rain. Princess Anne (1 NNE) reported 13.36 inches of rain. Back Bay (1 SSW) reported 7.74 inches of rain.

Williamsburg (c) County

Williamsburg

19	0600EST				0	0	0.00K	0.00K	Heavy Rain
22									

Rainfall totals generally ranged from 3 to 7 inches across the county. Williamsburg (1 ENE) reported 5.48 inches of rain.

The combination of a stalled frontal boundary and the remnant low pressure area that was Tropical Storm Julia, produced heavy rain across much of eastern and central Virginia from Monday, September 19th into Thursday, September 22nd. The highest rainfall totals were over the Hampton Roads area.

Chesapeake (c) County

Chesapeake

4 S Glen Rock

21	1030EST								
22	0200EST				0	0	725.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Norfolk (c) County

Norfolk

21	1030EST								
22	0200EST				0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Portsmouth (c) County

Portsmouth

21	1030EST								
22	0200EST				0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Suffolk (c) County

4 ESE Whaleyville Arpt

4 SW Cleopus

21	1030EST								
22	0200EST				0	0	360.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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VIRGINIA, East

Virginia Beach (c) County

1 SE North Virginia Beach	21	1030EST							
2 SE Munden	22	0200EST			0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Isle Of Wight County

2 SSW Maynards Xrds	21	1510EST							
3 SSW Carrsville	22	0200EST			0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Southampton County

4 SSW Little Texas	21	1510EST							
2 ENE Manry	22	0200EST			0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

Franklin (c) County

Franklin	21	1510EST							
	22	0200EST			0	0	0.00K	0.00K	Flood

Heavy rain caused flooding across much of the county with numerous roads washed out or closed.

The combination of a stalled frontal boundary and the remnant low pressure area that was Tropical Storm Julia, produced heavy rain which caused flooding across much of southeast Virginia from Wednesday morning, September 21st into early Thursday morning, September 22nd.

Caroline County

2 S Port Royal	28	1300EST							
	30	1800EST			0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 2 to 6 inches across the county. Rappahannock Academy (2 N) reported 6.25 inches of rain. Port Royal (2 S) reported 3.93 inches of rain. Fort A.P. Hill (1 SSW) reported 3.80 inches of rain. Dawn (1 S) reported 3.01 inches of rain.

Charles City (c) County

Charles City	28	1300EST							
	30	1800EST			0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 3 to 7 inches across the county.

Chesterfield County

5 S Midlothian	28	1300EST							
	30	1800EST			0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 2 to 12 inches across the county. Midlothian (5 S) reported 12.01 inches of rain. Beach (2 WNW) reported 8.65 inches of rain. Chester (3 WSW) reported 5.24 inches of rain. Matoaca (4 N) reported 3.83 inches of rain. Chesterfield (3 SSW) reported 3.81 inches of rain. Moseley (5 E) reported 3.78 inches of rain.

Hanover County

Ashland	28	1300EST							
	30	1800EST			0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 3 to 6 inches across the county. Highland Springs (2 NE) reported 5.39 inches of rain. Ashland reported 4.44 inches of rain. Mechanicsville (2 SE) reported 3.43 inches of rain.

Henrico County

Varina	28	1300EST							
	30	1800EST			0	0	0.00K	0.00K	Heavy Rain

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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VIRGINIA, East

Rainfall totals generally ranged from 3 to 10 inches across the county. Varina reported 9.57 inches of rain. Elko reported 7.99 inches of rain. Richmond International Airport (RIC) reported 6.74 inches of rain. Sandston (2 S) reported 5.84 inches of rain. Short Pump (3 NNE) reported 3.54 inches of rain. Tuckahoe (1 NE) reported 3.12 inches of rain.

James City County 3 W Toano

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 1 inch to 4 inches across the county. York River State Park (2 NW) reported 3.00 inches of rain.

King William County Aylett

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 1 inch to 6 inches across the county. Aylett reported 4.55 inches of rain. West Point reported 3.41 inches of rain.

New Kent County Bottoms Bridge

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 3 to 7 inches across the county. Bottoms Bridge reported 5.90 inches of rain.

Prince George County 1 ENE Garysville

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 1 inch to 4 inches across the county. Garysville (1 ENE) reported 3.71 inches of rain.

Colonial Heights (c) County Colonial Hgts

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 2 to 5 inches across the county. Colonial Heights reported 3.89 inches of rain.

Hopewell (c) County Hopewell

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 3 to 6 inches across the county.

Petersburg (c) County Petersburg

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 2 to 4 inches across the county.

Waves of low pressure moving along a stalled frontal boundary over the Mid Atlantic region produced periodic showers and thunderstorms with heavy rain across much of central Virginia from Wednesday afternoon, September 28th into Friday evening, September 30th.

Accomack County 1 SW Chincoteague

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 1 inch to 8 inches across the county. Chincoteague (1 SW) reported 8.39 inches of rain. Wallops Flight Facility Airport (WAL) reported 7.39 inches of rain. Atlantic (1 NE) reported 5.42 inches of rain. Greenbackville (1 NE) reported 4.25 inches of rain.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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VIRGINIA, East

Essex County Tappahannock

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 1 inch to 4 inches across the county.

King And Queen County 3 S Little Plymouth

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 1 inch to 6 inches across the county. Little Plymouth (3 S) reported 3.11 inches of rain.

Lancaster County 1 SE Mollusk

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 2 to 7 inches across the county. Mollusk (1 SE) reported 6.46 inches of rain. Mollusk (1 ESE) reported 6.05 inches of rain. Mollusk (1 E) reported 4.37 inches of rain. Brook Vale (1 SSE) reported 3.94 inches of rain.

Mathews County 1 NNE Laban

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 1 inch to 4 inches across the county. Laban (1 NNE) reported 3.29 inches of rain.

Middlesex County 1 N Remlik

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 2 to 6 inches across the county. Remlik (1 N) reported 4.65 inches of rain.

Northumberland County Lottsburg

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 2 to 6 inches across the county. Lottsburg reported 5.70 inches of rain. Fleeton (1 WSW) reported 5.65 inches of rain.

Richmond County Farnham

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 1 inch to 4 inches across the county.

Westmoreland County Montross

28	1300EST								
30	1800EST				0	0	0.00K	0.00K	Heavy Rain

Rainfall totals generally ranged from 1 inch to 4 inches across the county.

Waves of low pressure moving along a stalled frontal boundary over the Mid Atlantic region produced periodic showers and thunderstorms with heavy rain across much of the Virginia Northern Neck into the Virginia Eastern Shore from Wednesday afternoon, September 28th into Friday evening, September 30th.

Henrico County 4 N Short Pump

28	1454EST								
Quarter size hail was reported.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
VIRGINIA, East									
Hanover County									
1 WNW Lewistown	28	1505EST			0	0	0.00K	0.00K	Hail (2.00)
			Hen egg size hail was reported.						
Hanover County									
Lewistown	28	1505EST			0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
			Tree was downed across Southbound lane of Interstate 95. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
Hanover County									
1 SW Ashland	28	1507EST			0	0	0.00K	0.00K	Hail (1.75)
			Golf ball size hail was reported.						
Mecklenburg County									
1 N Clarksville Marks Ar	28	1630EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
			Numerous trees were downed and blocking roads from west of Clarksville into town. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
Mecklenburg County									
2 SSE Chase City	28	1640EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
			Numerous trees were downed and roads were blocked from south of Chase City to near South Hill. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
Chesterfield County									
4 N Beach	28	1703EST			0	0	0.00K	0.00K	Hail (1.00)
			Quarter size hail was reported.						
King And Queen County									
2 NE Truhart	28	1720EST			0	0	0.00K	0.00K	Hail (1.75)
			Golf ball size hail was reported.						
King And Queen County									
2 NNW Dragonville	28	1723EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
			Trees were downed along Rock Spring Road near Dragonville. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
Lancaster County									
2 NE Iberis	28	1816EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
			Tree and power lines were downed along Devil's Bottom Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
Northumberland County									
2 NNE Rehoboth Church	28	1830EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
			Numerous trees were downed across the southern end of Northumberland county. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.						
Goochland County									
3 ESE Columbia	28	1948EST			0	0	0.00K	0.00K	Hail (1.75)
			Golf ball size hail was reported. Scattered severe thunderstorms in advance of a frontal boundary produced damaging winds and large hail across portions of central and eastern Virginia.						
VAZ075									
Westmoreland									
	29	2300EST							
	30	0500EST			0	0	0.00K	0.00K	Coastal Flood
VAZ075-077									
Northumberland - Westmoreland									
	30	0000EST							
		1530EST			0	0	0.00K	0.00K	Coastal Flood
			Prolonged east to northeast winds produced minor to moderate coastal flooding in parts of the Chesapeake Bay region. Water levels reached moderate flood levels on the Northern Neck.						

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
<u>VIRGINIA, East</u>									
Dinwiddie County									
7 SE Butterworth	30	1515EST			0	0	0.00K	0.00K	Flash Flood
8 SE Dewitt		1745EST							
Numerous roads had high water throughout the county.									
Petersburg (c) County									
2 ENE Petersburg	30	1630EST			0	0	0.00K	0.00K	Flash Flood
Numerous roads throughout the city of Petersburg had several feet of water on them.									
Waves of low pressure moving along a stalled frontal boundary over the Mid Atlantic region produced periodic showers and thunderstorms with heavy rain that caused flash flooding across portions of central Virginia.									
<u>VIRGINIA, North</u>									
Fairfax County									
2 S Accotink	07	1707EST			0	0			Thunderstorm Wind (50EG)
A tree was blocking Gunston Road near Harley Road.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Fauquier County									
1 NNE Calverton	07	1721EST			0	0			Thunderstorm Wind (50EG)
A tree was down in the roadway on Catlett Road near Tapp Hollow Lane.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Prince William County									
1 SE Nokesville	07	1722EST			0	0			Thunderstorm Wind (50EG)
A tree was down on Aden Road near Fitzwater Drive.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Fairfax County									
1 N Clifton	07	1733EST			0	0			Thunderstorm Wind (50EG)
A tree was down in the 6500 Block of Newman Road.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Fairfax County									
1 WNW Lorton	07	1752EST			0	0			Thunderstorm Wind (50EG)
A large tree was down on wires on Lorton Road near Windermere Hill Drive.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Prince William County									
Woodbridge	07	1752EST			0	0			Thunderstorm Wind (50EG)
A tree was down on Jefferson Davis Highway near Marys Way.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Stafford County									
1 SSE Mountain View	07	1755EST			0	0			Thunderstorm Wind (50EG)
A tree was down near the intersection of Barbara Ann Drive and Theresa Drive.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Stafford County									
1 SE Roseville	07	1755EST			0	0			Thunderstorm Wind (50EG)
A tree was down on power lines along Rose Hill Farm Drive.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Stafford County									
3 NW Brooke	07	1801EST			0	0			Thunderstorm Wind (50EG)
A tree was down in the 800 Block of Ramoth Church Road.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
VIRGINIA, North									
Stafford County									
1 E Aquia	07	1802EST			0	0			Thunderstorm Wind (50EG)
A tree was down near the intersection of Hope Road and Hope Springs Lane.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
King George County									
1 SSE Fairview Beach	07	1815EST			0	0			Thunderstorm Wind (50EG)
A tree was down near the intersection of Fairview Drive and Caledon Road.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
King George County									
1 E Fairview Beach	07	1815EST			0	0			Thunderstorm Wind (50EG)
A tree was down on Potomac Landing Drive.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
King George County									
1 ENE Comorn	07	1819EST			0	0			Thunderstorm Wind (50EG)
A tree was down in the 8000 Block of Dahlgren Road.									
An upper-level low remained nearby while a surface trough was overhead. Warm and humid conditions led to an unstable atmosphere and some thunderstorms developed due to the surface trough and upper-level low. A few thunderstorms produced damaging wind gusts. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
VAZ029									
Page									
	19	2335EST							
	20	0655EST			0	0			Dense Fog
VAZ025-028-030>031									
Augusta - Clarke - Frederick - Rockingham - Warren									
	20	0255EST							
		0801EST			0	0			Dense Fog
Radiational cooling along with high amounts of low-level moisture resulted in areas of dense fog during the early morning hours.									
Loudoun County									
2 NW Lovettsville	28	2051EST			0	0			Thunderstorm Wind (50EG)
Two large trees had large branches snapped.									
A cold front from the north and east moved through central Virginia during on the 28th. A cutoff upper-level low also approached from the Midwest during this time. A few thunderstorms developed ahead of the cold front, and were able to mix down strong winds from aloft ahead of the upper-level low. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Frederick County									
2 ENE Burning Knolls	29	0120EST 0700EST			0	0	0.00K	0.00K	Flash Flood
Valley Mill Road was closed due to flooding. Law enforcement was on site directing traffic away from roadway.									
Clarke County									
3 SE Millwood	29	0150EST 0700EST			0	0	0.00K	0.00K	Flash Flood
Route 50 westbound was closed near Swift Shoals road due to flooding.									
Stafford County									
1 N Mt Joy Store 1 SW Midway Is	29	0320EST 0945EST			0	0	0.00K	0.00K	Flood
Route 1 was closed near Potomac Hills Fire State due to flooding.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
					Killed	Injured	Property		
VIRGINIA, North									
Stafford County									
1 NW Ferry Farms	29	0400EST							
1 NE Falmouth		0945EST			0	0	0.00K	0.00K	Flood
									Harrell Road was closed due to flooding.
Fairfax County									
1 ENE Donovans Corner	29	0430EST							
		0945EST			0	0	0.00K	0.00K	Flood
									Burke Lake Road was closed near Jermiah Court due to flooding.
									An upper level low was over Kentucky for an extended period of time and southerly flow led to persistent moisture advection across the Mid-Atlantic region. Showers and thunderstorms moved from south to north and led to multiple rounds of heavy rain. Flooding occurred across the Mid-Atlantic region.
Shenandoah County									
2 SSE Saumsville	29	1410EST			1	0			Thunderstorm Wind (30EG)
									A tree fell onto a pickup truck. One fatality was reported. M300U
									A few gusty showers and isolated thunderstorms developed due to an upper-level low nearby along with a stationary boundary. M300U Note: The estimated wind gust of 30 knots is equivalent to 35 mph.
Page County									
1 NE Kimball	29	1416EST							
		2230EST			0	0	0.00K	0.00K	Flood
									Lyn-Mar Road was closed over Pass Run due to flooding. This is a low water crossing.
Warren County									
1 WSW Cedarville	29	1416EST							
		2230EST			0	0	0.00K	0.00K	Flood
									Ritnour Hollow Road was closed due to high water over Ritenour Run.
Warren County									
1 W Cedarville	29	1436EST							
		2230EST			0	0	0.00K	0.00K	Flood
									Reliance Road was closed over Crooked Run due to high water.
Page County									
1 ENE Fairview	29	1627EST							
1 S Kimball		2230EST			0	0	0.00K	0.00K	Flood
									All three bridges on Dry Run Road were closed due to high water.
Clarke County									
4 NNW Boyce	29	1700EST							
		2230EST			0	0	0.00K	0.00K	Flood
									Sulphur Spring Road was closed over Opequon Creek Due to high water.
Clarke County									
2 SSW Wadesville	29	1700EST							
		2230EST			0	0	0.00K	0.00K	Flood
									Old Charlestown Road was closed near Opequon Creek due to high water.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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VIRGINIA, North

Frederick County

1 SE Burning Knolls

29	1700EST 2230EST				0	0	0.00K	0.00K	Flood
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Greenwood Road was closed at Edmonson Lane due to high water.

Frederick County

1 SW Green Spg

29	1700EST 2230EST				0	0	0.00K	0.00K	Flood
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Cattail Road was closed due to high water.

Frederick County

1 SE Freyco

29	1700EST 2230EST				0	0	0.00K	0.00K	Flood
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Jordan Springs Road was closed due to high water.

Frederick County

2 ENE Hayfield

29	1700EST 2230EST				0	0	0.00K	0.00K	Flood
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Indian Hollow Road was closed in the 2200 Block due to high water.

Page County

2 SW Panorama

29	1706EST 2230EST				0	0	0.00K	0.00K	Flood
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Jewell Hollow Road was closed over Pass Run due to high water.

Page County

2 E Stony Man

29	1717EST 2230EST				0	0	0.00K	0.00K	Flood
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Printz Mill Road was closed over South Fork Dry Run due to high water.

Frederick County

2 ENE Burning Knolls

29	1900EST 2230EST				0	0	0.00K	0.00K	Flood
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Channing Drive was closed near Valley Mill Road due to high water.

Frederick County

1 E Rock Enon Spgs

29	1900EST 2230EST				0	0	0.00K	0.00K	Flood
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Back Creek Road was closed in the 2100 Block due to high water.

An upper level low was over Kentucky for an extended period of time and southerly flow led to persistent moisture advection across the Mid-Atlantic region. Showers and thunderstorms moved from south to north and led to multiple rounds of heavy rain. Flooding occurred across the Mid-Atlantic region.

VIRGINIA, Southwest

Henry County

**2 ENE Stones Store
2 SW Bassett**

27	1611EST 1618EST				0	0	1.00K	0.00K	Thunderstorm Wind (55EG)
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Thunderstorm winds resulted in two trees down across roadways just west of Bassett.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
VIRGINIA, Southwest									
Henry County									
1 NE Bassett	27	1624EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG) Thunderstorm winds resulted in one tree down over the road at the 600 block of Basset Drive.
									Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Henry County									
1 N Collinsville	27	1630EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG) Thunderstorm winds resulted in one tree down.
									Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Campbell County									
Rustburg	27	2235EST			0	0			Hail (1.00)
Campbell County									
Concord	27	2245EST			0	0			Hail (1.00) Isolated to scattered thunderstorms formed as a result of a stationary front that pushed to the northeast of the area, and a cold front approaching from the northwest that followed on September 27th. Instability increased in some parts of the area due to breaks in the cloud cover. As a result, storms initiated along the slowly moving frontal boundary in the southern Piedmont counties of Virginia. Some storms produced strong wind gusts and hail east of the Blue Ridge divide.
Montgomery County									
1 WSW Mt Tabor Blacksburg	28	1335EST 1342EST			0	0	1.00K		Hail (1.00) Hail lasted for several minutes, falling the heaviest between 335 to 340 PM. Dents in cars were reported.
Pittsylvania County									
2 S Kent	28	1415EST			0	0			Hail (1.75)
Danville (c) County									
1 N (KDAN)Danville Regional Airport	28	1420EST			0	0			Hail (1.00)
Pittsylvania County									
Ringgold	28	1427EST 1430EST			0	0			Hail (1.00) Hail the size of a quarter fell for at least three minutes.
Halifax County									
2 WSW Cluster Spgs	28	1515EST			0	0	5.00K	0.00K	Thunderstorm Wind (55EG) Thunderstorm winds resulted in three uprooted trees, one of which impacting the side of a house, near Cluster Springs.
									Note: The estimated wind gust of 55 knots is equivalent to 63 mph.
Halifax County									
1 N Cluster Spgs	28	1520EST			0	0			Hail (3.00)
Halifax County									
Alton	28	1540EST			0	0			Hail (1.50)
Botetourt County									
1 WSW Webster	28	1545EST			0	0	10.00K	0.00K	Thunderstorm Wind (55EG) Thunderstorm winds blew down a few trees and power lines along Webster Road.
									Note: The estimated wind gust of 55 knots is equivalent to 63 mph.
Halifax County									
2 SE Cluster Spgs	28	1553EST			0	0			Hail (1.00)
Roanoke County									
2 NE Lindenwood	28	1553EST			0	0	1.00K	0.00K	Thunderstorm Wind (50EG) Thunderstorm winds resulted in the downing of numerous large tree limbs near the town of Vinton.
									Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
VIRGINIA, Southwest									
Bedford County									
4 SSW Coleman Falls	28	1658EST			0	0			Hail (1.75)
Bedford County									
1 N Boonsboro	28	1708EST 1722EST			0	0	0.00K	0.00K	Hail (1.50)
Hail from the storm fell for several minutes.									
Bedford County									
3 N Boonsboro	28	1714EST			0	0	5.00K	0.00K	Thunderstorm Wind (60EG)
Thunderstorm winds resulted in numerous trees down along Holcomb Rock Road.									
Note: The estimated wind gust of 60 knots is equivalent to 69 mph.									
Lynchburg (c) County									
1 WNW Lynchburg	28	1719EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
Thunderstorm winds brought a power Line down on Rivermont Avenue.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Amherst County									
3 NE Madison Hgts	28	1733EST			0	0	0.00K	0.00K	Hail (1.00)
Amherst County									
2 NNW Stapleton	28	1750EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
Several large tree limbs were blown down by thunderstorm winds.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Buckingham County									
1 SSE New Canton	28	1907EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
Thunderstorm winds toppled a tree along the 2600 Block of C. G. Woodson Road.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Buckingham County									
5 SE Gold Hill	28	1919EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
Thunderstorm winds downed a tree at the intersection of Trents Mill Road and Walnut Hill Lane.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Bedford County									
2 W Peaksville	28	1948EST			0	0			Hail (1.00)
Halifax County									
1 SW Aarons Creek	28	2230EST			0	0	3.00K	0.00K	Lightning
A lightning strike from a thunderstorm started a small house fire in a structure along Aarons Creek Road.									
A quasi-stationary frontal boundary continued to produce bands of deep convection early in the morning on September 28th, as a strong upper low continued to deepen in parts of the Ohio Valley. Widespread severe weather began to occur in the mid afternoon hours, mainly in the form of large hail and isolated wind damage across mainly the piedmont counties of Virginia, as the storms moved out of the New and Roanoke River Valleys.									
Carroll County									
3 NNW Laurel Fork	29	1343EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
Thunderstorm winds toppled a tree along Dugspur Road near the intersection with Silver Leaf Road.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Floyd County									
2 WNW Union	29	1351EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
Thunderstorm winds downed a tree along Burks Fork Road near Willis.									
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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VIRGINIA, Southwest

Patrick County 2 W Ararat

29	1406EST				0	0			Hail (1.00)
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A strong upper low situated across the Ohio River Valley continued its journey south, where it settled just to the west of the Appalachian Mountains. This low aided in the initiation of strong to severe thunderstorms during the afternoon hours of September 29th, which produced large hail and isolated wind damage across the higher elevations of Virginia before pushing just east of the Blue Ridge Mountains.

Montgomery County 1 S Pilot

29	1415EST								
30	2015EST				0	0	0.00K	0.00K	Flood

Brush Creek near Pilot was reported to be over Brush Creek Road.

An upper low became nearly stationary over the Ohio valley providing a favorable environment for showers to develop and track north across the area. Bands of heavier showers pushed across the upper James River basin into Bath County while other storms tracked across parts of the New and Roanoke River basins. The highest 24-hour rain gage totals ending 12z on the September 30th were very impressive especially over the upper James basin (mainly Bath and Alleghany counties) where 5 to 7+ inches of rain fell. Amounts of 2 to 5 inches fell across parts of Franklin, Montgomery and Bedford counties. According to NOAA Atlas 14 for Virginia the 100-year recurrence interval (.01 Annual Exceedance Probability or AEP) for 24-hour rainfall over Bath County ranges from roughly 6.5 to 7.0 inches depending on exact location. Per radar and rain gage estimates 6 to 7+ inches fell over a fairly large area of northern Bath County. At the location of the highest gage report, Back Creek at Sunrise (SUNV2), the 24-hour amount of 7.48 was in excess of the 200-year annual recurrence interval (.005 AEP).

Patrick County 2 SW Dodson

29	1536EST				0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorms winds blew down a tree along Heidelberg School Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Franklin County Ferrum

29	1601EST				0	0			Hail (1.00)
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A strong upper low situated across the Ohio River Valley continued its journey south, where it settled just to the west of the Appalachian Mountains. This low aided in the initiation of strong to severe thunderstorms during the afternoon hours of September 29th, which produced large hail and isolated wind damage across the higher elevations of Virginia before pushing just east of the Blue Ridge Mountains.

Roanoke County Catawba

29	1607EST								
	2207EST				0	0	0.00K	0.00K	Flood

Up to one foot of water was reported covering the intersection of Blacksburg Road and Route 311.

An upper low became nearly stationary over the Ohio valley providing a favorable environment for showers to develop and track north across the area. Bands of heavier showers pushed across the upper James River basin into Bath County while other storms tracked across parts of the New and Roanoke River basins. The highest 24-hour rain gage totals ending 12z on the September 30th were very impressive especially over the upper James basin (mainly Bath and Alleghany counties) where 5 to 7+ inches of rain fell. Amounts of 2 to 5 inches fell across parts of Franklin, Montgomery and Bedford counties. According to NOAA Atlas 14 for Virginia the 100-year recurrence interval (.01 Annual Exceedance Probability or AEP) for 24-hour rainfall over Bath County ranges from roughly 6.5 to 7.0 inches depending on exact location. Per radar and rain gage estimates 6 to 7+ inches fell over a fairly large area of northern Bath County. At the location of the highest gage report, Back Creek at Sunrise (SUNV2), the 24-hour amount of 7.48 was in excess of the 200-year annual recurrence interval (.005 AEP).

Henry County 4 WSW Ridgeway

29	1615EST				0	0			Hail (1.00)
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Franklin County 3 NNW Burnt Chimney

29	1638EST				0	0			Hail (1.25)
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Franklin County 2 WSW Hardys Ford

29	1710EST				0	0			Hail (1.25)
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Bedford County 3 S Villamont

29	1727EST				0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds toppled a tree along Porters Mountain Road near Blue Ridge.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
VIRGINIA, Southwest									
Bedford County									
1 NNW Thaxton	29	1743EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
Thunderstorm winds downed a tree along Breezy Ridge Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Botetourt County									
5 SE Fringer	29	1800EST			0	0	8.00K	0.00K	Thunderstorm Wind (55EG)
Several trees and power lines were blown down near the intersection of Pike Road and Goose Creek Valley Road. Aerial photos taken by a drone suggested a small microburst struck this area. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.									
Franklin County									
2 WNW Union Hall	29	1801EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
Thunderstorm winds downed a tree near Smiths Paradise. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Rockbridge County									
2 S Collierstown	29	1854EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
Thunderstorm winds downed a tree along Bluegrass Trail. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Rockbridge County									
3 N Collierstown	29	1900EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
Thunderstorm winds toppled a tree along Big Hill Road. A strong upper low situated across the Ohio River Valley continued its journey south, where it settled just to the west of the Appalachian Mountains. This low aided in the initiation of strong to severe thunderstorms during the afternoon hours of September 29th, which produced large hail and isolated wind damage across the higher elevations of Virginia before pushing just east of the Blue Ridge Mountains. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.									
Montgomery County									
1 W Lusters Gate	29	2200EST							
	30	0200EST			0	0	0.00K	0.00K	Flood
Indian Run Creek was reported out of its banks and covering Happy Hollow Road.									
Franklin County									
3 SW Gogginsville	29	2300EST							
	30	0600EST			0	0	5.00K	0.00K	Flood
Carolina Spring Road (Route 734) was damaged due to a culvert washout that undermined the road.									
Franklin County									
2 NNE Penhook	29	2300EST							
	30	0600EST			0	0	10.00K	0.00K	Flood
Bull Run Trail (SR 1122) was damaged by a culvert washout leaving about 20 homes temporarily cut off.									
Bath County									
6 NNE Mountain Grove	30	0200EST							
7 W Burnsville		2000EST			0	0	0.00K	0.00K	Flood
The Emergency Manager for the county reported water running across several roads (depth unspecified), driveways washing out and some basement flooding but it was described as nothing major. It is worth pointing that conditions prior to the entire event were drier than normal across the entire HSA including Bath County with the D0 or Abnormally Dry category introduced on the September 13th issuance of the U.S. Drought Monitor. Several gaged streams rose above Action Stage or Minor Flood Stage. Most notable was the Jackson River near Bacova (BCVV2) which reached 11.59 feet (Minor FS - 10 feet) at 1000 UTC (0500 LST) on the 30th. This was the highest reading at this gage since January 2010.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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VIRGINIA, Southwest

An upper low became nearly stationary over the Ohio valley providing a favorable environment for showers to develop and track north across the area. Bands of heavier showers pushed across the upper James River basin into Bath County while other storms tracked across parts of the New and Roanoke River basins. The highest 24-hour rain gage totals ending 12z on the September 30th were very impressive especially over the upper James basin (mainly Bath and Alleghany counties) where 5 to 7+ inches of rain fell. Amounts of 2 to 5 inches fell across parts of Franklin, Montgomery and Bedford counties. According to NOAA Atlas 14 for Virginia the 100-year recurrence interval (.01 Annual Exceedance Probability or AEP) for 24-hour rainfall over Bath County ranges from roughly 6.5 to 7.0 inches depending on exact location. Per radar and rain gage estimates 6 to 7+ inches fell over a fairly large area of northern Bath County. At the location of the highest gage report, Back Creek at Sunrise (SUNV2), the 24-hour amount of 7.48 was in excess of the 200-year annual recurrence interval (.005 AEP).

Patrick County 1 ENE Critz

30	0630EST				0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds resulted in the downing of two trees along Mill Creek Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Patrick County 1 S Patrick Spgs

30	0633EST				0	0			Hail (1.25)
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Showers and thunderstorms formed along a leading edge of a strong, nearly stationary low pressure system centered over Kentucky during the evening hours of September 30th. showers and thunderstorms initiated as a result of a very moist fall atmosphere with dew points in the 70's. Thunderstorm wind damage and large hail were recorded in parts of the southern Piedmont counties in Virginia.

Franklin County 2 SE Gogginsville

30	1200EST 1800EST				0	0	10.00K	0.00K	Flood
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Blue Bend road was partially damaged by flooding from the Blackwater River.

Bedford County 2 NNW Hardy 2 W Stewartville

30	1300EST 1600EST				0	0	0.00K	0.00K	Flood
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About one foot of water was reported over Beagle Club Road (Route 635) near Hardy Road.

Bedford County Thaxton

30	1427EST 1527EST				0	0	0.00K	0.00K	Heavy Rain
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A mudslide was reported across a portion of Route 460 near Johnson School Road.

An upper low became nearly stationary over the Ohio valley providing a favorable environment for showers to develop and track north across the area. Bands of heavier showers pushed across the upper James River basin into Bath County while other storms tracked across parts of the New and Roanoke River basins. The highest 24-hour rain gage totals ending 12z on the September 30th were very impressive especially over the upper James basin (mainly Bath and Alleghany counties) where 5 to 7+ inches of rain fell. Amounts of 2 to 5 inches fell across parts of Franklin, Montgomery and Bedford counties. According to NOAA Atlas 14 for Virginia the 100-year recurrence interval (.01 Annual Exceedance Probability or AEP) for 24-hour rainfall over Bath County ranges from roughly 6.5 to 7.0 inches depending on exact location. Per radar and rain gage estimates 6 to 7+ inches fell over a fairly large area of northern Bath County. At the location of the highest gage report, Back Creek at Sunrise (SUNV2), the 24-hour amount of 7.48 was in excess of the 200-year annual recurrence interval (.005 AEP).

WASHINGTON, Northeast

WAZ037-042

East Slopes Northern Cascades - Northeast Mountains

01 30	0000PST				0	0	0.00K	0.00K	Wildfire
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The Buck Creek Fire was a lightning cause fire in Chelan county with a noted locations of 12 miles northwest of Trinity, WA. This fire grew to 3,500 acres (as the most recent fire report of October 6th reported). This fire was controlled in the late summer but has yet to be reported as contained. The expectation is that winter snowfall will put it out.

WAZ035

Upper Columbia Basin

11 15	0000PST				0	0	0.00K	0.00K	Wildfire
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WASHINGTON, Northeast

The Elmer City Fire, initially located 1 mile North of Coulee Dam, WA, was a human caused fire. This fire burned 5,237 acres.

WASHINGTON, Southwest

WAZ021

South Coast

07	2000PST 2235PST						0	0	0.00K	0.00K	Rip Current
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A woman presumably drowned while swimming along the coast in Long Beach, WA. The US Coast Guard called off the search after 24 hours. The woman's body was never recovered and presumed to have drowned. Her boyfriend who was with her at the time said she was swept out to sea. Thus, her drowning was likely due to a rip current.

WEST VIRGINIA, East

Morgan County

2 SSE Berkeley Spgs

07	1518EST						0	0			Thunderstorm Wind (50EG)
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Two trees down were down near the intersection of Waugh Road and Johnsons Mill Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Jefferson County

Charles Town

07	1605EST						0	0			Thunderstorm Wind (50EG)
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A tree was down near the intersection of East Second Avenue and South Reymann Street.

An upper-level low remained nearby while a surface trough was overhead. Warm and humid conditions led to an unstable atmosphere and some thunderstorms developed due to the surface trough and upper-level low. A few thunderstorms produced damaging wind gusts. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

WVZ052-055

Berkeley - Hardy - Jefferson

20	0315EST 0801EST						0	0			Dense Fog
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Radiational cooling along with high amounts of low-level moisture resulted in areas of dense fog during the early morning hours.

Hardy County

Taylor

26	1606EST						0	0			Thunderstorm Wind (50EG)
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A large tree was blocking Fisher Road just outside of Mooresfield.

A warm front passed through the area, triggering a few showers and thunderstorms. An isolated thunderstorm produced damaging wind gusts. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Berkeley County

2 WSW Vanclevessville

29	1353EST 1653EST						0	0	0.00K	0.00K	Flood
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Opequon Creek was out of its banks and flooded Douglas Grove Road.

An upper level low was over Kentucky for an extended period of time and southerly flow led to persistent moisture advection across the Mid-Atlantic region. Showers and thunderstorms moved from south to north and led to multiple rounds of heavy rain. Flooding occurred across the Mid-Atlantic region.

WEST VIRGINIA, North

Wetzel County

1 W Barker

29	1334EST						0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Department of highways reported trees down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wetzel County

Wileyville

29	1334EST						0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Department of Highways reported trees down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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WEST VIRGINIA, North

Wetzel County

1 NE Fallen Timber	29	1341EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Department of Highways reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Marshall County

1 E Beelers Station	29	1411EST			0	0	0.00K	0.00K	Hail (1.00)
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Marshall County

2 W Wolf Run	29	1414EST			0	0	0.00K	0.00K	Hail (1.50)
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Marshall County

1 WNW Wolf Run	29	1415EST			0	0	0.00K	0.00K	Hail (1.75)
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Marshall County

1 SW Sherrard	29	1417EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Department of Highways reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Marshall County

1 NNW Calis	29	1422EST			0	0	0.00K	0.00K	Hail (1.25)
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Ohio County

1 SE Roneys Pt	29	1431EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Department of Highways reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Ohio County

1 N Wheeling	29	1431EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Department of Highways reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Ohio County

1 S Valley Grove	29	1435EST			0	0	0.00K	0.00K	Hail (1.00)
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Ohio County

1 N Valley Grove	29	1436EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Department of Highways reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Marshall County

1 W Dallas	29	1511EST			0	0	0.00K	0.00K	Hail (1.00)
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Stacked low pressure, pivoting over the Ohio valley, helped to sweep a boundary across the region on the 29th. With modest instability and deep layer shear, some storms were able to maintain themselves to severe thresholds. Both hail and wind damage was reported with storms over eastern Ohio and northern West Virginia.

WEST VIRGINIA, Southeast

Greenbrier County

1 NW Ronceverte	26	1542EST			0	0	1.00K	0.00K	Thunderstorm Wind (55EG)
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Thunderstorm winds downed a tree along both Coffman Hill Road and Dawkins Drive.
Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Greenbrier County

1 E Caldwell	26	1548EST			0	0	0.50K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds downed a tree along Route 60.
Isolated to scattered thunderstorms formed along and ahead of a cold frontal boundary pushing east through the region during the evening of September 26th, 2016. While the main threat with these storms were heavy rainfall, a few did intensify to severe limits, producing isolated tree damage across portions of southeast West Virginia. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
WEST VIRGINIA, West									
Kanawha County									
1 S Ferrell	26	1250EST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG) One tree and several limbs down. A line of showers developed as upper level flow increased ahead of a cold front during the afternoon hours. Instability was limited ahead of the line, with mostly pulse storms developing after noon. One storm was able to reach severe limits as it moved through Kanawha County. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Mcdowell County									
1 W Havaco	29	1347EST			0	0	0.00K	0.00K	Hail (1.00)
Mcdowell County									
1 NE Havaco	29	1347EST			0	0	0.00K	0.00K	Hail (1.00)
Boone County									
1 N Garrison	29	1357EST			0	0	0.00K	0.00K	Hail (1.00)
Kanawha County									
1 SE Burnwell	29	1412EST			0	0	1.00K	0.00K	Thunderstorm Wind (50EG) Trees and powerlines down. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.
Wyoming County									
2 E Saulsville	29	1416EST			0	0	0.00K	0.00K	Hail (1.75)
Wyoming County									
1 W Mullens	29	1419EST			0	0	0.00K	0.00K	Hail (1.00)
Kanawha County									
1 SW Gallagher	29	1420EST			0	0	0.00K	0.00K	Hail (1.50)
Kanawha County									
1 W Ward	29	1437EST			0	0	0.00K	0.00K	Hail (1.00)
Raleigh County									
1 N Lester	29	1445EST			0	0	0.00K	0.00K	Hail (1.00) An upper level low slowly drifted east along the Ohio River during the afternoon hours. Clouds broke across portions of central and southern WV after 1pm. Two strong thunderstorms developed in southern West Virginia after 1pm and took on supercellular characteristics owing to 60 knots of 0-6km shear and 0-1km SRH values over 200. Around 1000 j/kg of CAPE and freezing levels near 10-thousand feet resulted in large hail as the thunderstorms moved from south to north from McDowell County through Kanawha and Clay Counties. Other discrete cells formed across the state, and later in the evening, heavy rain occurred in the central mountains and dropped 3 to 4 inches of rain on average.
Pocahontas County									
Dunmore	30	1201EST			0	0	0.00K	0.00K	Heavy Rain Twelve hour total from 8pm to 8am.
Roane County									
Gandeeville	30	1317EST			0	0	0.00K	0.00K	Hail (0.88)
Roane County									
1 W Kyger	30	1324EST			0	0	0.00K	0.00K	Hail (1.75)
Roane County									
1 ESE Kyger	30	1330EST			0	0	0.00K	0.00K	Hail (2.30)
Roane County									
1 SSW Barrs	30	1334EST			0	0	0.00K	0.00K	Hail (1.75) An upper-level low continued to spin to the west of the region during the afternoon hours. As skies broke after noon, enough instability developed to allow a few thunderstorms to develop in central WV and moved from south to north. The strongest cell took on supercellular characteristics owing to 50 knots of bulk shear and low level SRH values over 150. This storm produced large hail owing to low freezing levels around 10-thousand feet. Earlier in the morning, heavy rain occurred throughout the central West Virginia mountains as training rainfall moved from south to north across the state. One area of Pocahontas County saw over 8 inches of rain as measured by a COOP site observer, ending at 8am on the 30th. Widespread reports of 2-4 inches were common. Due to dry ground and a relatively long duration event...only very minor flooding occurred in the region.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, Northeast

Oneida County

1 SSE Minocqua

06	0530CST				1	0	0.00K	0.00K	Lightning
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A 66-year-old man was struck by lightning outside his residence on Tanglewood Court in Minocqua. He was first taken to Howard Young Medical Center, then transported to St. Claire's Hospital in Weston. From there, he was taken to a burn center in Madison where he died from his injuries. M66OU

Thunderstorms moved across northern Wisconsin during the early morning of September 6th. A man, who was walking his dog, was struck by lightning and died of his injuries two days later. M66OU

Outagamie County

3 WNW Stephenville

06	1430CST				0	0	10.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds pushed a 28 foot by 40 foot shed off its foundation and damaged several apple trees north of Hortonville.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Outagamie County

1 S Applecreek

06	1456CST				0	0	10.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds downed an old barn and a 12-inch diameter tree just north of Kaukauna. Vehicles being stored inside the barn were damaged when it fell.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Outagamie County

1 N Little Chute

06	1457CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds downed street lights near Highway 55 and I-41.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Outagamie County

1 N Little Chute

06	1458CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds snapped tree limbs near the intersection of Tobacnoir Street and Lincoln Avenue in Little Chute.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Manitowoc County

1 NE Reedsville

06	1530CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds downed several trees in Reedsville.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Manitowoc County

2 SE (MTW)Manitowoc Arpt

06	1559CST				0	0	0.00K	0.00K	Thunderstorm Wind (70EG)
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Thunderstorm winds downed numerous trees on the north side of Manitowoc.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Manitowoc County

1 NE Manitowoc

06	1600CST				0	0	0.00K	0.00K	Hail (0.88)
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Nickel size hail fell in Manitowoc as thunderstorms moved through the area.

Waushara County

1 W Coloma

06	1655CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds downed two trees and some large branches near Coloma.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Outagamie County

1 S Dale

06	1700CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter size hail fell near Dale as thunderstorms moved across southwest Outagamie County.

Thunderstorms moved into unstable air across central and east central Wisconsin during the afternoon hours. The storms intensified near outflow boundaries from earlier storms and produced wind damage, heavy rainfall and large hail. The storms downed numerous trees, knocked down street lights near Little Chute (Outagamie Co.), pushed a large shed from its foundation north of Hortonville (Outagamie Co.), and caused a barn to collapse near Kaukauna (Outagamie Co.). Quarter size hail fell near Dale (Outagamie Co.), and nickel size hail fell in Manitowoc (Manitowoc Co.). Whitelaw (Manitowoc Co.) received almost an inch (0.90) of rain in just 15 minutes.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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WISCONSIN, Northeast

Portage County

1 ENE Plover

20	1830CST				0	0	10.00K	0.00K	Lightning
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Lightning struck a communications tower used by Portage County law enforcement. The time of this event is estimated.

Lightning struck a communications tower serving Portage County, knocking it out of service.

Portage County

1 SE Park Ridge

21	0130CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds downed three trees and power lines in Stevens Point.

A thunderstorm complex moved across southern Wisconsin overnight. Storms on the north end of the complex produced isolated wind damage in Stevens Point. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Waushara County

2 NW Hancock

1 SSE Bannerman

21	1830CST				0	0	20.00K	0.00K	Flood
22	1500CST				0	0	20.00K	0.00K	Flood

Multiple rounds of moderate to heavy rainfall over a 24-hour period caused Bird Creek to rise out of its banks near Wautoma, and flooded low-lying areas in other parts of the county. The flooding damaged roads and at least one bridge. The COOP site near Hancock had a 24-hour rainfall total of 3.60 inches through the morning of the 22nd.

Wood County

5 WNW Bakerville

2 W Blenker

21	1930CST				0	0	64.00K	0.00K	Flash Flood
	2151CST				0	0	64.00K	0.00K	Flash Flood

Runoff from heavy rainfall caused flooded roads, and caused damage to roads and bridges, especially across the western part of the county.

WIZ005

Vilas

21	2100CST				0	0	1.0K	0.00K	High Wind
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Thunderstorms brought multiple rounds of moderate to heavy rainfall to central Wisconsin on September 21st. The heaviest rain caused flash flooding in Wood County during the evening hours, closing and damaging roads and bridges. The runoff later caused flooding on the Yellow River at Babcock (Wood Co.), and Pittsville (Wood Co.). Much of Waushara County experienced areal flooding that lasted into the 22nd, and Bird Creek overflowed its banks near Wautoma (Waushara Co.). Isolated high wind gusts downed power lines in Boulder Junction (Vilas Co.), as an area of weakening showers and thunderstorms departed.

WISCONSIN, Southeast

Sauk County

3 NE La Valle

07	0500CST				0	0			Heavy Rain
	1900CST				0	0			Heavy Rain

Over 6 inches of rain fell in the area surrounding Lake Redstone. The lake rose about a foot causing piers to completely submerge and boats to float away.

Dodge County

Mayville

07	0615CST				0	0	5.00K	0.00K	Flood
	2141CST				0	0	5.00K	0.00K	Flood

Several inches of rain during the overnight and morning hours resulted in flooding around St. John's Lutheran School and Parkview Elementary School. The schools were evacuated and sandbagging was necessary. Nearby highway 28 and a few other road closures occurred due to deep water.

Sauk County

1 SSW La Valle

1 WNW Ironton

07	1200CST				0	0	0.00K	0.00K	Flood
08					0	0	0.00K	0.00K	Flood

Floodwaters from the Little Baraboo River covered two bridges between La Valle and Ironton. The bridges were closed with one located on highway 58 about 1 mile south of La Valle, and the other on Branton Road about 2 miles south of La Valle.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, Southeast

Sauk County

1 WSW Reedsburg

07	1350CST								
10	2205CST				0	0	2.00K	0.00K	Flood

The Baraboo River at Reedsburg reached minor flood stage and peaked at 15.80 feet. Floodwaters affected Granite Ave. and South Webb Ave. along the river and touched the concrete deck of the South Webb Ave. bridge. There is widespread inundation of lowland including Webb Park and Smith Conservancy.

Rock County

Mallwood

07	1535CST								
	1615CST				0	0	1.00K	0.00K	Heavy Rain

A burst of heavy rain around 2 inches resulted in water flowing over Richardson Road, through yards, and around structures as it flowed into the Rock River.

Waukesha County

1 WSW Tess Corners

07	1603CST								
	1607CST				0	0	10.00K		Thunderstorm Wind (55EG)

Widespread tree branches and trees down. Power lines down.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Milwaukee County

1 S State Fair Park

07	1612CST								
					0	0	3.00K	0.00K	Thunderstorm Wind (50EG)

A couple trees uprooted and other tree limbs down across West Allis.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Milwaukee County

1 NE West Allis

07	1615CST								
					0	0	1.00K	0.00K	Thunderstorm Wind (52EG)

A video shows several large tree branches and a tree falling in strong thunderstorm winds.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Walworth County

La Grange

2 N East Troy Arpt

07	1620CST								
	1640CST				0	0	7.00K		Thunderstorm Wind (50EG)

Several tree branches and trees down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Waukesha County

3 ENE New Berlin

07	1635CST								
	1900CST				0	0	0.00K	0.00K	Heavy Rain

Heavy rains and street flooding resulted in closing the intersection of 128th street and Cleveland Ave in New Berlin.

Milwaukee County

1 NW West Allis

07	1645CST								
	1900CST				0	0	10.00K	0.00K	Flash Flood

Around 3 inches of rain in a little over an hour led to flash flooding of the KK River Parkway and the Root River Parkway. Some lane closures occurred due to the flooding. Water levels up to the bumpers on cars. The KinderCare Learning Center in West Allis was evacuated by the fire department due to the deep water over the road that leads to the center.

Sauk County

1 SSE Rock Spgs

08	1245CST								
12	2240CST				0	0	2.00K	0.00K	Flood

The Baraboo River at Rock Springs reached minor flood stage and peaked at 20.67 feet. Floodwaters affected portions of highways DD, 154, and 136 in the Rock Springs area. There is widespread inundation of lowland flooding.

A shortwave trough and a persistent transport of very moist air into southern WI led to numerous thunderstorms and resultant wind damage, flash flooding, and river flooding. We Energies reported 11,500 customers without power with a majority of them in Milwaukee County. The Baraboo River flooded where over 6 inches of rain had fallen.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
WISCONSIN, Southeast									
Sauk County 1 NE Plain	19	1425CST			0	0			Hail (1.00)
Dane County Cross Plains	19	1457CST 1507CST			0	0			Hail (1.25)
Dane County Cross Plains Middleton	19	1457CST 1516CST			0	0			Hail (1.25)
			A swath of hail damage to crops from Cross Plains to Middleton.						
Dane County 1 S Madison Morey Arpt	19	1500CST			0	0	0.00K		Hail (1.00)
Dane County 4 NNE Verona Arpt	19	1505CST			0	0	0.00K		Hail (1.75)
Dane County 1 SW Middleton	19	1505CST			0	0	0.00K		Hail (2.00)
			Hail ranged from 1.5 to 2 inches in diameter. Hail damage to car, roof of home, siding, and window screens. Hail damage to trees and plants. Power outage around 1 hour.						
Dane County 1 NW Middleton	19	1506CST			0	0	0.00K		Hail (1.00)
			One inch hail at Middleton Police Department.						
Dane County 3 N Verona	19	1510CST			0	0	0.00K		Hail (2.00)
Dane County 2 N Verona Arpt	19	1510CST 1520CST			0	0	0.00K		Hail (1.50)
Dane County 3 SSW Middleton	19	1511CST			0	0	0.00K		Hail (2.00)
Dane County 2 NNE Verona Arpt	19	1512CST			0	0	0.00K		Hail (1.50)
Dane County 2 SSW Shorewood Hills	19	1513CST			0	0	0.00K		Hail (1.75)
Dane County 4 NE Verona Arpt	19	1515CST			0	0	0.00K		Hail (2.20)
			Hail ranging from 1.75 to 2.20 inches in diameter.						
Dane County 1 SSE Shorewood Hills	19	1515CST			0	0	0.00K		Hail (1.50)
Dane County 2 S Shorewood Hills	19	1515CST 1525CST			0	0	0.00K		Hail (1.50)
Dane County 3 SW Henry Vilas Park Zoo	19	1517CST			0	0	0.00K		Hail (1.50)
Dane County 2 WSW Downtown Madison	19	1517CST			0	0	0.00K		Hail (1.50)
Dane County 2 S Henry Vilas Park Zoo	19	1520CST			0	0	0.00K		Hail (1.00)
Dane County 2 SW Henry Vilas Park Zoo	19	1520CST			0	0	0.00K		Hail (1.00)

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, Southeast

Dane County

2 SE Albion

19	1545CST				0	0			Hail (1.50)
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A line of thunderstorms formed along a stalling cold front and moved across southern WI. A severe thunderstorm within the line produced widespread hail damage on the southwest side of Madison and in Middleton. Thousands of insurance claims are anticipated due to hail damage to vehicles and properties.

Green County

New Glarus

21	0345CST				0	0	0.00K	0.00K	Hail (0.75)
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Washington County

3 SSW Germantown

21	0433CST				0	0	0.00K	0.00K	Hail (0.75)
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Milwaukee County

1 SW State Fair Park

21	0452CST				0	0		0.00K	Hail (1.00)
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Dane County

1 W De Forest

21	1610CST				0	0			Hail (1.00)
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A warm front brought rounds of thunderstorms to southern WI from the early morning into the evening. A small number of large hail reports were received.

Sauk County

La Valle

22	1200CST				0	0	3.00K	0.00K	Flood
26	1600CST				0	0	3.00K	0.00K	Flood

The Baraboo River peaked around 18.25 feet on September 23rd in La Valle. There was water in some basements in La Valle, especially on West Main Street.

Sauk County

1 WNW Reedsburg

23	0100CST				0	0	5.00K	0.00K	Flood
26									

The Baraboo River peaked around 16.9 feet the early morning of September 24th in Reedsburg. Floodwaters affected West Second Street, Granite Ave., South Webb Ave. Water touched the lowest part of the concrete deck of the Webb Avenue bridge. Water is close to the overhead doors at the Public Works Building. Floodwaters are 3 to 3.5 feet deep in the Public Works Yard. South Park next to the Wastewater Plant is underwater. Floodwaters are into the swimming pool control room in Webb Park. Floodwaters are into Webb Park and Smith Conservancy. There was water in many basements on the west side of Reedsburg.

Columbia County

3 NNW Lewiston

23	1400CST				0	0	0.00K	0.00K	Flood
24									

Highway 127 closed in both directions due to water over the roadway.

Sauk County

1 WSW North Freedom

2 ESE Reedsburg Muni Arpt

24	0000CST				0	0	5.00K	0.00K	Flood
27	1600CST				0	0	5.00K	0.00K	Flood

The Baraboo River peaked around 22.6 feet on September 25th in Rock Springs. Floodwaters affected Highways DD, 154 and 136 in Rock Springs as well as Busser Park along Highway 136. More specifically highway 136 was closed between highway 33 and highway 154. A portion of highway 154 and DD was closed in Rock Springs. Water is about 3.5 to 4 feet deep in the baseball diamond in Fireman's Park along Highway DD. Floodwaters affect some businesses, including the Post Office, on Highway 154 in Rock Springs. There was water in basements of some homes.

Marquette County

Briggsville

24	1400CST				0	0	0.00K	0.00K	Flood
25									

Highway 23 closed near Briggsville due to high water from the flooding of Neenah Creek.

Repeated rounds of strong thunderstorms with heavy rainfall produced several inches of rain in the Baraboo River Basin and surrounding areas on September 21-22. Moderate flooding occurred along the Baraboo River from La Valle to Reedsburg to Rock Springs. A State of Emergency was declared for Sauk County on September 22nd.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, Southeast

Rock County

3 ENE Charlie Bluff

25	1344CST 1354CST				0	0	1.00K		Thunderstorm Wind (50EG)
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Large tree limbs down near the intersection of Highway 26 and County Line Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Jefferson County

3 ESE Lake Koshkonong

25	1355CST				0	0	2.00K		Thunderstorm Wind (50EG)
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Multiple trees down with some covering a road near Lake Koshkonong.

A broken line of thunderstorms formed along a cold front and moved east across southern WI. A few trees and branches were brought down by downburst winds. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

WISCONSIN, Southwest

Trempealeau County

2 ESE Coral City

06	1428CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter sized hail fell north of Blair.

Trempealeau County

1 SW Blair

06	1430CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter sized hail fell just southwest of Blair.

Jackson County

1 ESE Vaudreuil

06	1504CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter sized hail fell at the Black River Falls wastewater treatment facility.

Jackson County

2 ESE Vaudreuil

06	1505CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter sized hail fell in Black River Falls.

Jackson County

1 E Vaudreuil

06	1505CST				0	0	1.00K	0.00K	Thunderstorm Wind (35EG)
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Trees were blown down in Black River Falls. The locally heavy rain also caused some street flooding to occur.

Note: The estimated wind gust of 35 knots is equivalent to 40 mph.

Juneau County

2 N Mather

06	1544CST				0	0	0.50K	0.00K	Thunderstorm Wind (35EG)
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Large tree branches were blown down north of Mather.

Note: The estimated wind gust of 35 knots is equivalent to 40 mph.

Adams County

1 SW Big Flats

06	1631CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter sized hail fell in Big Flats.

Adams County

1 N Adams

06	1633CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter sized hail fell in Adams.

Severe thunderstorms produced large hail across parts of Trempealeau, Jackson and Adams Counties during the afternoon of September 6th. Quarter sized hail was reported near Blair (Trempealeau County) east through Black River Falls (Jackson County) to Adams (Adams County). These storms also blew down some trees in Black River Falls and tree branches near Mather (Juneau County).

Vernon County

1 S Purdy

06	1745CST				0	0	0.00K	0.00K	Heavy Rain
07	0953CST				0	0	0.00K	0.00K	Heavy Rain

In Purdy, 7.10 inches of rain fell.

Vernon County

1 W Viroqua Muni Arpt

06	1755CST				0	0	0.00K	0.00K	Heavy Rain
07	0555CST				0	0	0.00K	0.00K	Heavy Rain

The observing equipment at the Viroqua airport measured 3.59 inches of rain.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, Southwest

Vernon County 3 ESE Liberty

06	1815CST								
07	0517CST				0	0	0.00K	0.00K	Heavy Rain

The COOP observer in Viola measured 4.70 inches of rain.

Richland County 4 N Richland Center

06	1930CST								
07	0600CST				0	0	0.00K	0.00K	Heavy Rain

The COOP observer north of Richland Center measured 3.68 inches of rain.

Richland County 3 ENE Yuba 4 N Viola

07	0355CST								
	0930CST				0	0	0.00K	0.00K	Flash Flood

Flash flooding along the Pine River prompted sandbagging to occur in Yuba. Flooding along Camp Creek caused officials to close State Highway 56 east of Viola.

Vernon County 3 SSE Bud

07	0355CST								
	0700CST				0	0	0.00K	0.00K	Flash Flood

Flash flooding along Coe Hollow Creek prompted officials to evacuate Sidie Hollow Campground.

Vernon County 2 SW Viroqua Muni Arpt 1 W Viroqua

07	0355CST								
	0530CST				0	0	0.00K	0.00K	Flood

Heavy rains caused street flooding to occur in Viroqua.

Vernon County Readstown

07	0515CST								
08	1900CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Kickapoo River out of its banks in Readstown. The river crested just over two feet above the flood stage at 13.02 feet.

Vernon County 3 NE Kickapoo Center

07	0620CST								
08	1815CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Kickapoo River out of its banks in Viola. The river crested just over a foot above the flood stage at 15.04 feet.

Crawford County Soldiers Grove

07	0755CST								
09	1500CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Kickapoo River out of its banks in Soldiers Grove. The river crested less than a foot over the flood stage at 13.84 feet.

Richland County 3 ENE Yuba 4 N Viola

07	0839CST								
08	0230CST				0	0	0.00K	0.00K	Flood

Flood waters covered numerous roads across the northern and western sections of Richland County. Roads closed by the flood waters included State Highway 131 north of Viola along the Kickapoo River. State Highway 80 and County Highway C between Yuba and Richland Center were closed because of flooding along the Pine River. Three houses in Yuba had water in the basements. Richland Center schools canceled classes on both the 7th and 8th because of the flooding.

Crawford County 3 NNW Bell Center

07	1050CST								
11	2000CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Kickapoo River out of its banks in Gays Mills. The river crested around a foot and a half above the flood stage at 14.62 feet.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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WISCONSIN, Southwest

Crawford County 1 WNW Steuben

08	1050CST								
13	0650CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Kickapoo River out of its banks near Steuben. The river crested around a foot above the flood stage at 12.97 feet.

Flash flooding impacted parts of southwest Wisconsin during the early morning hours of September 7th. Thunderstorms with heavy rain dumped 4 to 7 inches of rain that caused flash flooding in Vernon and Richland Counties. Sidie Hollow Campground near Viroqua (Vernon County) had to be evacuated. Sandbagging took place in Yuba (Richland County) to protect houses from flooding on the Pine River. The flooding along the Pine River caused State Highway 80 to be closed north of Richland Center (Richland County). State Highway 56 had to be closed east of Viola (Richland County) because of flooding along Camp Creek and numerous other roads had water over them.

Crawford County 2 SE Ferryville

09	1330CST				0	0	1.00K	0.00K	Flash Flood
	1500CST								

A landslide pushed a tree onto State Highway 35 south of Ferryville.

Crawford County 2 SSE De Soto

09	1345CST				0	0	3.00K	0.00K	Flash Flood
	1500CST								

Debris and rocks from a landslide hit a car at State Highways 35 and 82 south of De Soto.

Vernon County Avalanche

09	1410CST				0	0	0.00K	0.00K	Flash Flood
	1500CST								

A boulder came down a bluff side and onto County Highway S near Avalanche.

Rainfall amounts of 2 to 4 inches were common across southwest Wisconsin during the afternoon of September 9th. This rain fell fast enough and on soils that were already saturated and produced some flash flooding. A boulder came down a bluff near Avalanche (Vernon County) and landed on County Highway S. Debris from other slides hit a car near De Soto (Crawford County) and a tree was pushed onto State Highway 35 near Ferryville (Crawford County).

Richland County Bloom City

19	1350CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter sized hail fell in Bloom City.

Richland County 1 NE Buck Creek

19	1400CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter sized hail fell southeast of Rockbridge.

Grant County Glenhaven

19	1422CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter sized hail fell in Glen Haven.

As a line of thunderstorms moved across southwest Wisconsin during the afternoon of September 19th, some of the stronger storms dropped large hail. Quarter sized hail was reported in Bloom City (Richland County), near Rockbridge (Richland County) and in Glen Haven (Grant County).

Crawford County 1 E De Soto

21	0445CST				0	0	0.00K	0.00K	Heavy Rain
22									

In Victory, 5.10 inches of rain fell.

Crawford County 1 NNE De Soto

21	0610CST				0	0	1.00K	0.00K	Flash Flood
	0745CST								

A mudslide in De Soto sent debris over one lane of State Highway 82.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons	Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, Southwest

Trempealeau County

Arcadia	21	0643CST								
1 ENE Ettrick		1030CST			0	0	4.00K	0.00K		Flood

Flooding along Beaver Creek created a washout on County Highways T and TT southwest of Ettrick. Another washout occurred east of Ettrick on County Highways D and DD from flooding along the South Branch of Beaver Creek. Some rural township roads were also closed because of flooding. Some street flooding occurred in Arcadia and other small creeks were out of their banks near Ettrick. 2.43 inches of rain was reported in Arcadia and 4.31 inches of rain fell in Ettrick.

La Crosse County

3 N Rockland	21	0830CST								
3 SSE Barre Mills		1330CST			0	0	913.00K	0.00K		Flash Flood

Flood waters from Fleming Creek caused State Highway 108 to be closed near Mindoro. Water covered low spots in several other locations across the northeast part of La Crosse County. Some of the impacted roads included County Highways C, DE and E. Some minor mudslides also occurred with County Highway OA reduced to one lane. Sixteen homes were damaged by the flooding. Bangor declared a local state of emergency due to flooding along Dutch Creek.

Monroe County

3 ESE Cashton	21	0838CST								
6 NNE Cataract		1030CST			0	0	170.00K	0.00K		Flash Flood

Street flooding occurred in Sparta. In addition, water was across several roads over the western portions of the county. Twenty five homes were damaged by the flood waters.

Trempealeau County

1 NW Trempealeau	21	1140CST								
					0	0	0.00K	0.00K		Hail (1.25)

Half dollar sized hail fell in Trempealeau.

Trempealeau County

1 NW Trempealeau	21	1144CST								
					0	0	0.00K	0.00K		Hail (0.88)

Clark County

4 NE Veefkind	21	1145CST								
	22	0300CST			0	0	0.00K	0.00K		Heavy Rain

Southeast of Riplinger, 3.75 inches of rain fell.

Clark County

6 SSW Eidsvold	21	1355CST								
7 WSW Tioga		1700CST			0	0	1.80M	0.00K		Flash Flood

Flooding from the South Branch of O'Neill Creek covered County Highway Y south of Chili. Standing water covered State Highway 73 in Christie. The emergency manager reported around 65 locations across the county had water over the road or culverts washed out. Fifteen homes were damaged by the flooding. A state of emergency was declared for the entire county.

Juneau County

(VOK)Volk Aaf Camp D	21	1658CST								
					0	0	0.00K	0.00K		Hail (0.88)

Crawford County

3 NNW Bell Center	21	1720CST								
	27	1550CST			0	0	0.00K	0.00K		Flood

Runoff from heavy rain pushed the Kickapoo River out of its banks in Gays Mills. The river crested just over five feet above the flood stage at 18.1 feet. The flooding caused the postponement of the Gays Mills Apple Festival until the first weekend in October.

Crawford County

Mt Sterling	21	1900CST								
	22	0618CST			0	0	0.00K	0.00K		Heavy Rain

In Mt. Sterling, 4.13 inches of rain fell.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, Southwest

Clark County

1 WNW Junction	21	1915CST					100.00K	0.00K	Flood
2 NNE Dorchester	22	0100CST			0	0	100.00K	0.00K	Flood

Widespread flooding occurred across much of Clark County with numerous roads impassable. Emergency officials had to respond to two incidents where vehicles became stuck in the flood waters. One person had to be rescued from the waters but no injuries were reported.

Vernon County

1 NE Kickapoo Center	21	1915CST					0.00K	0.00K	Heavy Rain
	22	0600CST			0	0	0.00K	0.00K	Heavy Rain

The COOP observer southwest of Viola measured 5.68 inches of rain.

Vernon County

Readstown	21	1920CST					0.00K	0.00K	Heavy Rain
	22	0400CST			0	0	0.00K	0.00K	Heavy Rain

In Readstown, 5.87 inches of rain fell.

Vernon County

1 E Viroqua	21	1925CST					0.00K	0.00K	Heavy Rain
	22	0600CST			0	0	0.00K	0.00K	Heavy Rain

Just southeast of Viroqua, 5.6 inches of rain fell.

Adams County

6 SSE Plainville	21	2030CST					116.00K	0.00K	Flash Flood
		2200CST			0	0	116.00K	0.00K	Flash Flood

Runoff from heavy rain caused flood waters from Big Spring Creek to washout a section of County Highway G northwest of Big Spring. Flood waters from Big Spring Creek also covered County Highway P near Big Spring. Flooding elsewhere in the county damaged three homes.

Clark County

1 SW Neillsville	21	2135CST					0.00K	0.00K	Flood
	22	0750CST			0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Black River out of its banks near Neillsville. The river crested around three feet above the flood stage at 21.07 feet.

Trempealeau County

2 W Pine Creek	21	2240CST					0.00K	0.00K	Flood
	25	2030CST			0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Trempealeau River out of its banks in Dodge. The river crested just over the flood stage at 9.23 feet.

Jackson County

3 SSW Hatfield	21	2325CST					0.00K	0.00K	Flood
	23	0035CST			0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Black River out of its banks near Hatfield. The river crested over seven feet above the flood stage at 804.4 feet.

Jackson County

2 E Vaudreuil	22	0025CST					825.00K	0.00K	Flood
2 N Pleasant View	24	1110CST			0	0	825.00K	0.00K	Flood

Runoff from heavy rain pushed the Black River out of its banks in Black River Falls. The river crested over thirteen feet above the flood stage at 60.3 feet, which was the 3rd highest crest on record at the time. The hydroelectric dam lost a gate when a large tree traveled through it. Several boats and docks that broke away on Lake Arbutus also traveled through the dam.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, Southwest

Vernon County

2 WSW Viroqua Muni Arpt	22	0104CST			1	0	8.88M	0.00K	Flash Flood
1 NNE Victory		1200CST							

Heavy rain caused flash flooding to occur across much of Vernon County. One person was killed near Victory when a mudslide caused a home to slide down a hillside very early in the morning of the 22nd. Numerous other houses were damaged by rocks, debris and floodwaters in Victory when a culvert used to divert water around town became blocked. In and around De Soto, two people had to be rescued from flood waters and 15 people were evacuated from a trailer park. The flood waters also covered State Highway 35. Flooding along Coe Hollow Creek prompted officials to evacuate Sidie Hollow Park but not before one person had to be rescued. Flood waters from the Kickapoo River flooded the west side of La Farge and caused State Highway 131 to be closed both north and south of town. Flooding from the Kickapoo River also sent water spilling into Viola and Readstown. State Highway 82 was closed west of La Farge because of flood waters from Otter Creek. Street flooding occurred in Viroqua where the water was up to 4 feet deep on Main Street. A state of emergency was declared in the county and there were up to 90 roads closed due to flooding. All together, there were a total of 44 homes and businesses destroyed. M53PH

Vernon County Readstown

	22	0110CST			0	0	0.00K	0.00K	Flood
	26	0530CST							

Runoff from heavy rain pushed the Kickapoo River out of its banks in Readstown. The river crested just over seven feet above the flood stage at 18.08 feet.

Crawford County 1 WNW Steuben

	22	0130CST			0	0	0.00K	0.00K	Flood
	29	0315CST							

Runoff from heavy rain pushed the Kickapoo River out of its banks near Steuben. The river crested over four feet above the flood stage at 16.17 feet.

Crawford County Soldiers Grove

	22	0130CST			0	0	0.00K	0.00K	Flood
	26	0730CST							

Runoff from heavy rain pushed the Kickapoo River out of its banks in Soldiers Grove. The river crested almost five feet above the flood stage at 17.9 feet.

Vernon County 1 NW La Farge

	22	0150CST			0	0	0.00K	0.00K	Flood
	23	1650CST							

Runoff from heavy rain pushed the Kickapoo River out of its banks in La Farge. The river crested just over two feet above the flood stage at 14.1 feet.

Vernon County 3 NE Kickapoo Center

	22	0200CST			0	0	0.00K	0.00K	Flood
	25	0535CST							

Runoff from heavy rain pushed the Kickapoo River out of its banks in Viola. The river crested over five feet above the flood stage at 19.32 feet. The flooding prompted officials to cancel the town's annual festival. This was the first time in over 80 that the event had to be canceled.

Richland County 1 E Viola 2 N Yuba

	22	0322CST			0	0	2.40M	0.00K	Flash Flood
		1200CST							

Flooding along a branch of Camp Creek sent three feet of water into a house east of Viola. Flooding along Fancy and Marshall Creeks caused roads to be closed near Gillingham. State Highway 56 was closed east of Viola due to flooding along Camp Creek and County Highway C was closed near Yuba because of flooding along the Pine River. A total of 3 homes were destroyed by the flooding with another 72 damaged.

Crawford County De Soto 3 N Lynxville

	22	0334CST			0	0	5.30M	300.00K	Flash Flood
		1200CST							

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, Southwest

A train derailment occurred near Ferryville when flood waters washed out the roadbed. Around 1,000 gallons of diesel fuel leaked out of one locomotive into the water. Runoff from heavy rains also washed out a portion of State Highway 35 south of Lynxville. A mudslide covered a portion of State Highways 35/82 south of De Soto. A mudslide northeast of Wauzeka sent a large boulder onto State Highway 60. State Highway 35 was closed between De Soto and Prairie du Chien due to flooding and mudslides. Roads were damaged across much of the county with the most damage occurring in the townships of Freeman, Utica, Clayton and Haney. Freeman was hit the hardest with every township road sustaining major damage. A large portion of Rush Creek Road north of Ferryville was washed out. The flooding also caused a large hole to form in State Highway 171 near Gays Mills. Two private structures were destroyed and another 67 damaged by the flooding.

Vernon County Ontario

22	0345CST				0	0	0.00K	0.00K	Flood
	1930CST								

Runoff from heavy rain pushed the Kickapoo River out of its banks in Ontario. The river crested over three feet above the flood stage at 19.37 feet.

Monroe County 2 W Sparta

22	0730CST				0	0	0.00K	0.00K	Flood
23	0345CST				0	0	0.00K	0.00K	Flood

Flood waters along the La Crosse River and Beaver Creek caused two city parks to be closed in Sparta along with some city streets.

Jackson County 2 S North Bend 1 SSE City Pt

22	0930CST				0	0	58.00K	0.00K	Flood
25	1245CST				0	0	58.00K	0.00K	Flood

Runoff from heavy rains caused several streams to go out of their banks across Jackson County. County Highway VV in North Bend, County Highway Z in City Point and several other township roads were closed because of the flooding.

Trempealeau County 2 ESE Ettrick 1 NE Frenchville

22	1030CST				0	0	0.00K	0.00K	Flood
23									

Flooding across southern Trempealeau County caused extended road closures including County Highway D east of Ettrick, Crystal Valley Road, Truax Road and Thompson Road.

Crawford County De Soto 3 N Lynxville

22	1200CST				0	0	0.00K	0.00K	Flood
26									

Flooding continued across much of Crawford County with numerous roads remaining closed from the 22nd into the 26th.

Vernon County 2 WSW Viroqua Muni Arpt 1 S Victory

22	1200CST				1	0	986.00K	0.00K	Flood
26									

One man drowned in southern Vernon County when he attempted to drive his pickup across a flooded road. The pickup and cattle trailer he was pulling got stuck in the flood waters with the water eventually filling the passenger compartment of the truck. M79VE

Trempealeau County 1 S Butman Corners

23	1755CST				0	0	0.00K	0.00K	Flood
26	1415CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Black River out of its banks near Galesville. The river crested almost three feet above the flood stage at 14.76 feet.

La Crosse County 1 NW La Crosse

25	1700CST				0	0	0.00K	0.00K	Flood
26	1315CST				0	0	0.00K	0.00K	Flood

Runoff from heavy rain pushed the Mississippi River out of its banks in La Crosse. The river crest just a few hundredths of a foot above the flood stage at 12.04 feet.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, Southwest

One person was killed near Victory (Vernon County) when a house was swept down a hillside by a mudslide during the early morning hours of the 22nd. Another person drowned south of Viroqua (Vernon County) when the driver of a truck pulling a cattle trailer attempted to drive through flood waters during the afternoon or evening of the 22nd. The truck and trailer became stuck in the flood waters, which filled the passenger compartment of the truck. The flooding occurred as several rounds of thunderstorms with heavy rain moved across southwest Wisconsin from the morning of September 21st into the morning of the 22nd. The heavy rain resulted in flash flooding across portions of Adams, Clark, Crawford, La Crosse, Monroe, Richland, Vernon and Trempealeau Counties. A train derailed near Ferryville (Crawford County) when the roadbed was washed away by flooding. Around 1,000 gallons of diesel fuel spilled into the water from one of the locomotives. Two people had to be rescued near De Soto (Vernon County) and another in Sidie Hollow County Park southwest of Viroqua (Vernon County). Washouts and road closures occurred in Trempealeau, La Crosse, Vernon and Crawford Counties. In Vernon County alone, high water and flooding resulted in 90 road closures and 44 homes and business were destroyed. Public and private sector damages in Vernon County totaled almost \$10 million. In Crawford County, 2 homes were destroyed with another 67 damaged with public and private sector damages totaling almost \$5 million. Flooding on the Black River in Black River Falls (Jackson County) caused the hydroelectric dam to loose a gate when a large tree traveled over the dam. Several boats and docks that broke loose in Lake Arbutus also traveled over the dam. A state of emergency was declared in Clark, Crawford, Jackson and Vernon Counties. The Governor of Wisconsin declared a state of emergency for Adams, Clark, Crawford, Jackson, La Crosse, Monroe, Richland, Trempealeau and Vernon Counties. A federal disaster declaration was made for Adams, Clark, Crawford, Jackson, Juneau, La Crosse, Monroe and Vernon Counties.

WISCONSIN, West

Eau Claire County 3 SSW Altoona	20	1840CST			0	0	0.00K	0.00K	Hail (0.88)
St. Croix County 1 E Hammond	21	0000CST			0	0	0.00K	0.00K	Hail (1.00)
Chippewa County Bloomer	21	1145CST			0	0	0.00K	0.00K	Hail (1.00)
Chippewa County Jim Falls	21	1210CST			0	0	0.00K	0.00K	Hail (1.25)
Dunn County 1 SW Boyceville	21	1445CST			0	0	0.00K	0.00K	Hail (1.25)
Dunn County 1 SSW Colfax	21	1628CST			0	0	0.00K	0.00K	Hail (1.00)
Eau Claire County 2 NNW Augusta	21	1630CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)

A few trees were blown down near Highway 27 and Solie Road near Augusta.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Polk County 2 SSE Osceola Muni Arpt 1 S Nye	21	1700CST 1705CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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A few trees were blown down between Osecola, St. Croix Falls and Amery, Wisconsin.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Chippewa County 1 NNE Albertville 5 W (EAU)Eau Claire Arpt	21	1900CST 2200CST			0	0	882.00K	0.00K	Flash Flood
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Widespread flash flooding occurred across southern Chippewa County due to extreme rainfall rates, and amounts of 5 to 8 inches fell in less than 6 hours. A 50 foot section of railroad was damaged near Stanley, and there was minor damage to 12 businesses and homes, and 3 more with major damage. Total damages were estimated at \$400,000 in the private section, \$100,000 in railroad expenses, and \$382,000 in roads, bridges and trails infrastructure.

Eau Claire County 7 WNW Eau Claire	21	1900CST 2200CST			0	0	660.00K	0.00K	Flash Flood
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WISCONSIN, West

Widespread flooding occurred in the city of Eau Claire. 45 homes and businesses sustained minor damage, and 5 sustained major damage due to the flood waters. In addition, a mudslide occurred near Highway 53, on the north side of Eau Claire. Total damages were estimated at \$300,000 in the private sector, and \$360,000 in the public sector for roads, bridges, and trails infrastructure.

Eau Claire County 2 NW Ludington

21	1930CST 2230CST				0	0	0.00K	0.00K	Flash Flood
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Flood waters covered Highway 27 and County Highway X near Ludington.

On the evening of September 20th, a warm front was stretched west to east across southern Minnesota, and southern Wisconsin. The weather pattern, and associated boundaries were nearly stationary through early Thursday morning, September 22nd. The atmosphere was very moist which was evident in the soundings, as near record high Precipitable Water (PWAT) values were noted.

Although the most significant part of this weather event was flooding, some large hail reports and severe wind gusts were observed the evening of September 20th, and during the afternoon and evening of Wednesday, September 21st.

The evening of Tuesday, September 20th, an area of thunderstorms formed along and north of the warm front in southern Minnesota. This area of thunderstorms moved northeast into west central Wisconsin and caused torrential rainfall and a few reports of large hail. This rainfall event, although localized, created very wet antecedent conditions before the main heavy rainfall event developed during the afternoon and through the evening of Wednesday, September 21st.

A few thunderstorms develop Wednesday afternoon around Chippewa Falls and Eau Claire. However, once a line of storms developed during the afternoon and evening, training of these storms produced extreme rainfall rates and rainfall amounts of 5 to 8 inches.

The Wisconsin Department of Transportation reported numerous roads washed out or closed in Chippewa and Eau Claire Counties during the height of the storm. Some vehicles were swept into culverts and ditches as roadways became flooded. The Canadian National Railroad had 50 feet of track wash out in Stanley, and near Wheaton.

In Chippewa County, damage assessments found that three homes sustained major damage and 52 had minor damage. Total damages related to homes and businesses were estimated at \$400,000. Another \$100,000 in damages occurred with railroad repairs. Damage to public infrastructure (roads, bridges, trails) were estimated at \$382,000.

In Eau Claire County, damage assessments found that five homes sustained major damage and 45 had minor damage. Total damages related to homes and businesses were estimated at \$300,000. Damage to public infrastructure (roads, bridges, trails) were estimated at \$360,000.

In Eau Claire County, the Red Cross assisted those displaced in the city of Eau Claire and surrounding communities. Several roads were closed in Eau Claire county, that included; Highway DD, Q, XX, and G.

Due to the widespread and significant flood damage, there was an approved presidential disaster declaration for Chippewa County.

WYOMING, Central and West

WYZ001-012-013

Jackson Hole - Teton & Gros Ventre Mountains - Yellowstone National Park

01	0000MST				0	0	0.00K	0.00K	Wildfire
17	1600MST				0	0	0.00K	0.00K	Wildfire

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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WYOMING, Central and West

The Berry Fire continued to burn slowly to the northeast over the first 10 days of September. However, the approach of a cold front on Sunday, September 11, whipped west-southwest winds to frequent gusts between 35 and 40 mph. On the same day, relative humidity dropped to between 10 and 15 percent and temperatures climbed into the 70s. This combination resulted in extreme fire behavior and the fire spread six miles to the northeast during the afternoon and evening consuming about 6,000 acres. The fire twice crossed US Highway 89/191/287 impacting approximately three miles of road. This closed the popular access route between Grand Teton and Yellowstone national parks until 1230MST on Tuesday, September 13. Evacuations were also ordered at the Flagg Ranch, the north entrance station to Grand Teton National Park, and a forest service campground. Cooler and wetter weather arrived in the wake of the cold front and areas near threatened structures were secured. By Saturday, September 17, no further growth was seen and the fire was essentially contained. The fire claimed 20,825 acres but no structures. Please see the August 2016 Storm Data publication for more information about the start of this wildfire.

Sublette County

7 NNE Merna

8 WNW Warren Bridge

04	1150MST								
	1205MST				0	0	0.00K	0.00K	Funnel Cloud

A funnel cloud north of Merna heading north toward The Rim was photographed by several people over the course of 15 minutes.

Sublette County

9 NW Warren Bridge

04	1158MST				0	0	0.00K	0.00K	Hail (1.50)
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Hail the size of ping pong balls fell near the Rim in association with a tornadic thunderstorm.

Sublette County

8 WNW Warren Bridge

04	1206MST								
	1212MST	2.42	300	0	0	1.00K	0.00K		Tornado (EF1)

A tornado touched down in open country north of Merna, Wyoming, and caused tree damage along its approximately 2.4 mile path. At its widest, the tornado produced sporadic tree damage approximately 300 yards across. The trees fell on some fence line, but otherwise caused no property damage.

A thunderstorm rapidly developed near Merna, Wyoming, on the afternoon of Sunday, September 4. Southeast wind at the surface coupled with strong southwest flow aloft created a favorable environment in which the storm could rotate. The storm strengthened, began rotating, and moved north across several private ranches and spawned a funnel cloud. The funnel eventually touched down as a tornado and caused areas of considerable tree damage just below The Rim, between Merna and Hoback Ranches. Large, old growth aspen trees of 12 to 15 inches in diameter were snapped in half, and other trees were topped, twisted, and/or uprooted. Hail up to the size of ping pong balls also fell near The Rim during the height of the thunderstorm.

Sweetwater County

(RKS)Rock Spgs Arpt

04	1558MST				0	0	0.00K	0.00K	Thunderstorm Wind (51MG)
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The ASOS at Rock Springs-Sweetwater County Airport registered a peak wind gust of 59 mph from outflow generated by storms passing to the south and east of the airport.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Natrona County

Bar Nunn

04	1614MST								
	1616MST				0	0	0.00K	0.00K	Hail (0.75)

A strong thunderstorm produced penny sized hail in Bar Nunn north of Casper.

Strong southwest flow aloft ahead of a vigorous upper low in Oregon aided the development of several long-lived strong to severe thunderstorms from Sweetwater County northeast through Natrona County. A wind gust to 59 mph was recorded at the Rock Springs Airport and penny sized hail fell near Casper.

WYOMING, North Central

Sheridan County

Arvada

01	1852MST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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An isolated thunderstorm developed over portions of Sheridan County during the early evening hours of the 1st. Due to large temperature-dew point spreads, this thunderstorm produced a severe wind gust. Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
WYOMING, Northeast									
Campbell County									
7 SSW Recluse	01	1620MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Wind gusts were estimated at 60 mph. A severe thunderstorm moved through northern Campbell County, producing strong wind gusts southeast of Spotted Horse. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Weston County									
9 SSW Clareton	14	1650MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
The spotter estimated wind gusts at 60 mph. A severe thunderstorm moved northeast across southern portions of Weston County, producing wind gusts to 60 mph south of Clareton. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
WYOMING, Southeast									
Laramie County									
25 NE Cheyenne	06	1709MST 1713MST			0	0	0.00K	0.00K	Hail (2.50)
Tennis ball size hail was reported 25 miles northeast of Cheyenne.									
Laramie County									
4 ENE Meriden	06	1742MST 1745MST			0	0	0.00K	0.00K	Hail (1.00)
Quarter size hail was reported near Meriden Rest Area. A thunderstorm produced large to very large hail over northeast Laramie County.									
Niobrara County									
10 N West Lance Creek	14	1610MST 1613MST			0	0	0.00K	0.00K	Hail (1.00)
Quarter size hail was reported 10 miles north of Lance Creek. A thunderstorm produced large hail in northern Niobrara County.									
Niobrara County									
4 NNE West Lance Creek 3 SSW (LSK)Lusk Airport	23	1526MST 1530MST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Estimated 60 mph wind gusts downed tree limbs onto utility lines, with numerous power outages reported. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Niobrara County									
Lusk	23	1530MST 1531MST			0	0	0.00K	0.00K	Hail (1.00)
Quarter size hail was reported at Lusk. Thunderstorms produced large hail and damaging winds across Niobrara County.									
WYZ116									
South Laramie Range									
	24	0000MST 0300MST			0	0	0.00K	0.00K	Winter Weather
A cold pool aloft and a moist upslope flow produced a brief period of moderate to heavy snow over the southern Laramie Range. Four inches of snow was observed at the Interstate 80 summit.									

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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LAKE ST. CLAIR

LCZ423

Detroit River

07	1400EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A thunderstorm which produced tree damage in Wyandotte moved into the Detroit River.

GULF OF MEXICO

GMZ876

Bonita Beach to Englewood FL 20 to 60nm

01	0647EST				0	0	0.00K	0.00K	Waterspout
	0651EST								

Weak flow and low level moisture allowed for isolated showers to linger over the eastern Gulf of Mexico during the early morning hours. One of these showers produced a waterspout.

GULF OF MEXICO

GMZ750-770

Apalachicola to Destin FL 20 to 60nm - Apalachicola to Destin FL out 20nm

01	1000EST				0	0	0.00K	0.00K	Marine Tropical Storm
02	0400EST								

Hurricane Hermine moved through the northeast Gulf of Mexico in early September, bringing with it both tropical storm and hurricane conditions. The C-Tower measured a peak gust of 69 knots.

GULF OF MEXICO

GMZ035

Gulf Of Mexico From West End Of Seven Mile Bridge To Halfmoon Shoal Out To 5 Fathoms

01	1358EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Southerly flow between high pressure across the western Atlantic and strengthening Tropical Storm Hermine over the northeast Gulf of Mexico produced thunderstorms with scattered gale-force wind gusts. These thunderstorms were confined mainly west of the Florida Keys island chain in Gulf of Mexico waters.

GULF OF MEXICO

GMZ730-755-765-775

Apalachee Bay or Coastal Waters from Keaton Beach to Ochlockonee River FL out to 20nm - Coastal Waters From Suwannee River To Keaton Beach Out To 20 Nm - Suwannee River to Apalachicola FL 20 to 60nm - Suwannee River to Apalachicola FL out 20nm

01	1600EST				0	0	0.00K	0.00K	Marine Hurricane/Typhoon
02	0400EST								

Hurricane Hermine moved through the northeast Gulf of Mexico in early September, bringing with it both tropical storm and hurricane conditions. The C-Tower measured a peak gust of 69 knots.

GULF OF MEXICO

GMZ034-035

Gulf Of Mexico From West End Of Seven Mile Bridge To Halfmoon Shoal Out To 5 Fathoms - Gulf Of Mexico Including Dry Tortugas And Rebecca Shoal Channel

01	1600EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
	1748EST								

Southerly flow between high pressure across the western Atlantic and strengthening Tropical Storm Hermine over the northeast Gulf of Mexico produced thunderstorms with scattered gale-force wind gusts. These thunderstorms were confined mainly west of the Florida Keys island chain in Gulf of Mexico waters.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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GULF OF MEXICO

GMZ530

Lake Ponchartrain and Lake Maurepas

01	2019CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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An isolated thunderstorm produced strong winds over Lake Pontchartrain during the evening hours.

GULF OF MEXICO

GMZ631

South Mobile Bay

03	1630CST				0	0	0.00K	0.00K	Waterspout
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A waterspout was observed over Mobile Bay.

GULF OF MEXICO

GMZ130

Laguna Madre from Port of Brownsville to Arroyo Colorado

04	1200CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A surge of moisture combined with coastal troughing led to the development of scattered showers and thunderstorms across the lower Texas coastal waters. Outflow from some of these thunderstorms brought gale force winds to portions of the Laguna Madre.

GULF OF MEXICO

GMZ230-235-250

Corpus Christi to Baffin Bay - Point Aransas to Baffin Bay TX out 20nm - Point O'Connor to Aransas Pass

04	1442CST 1548CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Scattered thunderstorms over the Coastal Bend produced wind gusts to around 35 knots over the bay waters during the afternoon hours.

GULF OF MEXICO

GMZ035

Gulf Of Mexico From West End Of Seven Mile Bridge To Halfmoon Shoal Out To 5 Fathoms

04	1721EST 1741EST				0	0	0.00K	0.00K	Waterspout
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A weak inverted surface trough moved westward through the Florida Keys, causing a rapid development of showers and thunderstorms over the western Florida Straits and Gulf of Mexico waters. Several waterspouts were observed in association with the showers and thunderstorms.

GULF OF MEXICO

GMZ135

Laguna Madre from 5nm North of Point Mansfield to Baffin Bay TX

05	1606CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Bands of showers and thunderstorms propagated northwest across the lower Texas Gulf waters and over the Laguna Madre. Some of these thunderstorms became strong and produced gusty winds of gale force.

GULF OF MEXICO

GMZ042

Hawk Channel From Ocean Reef To Craig Key Out To The Reef

06	1920EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Scattered thunderstorms moving rapidly south-southwest off mainland south Florida produced isolated gale-force wind gusts in the coastal waters near Islamorada.

GMZ032

Gulf Side of the Lower Keys out 20nm

08	0730EST				0	0	0.00K	0.00K	Waterspout
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An isolated shower produced a brief waterspout north of the east end of the Seven Mile Bridge.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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GULF OF MEXICO

GMZ555-570

Pascagoula MS to SW Pass of MS River out 20nm - SW Pass of the Mississippi River River to Atchafalaya River LA 20 to 60nm

17	1124CST 1215CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Weak low pressure over the western Gulf of Mexico aided the development of strong thunderstorms over the coastal waters off the Louisiana coast during the early afternoon hours.

GULF OF MEXICO

GMZ856

Bonita Beach to Englewood FL out 20nm

19	0935EST				0	0	0.00K	0.00K	Waterspout
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Weak onshore flow allowed for the development of coastal showers and storms. One shower produced a brief waterspout near Sanibel Island.

GULF OF MEXICO

GMZ032

Gulf Side of the Lower Keys out 20nm

20	1813EST 1823EST				0	0	0.00K	0.00K	Waterspout
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Scattered showers and thunderstorms developing over Florida Bay produced a waterspout north of Marathon.

GULF OF MEXICO

GMZ275

Matagorda Ship Channel to Point Aransas TX 20 to 60nm

22	0235CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Scattered thunderstorms over the Gulf waters produced wind gusts to around 40 knots at an elevated platform during the early morning hours.

GULF OF MEXICO

GMZ035-044

Gulf Of Mexico From West End Of Seven Mile Bridge To Halfmoon Shoal Out To 5 Fathoms - Hawk Channel From West End Of Seven Mile Bridge To Halfmoon Shoal Out To The Reef

22	1025EST 1512EST				0	0	0.00K	0.00K	Waterspout
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GMZ034

Gulf Of Mexico Including Dry Tortugas And Rebecca Shoal Channel

22	2156EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A weak surface pressure pattern and ample low to middle altitude moisture promoted scattered shower and thunderstorm development initially in the Lower Florida Keys coastal waters, then further west into the western Florida Straits and southeast Gulf of Mexico. A few waterspouts and isolated gale-force wind gusts were observed.

GMZ043

Hawk Channel From Craig Key To West End Of Seven Mile Bridge Out To The Reef

23	1154EST 1201EST				0	0	0.00K	0.00K	Waterspout
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A weak pressure pattern and ample moisture enabled isolated showers to develop near the Florida Keys, producing an isolated waterspout near Long Key.

GMZ032-044

Gulf Side of the Lower Keys out 20nm - Hawk Channel From West End Of Seven Mile Bridge To Halfmoon Shoal Out To The Reef

24	1054EST 1125EST				0	0	0.00K	0.00K	Waterspout
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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GULF OF MEXICO

A continuing weak pressure pattern combined with ample moisture promoted slow-moving scattered showers and thunderstorms to develop along short boundaries and near the larger islands of the Florida Keys. Isolated waterspouts were observed.

GULF OF MEXICO

GMZ355

High Island to Freeport TX out 20nm

24	1235CST				0	0	0.00K	0.00K	Waterspout
	1238CST								

A waterspout was sighted over the nearshore waters.

GULF OF MEXICO

GMZ655

Destin to Pensacola FL out 20nm

24	1550CST				0	0	0.00K	0.00K	Waterspout
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Thunderstorms moved over the marine area and produced high winds.

GULF OF MEXICO

GMZ230

Corpus Christi to Baffin Bay

25	0406CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
	0407CST								

Scattered thunderstorms over the Gulf waters moved northward into the bays of the Middle Texas coast during the early morning hours. Storms produced wind gusts to around 40 knots.

GULF OF MEXICO

GMZ035-044

Gulf Of Mexico From West End Of Seven Mile Bridge To Halfmoon Shoal Out To 5 Fathoms - Hawk Channel From West End Of Seven Mile Bridge To Halfmoon Shoal Out To The Reef

25	0630EST				0	0	0.00K	0.00K	Waterspout
	1056EST								

A weak easterly lower tropospheric flow combined with ample moisture promoted scattered showers and thunderstorms to develop along short convergent lines and in lee convergence off the large islands of the Florida Keys. Several waterspouts were observed.

GULF OF MEXICO

GMZ355

High Island to Freeport TX out 20nm

25	1144CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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North moving thunderstorms produced a strong marine thunderstorm wind gust along the Bolivar Peninsula.

GULF OF MEXICO

GMZ630

Mobile Bay

25	1527CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Thunderstorms moved over the marine area and produced high winds.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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GULF OF MEXICO

GMZ044

Hawk Channel From West End Of Seven Mile Bridge To Halfmoon Shoal Out To The Reef

25	1825EST								
	1845EST				0	0	0.00K	0.00K	Waterspout

A weak easterly lower tropospheric flow combined with ample moisture promoted scattered showers and thunderstorms to develop along short convergent lines and in lee convergence off the large islands of the Florida Keys. Several waterspouts were observed.

26	0745EST								
	0753EST				0	0	0.00K	0.00K	Waterspout

Isolated showers and thunderstorms produced an isolated waterspout south of Key West.

GMZ042

Hawk Channel From Ocean Reef To Craig Key Out To The Reef

26	1010EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
26	1200EST				0	0	0.00K	0.00K	Waterspout

An upper-level low pressure system in the eastern Gulf of Mexico provided strong high altitude diffluence, which supported strong thunderstorm development near the Upper Florida Keys. Gale-force winds and a waterspout were observed near Islamorada.

GULF OF MEXICO

GMZ230

Corpus Christi to Baffin Bay

26	1225CST								
	1227CST				0	0	0.00K	0.00K	Waterspout

A waterspout occurred east of Rockport over Aransas Bay.

GULF OF MEXICO

GMZ850

Tarpon Springs to Suwannee River FL out 20nm

26	2036EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Late evening thunderstorms focused over north-central Florida slowly pushed south throughout the evening and made their way into the Nature Coast. One storm produced gusty marine winds near Cedar Key.

GULF OF MEXICO

GMZ052

Ocean Reef to Craig Key FL out 20nm

27	1019EST								
	1023EST				0	0	0.00K	0.00K	Waterspout

GMZ042-043

Hawk Channel From Craig Key To West End Of Seven Mile Bridge Out To The Reef - Hawk Channel From Ocean Reef To Craig Key Out To The Reef

27	1223EST								
	1248EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind

A deepening upper trough in the eastern Gulf of Mexico promoted strong thunderstorm development near the Upper Florida Keys. Waterspouts and scattered gale-force wind gusts were reported.

GMZ042

Hawk Channel From Ocean Reef To Craig Key Out To The Reef

28	1039EST				0	0	0.00K	0.00K	Waterspout
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Light winds in the lower troposphere from weak high pressure in the western Atlantic were favorable for waterspout development with isolated showers near the Upper Florida Keys.

GMZ035

Gulf Of Mexico From West End Of Seven Mile Bridge To Halfmoon Shoal Out To 5 Fathoms

30	1918EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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GULF OF MEXICO

A rapidly-moving thunderstorm embedded within deep, moist easterly flow produced an isolated gale-force wind gust northwest of Key West.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ552

Volusia-Brevard County Line to Sebastian Inlet 0 to 20nm

01	1403EST								Marine Thunderstorm Wind
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Numerous squalls within the far eastern circulation of Hurricane Hermine moved rapidly northward across the east-central Florida coastal waters. Many of the squalls produced wind gusts above 34 knots.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ610

Lake Okeechobee

01	1415EST								Marine Thunderstorm Wind
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Surface low in the Gulf of Mexico combined with southerly flow provided plenty of moisture for widespread showers and thunderstorms to occur. This brought several strong wind gusts across Lake Okeechobee.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ552-555

Cocoa Beach to Jupiter Inlet FL out 20nm - Volusia-Brevard County Line to Sebastian Inlet 0 to 20nm

01	1426EST								Marine Thunderstorm Wind
	1514EST			0	0	0.00K	0.00K		

AMZ552

Volusia-Brevard County Line to Sebastian Inlet 0 to 20nm

01	1535EST								Waterspout
01	1548EST			0	0	0.00K	0.00K		Marine Thunderstorm Wind
01	1621EST			0	0	0.00K	0.00K		Marine Thunderstorm Wind

Numerous squalls within the far eastern circulation of Hurricane Hermine moved rapidly northward across the east-central Florida coastal waters. Many of the squalls produced wind gusts above 34 knots.

02	0624EST								Marine Thunderstorm Wind
02	0645EST			0	0	0.00K	0.00K		Marine Thunderstorm Wind
02	0750EST			0	0	0.00K	0.00K		Marine Thunderstorm Wind
02	0830EST			0	0	0.00K	0.00K		Marine Thunderstorm Wind
02	0900EST			0	0	0.00K	0.00K		Marine Thunderstorm Wind
02	0945EST			0	0	0.00K	0.00K		Marine Thunderstorm Wind
02	0957EST			0	0	0.00K	0.00K		Marine Thunderstorm Wind
02	1000EST			0	0	0.00K	0.00K		Marine Thunderstorm Wind
02	1010EST			0	0	0.00K	0.00K		Marine Thunderstorm Wind
02	1058EST			0	0	0.00K	0.00K		Marine Thunderstorm Wind

A large scale rainband trailing from Tropical Storm Hermine, located over southeast Georgia, dropped southward through the Volusia and Brevard Counties and the adjacent nearshore Atlantic. Wind gusts over 34 knots occurred at numerous coastal locations.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ610

Lake Okeechobee

02	1215EST				0	0			Marine Thunderstorm Wind
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Surface Low in the Gulf of Mexico supplies ample moisture to allow afternoon thunderstorms in South Florida. Some of these storms produced gusty winds on Lake Okeechobee.

AMZ650

Jupiter Inlet to Deerfield Beach FL out 20nm

03	0800EST				0	0			Waterspout
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A band of moisture and trailing surface trough behind Hermine produced showers and thunderstorms in the Atlantic waters offshore Palm Beach County.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ552

Volusia-Brevard County Line to Sebastian Inlet 0 to 20nm

03	1245EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A cluster of thunderstorms moved rapidly east off the mainland and spread across Cape Canaveral and the adjacent intracoastal and nearshore coastal waters with winds above 34 knots.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ651

Deerfield Beach to Ocean Reef FL

05	1450EST				0	0	0.00K		Waterspout
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1500EST

Showers and storms developed over the Atlantic as a band of moisture moved south across South Florida. Some of the storms produced water spouts off Miami Beach.

AMZ650

Jupiter Inlet to Deerfield Beach FL out 20nm

07	0812EST				0	0			Waterspout
----	---------	--	--	--	---	---	--	--	------------

A weak upper-level wave along with a remnant frontal boundary allowed morning showers and storms to produce a waterspout offshore Palm Beach County.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ350

South Santee River to Edisto Beach SC out 20nm

12	0615EST				0	0		0.00K	Waterspout
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0620EST

A large area of high pressure encompassed the eastern seaboard of the country and a very weakly forced environment was in place across the Atlantic coastal waters. This set up became conducive for the development of water spouts off the southeast South Carolina coast.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ552-572

Volusia-Brevard County Line To Sebastian Inlet 20-60nm - Volusia-Brevard County Line to Sebastian Inlet 0 to 20nm

13	0750EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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0850EST

A tropical disturbance moved northward along the coast from Vero Beach to north of Flagler Beach. Rainbands rotating around the disturbance spread onshore and resulted in strong wind gusts during passing showers and thunderstorms along the coast of Brevard and Volusia Counties throughout the morning and afternoon.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ651

Deerfield Beach to Ocean Reef FL

13	1112EST				0	0			Waterspout
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A surface low forecast to come ashore in central Florida bringing instability to the Atlantic Marine areas. This instability allowed a waterspout to form offshore Miami-Dade County.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ550-552

Flagler Beach to Cocoa Beach FL out 20nm - Volusia-Brevard County Line to Sebastian Inlet 0 to 20nm

13	1230EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
----	---------	--	--	--	---	---	-------	-------	--------------------------

A tropical disturbance moved northward along the coast from Vero Beach to north of Flagler Beach. Rainbands rotating around the disturbance spread onshore and resulted in strong wind gusts during passing showers and thunderstorms along the coast of Brevard and Volusia Counties throughout the morning and afternoon.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ610

Lake Okeechobee

18	1730EST				0	0			Marine Thunderstorm Wind
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Typical summertime heating and collision of sea breezes produced scattered showers and thunderstorms to produce gusty winds on Lake Okeechobee.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ454

St. Augustine to Flagler Beach FL out 20nm

19	1922EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A mid an upper level shortwave trough moved across the western Florida panhandle with PWATs near 2 inches. The moist and unstable airmass combined with lift from the trough and sea breeze and outflows produced heavy rainfall and a few strong storms.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ552

Volusia-Brevard County Line to Sebastian Inlet 0 to 20nm

22	2128EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A cluster of thunderstorms developed during the late evening over north Merritt Island and produced strong winds gusts as they exited Merritt Island and spread east across the Banana River.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ610

Lake Okeechobee

24	1530EST				0	0			Marine Thunderstorm Wind
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AMZ650

Jupiter Inlet to Deerfield Beach FL out 20nm

24	1630EST				0	0			Waterspout
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A weak low level ridge just east of South Florida with light southerly flow supplied deep moisture across South Florida. This allowed convection to develop and produce gusty winds on Lake Okeechobee and a waterspout to form off the coast of Palm Beach County.

ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ350

South Santee River to Edisto Beach SC out 20nm

26	1430EST				0	0	0.00K		Marine Thunderstorm Wind
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Isolated to scattered thunderstorms developed in the early afternoon hours along the southeast South Carolina coast. A few of these thunderstorms became strong enough to product strong gusty winds.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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ATLANTIC, Caribbean Sea and Tropical Atlantic

AMZ552 Volusia-Brevard County Line to Sebastian Inlet 0 to 20nm

28	1630EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A large cluster of strong thunderstorms moved off the mainland and crossed the Kennedy Space Center and Patrick Air Force Base while producing high wind gusts.

AMZ552-555 Cocoa Beach to Jupiter Inlet FL out 20nm - Volusia-Brevard County Line to Sebastian Inlet 0 to 20nm

29	1338EST 1415EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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AMZ550 Flagler Beach to Cocoa Beach FL out 20nm

29	1424EST				0	0	0.00K	0.00K	Waterspout
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AMZ552 Volusia-Brevard County Line to Sebastian Inlet 0 to 20nm

29	1445EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A line of strong thunderstorms moved from the mainland to the barrier islands and offshore into the Atlantic. Numerous wind gusts above 34 knots were recorded from Brevard to Indian River Counties. A waterspout was observed offshore of Ormond by the sea.

30	1540EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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30	1825EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A line of thunderstorms crossed the coast with strong wind gusts above 40 knots. Strong winds affected Jensen Beach and Satellite Beach near Patrick Air Force Base.

ATLANTIC, North

ANZ533 Chesapeake Bay North Beach to Drum Point MD

01	0220EST				0	0			Marine Thunderstorm Wind
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A warm and humid air mass led to an isolated thunderstorm that produced gusty winds.

ATLANTIC, North

ANZ631-634-636-638-650-652-656-658 Cape Charles Light VA to NC-VA border out 20nm - Chesapeake Bay From Little Creek - Chesapeake Bay New Point Comfort to Cape Henry VA - Chesapeake Bay Windmill Point to New Point Comfort VA - Chincoteague to Parramore Island VA out 20nm - Fenwick Island DE to Chincoteague VA out 20nm - James River From James River Bridge To Hampton Roads Bridge-Tunnel - NC-VA border to Currituck Beach Light out 20nm - York River

03	0100EST 0954EST				0	0	0.00K	0.00K	Marine Tropical Storm
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Tropical Storm Hermine moving northeast along the Southeast Coast then off the Mid Atlantic Coast produced tropical storm force winds across portions of the Chesapeake Bay from Friday night, September 2nd into Saturday night, September 3rd.

ATLANTIC, North

ANZ235-236 Narragansett Bay - Rhode Island Sound

05	1400EST 1706EST				0	0	0.00K	0.00K	Marine Tropical Storm
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Hermine was named on August 31st as it intensified to a tropical storm in the Gulf of Mexico. She meandered about in the eastern Gulf of Mexico before moving northeastward across the Florida panhandle, through Georgia and then along the coast of North and South Carolina. She was a hurricane as she made landfall in Florida, then weakened to a tropical storm and finally a tropical depression as she moved off the coast of North Carolina. After moving off the coast of North Carolina, Hermine moved northeast, then north, then west, meandering south of southern New England for several days in early September. While classified as a tropical system, Hermine's effects on southern New England were rather minimal. Rainfall added up to less than an inch for most locations and winds were generally below tropical storm force. Because trees were still fully leaved and we had higher wind gusts, there was some wind damage. Storm surge was highest during low tide so we had minimal coastal flooding impacts.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ATLANTIC, North

ANZ533-536

Chesapeake Bay North Beach to Drum Point MD - Tidal Potomac Indian Head to Cobb Island MD

07	1707EST 1908EST				0	0			Marine Thunderstorm Wind
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ANZ537

Tidal Potomac Cobb Island MD to Smith Point VA

08	0136EST				0	0			Marine Thunderstorm Wind
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An upper-level low remained nearby while a surface trough was overhead. Warm and humid conditions led to an unstable atmosphere and some thunderstorms developed due to the surface trough and upper-level low. A few thunderstorms produced gusty winds.

ATLANTIC, North

ANZ335-338

Long Island Sound West of New Haven CT to Port Jefferson NY - New York Harbor

14	1610EST 1634EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A cold frontal passage produced a few strong thunderstorms over the area.

ATLANTIC, North

ANZ533-542-543

Chesapeake Bay North Beach to Drum Point MD - Patuxent River To Broomes Island Md - Tangier Sound And The Inland Waters Surrounding Bloodsworth Island

28	0830EST 1042EST				0	0			Marine Thunderstorm Wind
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A cold front from the north and east moved through southern Maryland during the morning of the 28th. A cutoff upper-level low also approached from the Midwest during this time. A few thunderstorms developed ahead of the cold front, and were able to mix down gusty winds from aloft ahead of the upper-level low.

ATLANTIC, North

ANZ650

Fenwick Island DE to Chincoteague VA out 20nm

29	0130EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Isolated thunderstorm associated with a frontal boundary produced gusty winds across portions of the Maryland Coastal Waters.

ANZ637

James River From Jamestown To The James River Bridge

30	1634EST				0	0	0.00K	0.00K	Waterspout
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Scattered thunderstorms in advance of low pressure produced a waterspout across portions of the James River.

LAKE HURON

LHZ442

Harbor Beach to Point Sanilac MI

07	2220EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
----	---------	--	--	--	---	---	-------	-------	--------------------------

A thunderstorm over Port Sanilac produced a 34 knot wind gust.

LHZ443

Point Sanilac to Point Huron MI

10	1630EST 1640EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Thunderstorms moving through southern Lake Huron produced wind gusts around 40 knots.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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LAKE MICHIGAN

LMZ675

WIND POINT WI TO WINTHROP HARBOR IL 5NM OFFSHORE TO MID LAKE

01	0716CST				0	0	0.00K	0.00K	Waterspout
	0717CST								

A surge of cool air over the relatively warmer waters of Lake Michigan contributed to scattered showers over the far near shore and open waters of Lake Michigan during the morning. One of these showers produced an isolated waterspout off of the Kenosha lakeshore.

LAKE MICHIGAN

LMZ563

Rock Island Passage to Sturgeon Bay WI 5nm Offshore to Mid Line of Lake

06	1114CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Thunderstorms developed into a line as they moved onto the waters of Lake Michigan. This line of storms produced a wind gust of 61 knots (70 mph) at the North Lake Michigan Buoy.

LMZ542

Sturgeon Bay to Two Rivers WI

13	0348CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
	0354CST								

Thunderstorms, ahead of a passing cold front, moved across eastern Wisconsin and the nearshore waters of Lake Michigan. Peak wind gusts of 37 knots (43 mph) were recorded at Kewaunee Marina as the storms passed.

LAKE MICHIGAN

LMZ643

Sheboygan to Point Washington WI

21	0427CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A line of strong thunderstorms moved from east central Wisconsin over the near shore waters of Lake Michigan during the early morning. These thunderstorms caused strong wind gusts at the lakeshore of Sheboygan County.

LAKE MICHIGAN

LMZ740-741

Wilmette Harbor to Meigs Field IL - Winthrop Harbor to Wilmette Harbor IL

21	1420CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
	1440CST								

A cluster of thunderstorms over northern Illinois sagged south, producing a wake low over Lake Michigan. This brought gusty winds over the waters of Lake Michigan.

LMZ740-743-779

Calumet Harbor IL to Gary In - Wilmette Harbor To Michigan City In 5nm Offshore To Mid Lake - Wilmette Harbor to Meigs Field IL - Winthrop Harbor to Wilmette Harbor IL

28	0730CST				0	0	0.00K	0.00K	Waterspout
	1440CST								

There were over a dozen sightings of waterspouts on southern Lake Michigan on Wednesday, September 28. Many of these were observed from the Illinois and Indiana shores.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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LAKE SUPERIOR

LSZ147

Sand Island to Bayfield WI

18	2317CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Thunderstorms with gusty winds moved across western Lake Superior.

LAKE SUPERIOR

LSZ263

Lake Superior East of line from Saxon Harbor WI to Grand Portage MN to line Manitou Island MI northward beyond 5nm and South of Intl Border

19	0129EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
	0134EST								

A vigorous upper disturbance moving through an unstable air mass produced a strong thunderstorm at Rock of Ages Light in the early morning of the 19th.

LSZ266

Manitou Island to Marquette Mi and W of Grand Marais Mi to Us/Canadian Border beyond 5nm of shore

26	1700EST				0	0	0.00K	0.00K	Marine High Wind
	1705EST								

A cold frontal passage produced storm force winds at Stannard Rock on the evening of the 26th.

St. Lawrence River

SLZ022-024-042

Niagara River to Thirty Mile Point NY - St. Lawrence River above Ogdensburg NY - St. Lawrence River from Ogdensburg to St. Regis NY

10	2009EST				0	0	0.00K		Marine Thunderstorm Wind
	1820EST								

A cold front swept across the region during the evening hours. Thunderstorms that accompanied the front produced a wind gust measured to 40 knots at Ogdensburg.

LAKE ERIE

LEZ149

Conneaut OH to Ripley NY

01	1151EST				0	0	0.00K	0.00K	Waterspout
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Waterspouts were observed on Lake Erie offshore from Erie County Pennsylvania.

LEZ146

Avon Point to Willowick OH

02	0801EST				0	0	0.00K	0.00K	Waterspout
----	---------	--	--	--	---	---	-------	-------	------------

For the second day in a row, waterspouts were observed on Lake Erie.

LAKE ERIE

LEZ020-041

Buffalo Harbor and Upper Niagara River - Dunkirk to Buffalo NY

10	1813EST				0	0	0.00K		Marine Thunderstorm Wind
----	---------	--	--	--	---	---	-------	--	--------------------------

A cold front swept across the region during the evening hours. Thunderstorms that accompanied the front produced a wind gust measured to 37 knots at the Buffalo Coast Guard Station.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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PUERTO RICO

Toa Baja

3 WNW Toa Baja

08	1310AST 1530AST				0	0	0.00K	0.00K	Heavy Rain
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A 1.35 in of rain were reported in downtown Toa Baja.

An upper level trough continued moving across the region. This pattern resulted in an increase of low level moisture across the local islands. A tropical wave continued moving west northwest reaching the region producing an increase in showers and thunderstorms.

Santa Isabel

2 WSW Santa Isabel

13	1539AST 1650AST				0	0	0.00K	0.00K	Flood
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Highway 153 and road 541 flooded near k.m 0.2 to just above curb level.

Ponce

4 S Ponce

13	1543AST 1650AST				0	0	0.00K	0.00K	Flood
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Bypass in Ponce in front of Wendy's closed due to flooding.

The Doppler radar detected showers with periods of moderate to heavy rainfall mainly across the interior, West and Southwest Puerto Rico.

Salinas

3 WSW Salinas

14	1730AST 1930AST				0	0	0.00K	0.00K	Flood
----	--------------------	--	--	--	---	---	-------	-------	-------

Urban flooding reported in Barrio Pueblo at the intersection of road 1 and road 180.

Locally induced showers and thunderstorms developed over and West of Cordillera.

Utuaado

Utuaado

20	1345AST 1615AST				0	0	0.00K	0.00K	Flood
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Emergency manager reported flooding at road 111 near the city entrance in Utuaado close to CDT.

Utuaado

Utuaado

20	1530AST 1615AST				0	0	0.00K	0.00K	Flash Flood
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Creek at Jardines de Utuaado out of its banks.

Utuaado

1 WSW Utuaado

20	1530AST 1615AST				0	0	5.00K	0.00K	Heavy Rain
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Landslide reported at road 123, k.m.55. Parked car affected. No injuries.

San Sebastian

1 WNW San Sebastian

20	1600AST 2030AST				0	0	0.00K	0.00K	Flash Flood
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Landslide reported at road 119 k.m. 42.5 San Sebastian.

San Sebastian

3 WSW San Sebastian

20	1600AST 2030AST				0	0	0.00K	0.00K	Flash Flood
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Creek at Barrio Sonador in San Sebastian is out os its banks.

A troufiness pattern aloft enhanced the potential of showers and thunderstorms across the Central and Eastern Caribbean. The available moisture and instability resulted in trade wind showers and thunderstorms.

Storm Data and Unusual Weather Phenomena

September 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

PUERTO RICO

PRZ003

Southeast

29	1340AST								
30	0200AST				0	0	0.00K	0.00K	Coastal Flood

PRZ007

Ponce and Vicinity

29	1340AST								
30	0200AST				0	0	0.00K	0.00K	High Surf

Southeast swells and rough and very dangerous marine conditions associated with hurricane Matthew, produced coastal flooding along the southern facing beaches in Puerto Rico.

Storm Data and Unusual Weather Phenomena

June 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ADDITIONS

MISSOURI, East

Washington County 3 NNW Pea Ridge

16	1940CST				0	0	0.00K	0.00K	Flood
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The Missouri Highway Patrol reported a vehicle attempted to cross a flooded low water crossing. The vehicle was swept into the stream and overturned. The driver was killed.

A vehicle was swept off a low water crossing and overturned. The driver was killed.

Storm Data and Unusual Weather Phenomena

July 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage	Crops	Character of Storm
					Killed	Injured	Property		

ADDITIONS

ILLINOIS, Southwest

**ILZ058>060-064>
065-069>070-074-
079-095>102**

Adams - Bond - Brown - Calhoun - Clinton - Fayette - Greene - Jersey - Macoupin - Madison - Marion - Monroe - Montgomery - Pike - Randolph - St. Clair - Washington

12	1100CST								
13	1900CST				0	0			Excessive Heat

Excessive heat hit parts of West Central and South Central IL. The high Heat Index was around 110 with high temperatures in the mid to upper 90s.

ILZ058-095>102

Adams - Brown - Calhoun - Greene - Jersey - Macoupin - Madison - Monroe - Pike - St. Clair

17	1100CST								
18	1900CST				0	0			Excessive Heat

The heat index ranged from 105 - 110 with high temperatures in the lower to middle 90s.

**ILZ060-064-069>
070-074**

Bond - Clinton - Fayette - Marion - Montgomery - Washington

18	1100CST				0	0			Excessive Heat
19									

The heat index ranged from 105 - 110 with high temperatures in the lower to middle 90s.

**ILZ058>060-064>
065-070-074-079-
095>099**

Adams - Bond - Brown - Calhoun - Fayette - Greene - Jersey - Macoupin - Marion - Montgomery - Pike - Randolph - Washington

27	1100CST				0	0			Excessive Heat
29									

A hot and humid air mass produced Heat Index values from 105 to 110 degrees with high temperatures in the middle 90s.

MISSOURI, East

**Lincoln County
2 NNW Moscow Mills**

09	0850CST								
	1450CST				0	0	0.00K	0.00K	Flood

The Missouri Highway Patrol reported an operator of a Utility Task Vehicle (UTV) left his residence to make a visual observation of nearby flood waters. The UTV became stuck and the victim started walking in the flood water, and drowned.

A man drowned while attempting to walk through flood water from the Cuivre River.

**MOZ018-026>027-
034>036-041>042-
047>052-059>065-
072>075-084>085-
099**

Audrain - Boone - Callaway - Cole - Crawford - Franklin - Gasconade - Iron - Jefferson - Knox - Lewis - Lincoln - Madison - Marion - Moniteau - Monroe - Montgomery - Osage - Pike - Ralls - Reynolds - Shelby - St. Charles - St. Francois - St. Louis - St. Louis (c) - Ste. Genevieve - Warren - Washington

12	1100CST								
13	1900CST				0	50			Excessive Heat

The first heat event of the summer for Northeast MO produced heat index readings around 110 with high temperatures in the middle to upper 90s.

17	1100CST				0	0			Excessive Heat
18									

**MOZ019-026-034-
036-041>042-047>
052-059>065**

Audrain - Boone - Callaway - Cole - Franklin - Gasconade - Jefferson - Lewis - Lincoln - Marion - Moniteau - Monroe - Montgomery - Osage - Pike - Shelby - St. Charles - St. Louis - St. Louis (c) - Warren

17	1100CST								
18	1900CST				0	11			Excessive Heat

The heat index ranged from 105 - 110 with high temperatures in the lower to middle 90s.

Storm Data and Unusual Weather Phenomena

July 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ADDITIONS

MISSOURI, East

**MOZ072>075-084>
085-099**

Crawford - Iron - Madison - Reynolds - St. Francois - Ste. Genevieve - Washington

18	1100CST								
19	1900CST				0	0			Excessive Heat

The heat index ranged from 105 - 110 with high temperatures in the lower to middle 90s.

**MOZ041-047>051-
059>060-062-072>
073-084-099**

Boone - Callaway - Cole - Crawford - Franklin - Gasconade - Iron - Moniteau - Montgomery - Osage - Reynolds - Warren - Washington

25	1100CST								
29	1800CST				0	0			Excessive Heat

A hot and humid air mass produced Heat Index values around 110 degrees with high temperatures in the middle 90s.

**MOZ018-026>027-
034>036-042-051>
052-059-061>065-
072>075-084>085-
099**

Audrain - Crawford - Franklin - Gasconade - Iron - Jefferson - Knox - Lewis - Lincoln - Madison - Marion - Monroe - Montgomery - Pike - Ralls - Reynolds - Shelby - St. Charles - St. Francois - St. Louis - St. Louis (c) - Ste. Genevieve - Washington

27	1100CST								
29	2000CST				0	31			Excessive Heat

A hot and humid air mass produced Heat Index values around 110 degrees with high temperatures in the middle 90s.

Storm Data and Unusual Weather Phenomena

February 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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ADDITIONS

COLORADO, West

COZ006

Grand Valley

06	0700MST								
	0800MST			0	0	0.00K	0.00K		Dense Fog

Low level moisture trapped at the surface due to recent snow showers resulted in areas of dense fog within the Grand Valley.

COZ004-010-013

Elkhead And Park Mountains - Flattop Mountains - Gore And Elk Mountains/central Mountain Valleys

14	1000MST								
16	0800MST			0	0	0.00K	0.00K		Winter Weather

A quick moving disturbance in a northwesterly flow brought significant snowfall to the northwest Colorado mountains.

COZ003

Roan And Tavaputs Plateaus

18	0400MST								
	1900MST			0	0	0.00K	0.00K		High Wind

A strong cold front moving through the region caused gusty winds to develop across much of western Colorado.

COZ004-009-012

Elkhead And Park Mountains - Gore And Elk Mountains/central Mountain Valleys - Grand And Battlement Mesas - West Elk And Sawatch Mountains

18	0600MST								
	0400MST			0	0	0.00K	0.00K		Winter Weather

A vigorous cold front brought significant to heavy snowfall to many higher elevation areas of western Colorado. Gusty winds accompanied the front and generated areas of blowing snow throughout the event.

COZ001-007-009-012-018>019

Central Yampa River Basin - Debeque To Silt Corridor - Grand And Battlement Mesas - Lower Yampa River Basin - Northwestern San Juan Mountains - Southwestern San Juan Mountains - West Elk And Sawatch Mountains

18	1000MST								
	1930MST			0	0	0.00K	0.00K		High Wind

A strong cold front moving through the region caused gusty winds to develop across much of western Colorado.

COZ013

Flattop Mountains

18	1600MST								
19	0400MST			0	0	0.00K	0.00K		Winter Weather

A vigorous cold front brought significant to heavy snowfall to many higher elevation areas of western Colorado. Gusty winds accompanied the front and generated areas of blowing snow throughout the event.

18	1700MST								
	2200MST			0	0	0.00K	0.00K		High Wind

A strong cold front moving through the region caused gusty winds to develop across much of western Colorado.

COZ012-018

Northwestern San Juan Mountains - West Elk And Sawatch Mountains

22	1000MST								
23	1200MST			0	0	0.00K	0.00K		Winter Weather

A moist Pacific trough brought heavy snowfall amounts to the mountains of western Colorado.

Storm Data and Unusual Weather Phenomena

February 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ADDITIONS

COLORADO, West

COZ002

Central Yampa River Basin

23	0300MST 1000MST				0	0	0.00K	0.00K	Dense Fog
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Low level moisture trapped at the surface due to a recent winter storm resulted in areas of dense fog within the Central Yampa River Basin.

MARYLAND, South

MDZ021>023

Dorchester - Somerset - Wicomico

09	1000EST 1900EST				0	0	0.00K	0.00K	Coastal Flood
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MDZ021

Dorchester

10	0000EST 0400EST				0	0	0.00K	0.00K	Coastal Flood
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Strong winds behind a cold front caused minor to moderate coastal flooding along central and southern portions of the Chesapeake Bay region, including the Lower Maryland Eastern Shore.

UTAH, East

UTZ027

Grand Flat And Arches

04	2100MST 2130MST				0	0	0.00K	0.00K	Dense Fog
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Low level moisture trapped at the surface due to a recent winter storm resulted in areas of dense fog in southeast Utah.

VIRGINIA, East

VAZ077-099>100

Accomack - Lancaster - Northampton - Northumberland

09	0700EST 1600EST				0	0	0.00K	0.00K	Coastal Flood
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Strong winds behind a cold front caused minor to moderate coastal flooding along central and southern portions of the Chesapeake Bay region, including portions of the Potomac River.

Storm Data and Unusual Weather Phenomena

March 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ADDITIONS

TEXAS, Central

McCulloch County

5 S Voca

08	1914CST								
	1917CST	0.58	185	0	0	0.00K	0.00K		Tornado (EF1)

A National Weather Service Damage Assessment Team found evidence of an EF1 Tornado that formed about 3 miles east northeast of Katemcy in northern Mason County and lifted about 2 miles north northwest of Fredonia in McCulloch County. The tornado mainly damaged a grove of trees snapping many tree trunks about half way down. The tornado also destroyed an outbuilding. Winds were estimated between 95 to 110 mph.

A retreating dryline, an unstable atmosphere and an upper level disturbance resulted in the development of a few supercell thunderstorms. These storms produced large hail and damaging winds across portions of West Central Texas. One of the supercells spawned a tornado near Fredonia.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ADDITIONS

OREGON, Northwest

ORZ002

Central Oregon Coast

15	1050PST				0	1	0.00K	0.00K	High Surf
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A man was swept out to sea when a sneaker wave struck him while taking photos.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops		Character of Storm
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ADDITIONS

TEXAS, Central Southeast

Liberty County

1 W Kenefick

26 2200CST

3 S Hardin

27 0100CST

0 0 400.00K 0.00K Flash Flood

Numerous roads and bridges under water. Damage estimated.

Polk County

Goodrich

27 0500CST

4 NE Carmona

1100CST

0 0 500.00K 0.00K Flash Flood

Five structures damaged in the Goodrich area. Roads damaged near Corrigan and over eastern part of county.

Strong upper level disturbances combined with above average moisture levels and favorable upper level wind patterns to produce a round of severe thunderstorms that eventually trained and produced excessive rainfall and flash flood during the afternoon hours of the 26th and on into the overnight and early morning hours of the 27th. Rainfall totals of 6 to 10 inches were common over the north and northwestern parts of Harris County into Waller, Montgomery, and Washington Counties, with much of the rain falling in a 3 to 6 hour period. Portions of Washington County recorded over 12 inches of rainfall in a 3 hour period. This event was the fourth federal disaster declaration for Harris County in the last year.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops		Character of Storm
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ADDITIONS

ILLINOIS, Northeast

**Will County
Bolingbrook**

28	1354CST				0	1	0.00K	0.00K	Lightning
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Woman struck by lightning in the 300 block of Janes Ave.
Scattered thunderstorms went through northern Illinois during the afternoon and evening. Heavy rain brought some minor flooding, and there were some reports of funnel clouds.

OREGON, Northwest

ORZ001

Northern Oregon Coast

21	1530PST 1545PST				0	1	0.00K	0.00K	Rip Current
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Two teenagers were swimming in the ocean near Seaside and swept out to sea. Both were rescued, but one died at the hospital.

WISCONSIN, Northwest

**Bayfield County
2 ENE Grandview**

18	0000CST				0	0	0.00K	0.00K	Flash Flood
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A woman was killed when she drove past two set of barricades before her vehicle plunged 50 feet into a ditch left by a washed-out road.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

ADDITIONS

NEW YORK, West

Genesee County 1 SE Batavia

10	0200EST				2	0	0.00K	0.00K	Lightning
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Thunderstorms moved across western New York during the early morning hours of the 10th. During the afternoon of that day, two people were found dead in a Batavia cemetery. The medical examiner determined that the cause of death of the 34-year-old male and 32-year-old female was a lightning strike from the earlier overnight thunderstorms. M34UT, F32UT

TEXAS, North Panhandle

TXZ011

Oldham

02	0045CST 0700CST				0	0	0.00K	0.00K	Wildfire
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The North Almaseitos Pasture wildfire began around 0045CST about six miles east northeast of Adrian Texas in Oldham county. The wildfire consumed approximately six hundred acres and was caused by lightning. There were no homes or other structures that were threatened and none were damaged or destroyed. There were also no reports of any injuries or fatalities. The wildfire was contained around 0700CST and approximately three fire departments or other fire agencies responded to the wildfire.

TXZ002

Sherman

03	1140CST 1800CST				0	0	0.00K	0.00K	Wildfire
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The Coldwater Draw wildfire began around 1140CST about fifteen miles north of Sunray Texas in Sherman county. The wildfire started just west of the Coldwater Cattle Company Lake or Pleasure Pond. The wildfire consumed approximately twelve hundred acres and was caused by lightning. There were no homes or other structures that were threatened and none were damaged or lost by the wildfire. There were no reports of any injuries or fatalities. The wildfire was contained around 1800CST and there were a total of five fire departments or other fire agencies that responded to the wildfire.

TXZ005

Lipscomb

04	1242CST 1800CST				0	0	0.00K	0.00K	Wildfire
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The Braums wildfire began around 1242CST about seven miles south of Follett Texas in Lipscomb county and started east of Farm to Market Road 1454. The wildfire consumed approximately three hundred and fifty acres and was caused by lightning. There were two homes that were threatened but were saved, however no homes or other structures were damaged or lost by the wildfire. There were no reports of any injuries or fatalities. The wildfire was contained 1800CST and there were a total of six fire departments or other fire agencies that responded to the wildfire.

TXZ013

Carson

05	1905CST 2330CST				0	0	0.00K	0.00K	Wildfire
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The Button wildfire began around 1905CST about two miles west northwest of Skellytown Texas in Carson county. The wildfire began just south of the intersection of State Highway 152 and Farm to Market Road 1059 and consumed approximately three hundred acres. The cause of the wildfire was determined to be from lightning. There were no reports of homes or any other structures threatened or lost and there were no reports of any injuries or fatalities. The wildfire was contained between 2300CST and 2400CST and a total of six fire departments or other fire agencies responded to the wildfire.

Storm Data and Unusual Weather Phenomena

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm	June 2015
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CORRECTIONS

ILLINOIS, Southwest

Adams County

Loraine	07	1825CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
1 ENE Camp Pt		1840CST							

Thunderstorm winds blew down numerous power lines across northern portions of Adams County. Also, just west of Camp Point several large tree limbs were blown down.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Fayette County

6 NNW Bingham	08	0000CST			0	0	0.00K	0.00K	Flash Flood
2 WSW Pittsburg		0624CST							

Up to five inches of rain fell in a short amount of time causing flash flooding. Numerous roads were flooded across the county.

Montgomery County

1 WSW Irving	08	0000CST			0	0	0.00K	0.00K	Flash Flood
5 WNW Witt		0624CST							

Up to three inches of rain fell in a short amount of time causing flash flooding. Several roads were flooded including Illinois Route 16 between Irving and Witt. Also, several viaducts were flooded as well.

Bond County

2 NNW Stubblefield	08	0100CST			0	0	0.00K	0.00K	Flash Flood
3 NNW Scott Corners		0655CST							

Up to four inches of rain fell in a short amount of time causing flash flooding. Numerous roads were flooded, including Illinois Route 127 near Greenville.

Adams County

Ursa	08	1350CST			0	0	0.00K	0.00K	Hail (1.75)
3 S Ewbanks		1410CST							

A line of slow moving thunderstorms moved south across the forecast area during the evening hours of June 7th and early morning hours of June 8th. There were several reports of damaging winds as well as flash flooding. Then during the afternoon and evening hours of June 8th, scattered thunderstorms developed with several reports of large hail.

Adams County

1 NNW Quincy	11	2150CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
		2152CST							

Thunderstorm winds blew down a couple of trees and tree limbs on the north side of Quincy. One large tree on 6th Street between Spruce and Sycamore Streets fell onto a telephone pole knocking it down as well.

Isolated storms developed across the area. One storm caused some wind damage in Quincy. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Madison County

1 S Bluff Jet	12	1510CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
1 ESE Edwardsville									

Thunderstorm winds blew down several large tree limbs around town. Some of the fallen limbs pulled down power lines as well.

Isolated storms developed across the region. Some of the storms produced damaging winds. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Pike County

1 SW Nebo	13	1840CST			0	0	0.00K	0.00K	Thunderstorm Wind (52MG)

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Greene County

Carrollton	13	1940CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down a few large trees, as well as numerous tree limbs and several power lines around town. Also, an unoccupied mobile home was blown off its foundation.

As a cold front approached the region, thunderstorms developed ahead of it producing some severe weather. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

June 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Southwest

Fayette County St Peter

14	1520CST 1521CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew the roof off of a carport at the corner of Walnut Street and Illinois Route 185 in St. Peter. Also, several power poles along Illinois Route 185 were leaning at a 45 degree angle and several large tree limbs were blown down.

Isolated thunderstorms developed. One storm produced damaging winds. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Montgomery County 1 N Irving

15	1717CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down numerous large tree limbs on the north side of Irving.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Adams County 5 SE Beverly 5 ENE La Prairie

15	1845CST								
16	0000CST				0	0	0.00K	0.00K	Flash Flood

Up to 5 inches of rain fell in a short amount of time causing flash flooding. Numerous roads were flooded including U.S. Highway 24 at the Paloma viaduct and Illinois Route 94 south of Golden. Some of the secondary roads were washed out. A couple of cars were stuck in the flooded viaducts, but no injuries were reported.

Slow moving thunderstorms developed over portions of east central and southwestern Illinois. Very heavy rain caused flash flooding.

Monroe County Columbia 3 WNW Hecker

19	0945CST 1530CST				0	0	0.00K	0.00K	Flash Flood
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Up to 4 inches of rain fell onto already saturated soils causing flash flooding. Numerous roads through out the county were flooded.

Marion County 4 SW Greendale

19	1130CST 1134CST	1.67	50		0	0	0.00K	0.00K	Tornado (EF1)
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A weak tornado touched down near a farm just south of Briarcroft Road (west of intersection with Bannister Road), where it destroyed a large barn and heavily damaged another. Debris from the barn was thrown up to half a mile into a corn field. The damaged corn crop showed very distinct convergent and rotational pattern. A wooden utility pole nearby was snapped off at ground level. The tornado continued to the northeast where scattered tree damage occurred, including an area of several large uprooted trees in a chaotic pattern. The tornado dissipated near the old Bethel Church where relatively minor tree damage was noted. Overall, the tornado was rated EF1 with a max path width of 50 yards and a path length of 1.67 miles.

St. Clair County 1 WSW East Carondelet 2 SW Floraville

19	1230CST 1530CST				0	0	0.00K	0.00K	Flash Flood
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Up to five inches of rain fell onto saturated soils causing flash flooding. Numerous roads were flooded including Illinois State Route 13 near Centreville.

Numerous storms developed over Missouri and Illinois. A number of the storms produced very heavy rainfall causing flash flooding. One storm produced an EF1 tornado in Marion County Illinois.

Calhoun County 5 WNW Belleview 2 N Hamburg

21	0230CST 1441CST				0	0	0.00K	0.00K	Flash Flood
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Up to 5 inches of rain fell onto already saturated soils causing flash flooding over Calhoun County. Several roads were flooded including Illinois Route 96 near Belleview. In Belleview, between 3 and 4 feet of water was reported in parts of town from a nearby creek that was out of its banks. The water rose about 3 feet in 30 minutes.

A cold front moved into the region and stalled out, triggering showers and thunderstorms. A number of thunderstorms developed across northern Missouri and west central Illinois. Heavy rain from the storms caused flash flooding across the region.

Storm Data and Unusual Weather Phenomena

June 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Southwest

Adams County

2 SW Loraine
1 NNW Mendon

22	1936CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
	1938CST								

Thunderstorm winds blew a large tree onto a house in Mendon causing moderate roof damage.

A cold front moved through the region, triggering showers and thunderstorms. Some of the storms caused wind damage. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Calhoun County

Brussels
1 W Golden Eagle

25	1650CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
	1705CST								

Thunderstorm winds flattened several corn fields near Brussels and Golden Eagle. Also, numerous tree limbs were blown down.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Jersey County

1 W Otterville

25	1700CST				0	0	0.00K	0.00K	Hail (0.75)
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Calhoun County

Batchtown
3 SW Beechville

25	1735CST				0	0	0.00K	0.00K	Flash Flood
26	0630CST				0	0	0.00K	0.00K	Flash Flood

Up to 5 inches of rain fell in about a three to four hour period onto already saturated soils. This caused flash flooding. Numerous roads were flooded including the Mississippi River Road which had at least a foot of water over it near Batchtown. Illinois Route 1 was flooded in several locations between Hardin and Brussels.

Macoupin County

Hettick

25	1750CST				0	0	0.00K	0.00K	Hail (0.88)
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Madison County

1 W Granite City

25	1810CST				0	0	0.00K	0.00K	Hail (1.00)
	1817CST								

Hail up to one inch in diameter fell for about 10 minutes over Granite City.

Madison County

1 ENE Collinsville

25	1820CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Thunderstorm winds snapped an 18 inch diameter ash tree about 10 feet up from the base.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Macoupin County

3 NW Nilwood

25	1825CST				0	0	0.00K	0.00K	Hail (1.00)
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St. Clair County

Caseyville
1 NW Pontiac

25	1826CST				0	0	0.00K	0.00K	Hail (1.00)
	1830CST								

St. Clair County

1 SSE Swansea
1 N Chenot Place

25	1850CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
	1855CST								

Thunderstorm winds blew down several large trees and numerous tree limbs around Belleville. Also, a few power lines were blown down.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Adams County

2 NNE Meyer
1 W North Quincy

26	0740CST				0	0	0.00K	0.00K	Flash Flood
	1300CST								

Up to 5 inches of rain fell in a short amount of time on already saturated soils causing flash flooding. Numerous roads were flooded including Illinois Route 94 north of Golden and Illinois Route 61 between Loraine and Golden.

Storm Data and Unusual Weather Phenomena

June 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Southwest

A frontal boundary was slowly sinking south across forecast area. Several rounds of storms developed and moved east along the front dumping up to 8 inches of rain in a 24 hour period from 7 am June 25th to 7 am June 26th. This caused considerable flash flooding, especially in Lincoln County Missouri and Calhoun County Illinois. There were also numerous reports of damaging winds and large hail.

MISSOURI, East

St. Charles County

1 SE St Peters

2 NNW Harvester

05	0430CST								
	0433CST			0	0	0.00K	0.00K		Thunderstorm Wind (74EG)

A microburst caused a narrow swath of damage from just northeast of Spencer Library to around Willott Road between Spencer Drive and Spencer Creek. The highest winds appear to have occurred in an area from the City of St. Peters Maintenance Facility on Boone Hills Drive southeast to near Spencer Creek north of Willott Road. The greatest damage occurred in two locations. The first was at the maintenance facility, where the roof of one of the maintenance sheds was blown west northwest into a neighboring residential area. Part of the roof hit a house causing minor damage to it as well as an above ground pool. The second area was on Wells Fargo Drive, where a large uprooted tree caused structural damage to the roof and sidewalls of a house. Maximum winds of this microburst were estimated to be in the 80 to 85 mph range. The majority of the damage was broken tree limbs and power lines.

Some of the thunderstorms that popped up on June 5th produced damaging winds. Note: The estimated wind gust of 74 knots is equivalent to 85 mph.

Shelby County

4 NW Maud

1 W Hagers Grove

07	2135CST								
08	0530CST			0	0	0.00K	0.00K		Flash Flood

Up to four inches of rain fell in a short amount of time causing flash flooding. Numerous primary and secondary roads were flooded. Also, several vehicles were off the highway and partially submerged along U.S. Highway 36 and Highway 15 near Shelbina. No injuries or deaths were reported.

Audrain County

1 N Littleby

2 SSW Benton City

07	2340CST								
08	0730CST			0	0	0.00K	0.00K		Flash Flood

Up to five inches of rain fell in a short amount of time causing flash flooding. Numerous roads had water over them including U.S. Highway 54 on the southeast side of Mexico. Several vehicles became stalled due to high water and had to be towed out. No injuries were reported. Also, the East Liberty underpass on Business U.S. Highway 54 was flooded.

Boone County

2 NW Sturgeon

3 N Hinton

07	2340CST								
08	0730CST			0	0	0.00K	0.00K		Flash Flood

Between 2 and 4 inches of rain fell in a short amount of time causing flash flooding. Several roads were flooded across northern Boone County including Route B on the south side of Hallsville.

Audrain County

1 ESE Vandalia

08	1708CST			0	0	0.00K	0.00K		Hail (1.00)
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A line of slow moving thunderstorms moved south across the forecast area during the evening hours of June 7th and early morning hours of June 8th. There were several reports of damaging winds as well as flash flooding. Then during the afternoon and evening hours of June 8th, scattered thunderstorms developed with several reports of large hail.

St. Charles County

1 SSW Weldon

1 N St Charles

12	1550CST								
	1615CST			0	0	0.00K	0.00K		Thunderstorm Wind (61EG)

Thunderstorm winds blew down numerous large trees in an area from the Katy Trail in Weldon Springs to Cottleville then onto St. Peters, and St. Charles areas. One large tree was blown down in the Timberwood Trails subdivision blocking the street. A large portion of a tree landed on the roof of a house on Park Charles Blvd South causing moderate damage and a large trampoline was thrown into a pool 3 houses down from where it had been. Also, the cross arm on a power pole just southwest of Barnes-Jewish St. Peters Hospital was snapped. Another large tree was blown over onto a house in the 1000 block of Madison Street near Lindenwood University. The house sustained moderate damage, though no one was injured in the home. Another large tree fell onto an unoccupied car on Elm Street near Duchesne High School.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Storm Data and Unusual Weather Phenomena

June 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

Osage County

1 WSW Bonnots Mill

12	1839CST 1840CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large trees. A parked trailer carrying boats was flipped over crushing the boats. The size of the boats on the trailer are unknown.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Callaway County

Williamsburg

12	1937CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Several large trees, the largest was three feet in diameter, were blown over in Williamsburg.

Isolated storms developed across the region. Some of the storms produced damaging winds. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Boone County

1 NE Providence

1 E Shaw

13	1555CST 1630CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down numerous trees, tree limbs and power lines in Boone County. Some of the worst tree damage was in southern Boone County near the intersection of Old Plank Road South and Dothage Road. In Columbia, a large tree limb fell and knocked down power lines onto an unoccupied car. The car sustained moderate damage to the hood. Further east, several large tree limbs and a couple of trees were blown down. One large tree blocked a gravel road next to Lake LaVista.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Lincoln County

2 WSW Hawk Pt

13	1745CST 1750CST	1.95	50		0	0	0.00K	0.00K	Tornado (EF1)
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A weak tornado formed on the leading edge of a line of thunderstorms as it approached the town of Hawk Point in Lincoln County, Missouri. The tornado touched down at a farm home where 3 trees were uprooted or snapped. Minor damage occurred at the home, but an outbuilding was completely destroyed with large debris thrown over 100 yards into an adjacent farm field. The tornado continued on the ground for another almost 2 miles, causing relatively minor damage to homes in the town of Hawk Point. Several large trees were uprooted as well, however the ground was very wet due to previous rains. The tornado severely damaged a business on the north side of town, but the damage was likely exacerbated by implosion of a garage bay door, allowing the roof to be lifted off and one exterior wall to collapse. The tornado lifted shortly thereafter. No injuries or deaths were reported. The tornado was rated EF1 with a max path width of 50 yards. The tornado path length was 1.95 miles.

As a cold front approached the region, thunderstorms developed ahead of it producing some severe weather.

Lincoln County

1 WNW Louisville

3 ESE Olney

18	2330CST				0	0	0.00K	0.00K	Flash Flood
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Up to three inches of rain fell onto already saturated ground causing flash flooding. Several roads were flooded including Highways H and Z, as well as, Highway 79 at Highway JJ.

Crawford County

6 WSW Dillard

6 SE Davisville

19	0530CST 0830CST				0	0	0.00K	0.00K	Flash Flood
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Up to three inches of rain fell onto already saturated ground causing flash flooding. Several roads were flooded throughout the county. Also, in Steelville, several people had to be evacuated on the southwest side of town due to Yadkin Creek rising well above its banks.

Franklin County

New Haven

1 W Berger

19	0945CST 1500CST				0	0	0.00K	0.00K	Flash Flood
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Up to 3 inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded.

Storm Data and Unusual Weather Phenomena

June 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

Gasconade County

Morrison	19	0945CST			0	0	0.00K	0.00K	Flash Flood
4 NW Redbird		1500CST							

Up to 3 inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded through out the county.

Numerous storms developed over Missouri and Illinois. A number of the storms produced very heavy rainfall causing flash flooding. One storm produced an EF1 tornado in Marion County Illinois.

Lewis County

3 N La Belle	20	2220CST							
2 NNW Deer Ridge	21	0830CST			0	0	0.00K	0.00K	Flash Flood

Up to 5 inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including Highway 156 near Ewing, Highway C east of Ewing and Highway D south of LaBelle.

Marion County

Palmyra	21	0000CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down numerous large tree limbs around town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Audrain County

3 NW Bassinger Corner	21	0545CST					0.00K	0.00K	Flash Flood
3 NNW Worchester		1441CST			0	0	0.00K	0.00K	Flash Flood

Up to 6 inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including County Road 777, which was washed out.

Lincoln County

5 NE Elsberry	21	0545CST					0.00K	0.00K	Flash Flood
1 NNW Louisville		1441CST			0	0	0.00K	0.00K	Flash Flood

Up to at least 8 inches of rain fell onto already saturated soils causing flash flooding across Lincoln County. Numerous roads were flooded including Highways E and H near Silex, Route B near Davis, and Routes C and MM near Moscow Mills. A number of businesses in Silex sustained flood damage due to flood waters. Over 20 people had to be rescued from their homes in and around Silex and Davis due to the flash flooding. Also, a section of railroad track near Old Monroe and Highway 79 had some of its bedding washed out.

Montgomery County

5 NNW Wellsville	21	0545CST					0.00K	0.00K	Flash Flood
7 NW Danville		1441CST			0	0	0.00K	0.00K	Flash Flood

Up to 7 inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including Route CC east of Wellsville and Route E southeast of Middletown.

Pike County

4 NE Stark	21	0545CST					0.00K	0.00K	Flash Flood
2 NNW Reading		1441CST			0	0	0.00K	0.00K	Flash Flood

Up to 5 inches of rain fell onto already saturated soils causing flash flooding. Several roads were flooded including Highway 79 at Pike Street in Annada and Highway N west of Clarksville.

A cold front moved into the region and stalled out, triggering showers and thunderstorms. A number of thunderstorms developed across northern Missouri and west central Illinois. Heavy rain from the storms caused flash flooding across the region.

Lewis County

3 N Monticello	22	1913CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew off part of the roof of a metal barn 3 miles north of Monticello. Some of the debris was laying on Highway A.

A cold front moved through the region, triggering showers and thunderstorms. Some of the storms caused wind damage. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Storm Data and Unusual Weather Phenomena

June 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

Knox County

Baring	25	0400CST							
4 NW Kenwood		1345CST			0	0	200.00K	0.00K	Flash Flood

Up to 5 inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including Highway 15 just north of Edina. The heavy rains caused the South Fabius River to rise rapidly. There was a levee breach on the South Fork of the South Fabius River upstream from Edina. The flood waters caused flooding on the south side of Edina. About 7 businesses had to be evacuated due to the flood waters.

Lewis County

1 NW Deer Ridge	25	0400CST							
2 N Fenway		1345CST			0	0	0.00K	0.00K	Flash Flood

Up to 4 inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including Highway 156 west of Ewing due to rapidly rising water from Grassy Creek. Also, Highway 156 was flooded east of Newark, in far southwestern Lewis County.

A complex of storms developed over northern Missouri and tracked to the east, dumping a lot of rain over northeastern Missouri. There were numerous reports of flash flooding over Knox and Lewis counties.

St. Charles County

Orchard Farm	25	1725CST			0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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Thunderstorm winds blew down numerous large tree limbs around town.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Lincoln County

Troy	25	1758CST			0	0	0.00K	0.00K	Hail (1.75)
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Monroe County

2 NW Evansville	25	1815CST			0	0	0.00K	0.00K	Hail (1.00)
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Monroe County

Madison	25	1822CST							
Paris		1832CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)

Thunderstorm winds blew down numerous large tree limbs and a couple of trees.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

St. Charles County

Portage Des Sioux	25	1845CST							
5 N Orchard Farm	26	0630CST			0	0	0.00K	0.00K	Flash Flood

Up to three inches of rain fell in a short amount of time onto already saturated soils causing flash flooding. Several roads were flooded including Highway 94 near Orchard Farm and Portage Des Sioux and Route H between Boschertown and Portage Des Sioux.

Audrain County

2 SE Mexico	25	1855CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down a large tree onto Jefferson Road on the southeast side of town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Monroe County

2 S Santa Fe	25	1855CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down a large tree.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Montgomery County

1 SE Wellsville	25	1905CST							
Middletown		1915CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)

Thunderstorm winds several large trees as well as numerous large tree limbs. One tree snapped and fell onto a home in Wellsville causing moderate damage and a two car carport was blown over.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Storm Data and Unusual Weather Phenomena

June 2015

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

Audrain County

1 SSE Laddonia
1 SE Vandalia

25	1910CST								
	1915CST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)

Thunderstorm winds blew down several large trees and numerous tree limbs. Also, just east of Laddonia, the winds overturned several empty railroad cars. The railroad cars blocked the track's intersections with County Road 509 and Locust Street.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Boone County

1 E Rocheport
1 SSE Shaw

25	1915CST								
26	0630CST				0	0	0.00K	0.00K	Flash Flood

Up to four inches of rain fell in a short amount of time onto already saturated soils causing flash flooding. Numerous roads were flooded including East Small Lane, off of Highway VV north of Columbia.

Lincoln County

3 E Louisville
Olney

25	1915CST								
26	0630CST				0	0	0.00K	0.00K	Flash Flood

Up to 8 inches of rain fell over a short amount of time onto already saturated soils causing flash flooding. Numerous roads were flooded including Highway 79 in Winfield, Routes H and BB near Davis, and Routes O and D just southeast of Olney. Over 30 water rescues of over 50 people from homes and vehicles were performed throughout the county. The worst hit areas were Winfield, Troy, Davis, Hawk Point, and Old Monroe. About 2 miles south of Winfield, Bob's Creek was flowing so high and forcefully that the floodwaters washed away areas underneath the railroad tracks.

Warren County

Warrenton

25	1950CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm wind blew the roof off of a mobile home and knocked down several large trees and power lines.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

St. Louis County

1 SSW Chesterfield
South Bellefontaine

25	2024CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down several large tree limbs.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Knox County

4 NNE Colony
7 W Greensburg

26	0740CST								
	1300CST				0	0	0.00K	0.00K	Flash Flood

Up to 3 inches of rain fell in a short amount of time onto already saturated soils causing flash flooding. Several roads were flooded including Highway 15 in Edina.

Lewis County

1 WSW Fenway
6 SSE La Grange

26	1200CST								
	1455CST				0	0	0.00K	0.00K	Flash Flood

Up to 4 inches of rain fell in a short amount of time onto already saturated soils causing flash flooding. Several roads were flooded including Highway J just south of Lewistown.

A frontal boundary was slowly sinking south across forecast area. Several rounds of storms developed and moved east along the front dumping up to 8 inches of rain in a 24 hour period from 7 am June 25th to 7 am June 26th. This caused considerable flash flooding, especially in Lincoln County Missouri and Calhoun County Illinois. There were also numerous reports of damaging winds and large hail.

Knox County

4 W Colony

28	1445CST				0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
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Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Marion County

2 NW Withers Mill

28	1506CST				0	0	0.00K	0.00K	Hail (1.25)
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Storm Data and Unusual Weather Phenomena

June 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

MISSOURI, East

Boone County 1 W Centralia

28	1530CST 1532CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large trees and power lines around town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Callaway County 1 W Fulton

28	1610CST				0	0	0.00K	0.00K	Hail (1.00)
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Callaway County 2 E Guthrie

28	1646CST 1647CST	0.11	10		0	0	0.00K	0.00K	Tornado (EF0)
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A trained spotter saw a tornado briefly touch down in a field. Debris was seen in the air confirming the brief touchdown. The debris appeared to consist of brush and dirt. No structural damage was reported.

Montgomery County 1 SE Danville

28	1648CST				0	0	0.00K	0.00K	Hail (1.00)
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Callaway County 3 NNW Mokane

28	1655CST				0	0	0.00K	0.00K	Hail (1.25)
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Gasconade County 1 W Gasconade

28	1710CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Pike County 1 S Bowling Green

28	1710CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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A building in Bowling Green sustained siding damage on two sides of the building from thunderstorm winds.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Pike County 1 SSW Edgewood 2 NNW Eolia

28	1723CST 1729CST	2.48	50		0	0	0.00K	0.00K	Tornado (EF1)
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A tornado touched down just west of County Road 301 just south of intersection with County Road 304. As it traveled to the east, it snapped off numerous trees and tree limbs. The tornado crossed U.S. Highway 61 just north of Highway OO, knocking over several more trees before lifting and dissipating. No structural damage occurred with this tornado. Overall, it was rated EF1 with a path length of 2.48 miles and a max path width of 50 yards.

Pike County 1 ESE Edgewood

28	1730CST				0	0	0.00K	0.00K	Hail (1.75)
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Pike County 1 WNW Eolia

28	1734CST 1735CST	0.65	40		0	0	0.00K	0.00K	Tornado (EF0)
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A tornado touched down about a mile and a quarter west of Eolia and traveled to the east, lifting and dissipating half a mile west of Eolia. The only damage found along the path was broken tree branches and some patterns in the vegetation. The damage was rated EF0 with a path length of 0.65 miles and a max path width of 40 yards.

St. Charles County 2 SSW Peruque 2 NNE St Peters

28	1904CST 1909CST	2.26	400		0	0	0.00K	0.00K	Tornado (EF2)
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Storm Data and Unusual Weather Phenomena

June 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

Tornado touched down 1.2 miles northwest of the intersection of Silvers Road and Highway C. The tornado traveled to the southeast. About half a mile west northwest of the intersection of Silvers Road and Highway C, a large outbuilding was destroyed, numerous trees snapped off and a house sustained moderate window, roof and siding damage. On the south side of Silvers road, a mobile home just had a few shingles blown off, but a small shed on the backside of mobile home was destroyed. Just a little further east and southeast, there was a convergent pattern in the corn field and a couple of power poles were snapped. The tornado crossed Highway C about a third of a mile south of the intersection of Highway C and Silvers Road. In this location, on the east side of the highway, a house sustained considerable damage. Most of the roof was removed, but the walls remained standing. Also, several power poles were snapped off along Highway C. Just north of the house, a large shed was destroyed and numerous trees were snapped off. The tornado then began to take a more easterly track. Just sporadic tree damage was observed along this section, as well as a couple of power poles that were leaning. The tornado then lifted and dissipated one mile east southeast of the intersection of Highway C and Silvers Road. Overall, the tornado was rated EF2 with a path length of 2.26 miles and a max path width of 400 yards.

St. Charles County

**2 SSW Kampville
1 WSW St Charles**

28	1909CST				0	0	0.00K	0.00K	Hail (1.00)
	1914CST								

St. Louis County

**1 WNW Richmond Hgts
1 N Rock Hill**

28	1950CST				0	0	0.00K	0.00K	Hail (1.00)
	1951CST								

St. Louis (c) County

**2 SW Tower Grove
3 S St Louis**

28	1954CST				0	0	0.00K	0.00K	Hail (1.50)
	2005CST								

A strong cold front moved through the region triggering showers and thunderstorms. Some of the storms produced tornadoes, large hail and damaging winds.

Pike County

1 NW Louisiana

29	1614CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
	1616CST								

Thunderstorm winds blew down several large trees around town. Also, a building at the intersection of Tennessee and Water Streets sustained minor roof damage.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Pike County

Louisiana

29	1618CST				0	0	0.00K	0.00K	Hail (0.88)
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Lincoln County

1 N Foley

29	1720CST				0	0	0.00K	0.00K	Hail (0.88)
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A shortwave was dropping south across the forecast area triggering isolated thunderstorms along the Mississippi River between Quincy and St. Louis.

Storm Data and Unusual Weather Phenomena

July 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Southwest

Madison County

Granite City

06	1230CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds snapped off a portion of a large oak. It landed on the roof of a home causing moderate roof damage.

Isolated severe storms developed across the St. Louis metro area on July 6th. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Adams County

2 E Coatsburg

11	1215CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds rolled an unoccupied fifth wheel trailer at Cedar Lakes Campground twice before it landed next to some trees. Also, several large tree limb at the campground were blown down and one large tree was uprooted.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Macoupin County

3 E Scottville

11	1457CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
	1501CST								

Thunderstorm winds blew down several power lines onto Modesto-Scottville Road.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Adams County

6 ENE La Prairie

5 ESE Beverly

11	2030CST								
12	0249CST				0	0	0.00K	0.00K	Flash Flood

Up to five inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including U.S. Highway 24 between Coatsburg and Paloma, the underpass on Illinois Route 94 south of Golden, and up to a foot of water over Illinois Route 61 between Loraine and Golden. In Fall Creek, some homes were flooded and evacuations took place. Several roads were washed out including Columbus Road, about a tenth of a mile west of intersection with North 72nd Street, where Little Mill Creek flows under it. The washout was at least 12 feet deep and 30 feet wide.

Brown County

3 WNW Damon

2 WNW Benville

11	2045CST								
12	0249CST				0	0	0.00K	0.00K	Flash Flood

Up to four inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded. Also, in Mount Sterling, 10 residents of an apartment building had to be evacuated due to flash flooding.

Several rounds of heavy rain fell over northeast Missouri and west central Illinois from the afternoon hours of July 11th through the early morning hours of July 12th. There were numerous reports of flash flooding as well as two deaths, one from flash flooding and one from a fallen tree.

Adams County

2 NNW Quincy

2 ENE Beverly

13	1713CST				0	0	0.00K	0.00K	Thunderstorm Wind (64MG)
	1745CST								

A wide swath of damaging winds occurred across the south half of Adams County. Numerous trees, tree limbs, power poles and power lines were blown down in Quincy, Coatsburg, Payson, Plainville and Liberty. In Quincy, several unoccupied vehicles were destroyed by fallen trees. Also, numerous homes and businesses in town sustained minor to major damage from trees falling on them. A couple of older brick facade buildings were damaged or destroyed by the winds. No injuries were reported.

Note: The measured wind gust of 64 knots is equivalent to 74 mph.

Pike County

1 NNE Barry

3 S Griggsville

13	1739CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
	1755CST								

A wide swath of damaging winds occurred across the northern half of Pike County. Numerous trees, tree limbs, power poles and power lines were blown down in Barry, Griggsville and northeast of Pittsfield. A couple of homes in Griggsville and Barry sustained minor roof and siding damage.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Storm Data and Unusual Weather Phenomena

July 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Southwest

Brown County

**4 ESE Buckhorn
Versailles**

13	1745CST 1755CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Thunderstorm winds blew down several large trees onto Route 107 about 5 miles south of Mount Sterling. In Versailles, several large tree limbs were blown down.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Macoupin County

**2 NNW Palmyra
1 NE Hornsby**

13	1835CST 1850CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds caused a wide swath of damage across Macoupin County. Numerous trees, tree limbs, and power lines were blown down in Modesto, Palmyra, Girard, and Carlinville. In Carlinville, a retirement home and an apartment building sustained minor to moderate roof damage.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Montgomery County

**1 N Farmersville
Litchfield Muni Arpt**

13	1850CST 1910CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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Thunderstorm winds blew down numerous large tree limbs between Farmersville and Litchfield.

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Bond County

Greenville

13	1936CST				0	0	0.00K	0.00K	Hail (1.00)
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Marion County

**Sandoval
1 SSE Salem**

13	2010CST 2020CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large trees, numerous tree limbs and power lines. In Sandoval, a power pole was blown over onto a house causing moderate damage.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Bond County

**Greenville
Tamalco**

15	1935CST 1950CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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Thunderstorm winds blew down several large trees and numerous large tree limbs.

A severe thunderstorm tracked across northeastern Missouri and into west central Illinois producing a continuous swath of damaging winds from Knox County MO to Marion County IL. Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Greene County

**4 NNW Hillview
4 NNE Athensville**

19	0430CST 1723CST				0	0	0.00K	0.00K	Flash Flood
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Between 2 and 7 inches rain fell across Greene County causing flash flooding. Numerous roads were flooded including U.S. Highway 67 near White Hall and Roodhouse. In Hillview, a levee along Hurricane Creek was breached, flooding the town. At least 6 people had to be rescued from their homes due to the flood waters. No injuries or deaths were reported.

Pike County

**Fishhook
1 ENE Baylis**

19	0445CST 1430CST				1	0	0.00K	0.00K	Flash Flood
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Up to six inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded across the northern part of Pike County. County Road 2 about a mile east of New Salem was washed out due to a creek that flowed through the area. This created a 30 foot wide by 30 foot deep hole. A lineman with a local electric company was driving through the area and did not see the hole due to darkness. His vehicle plunged into the hole. He died at the scene. No other injuries or deaths were reported. M52VE

Several rounds of heavy rain moved through portions of the forecast area on the July 19th and 20th. There were several reports of flash flooding. M52VE

Storm Data and Unusual Weather Phenomena

July 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Southwest

St. Clair County 3 WSW Millstadt

27	1525CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds snapped a few trees off and a shed sustained minor roof damage near the intersection of Illinois Route 158 and Triple Lakes Road.

Storms developed across the forecast area. Some of the storms produced very heavy rainfall and damaging winds. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

MISSOURI, East

St. Louis County 1 N Breckenridge Hills 1 ESE Olivette

01	1840CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large trees and numerous large tree limbs in St. Ann, Woodson Terrace and Olivette. Several homes had minor to moderate roof damage from the fallen trees and tree limbs.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Boone County 1 N Rocheport 1 ESE Wilton

01	1850CST				0	0	0.00K	0.00K	Flash Flood
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Up to three inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including Providence Road and Rangeline Road.

St. Louis (e) County 1 WSW Tower Grove 1 SW St Louis

01	1855CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Thunderstorm winds blew down several large trees and numerous tree limbs in Forest Park. Also, a tree was blown down onto two homes causing moderate damage.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Boone County 4 W Columbia

01	1900CST				0	0	0.00K	0.00K	Hail (1.00)
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Boone County 3 S Columbia

01	1910CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds broke a couple of skylights on a business on the south side of Columbia. The store had water problems due to the broken skylights.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Moniteau County 1 WNW High Pt

01	2003CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large trees. A couple of the trees landed on power lines knocking them down.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Jefferson County 3 ENE Ware 1 ESE Victoria

01	2020CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down numerous tree limbs between Hillsboro and Victoria. Also, several large trees were uprooted and a two foot diameter tree was snapped off about 3 feet above the ground just west of Hillsboro.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Jefferson County 3 S Festus Arpt

01	2040CST				0	0	0.00K	0.00K	Hail (3.00)
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Hail was mostly half dollar size, but some stones were up to 3 inches in diameter. Hail fell for about 18 minutes. Observer's car had dents from the hail stones. Also, the hail damaged roof shingles and broke a couple of windows on their house.

Storm Data and Unusual Weather Phenomena

July 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

MISSOURI, East

Cole County

2 SSE St Thomas	01	2100CST							
2 W Brazito		2358CST			0	0	750.00K	0.00K	Flash Flood

Up to three inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including Route W south of Wardsville and Lower Bottom Road just northeast of St. Thomas. A portion of Lower Bottom Road was washed out and the cost to repair it will be around \$750,000.

Osage County

Meta	01	2110CST					0.00K	0.00K	Flash Flood
2 NNW Folk		2358CST			0	0	0.00K	0.00K	Flash Flood

Up to three inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including Route T north of Argyle and Route P west of Freeburg.

Jefferson County

1 S Kimmswick	01	2113CST							
1 ENE Festus Arprt	02	0215CST			2	0	4.00M	0.00K	Flash Flood

Up to 7 inches of rain fell in a short amount of time onto already saturated soils causing flash flooding. The main band of heavy rain extended from northwest of Cedar Hill southeastward to southeastern Jefferson County, south of Festus. Four vehicles were swept off of Meyer Road, just west of intersection with U.S. Highway 67, when Buck Creek rose well above its banks. All four vehicles were swept downstream but only two were occupied, the other two had been in a nearby parking lot. Two bodies were found further downstream, a 35 year old female and a 50 year old female. Authorities say that the owners of the other two vehicles have been accounted for. Several rescues had to be performed including on Montauk Drive just off of U.S. Highway 67, about 2 miles north northeast of Olympian Village. Also, a levee was over topped on Plattin Creek next to Lakeside Manor Mobile Home Park. Four to five feet of water flooded the mobile home park. Sixty to seventy people had to be rescued. Three people were injured and brought to a local hospital. Numerous businesses were flooded. One business had about a dozen ATVs damaged or ruined by the flood waters. Mercy Hospital in Crystal City had to close its emergency department for a couple of days when flood waters came into that area of the hospital, the rest of the hospital remained open. Several homes along Cotter Creek, off of Hillsboro Victoria Road near intersection with Highway P, were damaged/destroyed from flood waters as the creek quickly rose there. One person had to be rescued after her vehicle was swept into Cotter Creek by the flood waters. She was clinging to a tree for over an hour before being rescued. Several roads were washed out due to the flash flooding. Damage to the roads and bridges was estimated around \$1.5 million with total damage estimated close to \$3-4 million. F35VE, F50VE

Franklin County

2 ENE Catawissa	01	2200CST							
5 ENE Maupin	02	0220CST			0	0	0.00K	0.00K	Flash Flood

Up to three inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including the intersection of Routes C and YY near Kiel, Route C just northwest of Leslie. Just south of Catawissa, the bridge at the entrance to Lake Serene Subdivision on the west side of Highway HH was damaged due to flash flooding.

Several rounds of storms moved through the south half of Missouri on July 1st-2nd. The heaviest rains fell over central and southwestern Missouri as well as a swath of very heavy rain from Franklin County southeast through Jefferson and Ste. Genevieve Counties.

Washington County

2 ENE Caledonia	08	1743CST							
		1745CST	0.18	100	0	0	0.00K	0.00K	Tornado (EF0)

A tornado briefly touched down north of Caledonia in a wooded area. It was captured on video by two different trained spotters. Tree debris could be seen in the air once it touched down. No other damage was found or reported. It was rated EF0 with a max path length of approximately two tenths of a mile and an estimated path width of 100 yards.

Jefferson County

1 WNW Rush Tower	08	1806CST							
		1807CST	0.15	50	0	0	0.00K	0.00K	Tornado (EF0)

A tornado briefly touched down in a wooded area about 7 miles southeast of Festus. Trained spotters caught it on video. Only damage seen was to some trees. It was rated EF0 with a path length of 0.15 miles and a max path width of approximately 50 yards.

Storm Data and Unusual Weather Phenomena

July 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

Isolated severe thunderstorms developed on July 8th. One of the storms produced a brief tornado.

Lewis County

La Grange

11	2200CST								
12	0249CST			1	0	0.00K	0.00K	Flash Flood	

Up to five inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including Highways C and B at LaGrange. County Road 322, also known as 190th Street, was flooded where Reddish Branch Creek flows under it, about 3 miles east northeast of LaBelle, just east of intersection with 145th Avenue. In this location, a pickup truck was driven into the flooded roadway just after midnight on the 12th of July and then swept downstream. The driver was swept about a mile downstream and drowned in the flood waters. Her passenger was able to cling to a tree till he was rescued a few hours later. Several roads were also washed out including 3rd Street at Pierce Street in LaGrange. F33VE

Lewis County

3 SSW La Grange

12	0150CST								
				1	0	0.00K	0.00K	Thunderstorm Wind (35EG)	

Sub-severe thunderstorm winds in combination with saturated soils, caused a large tree to be blown over at Wakonda State Park in the area where RVs are allowed to stay. The tree fell onto an RV, crushing the front section of it. Five people were trapped in the vehicle. One occupant was crushed by the fallen tree and died from his injuries. No one else in the vehicle sustained any injuries. M25VE

Note: The estimated wind gust of 35 knots is equivalent to 40 mph.

Marion County

2 E Taylor Haerr Fld Arp 4 ENE Benbow

12	0230CST								
	0445CST			0	0	0.00K	0.00K	Flash Flood	

Up to five inches of rain fell onto already saturated soils causing flash flooding. Numerous roads were flooded including Highway MM at Bear Creek, County Roads 425 and 403. Several homes in Hannibal had up to 17 inches of water in their basements.

Several rounds of heavy rain fell over northeast Missouri and west central Illinois from the afternoon hours of July 11th through the early morning hours of July 12th. There were numerous reports of flash flooding as well as two deaths, one from flash flooding and one from a fallen tree.

Knox County

Edina 2 NNE Colony

13	1640CST								
	1645CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)	

Thunderstorm winds blew down numerous large tree limbs as well as a few trees, especially in Edina and just northeast of Colony.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Lewis County

Lewistown Canton

13	1655CST								
	1710CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)	

Thunderstorms produced a wide swath of damaging winds as it moved east southeast across the county. In Lewistown, a large tree was blown over onto an unoccupied mobile home. In Ewing, the roof was blown off of a church and numerous trees were blown down around town. In Canton, there was widespread tree damage and numerous trees uprooted or snapped off. Also, an unanchored mobile home was pushed off of its foundation.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Marion County

1 NNE Taylor

13	1715CST								
				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)	

Thunderstorm winds uprooted a 48 inch diameter tree and blew down numerous powerlines around town.

A severe thunderstorm tracked across northeastern Missouri and into west central Illinois producing a continuous swath of damaging winds from Knox County MO to Marion County IL. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Shelby County

4 NE Epworth

16	1754CST								
				0	0	0.00K	0.00K	Hail (0.75)	

Scattered thunderstorms developed and moved across northeast Missouri and west central Illinois. Some isolated large hail was reported.

Storm Data and Unusual Weather Phenomena

July 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

MISSOURI, East

St. Louis County

1 WSW South Bellefontaine	27	1655CST							
2 ENE Ballwin		1700CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)

Thunderstorm winds blew down a few power lines in Chesterfield and a couple of very large tree limbs in Ballwin.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Marion County

1 ENE Cherrydell	27	1730CST							
7 SSW Warren		2300CST			0	0	0.00K	0.00K	Flash Flood

Up to three inches of rain fell in a short amount of time causing flash flooding. Numerous roads were flooded. In Hannibal, water was high enough on some streets to get into vehicles. No injuries or deaths were reported.

Storms developed across the forecast area. Some of the storms produced very heavy rainfall and damaging winds.

Storm Data and Unusual Weather Phenomena

October 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

GULF OF MEXICO

GMZ355

High Is To Freeport Tx Out 20nm

24	1255CST								
	1300CST				0	0			Waterspout

A developing surface low off the middle Texas coastline tapped into the moisture from the remnants of Hurricane Patricia. As this low moved up the upper Texas coast it produced moderate to heavy rainfall that lead to southeastern Texas flooding. Within a better sheared downstream environment, isolated storms that formed along this low's leading warm frontal boundary produced tornadoes and waterspouts. In addition to the heavy rainfall, strong east northeast winds over much of the week resulted in minor coastal flooding along western Galveston Bay.

TEXAS, Central Southeast

Brazoria County

5 WNW Pearland

24	0814CST								
	0819CST	0.57	30		0	0	20.00K		Tornado (EF0)

The tornado damaged the metal roof of a large business south of Beltway 8 west of Cullen Blvd. The damage path extended north of Beltway 8 into the Brunswick Place subdivision.

Matagorda County

1 W Collegeport

24	1315CST								
	2115CST				0	0	0.00K	0.00K	Flash Flood

There were flooded roadways along East Bayshore Drive as well as on the 700 block of Moore towards Main Street. 30 to 40 percent of the cities' roads were flooded going into the early evening hours.

Brazos County

1 SSW Bryan Coulter Arpt

24	1800CST								
	2100CST				0	0	0.00K	0.00K	Flash Flood

Flooding was reported throughout the town of Bryan. Five inches of water were reported flowing over Hooper Street with flooding reported in City, Municipal and Williamson Parks.

Burleson County

Caldwell Muni Arpt

24	1800CST								
	2100CST				0	0	0.00K	0.00K	Flash Flood

Flooding was reported in Caldwell.

Harris County

3 WNW Katy 2 ENE Bammel

24	1800CST								
25	0200CST				0	0	0.00K	0.00K	Flash Flood

There was widespread flooding around the city of Houston. There were numerous reports of flooded and impassable roadways with submerged vehicles. Vehicles were submerged near Fondren Road and the Highway 59 southwest freeway as well as in the Galleria area. The Katy exit ramp to the north freeway was closed due to high water. Interstate 45 at North Shepherd had two feet of water flowing across all lanes. Highway 59 at the 610 Loop interchange was closed due to high water. There was also high water reported over Clay Road at North Eldridge in Bear Creek Pioneers Park that was blocking traffic. Sections of Memorial Drive near Bagby Street were closed due to high flood waters. All entrances to downtown Houston off of Interstate 45 were closed due to high water over the roadways. Eastbound Interstate 10 was closed due to high water near White Oak Bayou.

Washington County

2 NW Gay Hill

24	1800CST								
	2100CST				0	0	0.00K	0.00K	Flash Flood

Flood waters were inundating the Rehburg Road and FM 1948 intersection.

TXZ237

Brazoria

25	0530CST								
	1000CST				0	0	0.00K	0.00K	Coastal Flood

Storm Data and Unusual Weather Phenomena

October 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

The remnants of Hurricane Patricia merged with a developing frontal low to produce an intense surface low off the Texas Gulf Coast. As this low moved up the upper Texas coast it produced moderate to heavy rainfall that broad flooding to some areas, an isolated tornado and waterspout, and minor coastal flooding due to elevated stormtides.

Burleson County 8 W Caldwell

30	1152CST								
	1154CST				0	0	0.00K	0.00K	Funnel Cloud

A funnel cloud was reported near FM 908 and FM 316.
A moist and unstable air mass was conducive for the formation of a funnel cloud.

TXZ238

Galveston

31	0000CST								
	0800CST				0	0	0.00K	0.00K	Coastal Flood

Harris County

4 SSE Orr 2 NE Missouri City

31	0230CST								
	1200CST			2	0	1.00M	0.00K		Flash Flood

There was widespread flooding across the city of Houston and surrounding areas. The worst flooding occurred across eastern and southern Houston and towns north and east of the city. Numerous roadways were flooded including all main lanes of Highway 288 north of Brays Bayou. High rainfall rates caused Brays Bayou to go out of banks and inundate the Lawndale Wayside part of eastern Houston. Four to five feet of water flowed over North Macgregor Way between Merry Lane and Wildwood Way. High water rescues were conducted by the fire department with a half a foot of water entering Fire Station 26 in southeast Houston near Telephone and Bellfort Streets. Highway 59 at Will Clayton Parkway south of Humble was impassable due to high water. Approximately 40 homes were flooded in the Cloverleaf subdivision near Interstate 10 and Beltway 8. Hunting Bayou went out of banks and flooded neighboring homes. High water rescues were performed on Autumnwood and Wood Shadows Drives near Hunting Bayou. A shopping district and surrounding parking lots were flooded in the Crosby and Barrett areas. M55OU, F30OU

A strong upper level storm system, combined with high moisture levels to produce a bands of excessive rainfall that caused flash flooding across Fort Bend, Harris and Liberty Counties. Thunderstorms rapidly developed shortly after midnight on the 31st over Matagorda and Fort Bend Counties and moved into Harris County around 1:00 a.m. The thunderstorms trained or moved over the same areas between 1:00 a.m. and 4:00 a.m. with significant rainfall occurring over the southwest and south-central portions of Harris County into the east-central part of the county. After a brief break between 5:00 a.m. and 8:00 a.m. an additional round of thunderstorms slowly moved across Harris County from west to east producing additional heavy rainfall and worsening ongoing flooding conditions. Saturated grounds from previous heavy rainfall the week before coupled with intense short term rainfall rates resulted in widespread flooding. There was one confirmed flood related death and one possible flood related death. M55OU, F30OU

Brazoria County

1 WSW Jones Creek

31	0232CST								
	0235CST	1.2	40	0	0	50.00K			Tornado (EF1)

A small EF-1 tornado moved from a wildlife management area one mile southwest south of Jones Creek where it uprooted several large trees. The tornado then crossed Highway 36 and severely damaged a mobile home just north of the roadway. The tornado caused minor damage for approximately a mile toward the northeast before reaching the Brazos River, or one mile northeast of Jones Creek. Estimated peak wind speed was 90 mph.

Brazoria County

1 WSW Lake Jackson

31	0304CST								
	0307CST	1	40	0	0	50.00K	0.00K		Tornado (EF0)

An EF-0 tornado tracked from a subdivision south of the Brazos Mall knocking down fences and shallow rooted trees. The tornado then tracked across Hobby Lobby and the eastern end of the mall where it caused roof damage. It then continued into a subdivision to the northeast of the mall uprooting several large trees. Estimated peak wind speed was 85 mph.

Brazoria County

1 S Liverpool

31	0319CST								
	0321CST	0.92	40	0	0	50.00K	0.00K		Tornado (EF0)

An EF-0 tornado touched down in a field south of Liverpool and damaged a cattle handling area. The tornado tracked into the town of Liverpool and produced minor damage to trees and structures. The tornado lifted north of town. The estimated peak wind was 80 mph.

Storm Data and Unusual Weather Phenomena

October 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

TEXAS, Central Southeast

Brazoria County

2 NE Angleton Bailes Arpt
2 NW Danbury

31	0323CST								
	0330CST	3.69	50	0	0	200.00K	0.00K		Tornado (EF0)

The EF-1 tornado severely damaged a farm house and barn then flipped three trailers over at an RV park before weakening. Estimated peak wind was 90 mph.

Brazoria County

2 E Manvel

31	0421CST								
	0422CST	0.21	40	0	3	50.00K	0.00K		Tornado (EF1)

The EF-1 tornado tracked along Wink Road between Alvin and Manvel. The tornado injured three people as it destroyed one mobile home and damaged several other mobile homes. The estimated peak wind was 100 mph.

Brazoria County

3 SW Hastings

31	0421CST								
	0424CST	0.93	30	0	2	200.00K	0.00K		Tornado (EF1)

The EF-1 tornado tracked along a trailer park in Alvin where it damaged fifteen to twenty trailers and overturned one trailer. An elderly couple sustained injuries in the overturned trailer. The estimated peak wind was 90 mph.

Harris County

Ellington Field

31	0422CST								
	0424CST	0.76	30	0	0	75.00K	0.00K		Tornado (EF0)

A brief EF-0 tornado caused damage to homes near the intersection of Clear Lake City Boulevard and El Dorado Boulevard. The estimated peak wind was 85 mph.

Brazoria County

1 NNW Hastings

31	0428CST								
	0432CST	2.55	50	0	0	2.00M	0.00K		Tornado (EF2)

The EF-2 tornado touched down just east of Clover Field Airport (Brazoria County) and continued on a narrow northeast track into Galveston County. This tornado expanded in size and weakened in intensity as it approached FM 518 over the last half of its track. There was extensive tree damage along the entire track. Homes sustained partial roof loss and tree damage consistent with an EF-1 rating from east of the airport through Sunset Drive in Friendswood (Galveston County). Low-end EF-2 damage occurred on Chester Drive in Friendswood where there was complete loss of a residential home's roof. Estimated peak wind was 115 mph.

Harris County

5 N Baytown Humphrey Arp

31	0430CST								
	0432CST	0.21	50	0	0	20.00K	0.00K		Tornado (EF0)

The EF-0 tornado caused minor roof damage to a home and snapped numerous tree trunks half way up. The tornado also rolled two RV campers. The estimated peak wind was 80 mph.

Galveston County

7 NW League City S S Arpt

31	0432CST								
	0436CST	1.68	50	0	0	1.00M	0.00K		Tornado (EF2)

The EF-2 tornado touched down just east of Clover Field Airport (Brazoria County) and continued on a narrow northeast track into Galveston County. This tornado expanded in size and weakened in intensity as it approached FM 518 over the last half of its track. There was extensive tree damage along the entire track. Homes sustained partial roof loss and tree damage consistent with an EF-1 rating from east of the airport through Sunset Drive in Friendswood (Galveston County). Low-end EF-2 damage occurred on Chester Drive in Friendswood where there was complete loss of a residential home's roof. Estimated peak wind was 115 mph.

Harris County

3 NNE Ellington Field
1 NW Strang

31	0447CST								
	0455CST	4.76	150	0	0	12.00M			Tornado (EF2)

Storm Data and Unusual Weather Phenomena

October 2015

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured		Estimated Damage Property Crops		Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

An EF-2 tornado began near the Genoa Red Bluff and Red Bluff intersection in Pasadena and ended near the Spencer Highway and Myrtle Creek Drive intersection in La Porte. The tornado caused extensive tree, fence and power line damage. Low end EF -2 damage was observed where the tornado demolished an industrial building and caused significant roof loss to several homes in La Porte. One of these homes lost a portion of an exterior brick wall. The estimated peak wind was 125 mph.

Harris County

**2 WNW Highlands
1 E Barrett**

31	0559CST								
	0603CST	3.3	50	0	0	200.00K	0.00K	Tornado (EF0)	

An EF-0 tornado began in the Rio Villa subdivision along the San Jacinto River where several homes received minor roof damage. The tornado damage ended near Evangeline street in Barrett where there was mainly tree and power line damage. The estimated peak wind was 75 mph.

Tornadoes formed along a near coastal county warm frontal boundary that was downstream of a central Texas cold front.

Fort Bend County

**2 NE Hobby
3 NW Arcola**

31	0600CST								
	1100CST			0	0	10.00K	0.00K	Flash Flood	

There were flood waters in homes in the Mayfair Park area with flooding occurring on Maywood Street and Arthington Avenue. The roadway was closed at Highway 99 and West Bellfort Street in Pecan Grove due to high water. The southbound lanes of the Fort Bend Parkway were closed due to high water east of Lake Olympia.

Liberty County

**3 NW Dayton
2 NE Liberty**

31	0650CST								
	1100CST			0	0	700.00K	5.00K	Flash Flood	

High rainfall rates created flooding in both towns of Dayton and Liberty. The underpass at the intersection of US Highway 90 and FM 321, along with other streets in Dayton, were closed due to high water. The city of Liberty reported flood waters in six homes with numerous road closures due to high water.

Burleson County

8 W Caldwell

31	1152CST								
				0	0	0.00K	0.00K	Funnel Cloud	

The funnel cloud was sighted near FM 316 and FM 908.

A strong upper level storm system, combined with high moisture levels to produce a bands of excessive rainfall that caused flash flooding across Fort Bend, Harris and Liberty Counties. Thunderstorms rapidly developed shortly after midnight on the 31st over Matagorda and Fort Bend Counties and moved into Harris County around 1:00 a.m. The thunderstorms trained or moved over the same areas between 1:00 a.m. and 4:00 a.m. with significant rainfall occurring over the southwest and south-central portions of Harris County into the east-central part of the county. After a brief break between 5:00 a.m. and 8:00 a.m. an additional round of thunderstorms slowly moved across Harris County from west to east producing additional heavy rainfall and worsening ongoing flooding conditions. Saturated grounds from previous heavy rainfall the week before coupled with intense short term rainfall rates resulted in widespread flooding. There was one confirmed flood related death and one possible flood related death.

Storm Data and Unusual Weather Phenomena

January 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

CALIFORNIA, Western

Napa County

1 NE Woodleaf

06	0700PST				0	0	0.00K	0.00K	Debris Flow
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Minor mud slide at SR29 and Old Lawley Road. One land partially blocked.

CAZ506

North Bay Interior Valleys

06	0800PST				0	0	0.00K	0.00K	Coastal Flood
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Marin County

1 S Stinson Beach

06	0800PST				0	0	0.00K	0.00K	Debris Flow
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Minor Mud slide on SR1 at Steep Ravine Trail, blocked one lane.

Alameda County

5 NNW Albany

06	0800PST				0	0	0.00K	0.00K	Flood
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CHP reported that I-80 East at El Portal Drive was flooded. The HOV lane was flooded and water was flowing across all lanes.

Monterey County

1 NW Spence

06	0800PST				0	0	0.00K	0.00K	Flood
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Hartnell Road at US101 closed due to flooding.

San Francisco County

2 NE San Francisco

1 ENE Ocean View

06	0800PST				0	0	0.00K	0.00K	Flood
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US 101 Flooded at several on/off ramps. CHP reports water 1 to 3 feet deep, including at Silver Ave, South Van Ess, and I-80 at 7th Street.

Sonoma County

1 SW Sebastopol

06	0800PST				0	0	0.00K	0.00K	Flood
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Roadway flooded on Pleasant Hill Road at Mitchell Court. Roadway was completely flooded.

San Benito County

1 SE Dunneville Corners

06	0850PST		0.61	20	0	0	0.00K	75.00K	Tornado (EF0)
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A weak (EF-0) tornado touched down in a field between Highway 156 and Orchard Road approximately 7 miles north of Hollister, CA in San Benito County. The tornado last just a minute or two and caused spotty damage along a 3/4-mile length path that was 10-20 yards in width. A large shed sustained significant damage with its roof blown off. The roof was also blown off a barn and there was significant damage to a fence on the same property.

Santa Cruz County

3 SSE Ellicott

06	1030PST				0	0	0.00K	0.00K	Flood
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Roadway flooding at San Andreas Road and Beach Street. Several vehicles stuck in water.

Monterey County

2 ESE Castroville

2 SW Prunedale

06	1354PST				0	0	0.00K	0.00K	Funnel Cloud
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Funnel cloud reported. Did not touch down.

Storm Data and Unusual Weather Phenomena

January 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

CALIFORNIA, Western

A strong Pacific storm swept through the San Francisco Bay Area and Monterey Bay Area on Wednesday, January 6. This storm produced heavy rain, minor flooding, damaging winds, a funnel cloud, and one confirmed tornado.

CAZ529

Northern Monterey Bay

16	0000PST								
18	1800PST				2	0	0.00K	0.00K	High Surf

A series of storms over the northern Pacific generated large long period swell which impacted the coast of Northern and Central California from January 16 through January 18. Swell increased through the day Saturday January 16 and then peaked Saturday Night and Sunday January 17. Swell height gradually decreased Sunday Night and into Monday January 18, but remained relatively high through the 18th. M19IW, M25IW

Santa Cruz County Mt Hermon

22	1230PST								
	1250PST				0	2	5.00K	0.00K	Debris Flow

Rocks and mud flowed onto Highway 9 in Felton (near Felton Empire Road) early in the afternoon of January 22, 2016. The slide blocked the southbound lane of highway 9 and caused a traffic accident. Three vehicles were involved in the accident which occurred at 12:48 pm. There were two injuries in the accident.

Monterey County 1 WNW Big Sur

22	1900PST				0	0	0.00K	0.00K	Debris Flow
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Heavy rain on saturated soil triggered a rock slide/debris flow onto SR 1 near Captain Cooper Elementary School in Big Sur. Highway 1 was at least partially blocked.

A frontal system intensified on the afternoon of Friday, January 22, as it moved through Santa Cruz County. The front generated heavy rain in the Santa Cruz Mountains that afternoon and then further south across the Santa Lucia Mountains and Big Sur area of Monterey County late that afternoon through early evening. Rain rates in these areas reached maximum intensities of between 0.50 and 0.75 per hour. These heavy rain rates occurred on saturated soils and triggered rock slides and debris flows.

Storm Data and Unusual Weather Phenomena

February 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ATLANTIC, North

ANZ630>632-634-636-638

Chesapeake Bay From Little Creek, Va, To Cape Henry, Va, Including The Chesapeake Bay Bridge Tunnel - Chesapeake Bay Smith Pt To Windmill Pt Va - Chesapeake Bay Windmill Pt To New Pt Comfort Va - James River From James River Bridge To Hampton Roads Bridge-Tunnel - Mouth Of Chesapeake Bay From New Point Comfort To Little Creek, Va - York River

24	1554EST 2158EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Scattered thunderstorms in advance of a cold front produced gusty winds across portions of the York River.

COLORADO, West

COZ006-011-014-020

Central Gunnison And Uncompahgre River Basin - Grand Valley - Paradox Valley / Lower Dolores River Basin - Upper Gunnison River Valley

01	0000MST 2200MST				0	0	0.00K	0.00K	Heavy Snow
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COZ003-007-009-012-017>019-021>023

Animas River Basin - Debeque To Silt Corridor - Four Corners / Upper Dolores River Basin - Gore And Elk Mountains/central Mountain Valleys - Grand And Battlement Mesas - Northwestern San Juan Mountains - Roan And Tavaputs Plateaus - San Juan River Basin - Southwestern San Juan Mountains - Uncompahgre Plateau And Dallas Divide - West Elk And Sawatch Mountains

01	0000MST				0	0	0.00K	0.00K	Winter Storm
02	0700MST				0	0	0.00K	0.00K	Winter Storm

COZ001-004>005-013

Central Yampa River Basin - Elkhead And Park Mountains - Flattop Mountains - Lower Yampa River Basin - Upper Yampa River Basin

01	0000MST				0	0	0.00K	0.00K	Winter Weather
03	1200MST				0	0	0.00K	0.00K	Winter Weather

A moist Pacific low pressure system produced a prolonged period of heavy snowfall across much of western Colorado with areas of blowing snow.

COZ019

Southwestern San Juan Mountains

13	1130MST 1135MST				0	0	0.00K	0.00K	Avalanche
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An unstable snowpack was triggered by a couple of back-country skiers.

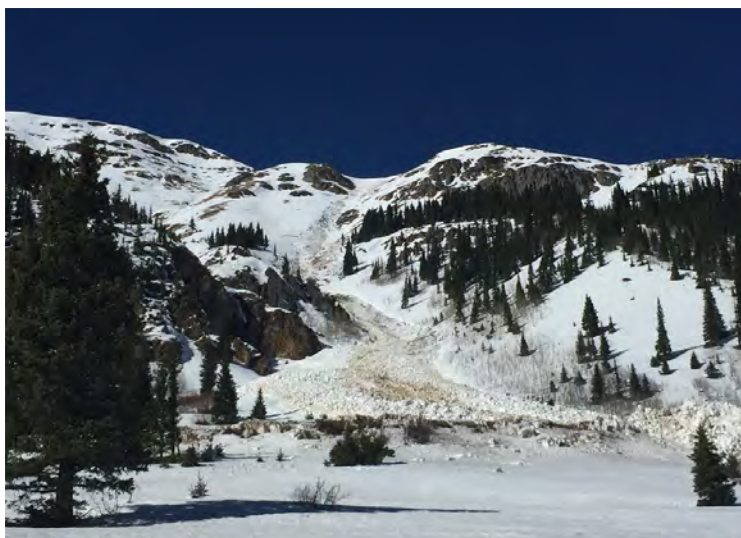
Storm Data and Unusual Weather Phenomena

February 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

COLORADO, West



A picture of the Eagle avalanche path as seen from below US Highway 550 in West, Colorado on February 13th, 2016. Photo courtesy of CDOT-CAIC.

MARYLAND, South

MDZ021>024

Dorchester - Inland Worcester - Somerset - Wicomico

15	0100EST				0	0	0.00K	0.00K	Winter Storm
	1300EST								

The combination of Cold High Pressure moving off the Mid Atlantic Coast and Low Pressure tracking from eastern Texas northeast toward the Mid Atlantic Coast produced between three and six inches of snow across the Lower Maryland Eastern Shore.

NORTH CAROLINA, North Coastal

**NCZ012>017-030>
032-102**

Bertie - Camden - Chowan - Eastern Currituck - Gates - Hertford - Northampton - Pasquotank - Perquimans - Western Currituck

12	1100EST				0	0	0.00K	0.00K	Winter Weather
	1900EST								

Low pressure moving northeast just off the North Carolina coast produced between one and three inches of snow across portions of northeast North Carolina.

Bertie County

**Colerain
1 W Colerain Beach**

24	1454EST				0	0	25.00K	0.00K	Tornado (EF0)
	1455EST	0.48	50						

A very weak EF0 tornado moved across a nearly one half mile area on the east side of Colerain. Several trees were damaged, with one large limb falling through the roof of a shed. In addition, a small outbuilding was blown over.

Isolated severe thunderstorm in advance of a cold front produced a weak tornado across portions of northeast North Carolina.

Storm Data and Unusual Weather Phenomena

February 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

UTAH, East

UTZ022-025-027>029 **Canyonlands / Natural Bridges - Grand Flat And Arches - La Sal & Abajo Mountains - Southeast Utah - Tavaputs Plateau**

01	0000MST				0	0	0.00K	0.00K	Winter Storm
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UTZ023-024 **Eastern Uinta Basin - Eastern Uinta Mountains**

01	0000MST				0	0	0.00K	0.00K	Winter Weather
02	0600MST				0	0	0.00K	0.00K	Winter Weather

A moist Pacific low pressure system produced heavy snowfall with areas of blowing snow across much of eastern Utah.

VIRGINIA, East

VAZ088-095-098 **Norfolk - Sussex - Virginia Beach**

12	1100EST				0	0	0.00K	0.00K	Winter Weather
	1900EST				0	0	0.00K	0.00K	Winter Weather

Low pressure moving northeast just off the North Carolina coast produced between one half inch and one inch of snow across portions of southeast Virginia.

VAZ048-060>062-069-509>510 **Cumberland - Eastern Louisa - Fluvanna - Goochland - Powhatan - Prince Edward - Western Louisa**

14	2200EST				0	0	0.00K	0.00K	Winter Storm
16	0300EST				0	0	0.00K	0.00K	Winter Storm

The combination of Cold High Pressure moving off the Mid Atlantic Coast and Low Pressure tracking from eastern Texas northeast toward the Mid Atlantic Coast produced between three and six inches of snow across the Virginia Northern Neck and Central Virginia Piedmont.

VAZ065>068-079>080 **Amelia - Brunswick - Dinwiddie - Lunenburg - Mecklenburg - Nottoway**

14	2200EST				0	0	0.00K	0.00K	Winter Weather
15	2000EST				0	0	0.00K	0.00K	Winter Weather

The combination of Cold High Pressure moving off the Mid Atlantic Coast and Low Pressure tracking from eastern Texas northeast toward the Mid Atlantic Coast produced between one and four inches of snow across Central and South Central Virginia.

VAZ064-075-076 **Caroline - Richmond - Westmoreland**

14	2300EST				0	0	0.00K	0.00K	Winter Storm
16					0	0	0.00K	0.00K	Winter Storm

The combination of Cold High Pressure moving off the Mid Atlantic Coast and Low Pressure tracking from eastern Texas northeast toward the Mid Atlantic Coast produced between three and six inches of snow across the Virginia Northern Neck and Central Virginia Piedmont.

VAZ077-081>083-087>089-092>093-511>522 **Charles City - Eastern Chesterfield - Eastern Essex - Eastern Hanover - Eastern Henrico - Eastern King And Queen - Eastern King William - Greensville - Isle Of Wight - Lancaster - New Kent - Northumberland - Prince George - Southampton - Surry - Sussex - Western Chesterfield - Western Essex - Western Hanover - Western Henrico - Western King And Queen - Western King William**

14	2300EST				0	0	0.00K	0.00K	Winter Weather
15	0200EST				0	0	0.00K	0.00K	Winter Weather

VAZ084>086-090-095>100-523>525 **Accomack - Chesapeake - Gloucester - Hampton/poquoson - James City - Mathews - Middlesex - Newport News - Norfolk - Northampton - Suffolk - Virginia Beach - York**

15	0000EST				0	0	0.00K	0.00K	Winter Weather
	1000EST				0	0	0.00K	0.00K	Winter Weather

Storm Data and Unusual Weather Phenomena

February 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

VIRGINIA, East

The combination of Cold High Pressure moving off the Mid Atlantic Coast and Low Pressure tracking from eastern Texas northeast toward the Mid Atlantic Coast produced between one and three inches of snow across Eastern and Southeast Virginia.

Sussex County

**3 SE Newville
3 N Waverly**

24	1431EST 1438EST	6.19	300	3	8	2.60M	0.00K	Tornado (EF1)
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NWS storm survey concluded that an EF1 tornado occurred near Waverly. The tornado began a few miles south southwest of Waverly, moved fast through the town of Waverly, then ended about five miles north northeast of Waverly in Surry county. Maximum winds were between 100 and 110 mph. Numerous trees were downed, with two mobile homes destroyed and several homes and businesses damaged. M2MH, M26MH, M50MH

Surry County

**4 SSE Barham
3 SW Savedge**

24	1438EST 1441EST	2.67	300	0	0	15.00K	0.00K	Tornado (EF1)
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Tornado tracked from Sussex county into Surry county before lifting. Several trees were down, but no structural damage was observed.

Charles City (c) County

85 ENE Keysville

24	1505EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed across a telephone line along Capital Trail east of Charles City Courthouse.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

New Kent County

4 NW Barhamsville

24	1505EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed along Route 33 east of Old Stage Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

King William County

4 NNE Sweet Hall

24	1520EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed at Custis Mill Pond.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

King William County

1 E Port Richmond

24	1522EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed on Thompson Road near West Point.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Hampton (c) County

Hampton

24	1530EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Tree was downed on power lines along Robinson Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Newport News (c) County

1 NW Hilton Vlg

24	1530EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed near the intersection of Cedar Road and River Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Isle Of Wight County

1 E Smithfield

24	1540EST			0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Roof was blown off a barn.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Prince Edward County

1 NNE Worsham

24	1545EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed on Farmville Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Newport News (c) County

1 W Oyster Pt

24	1545EST 1550EST			0	0	55.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed on two homes in Newport News. One house was destroyed by the downed tree.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

February 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

VIRGINIA, East

Norfolk (c) County

2 NNE Norfolk

24	1559EST				0	0	0.00K	0.00K	Funnel Cloud
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A funnel cloud was reported.

Fluvanna County

1 NW Fork Union

1 SE Carysbrook

24	1610EST				0	0	325.00K	155.00K	Tornado (EF0)
----	---------	--	--	--	---	---	---------	---------	---------------

An EF0 tornado with winds estimated between 75 and 85 mph affected southeast Fluvanna county. The tornado path was about 4.5 miles in length beginning near Winnsville Drive and Tepee Town Road. It extended north northeast across Thessalonia Road and finally lifted after crossing Highway US 15, James Madison Highway, just north of Carys Creek Road. Numerous large trees were uprooted, and several houses received damage to shingles, siding and gutters. A few homes were damaged as trees fell on the homes. Also, one small outbuilding was destroyed near a home along Highway 15.

Louisa County

Louisa

24	1640EST				0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed across the central portion of the county.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mecklenburg County

2 E Phillis

24	1648EST				0	0	0.00K	0.00K	Hail (3.00)
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Tea cup size hail was reported at John Kerr Dam to New Castle Heights.

Mecklenburg County

2 SSE Redlawn

3 WSW Palmer Spgs

24	1648EST		5	150	0	0	260.00K	50.00K	Tornado (EF1)
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NWS storm survey found EF1 tornado damage along a path from the North Carolina Virginia line near Keats Point northeast through Palmer Point Recreation area, then to a point about five miles west of Bracey. Numerous trees were downed or snapped, minor roof damage occurred to a few homes, minor structural damage occurred to one home and a shed, and one home was moved off its foundation.

Mecklenburg County

1 W South Hill

24	1700EST				0	0	0.00K	0.00K	Hail (1.75)
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Golf ball size hail was reported one to two miles west of South Hill.

Goochland County

4 NNW Hadensville

24	1700EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed along Shannon Hill Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mecklenburg County

1 SE Opie

24	1703EST				0	0	0.00K	0.00K	Hail (3.00)
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Tea cup size hail was reported northwest of South Hill.

Brunswick County

3 NNE Brodnax

24	1706EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed along Forksville Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mecklenburg County

1 SSW Palmer Spgs

24	1712EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed on Palmer Springs Road about one mile east of Route 4.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lunenburg County

5 ESE Bagleys Mills

24	1715EST				0	0	0.00K	0.00K	Hail (1.75)
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Golf ball size hail was reported.

Amelia County

1 N Jetersville

24	1725EST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter size hail was reported near Jetersville.

Storm Data and Unusual Weather Phenomena

February 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

VIRGINIA, East

Amelia County
5 SSW Rodephil

24	1730EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed along Saylers Creek Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Goochland County
1 N Goochland

24	1735EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed along Fairground Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Goochland County
1 NE Maidens

24	1735EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Goochland County
3 SE Sandy Hook

24	1735EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Brunswick County
3 SE Brodnax

24	1741EST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter size hail was reported.

Brunswick County
2 ESE Grandy

24	1755EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed along Old Indian Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Chesterfield County
3 S Chesterfield

24	1755EST				0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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Large tree was downed on East Fair Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Hanover County
2 WSW Hewlett

24	1755EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed across the west end of Hanover county.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Brunswick County
2 E Sturgeonville

24	1800EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed near Boydton Plank Road and Rawlings Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Caroline County
1 NNE Cedon

24	1805EST				0	0	3.00K	0.00K	Thunderstorm Wind (50EG)
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Numerous trees and power lines were downed across northern Caroline county. Numerous roads were blocked.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Hanover County
2 NNE Mechanicsville

24	1815EST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter size hail was reported near Mechanicsville.

Chesterfield County
3 NNE Matoaca

24	1820EST				0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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Large tree was downed across Woodpecker Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Richmond County
45 WSW Wellford

24	1825EST				0	0	1.00K	0.00K	Thunderstorm Wind (50EG)
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Large tree was downed and blocking southbound lanes on Interstate 95.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

February 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Property Damage	Crops	Character of Storm
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CORRECTIONS

VIRGINIA, East

King And Queen County

1 N Bruington	24	1834EST							
1 NE Minor		1837EST	2.58	200	0	0	500.00K	5.00K	Tornado (EF1)

Tornado initially touched down along Homlestown Road, then moved along Bruington Road where a home was destroyed and others were damaged just west of Millers Tavern. The tornado then crossed Highway 360 and moved into Essex county.

Essex County

4 W Howertons	24	1837EST							
2 N Tappahannock		1847EST	10.7	500	0	25	4.50M	750.00K	Tornado (EF3)

Tornado tracked from King and Queen county into Essex county as an intensifying, high end EF1 severely damaging several homes along Dunbrook Road. The tornado continued to intensify crossing Perkins Road as an EF2 before hitting Kino Road as an EF3 tornado. Along Kino Road, all the homes in the path including three modular homes, two double wide mobile homes and one single wide mobile home were completely destroyed with most of the debris carried away. Tree damage was severe and winds were estimated at 140 to 150 mph based on damage. Everyone impacted by the tornado along Kino Road suffered injuries, some life threatening. After leaving the Kino Road area, the tornado crossed Scotts Mill Road just west of Tappahannock as a high end EF2 tornado causing severe tree damage, severely damaging numerous homes and causing the collapse of several garages and outbuildings. The tornado passed just west of downtown Tappahannock, crossing Highway 17 as an EF1 tornado and severely damaging homes on Tuckaway Lane and Highway 17. The tornado then crossed the Rappahannock River and into Richmond county.

Hopewell (c) County

83 SSE Goldvein	24	1838EST			0	0	0.00K	0.00K	Hail (1.00)
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Quarter size hail was reported.

Prince George County

1 E Jefferson Park	24	1840EST			0	0	0.00K	0.00K	Hail (1.00)
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Quarter size hail was reported.

Prince George County

3 NNE Prince George	24	1840EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed across northern Prince George county including Jordan Point Road, Middle Road, and James River Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Hopewell (c) County

2 ENE Hopewell	24	1842EST			0	0	0.00K	0.00K	Hail (1.25)
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Half dollar size hail was reported.

Richmond County

5 SSW Havelock	24	1847EST							
2 E Farmers Fork		1857EST	7.47	300	0	0	3.30M	0.00K	Tornado (EF2)

Tornado crossed the Rappahannock River from Essex county into Richmond county. The tornado struck Naylor's Beach as an EF2 tornado removing significant portions of the upper floor of one two story home and destroying several other smaller homes. At this point, the tornado was 300 yards wide with winds around 120 mph. The tornado then crossed Newland Road, weakening slightly to low end EF1 with winds around 90 mph and continuing to Tallent Town Road and Piney Grove Road. The tornado then tracked into Westmoreland county.

Dinwiddie County

4 WSW Carson	24	1853EST			0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed across southeast Dinwiddie county.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

New Kent County

1 W New Kent	24	1855EST			0	0	107.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were downed. In addition, a garage door at the Fire Station was blown out by the wind, and a school bus was destroyed when the wind downed a tree onto the bus.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Westmoreland County

1 WNW Nomini Grove	24	1857EST							
3 N Erica		1905EST	9.59	400	0	0	905.00K	78.00K	Tornado (EF1)

Storm Data and Unusual Weather Phenomena

February 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

VIRGINIA, East

Tornado re-intensified as it moved from Richmond county into Westmoreland county, crossing Kings Highway (Route 3) west of Naomi Grove as a high end EF1 tornado. Tornadic winds increased to 100 mph, severely damaging two homes and destroying a mobile home along Kings Highway. The tornado continued to Cople Highway near Mount Holly, severely damaging numerous homes. After crossing Nomini Creek, the tornado crossed Bushfield Road damaging several homes. The tornado then continued northeast along Mount Holly Road, uprooting and snapping trees before moving into the Potomac River.

Prince George County
1 N Prince George

24 1910EST 0 0 0.00K 0.00K Hail (1.00)
Quarter size hail was reported.

Prince George County
2 N Poe

24 1930EST 0 0 2.00K 0.00K Thunderstorm Wind (50EG)
Trees were downed along Baxter Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Prince George County
3 SSW Poe

24 1933EST 0 0 2.00K 0.00K Thunderstorm Wind (50EG)
Trees were downed along Crater Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Hopewell (c) County
1 E Hopewell

24 1935EST 0 0 0.00K 0.00K Hail (1.25)
Half dollar size hail was reported.

Prince George County
2 SSW Jefferson Park

24 1935EST 0 0 2.00K 0.00K Thunderstorm Wind (50EG)
Trees were downed along River Road near Irwin Road.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Prince George County
4 NNE Prince George

24 1940EST 0 0 2.00K 0.00K Thunderstorm Wind (50EG)
Trees were downed near Route 10.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Franklin (c) County
150 E Sago

24 1954EST 0 0 1.00K 0.00K Thunderstorm Wind (53MG)
Wind gust of 53 knots (61 mph) was measured in the City of Franklin.

Note: The measured wind gust of 53 knots is equivalent to 61 mph.

New Kent County
3 WSW Plum Pt

24 2010EST 0 0 2.00K 0.00K Thunderstorm Wind (50EG)
Trees were downed.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Suffolk (c) County
Suffolk

24 2010EST 0 0 2.00K 0.00K Thunderstorm Wind (50EG)
Numerous trees were downed across the city of Suffolk.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Suffolk (c) County
1 SW South Suffolk

24 2015EST 0 0 0.00K 0.00K Hail (1.00)
Quarter size hail was reported near Nansemond Square.

Portsmouth (c) County
2 SE Portsmouth

24 2023EST 0 0 2.00K 0.00K Thunderstorm Wind (50EG)
Minor structural damage occurred where shingles were blown off a roof.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Middlesex County
4 SW Morattico

24 2025EST 2.8 100 0 0 10.00K 0.00K Tornado (EF0)
2029EST

Tornado began as an EF0 near a Boy Scout Camp in Middlesex county. It then crossed the Rappahannock River into Lancaster county where it intensified to an EF1.

Storm Data and Unusual Weather Phenomena

February 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

VIRGINIA, East

Lancaster County

- 1 W Morattico**
- 2 WNW Litwalton**

24	2029EST								
	2033EST		3.26	150	0	0	377.00K	0.00K	Tornado (EF1)

The tornado that began as an EF0 in Middlesex county, intensified briefly to an EF1 in the Norwood Church Road area near Flagstaff Road in Lancaster county. In this area, a brick wall on a garage was flattened, the roof was ripped off a house, and an outbuilding was destroyed. Numerous large trees were snapped including two foot diameter pine trees. The tornado continued north and northeast for a short distance before lifting.

Middlesex County

- 1 N Warner**
- 2 ESE Samos**

24	2035EST								
	2041EST		4.01	150	0	0	275.00K	402.00K	Tornado (EF1)

NWS storm survey concluded that an EF1 tornado with winds estimated around 100 mph affected Middlesex county near Remlik. The tornado destroyed a house on Reed Road, tore off the second story of a barn in Hampstead Farms, and tore off the roof of another barn in Corbin Farms.

Scattered severe thunderstorms in advance of a cold front produced damaging winds, large hail, and six tornadoes across portions of central and eastern Virginia.

Storm Data and Unusual Weather Phenomena

March 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northwest

Hancock County

1 N Nauvoo	15	1644CST			0	0	0.00K	0.00K	Hail (0.75)
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Hail reported up to the size of dimes.

Hancock County

Warsaw	15	1650CST			0	0	0.00K	0.00K	Hail (1.00)
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Hancock County

4 SSE Webster	15	1653CST			0	0	0.00K	0.00K	Hail (2.00)
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The hail size was estimated to be up to 2 inches in diameter.

Hancock County

1 NNW Hamilton	15	1700CST			0	0	0.00K	0.00K	Hail (1.00)
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This report was received via twitter.

Hancock County

Ferris	15	1707CST			0	0	0.00K	0.00K	Hail (1.00)
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Hancock County

1 E Dallas City	15	1710CST			0	0	0.00K	0.00K	Hail (1.50)
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This report was relayed from the county emergency manager.

Hancock County

1 S Carthage	15	1714CST 1717CST			0	0	0.00K	0.00K	Hail (1.00)
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McDonough County

1 NNE Good Hope 1 NNE Walnut Grove	15	1726CST 1742CST	8.23	400	0	0	200.00K	0.00K	Tornado (EF2)
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An EF-2 tornado with winds estimated at 115 mph touched down north of Good Hope Illinois in McDonough County. It traveled northeast, crossing into Warren County west of Prairie City and eventually into Fulton County. Several homes were severely damaged with most of the damage occurring to farm outbuildings and trees.

McDonough County

Blandinsville	15	1729CST			0	0	0.00K	0.00K	Hail (1.75)
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Warren County

Smithshire	15	1730CST			0	0	0.00K	0.00K	Hail (1.25)
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Report received from social media. The size was estimated from a picture.

Mercer County

5 NNW New Boston	15	1738CST			0	0	0.00K	0.00K	Hail (1.00)
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Warren County

5 SE Greenbush	15	1740CST			0	0	0.00K	0.00K	Hail (1.75)
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Warren County

1 NNE Walnut Grove 4 N Prairie City	15	1742CST 1756CST	6.4	400	0	0	200.00K	0.00K	Tornado (EF1)
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A tornado moved from McDonough County into Warren County west of Prairie City. It traveled northeast across Warren County, affecting mainly farm outbuildings and trees before it moved into Fulton County.

Rock Island County

1 NW Blackhawk State Park	15	1811CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Straight line wind damage track extended from State Highway 92 and Andalusia Road through Rock Island, the Arsenal Island, and then into Bettendorf. The end time was estimated around 725 PM by radar.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Storm Data and Unusual Weather Phenomena

March 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northwest

Rock Island County

1 E (MLI) Quad City Arpt

15	1819CST				0	0	0.00K	0.00K	Thunderstorm Wind (59MG)
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The ASOS at the Quad City Airport measured a 59 knot wind gust.

Note: The measured wind gust of 59 knots is equivalent to 68 mph.

Rock Island County

1 E (MLI) Quad City Arpt

15	1821CST				0	0	0.00K	0.00K	Thunderstorm Wind (60MG)
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Report was measured from the ASOS at Quad City Airport.

Note: The measured wind gust of 60 knots is equivalent to 69 mph.

Rock Island County

1 NNE Barstow

1 NE Rapids City

15	1825CST								
	1835CST	4.78	200	0	10	750.00K	0.00K	Tornado (EF2)	

An EF-2 tornado tracked north then curved to the east through upper Rock Island county. An estimated 40 homes were damaged with the most severe damage to a neighborhood in rural East Moline where 10 homes were completely destroyed. Ten people reported minor injuries. The maximum wind with this tornado were estimated at 130 mph.

Rock Island County

1 WSW Moline

15	1832CST				0	0	0.00K	0.00K	Hail (0.88)
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Henry County

1 NNE Cambridge

15	1836CST				0	0	0.00K	0.00K	Hail (0.75)
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Jo Daviess County

1 SE Galena

15	1838CST				0	0	0.00K	0.00K	Hail (1.00)
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Hail the size of a half inch in diameter up to the size of quarters was reported.

Jo Daviess County

1 W Scales Mound

15	1843CST				0	0	0.00K	0.00K	Hail (0.75)
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Dime size hail fell for 10 minutes.

Jo Daviess County

1 NW Council Hill Station

15	1848CST				0	0	0.00K	0.00K	Hail (0.88)
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Hail fell for 7 to 8 minutes between 748 and 756 PM and was the size of dimes to nickels.

Whiteside County

3 N Deer Grove

4 S Sterling Arpt

15	1933CST								
	1938CST	1.76	50	0	0			Tornado (EF0)	

A tornado uprooted a tree, damaged shingles and siding on two homes, and overturned a short portion of an irrigation rig. The damage was rated EF0 with winds estimated at 80 MPH. The path was about 50 yards wide and roughly 1.5 miles long.

Bureau County

1 NE Bureau

15	1950CST				0	0	0.00K	0.00K	Hail (1.00)
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Stephenson County

1 S Oakdale Nature Prsrve

15	2010CST				0	0	0.00K	0.00K	Hail (0.88)
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Bureau County

1 E Ladd

15	2022CST				0	0	0.00K	0.00K	Hail (1.00)
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Bureau County

1 ENE Depue

15	2101CST				0	0	0.00K	0.00K	Hail (0.75)
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Hail was pea to dime sized.

A strong area of low pressure and associated warm front tracked northeast from Missouri into northern Illinois late in the day. Numerous severe thunderstorms developed over the region, bringing large hail, damaging winds, and several tornadoes to the area. The warm front lifting north was a focus area for tornadic supercells.

Storm Data and Unusual Weather Phenomena

March 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

IOWA, East Central and Southeast

Lee County 3 S Mooar	15	1648CST			0	0	0.00K	0.00K	Hail (1.25)
Lee County 2 WSW Ft Madison	15	1652CST			0	0	0.00K	0.00K	Hail (0.75)
Lee County 1 WNW Keokuk	15	1653CST			0	0	0.00K	0.00K	Hail (1.00)
		Time was estimated by radar.							
Lee County 2 NW Keokuk	15	1653CST			0	0	0.00K	0.00K	Hail (1.00)
Lee County 1 SW Keokuk	15	1654CST			0	0	0.00K	0.00K	Hail (1.00)
Lee County 1 W Keokuk	15	1655CST			0	0	0.00K	0.00K	Hail (1.00)
		Hail was mostly dime and nickel sized with a few quarter sized stones.							
Henry County 1 S Mt Pleasant	15	1657CST			0	0	0.00K	0.00K	Hail (1.00)
Lee County 1 NW Ft Madison	15	1658CST			0	0	0.00K	0.00K	Hail (0.88)
Henry County 1 E Winfield	15	1709CST			0	0	0.00K	0.00K	Hail (0.88)
		Report was delayed and received via social media.							
Louisa County 1 NE Grandview	15	1724CST			0	0	0.00K	0.00K	Hail (1.75)
Louisa County 3 NE Wapello	15	1727CST			0	0	0.00K	0.00K	Hail (0.75)
Louisa County 1 E Wapello	15	1730CST			0	0	0.00K	0.00K	Hail (1.00)
Louisa County 1 E Grandview	15	1730CST			0	0	0.00K	0.00K	Hail (1.00)
Louisa County 6 ENE Grandview	15	1733CST			0	0	0.00K	0.00K	Hail (2.50)
		This report was delayed. The hail was reported up to the size of tennis balls. Numerous cars sustained dents and windows were broken out at a generation station.							
Jackson County 2 W Hurstville	15	1735CST			0	0	0.00K	0.00K	Hail (1.00)
		The hail covered the ground up to a depth of 1 inch.							
Muscatine County Fruitland	15	1735CST			0	0	0.00K	0.00K	Hail (1.00)
Muscatine County 2 WNW Muscatine	15	1735CST			0	0	0.00K	0.00K	Hail (1.00)
Muscatine County 1 N Muscatine	15	1736CST			0	0	0.00K	0.00K	Hail (1.00)
Muscatine County 2 NNW Muscatine	15	1745CST			0	0	0.00K	0.00K	Hail (1.00)
Muscatine County 1 W Muscatine	15	1747CST			0	0	0.00K	0.00K	Hail (1.00)
		Report received from social media.							
Cedar County 1 E Durant	15	1758CST			0	0	0.00K	0.00K	Hail (2.00)

Storm Data and Unusual Weather Phenomena

March 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

IOWA, East Central and Southeast

Cedar County
1 NE Lowden 15 1813CST 0 0 0.00K 0.00K Hail (0.75)

Jackson County
3 WSW Bellevue 15 1824CST 0 0 0.00K 0.00K Hail (0.75)

Scott County
2 WSW Mc Causland 15 1833CST
1834CST 0.03 50 0 0 Tornado (EF0)

A tornado touched down on the Scott County side of the Wapsipinicon River and quickly cross the river into Clinton County. Damage was mainly to trees. The wind speeds with this tornado were estimated at 80 mph.

Clinton County
3 WNW Folletts 15 1834CST
1835CST 1.17 50 0 0 Tornado (EF0)

A tornado touched down on the Scott County side of the Wapsipinicon River and quickly crossed the river into Clinton County. Damage was mainly to trees. The wind speeds with this tornado were estimated at 80 mph.

Clinton County
2 SSE Clinton Muni Arpt 15 1849CST
1 W Low Moor 1851CST 1.35 75 0 3 50.00K Tornado (EF1)

An EF-1 tornado with winds estimated at 90 mph hit a mobile home park, destroying at least 5 mobile homes and damaging numerous others. At least 3 people were injured.

Clinton County
4 SSE Bryant 15 1857CST
2 SW Almont 1901CST 3.38 300 0 0 Tornado (EF1)

An EF-1 tornado with winds estimated at 95 mph tracked northeast across Clinton County, where it damaged mainly farm outbuildings and trees.

A strong area of low pressure and associated warm front tracked northeast from Missouri into northern Illinois late in the day. Numerous severe thunderstorms developed over the region, bringing large hail and several tornadoes to the area. The warm front lifting north was a focus area for tornadic supercells.

Clinton County
2 SSE Low Moor 31 0930CST 0 0 0.00K 0.00K Hail (0.75)

Clinton County
1 NNE Clinton 31 0932CST 0 0 0.00K 0.00K Hail (0.75)

Clinton County
2 WNW Clinton 31 0933CST 0 0 0.00K 0.00K Hail (1.00)

Clinton County
2 WNW Clinton 31 0934CST
0944CST 0 0 0.00K 0.00K Hail (1.00)

Hail up to the size of quarters covered the ground. The hail lasted about 10 minutes.

Clinton County
2 S Low Moor 31 0935CST 0 0 0.00K 0.00K Hail (1.00)

Clinton County
2 SSE Low Moor 31 0935CST 0 0 0.00K 0.00K Hail (1.00)

Jackson County
Fulton 31 0935CST 0 0 0.00K 0.00K Hail (0.75)

A cold front produced scattered thunderstorms during the late morning hours before moving east. A few of the strongest storms produced hail to the size of quarters in Clinton County.

Storm Data and Unusual Weather Phenomena

March 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, Northeast

Clark County

St Patrick

15	1630CST				0	0	0.00K	0.00K	Hail (1.00)
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Hail up to the size of quarters was reported.

Clark County

St Patrick

15	1636CST				0	0	0.00K	0.00K	Hail (2.50)
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Clark County

1 S Wayland

15	1645CST				0	0	0.00K	0.00K	Hail (1.00)
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Clark County

2 NW Antioch

15	1648CST				0	0	0.00K	0.00K	Hail (1.75)
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Hail up to the size of golf balls covered the ground.

A strong area of low pressure and associated warm front tracked northeast from Missouri into northern Illinois late in the day. Several severe thunderstorms developed over the region, bringing large hail to the area.

TEXAS, Central

Crockett County

25 NW Ozona Muni Arpt

07	1715CST				0	0	0.00K	0.00K	Hail (1.00)
	1718CST								

Tom Green County

1 NE (SJT)Mathis Fld San

08	0225CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
	0230CST								

A wall built with light weight aluminum was blown inward and an aluminum roof was blown off of a storage shed by damaging thunderstorm winds. This aluminum blew onto a nearby camper. There was additional damage sustained to objects within the shed.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Kimble County

1 NW Roosevelt

08	0405CST				0	0	0.00K	0.00K	Thunderstorm Wind (74EG)
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A large tree was uprooted by damaging thunderstorm winds.

Note: The estimated wind gust of 74 knots is equivalent to 85 mph.

Kimble County

8 WNW Cleo

08	0418CST				0	0	0.00K	0.00K	Hail (1.00)
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Menard County

10 S Menard

08	0445CST				0	0	0.00K	0.00K	Hail (2.25)
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This large hail broke out a bedroom window. The hail was just under tennis ball size hail but larger than an egg.

Menard County

11 SW Hext

08	0445CST				0	0	0.00K	0.00K	Hail (0.88)
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Brown County

1 SE Byrd

08	0530CST				0	0	0.00K	0.00K	Thunderstorm Wind (82EG)
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A boat dock on Lake Brownwood was lifted out of the water and tossed onto the bank. In addition, the roof was blown off of an outbuilding and several trees were downed by the damaging thunderstorm wind gusts.

Note: The estimated wind gust of 82 knots is equivalent to 94 mph.

Mcculloch County

2 SW Brady

08	0533CST				0	0	0.00K	0.00K	Hail (0.88)
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Menard County

1 WSW Ft Mckavett

08	1800CST				0	0	0.00K	0.00K	Hail (0.88)
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Menard County

8 NW Menard Co Arpt

08	1829CST				0	0	0.00K	0.00K	Hail (0.88)
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Menard County

Hext

08	1836CST				0	0	0.00K	0.00K	Hail (2.00)
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Storm Data and Unusual Weather Phenomena

March 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central

Mcculloch County

1 S Voca 08 1840CST
1842CST 0 0 0.00K 0.00K Hail (1.25)

Mcculloch County

1 N Brady 08 1855CST 0 0 0.00K 0.00K Hail (0.88)

Mason County

5 WSW Air 08 1857CST 0 0 0.00K 0.00K Hail (2.00)

Mcculloch County

1 S Voca 08 1910CST
1914CST 0 0 0.00K 0.00K Hail (2.75)

Mason County

5 ENE Katemcy 08 1910CST
4 WNW Fredonia 1914CST 1.12 185 0 0 0.00K 0.00K Tornado (EF1)

A National Weather Service Damage Assessment Team found evidence of an EF1 Tornado that formed about 3 miles east northeast of Katemcy in northern Mason County and lifted about 2 miles north northwest of Fredonia in McCulloch County. The tornado mainly damaged a grove of trees snapping many tree trunks about half way down. The tornado also destroyed an outbuilding. Winds were estimated between 95 to 110 mph.

Mason County

4 W Fredonia 08 1917CST
1919CST 0 0 0.00K 0.00K Thunderstorm Wind (78EG)

Damaging thunderstorm winds blew shingles off of a manufactured home and tipped a construction trailer on its side. The strong winds also damaged large overhead doors.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

Mason County

Fredonia 08 1920CST 0 0 0.00K 0.00K Thunderstorm Wind (78EG)

Damaging thunderstorm winds tipped over an irrigation sprinkler, uprooted trees and knocked down some tree branches.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

Mcculloch County

2 S Voca 08 1925CST 0 0 0.00K 0.00K Hail (1.50)

Quarter to ping pong ball size hail was estimated by a member of the public.

Mason County

2 ESE Katemcy 08 1925CST
1940CST 0 0 0.00K 0.00K Hail (1.75)

A trained spotter said golfball size hail lasted for about 15 minutes.

Mcculloch County

3 SSE Voca 08 1930CST 0 0 0.00K 0.00K Hail (2.75)

Mcculloch County

5 SSW Voca 08 1930CST 0 0 0.00K 0.00K Hail (4.00)

Mason County

1 E Fredonia 08 1934CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)

Damaging thunderstorm winds broke tree branches.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Taylor County

Lawn 08 1935CST 0 0 0.00K 0.00K Hail (1.00)

San Saba County

2 NNE Richland Spgs 08 1944CST 0 0 0.00K 0.00K Hail (1.00)

Storm Data and Unusual Weather Phenomena

March 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

TEXAS, Central

**San Saba County
18 S Sellman**

08	1950CST 1955CST				0	0	0.00K	0.00K	Hail (1.50)
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**San Saba County
1 W Cherokee**

08	2027CST				0	0	0.00K	0.00K	Hail (0.88)
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**San Saba County
9 SSE Chappel**

08	2115CST				0	0	0.00K	0.00K	Hail (1.00)
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A retreating dryline, an unstable atmosphere and an upper level disturbance resulted in the development of a few supercell thunderstorms. These storms produced large hail and damaging winds across portions of West Central Texas. One of the supercells spawned a tornado near Fredonia.

**San Saba County
6 ENE San Saba Co Muni Arp**

23	2150CST 2152CST				0	0	0.00K	0.00K	Hail (1.00)
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An isolated supercell thunderstorm formed along the dryline and produced large hail in San Saba County.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

GEORGIA, East Central

McDuffie County

1 S Boneville

07 0118EST 0 0 Hail (0.88)
Public reported nickel size hail just south of the town of Thomson.

Columbia County

3 N Winfield

07 0224EST 0 0 Thunderstorm Wind (55EG)
Report through Facebook of a tree down in backyard along Winfield Road.

A Squall Line developed ahead of an approaching cold front. The squall line moved across the Central Savannah River Area. The strong winds damaged a few trees and produced some nickel size hail. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.



A picture of a tree down in a backyard along Winfield Road in Columbia County, Georgia on April 7th, 2016. Photo courtesy of Jamie Harrel via Facebook.

GULF OF MEXICO

GMZ355

High Is To Freeport Tx Out 20nm

01 0636CST 0 0 0.00K 0.00K Marine Thunderstorm Wind
0641CST

Maritime thunderstorms produced gale force wind gusts.

GMZ335-350-355

Freeport To Matagorda Ship Chnl Out 20nm - Galveston Bay - High Is To Freeport Tx Out 20nm

13 0158CST 0 0 0.00K 0.00K Marine Thunderstorm Wind
0320CST

A thunderstorm complex moved eastward across Southeast Texas during the overnight hours producing hail and wind damage.

GMZ355

High Is To Freeport Tx Out 20nm

18 1015CST 0 0 0.00K 0.00K Marine Thunderstorm Wind
There was a marine thunderstorm wind gust associated with storms that generated record flooding rains overnight and early in the morning in and around the Houston area.

GMZ330-350

Freeport To Matagorda Ship Chnl Out 20nm - Matagorda Bay

21 1148CST 0 0 0.00K 0.00K Marine Thunderstorm Wind
1355CST

Showers and thunderstorms moved through the coastal waters in the afternoon and produced marine thunderstorm wind gusts.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

GULF OF MEXICO

GMZ335-350-355

Freeport To Matagorda Ship Chnl Out 20nm - Galveston Bay - High Is To Freeport Tx Out 20nm

27	0440CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
	0545CST								

A late night through early morning storm system moved east and southeast across the area and produced strong marine thunderstorm wind gusts.

ILLINOIS, Northwest

ILZ015

Rock Island

01	0830CST				0	0	2.0K	0.00K	Strong Wind
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A strong cold front moving southward during the day on the 2nd brought strong, gusty northwest winds to western Illinois. Sustained wind speeds of 30 to 40 mph with gusts as high as 60 mph caused damage to trees, power lines, and personal property. The winds were the strongest from 7AM to 7PM CST.

Hancock County 1 SW Hamilton

27	2020CST				0	0	0.00K	0.00K	Hail (1.00)
	2026CST								

Law Enforcement reported hail that started out as pea sized around 920 PM and increase in size to quarters.

Hancock County 1 E Bowen

27	2110CST				0	0	0.00K	0.00K	Hail (0.88)
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A trained spotter reported penny to nickel sized hail.
A storm system moved along the Iowa and Missouri border and into central Illinois during the evening hours of the 27th. Scattered thunderstorms moved into Hancock County from northeast Missouri and produced an isolated report of hail up to the size of a quarter.

IOWA, East Central and Southeast

IAZ052

Linn

02	0726CST				0	2	0.00K	0.00K	High Wind
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IAZ063-066-068

Clinton - Iowa - Scott

02	0803CST				0	0	2.0K	0.00K	Strong Wind
	0843CST								

IAZ054

Jackson

02	0952CST				0	0	1.0K	0.00K	High Wind
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A strong cold front moving southward during the day on the 2nd brought strong, gusty northwest winds to eastern Iowa. Sustained wind speeds of 30 to 40 mph with gusts as high as 60 mph caused damage to trees, power lines, and personal property. The winds were the strongest from 7AM to 7PM CST.

Van Buren County

3 SSE Lake Sugema Camp Gd

27	1941CST				0	0	0.00K	0.00K	Hail (0.75)
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A storm system moved along the Iowa and Missouri border and into central Illinois during the evening hours of the 27th. Thunderstorms developed in northeast Missouri and moved into southeastern Iowa. These thunderstorms produced hail ranging in size from a pea in Lee County to up to the size of nickels in Van Buren County. In addition to the hail, rainfall amounts of 1.50 inches were reported in Van Buren County.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

MISSOURI, Northeast

Scotland County

3 WSW Spillman Mound	27	1848CST	0.2	40	0	0	100.00K	0.00K	Tornado (EF1)
		1849CST							

A brief EF-1 tornado with winds of 90 MPH moved from Knox County into Scotland County. The tornado caused damage mainly to trees. As the tornado neared its end, a manufactured home was blown off its foundation blocks and destroyed. A door on a nearby barn was also ripped off. The tornado was on the ground 0.2 miles with a maximum width of 40 yards.

Scotland County

3 ENE Bible Grove	27	1854CST			0	0	0.00K	0.00K	Hail (1.00)
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Scotland County

3 WNW Gorin Wileys Fld Arp	27	1921CST			0	0	0.00K	0.00K	Hail (1.00)
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Scotland County

3 WNW Gorin Wileys Fld Arp	27	1921CST			0	0	0.00K	0.00K	Hail (1.00)
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Scotland County

2 ENE Gorin Howard Fld Arp	27	1923CST			0	0	0.00K	0.00K	Hail (0.88)
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A trained spotter was away from his residence but found 5/8 inch hail when he returned. The time of this event was estimated using radar.

Scotland County

2 N Arbela 2 SW Prospect Grove	27	1930CST	0.23	30	0	0	100.00K	0.00K	Tornado (EF0)
		1931CST							

A trained spotter reported a tornado north of Arbela. A barn and a cattle shed were destroyed along with several other outbuildings in the area. The tornado was on the ground for 0.2 miles and was around 30 yards wide. It was rated EF0 with a peak wind speed of 80 MPH.

Scotland County

1 E Prospect Grove	27	1934CST			0	0	0.00K	0.00K	Hail (1.00)
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Scotland County

3 NE Azen	27	1940CST			0	0	0.00K	0.00K	Hail (1.00)
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Clark County

1 W Clark City	27	1958CST			0	0	0.00K	0.00K	Hail (1.00)
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A storm system moved along the Iowa and Missouri border during the evening of the 27th and brought scattered severe thunderstorms that moved across Scotland and Clark Counties in northeast Missouri. These storms brought mainly hail up to the size of quarters, and heavy rain between 1 to 2 inches. Two brief tornadoes were also reported. One of these tornadoes was an EF-1 with maximum winds of 90 MPH that from Knox County into southern Scotland County. The second brief tornado occurred near the town of Granger and was rated EF-0 with a maximum winds of 80 MPH.

OREGON, Northwest

Clackamas County

1 NE Welches	20	1740PST			0	0	0.00K	0.00K	Hail (1.00)
		1741PST							

There was a report of 1 inch hail at the baseball field in Welches, Oregon associated with a thunderstorms that moved over the area.

A thunderstorm produced large hail at a baseball field in Welches, Oregon.

Lane County

1 E Junction City 5 N Cheshire	22	0410PST			0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
		0430PST							

A county official reported that a 18 to 24 inch diameter tree was snapped by thunderstorm winds near Junction City, and blocked Love Lake Road near milepost 1.75. The Oregon Department of Transportation reported another tree was downed along the Territorial Highway near milepost 5.

A line of Thunderstorms moved across Lane County from south to north and produced winds strong enough to knock down two large trees. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

OREGON, Northwest

Polk County 1 N Monmouth

22	1045PST 1100PST				0	0	0.00K	0.00K	Funnel Cloud
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There were several reports and photos of a funnel cloud near Monmouth, Oregon.

There were several reports and photos of a funnel cloud near Monmouth, Oregon.

Linn County 10 S Albany

24	1529PST 1530PST				0	0	0.00K	0.00K	Funnel Cloud
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A trained spotter observed a funnel cloud along Interstate 5 around 10 miles south of Albany, Oregon.

A brief funnel cloud was observed just south of Albany.

SOUTH CAROLINA, Central

Lexington County 1 S Barr

01	1503EST				0	0			Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--	--	--------------------------

NWS Storm Report Page received a report of a tree down off of Muddy Springs Road.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Richland County 3 W Gadsden

01	1503EST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Law enforcement reported a tree down at the intersection of Clarkson Road and Bluff Road.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Lexington County 1 WNW Red Bank

01	1514EST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Law enforcement reported tree in the roadway at the intersection of Stump Road and Highway 6.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lexington County 1 N (CAE) Columbia Metro

01	1519EST				0	0	0.50K	0.00K	Thunderstorm Wind (44MG)
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The ASOS at Columbia Metro Airport reported a wind gust of 51 mph.

Note: The measured wind gust of 44 knots is equivalent to 51 mph.

Richland County 1 SSE St Andrews

01	1520EST				0	0			Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Law enforcement reported trees down along I-126 near the Greystone Boulevard interchange.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Sumter County 1 N Pinckney Xrds

01	1613EST				0	0			Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Law enforcement reported trees down near the intersection Fish Road and Raccoon Road.

A strong cold front approached the region from the west during the afternoon hours. Strong to severe thunderstorms developed ahead of the front. The storms produced strong damaging winds and some small hail. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Saluda County 11 NW Monetta

07	0200EST 0209EST				0	0			Thunderstorm Wind (60EG)
----	--------------------	--	--	--	---	---	--	--	--------------------------

Law enforcement reported several trees down along Forrest Hills Road near the intersection of Ridge Spring Highway, Emory Road near the intersection of Forrest Hills Road, Mt. Willing Road near the intersection of High Point Road, across Highway 378 and across Old Golf Course Road.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

SOUTH CAROLINA, Central

Lexington County

2 S Syrup

5 NW Irmo

07	0235EST								
	0245EST				0	0	250.00K		Thunderstorm Wind (78EG)

Straight Line Winds produced a damage path which began along Indian Summer Point and Libby Ariail Court along the north shore of Lake Murray. Several pine trees were uprooted or snapped landing on the roofs of a couple of homes. This resulted in significant damage to a covered porch on one home. The storm then moved northeast across the next cove producing additional tree damage near Old Lexington Road and Jake Meetze Road. The most significant damage occurred in The Cove subdivision. Several structures sustained minor to moderate damage due to downed hardwood and softwood trees up to 4 feet in diameter. There were also several public reports of trees down around the town of Chapin.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.



A picture of a neighbor's metal chimney topper wrapped around a Wax Myrtle tree in Lexington County, South Carolina on April 7th, 2016. Photo courtesy of Lisa Linguine via Facebook.

Richland County

2 SE Hilton

07	0240EST				0	0			Thunderstorm Wind (56MG)
----	---------	--	--	--	---	---	--	--	--------------------------

A wind gust of 64 mph was recorded at Flotilla Island at Lake Murray.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Richland County

1 NW Ballentine

07	0245EST				0	0			Thunderstorm Wind (53MG)
----	---------	--	--	--	---	---	--	--	--------------------------

The Richland County Mesonet site at Ballentine recorded a wind gust of 61 mph.

A Squall Line developed ahead of an approaching cold front. The squall line moved across the Central Savannah River Area and then northeast across the Midlands during the early morning hours. The strong winds damaged numerous trees including trees and limbs on homes along the northern shore of Lake Murray. Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Lancaster County

7 N Van Wyck

30	1955EST								
	2055EST				0	0	0.10K	0.00K	Flash Flood

Lancaster County Dispatch reported flooding at Collins Rd and Hwy 521. The road was impassable.

Lancaster County

6 NNW Van Wyck

30	2048EST				0	0	0.00K	0.00K	Hail (0.88)
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SKYWARN Spotter reported nickel sized hail on Whimbrel Circle.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

SOUTH CAROLINA, Central

Lancaster County
10 N Van Wyck

30	2131EST 2159EST				0	0	0.50K	0.00K	Flash Flood
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Man O War Drive was flooded and appeared impassable based on video posted on social media by broadcast media. Department of Highways also reported Straightaway Lane at Black Horse Run Road flooded with about 6 inches of water on the roadway.

Slow moving showers and thunderstorms developed along the southern periphery of a wedge boundary or slowly lifting warm front, resulting in heavy rainfall and flash flooding along with small hail in northern Lancaster County.

TEXAS, Central Southeast

Colorado County
Weimar

12	2307CST 2310CST				0	0			Thunderstorm Wind (50EG)
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Thunderstorm winds downed large tree limbs.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Colorado County
2 E Weimar

12	2310CST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Thunderstorm winds downed a couple of trees east of Weimar.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Colorado County
3 SW Bernardo

12	2334CST 2338CST				0	0			Thunderstorm Wind (50EG)
----	--------------------	--	--	--	---	---	--	--	--------------------------

Thunderstorm winds downed trees along FM 949 from Nelson Lane to Lehrmann Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Fort Bend County
5 SSE Katy

13	0020CST				0	0			Hail (0.88)
----	---------	--	--	--	---	---	--	--	-------------

Nickel size hail was reported in Cinco Ranch.

Fort Bend County
1 W Needville

13	0022CST				0	0			Hail (1.25)
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The half dollar size hail was reported in Needville.

Fort Bend County
1 E Sugarland

13	0044CST				0	0			Hail (1.00)
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Quarter size hail was reported in Sugar Land.

Fort Bend County
1 E Sugarland

13	0044CST				0	0	15.00K	0.00K	Lightning
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A lightning strike caused a residential structure fire.

Fort Bend County
2 NE Dewalt

13	0045CST				0	0	3.00K	0.00K	Lightning
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A lightning strike caught a residential tree on fire.

Galveston County
5 WNW League City S S Arpt

13	0106CST 0108CST				0	0	0.00K	0.00K	Hail (1.00)
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The quarter size hail was reported in Friendswood.

Galveston County
1 N League Cty Splnd Ar

13	0120CST 0122CST				0	0			Hail (0.75)
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The dime size hail was reported in League City.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

Harris County

1 NNW Webster

13	0120CST 0122CST				0	0			Hail (1.00)
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Quarter size hail was reported in Webster.

Brazoria County

3 N Danbury

13	0129CST				0	0	25.00K	0.00K	Thunderstorm Wind (55EG)
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Severe thunderstorm winds blew the roof off a barn and metal shed. A calf was killed by flying debris while two other calves were injured.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Brazoria County

2 NNE Danbury

13	0130CST				0	0	3.00K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew an oil well work-over rig on its side.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Brazoria County

3 N Danbury

13	0130CST 0132CST				0	0	4.00K	0.00K	Thunderstorm Wind (55EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Severe thunderstorm winds blew the roof off a large storage shed and slid a fully loaded stock car semi-trailer off a driveway.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Brazoria County

3 N Danbury

13	0130CST				0	0	18.00K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

Severe thunderstorm winds damaged three rice silos and blew a large tank into a ditch.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Brazoria County

3 N Danbury

13	0130CST				0	0	30.00K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

Severe thunderstorm winds caused significant home roof damage and blew over an RV beside the home.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Brazoria County

2 NNW Danbury

13	0135CST 0137CST				0	0	2.00K	0.00K	Thunderstorm Wind (55EG)
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Thunderstorm winds blew over a utility pole on Wolfglen Estates Drive.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Brazoria County

1 WNW Danbury

13	0135CST 0136CST				0	0	4.00K	0.00K	Thunderstorm Wind (55EG)
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Thunderstorm winds downed a dilapidated barn and downed trees.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Chambers County

Winnie

13	0210CST				0	0	30.00K	0.00K	Lightning
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A lightning strike damaged a nursing home's fire alarm system.

Early morning pre-dawn thunderstorms strengthened to severe as they moved eastward across southeastern Texas. These storms produced wind damage and hail along with damaging lightning strikes.

Harris County

3 WSW Spring Skyline Arpt

17	1110CST 1112CST	0.47	30		0	0	30.00K	0.00K	Tornado (EF0)
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Weak tornado damaged Klein Collins High School. Well defined path across school and into adjacent subdivision.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

Harris County

3 NW Hockley	17	2300CST							
1 SW Katy	18	1100CST			6	0	35.00M	0.00K	Flash Flood

Heavy rain caused extensive flooding especially over western half of the county where 10 to 15 inches of rain fell in less than a 12 hour period. An estimated 40,000 vehicles and 10,000 homes were flooded. Seven people in Harris County drowned in their vehicles when they drove into flooded roadways. There were numerous high water rescues. F49VE, F41VE, M66VE, F25VE, M61VE, M36VE

Harris County

2 NNE Korville	17	2305CST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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A large pine tree was snapped off along Highway 249 between Northpointe Blvd and Canyon Gates Point Driver.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Austin County

3 NNW Buckhorn	18	0100CST							
Wehdem		0900CST			1	0	2.30M	0.00K	Flash Flood

The following roads either inundated with water and/or closed due to being flooded; FM 2429 south of Bellville, FM 529 and FM 331 east of Bellville. A report at 0309 CST stated that that there were numerous road closures due to flooding across a large part of the county, especially over the central and north part of the county. A female resident drowned when driving into high water on Plumb Creek Road. Damage amounts estimated. F?VE

Grimes County

5 SSE Todd Mission	18	0200CST							
2 NNE Plantersville		1000CST			0	0	800.00K	0.00K	Flash Flood

There were water rescues in the Todd Mission area. Major flooding occurred along County Road 311 northwest of Todd Mission with water halfway up the street signage.

Waller County

2 E Hempstead	18	0200CST							
3 NE Waller		0800CST			1	0	6.70M	10.00K	Flash Flood

Flooding closed Highway 290 at the Harris and Waller County line. FM 362, FM 359 and FM 527 were all flooded. M56VE

Colorado County

9 NNE Weimar	18	0300CST							
2 SSE Borden		0900CST			0	0	2.50M	0.00K	Flash Flood

Numerous roads and bridges were closed and water rescues were performed due to flooding across northern portions of the county. The FM 109 bridge over Cummings Creek, just north of Brunen Mill Road north of Columbus, was completely washed out.

Montgomery County

1 NNW Mostyn	18	0330CST							
1 NW Magnolia		0930CST			0	0	3.00M	0.00K	Flash Flood

FM 1774 was flooded just west of Magnolia near the Montgomery and Waller County line.

Harris County

2 SSW Lake Houston	18	0412CST							
		0414CST	0.23	30	0	0	30.00K	0.00K	Tornado (EF0)

Minor damage occurred in the Summerwood neighborhood near Lake Houston. Trees and fences blown down. One home sustained roof damage.

Harris County

3 NW Huffman	18	0414CST							
		0416CST	0.14	30	0	0	10.00K	0.00K	Tornado (EF0)

Tornado moved through residential area near Huffman with damage mainly along Waterway Street. A few trees were uprooted, many branches down.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

Fort Bend County

1 W Sugarland	18	0600CST							
3 NNW Rosenberg		1200CST			0	0	992.00K	0.00K	Flash Flood

The Brazos River turnaround at Highway 59, along with the Highway 90 underpass between Richmond and Rosenberg and Highway 90A at Highway 99, were all impassable due to flooding.

Galveston County

1 NNW League City S S Arpt	18	0700CST							
3 SW (GLS)Scholes Fld Gal		1500CST			0	0	0.00K	0.00K	Flash Flood

Numerous flooded roadways in League City. Flood waters were inundating numerous roads within the city of Galveston.

A slow moving upper low over the Southwestern U.S. combined with near record level moisture aided in producing extremely heavy rainfall and devastating flooding over portions of Harris, Waller and Fort Bend Counties. Northwest to southeast orientated bands of precipitation commenced during the early evening hours of April 17th across extreme southwestern and western Harris County as well as north and west into Grimes, Waller, Fort Bend, Austin and Colorado Counties. Between 8:00 p.m. and 9:00 p.m. thunderstorms began to greatly intensify and slow their northward movement over Waller County and, by late evening, had stalled and began shifting eastward into western Harris County. Excessive rainfall spread across northwestern Harris County during the late evening hours of April 17th and into the early morning hours of April 18th. Slow thunderstorm movement and rain rates over 4 inches per hour resulted in a large portion of northwest Harris and Waller Counties receiving between 10 and 20 inches of rainfall over mainly a 12 hour period. A few CoCoRaHS gauges in Waller County measured over 20 inches.

The flooding resulted in 9 direct fatalities over the region, all drownings in vehicles. Seven of these were in Harris County with 1 in Waller County and another in Austin County. An estimated 40000 cars and trucks were flooded. Several bayous and creeks were flooded. The Addicks Barker Reservoir was severely impacted. At least 10,000 homes were flooded. Damage was estimated from Damage Survey Reports to be near \$60 million.

Montgomery County

3 ENE Spring	21	1026CST			0	0	10.00K	0.00K	Lightning
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A lightning strike caused a house fire in the Spring Trails subdivision.

Showers and thunderstorms moved across Southeast Texas during the morning and afternoon hours.

Galveston County

2 ESE League City S S Arpt	24	1729CST							
1 SE League City		1736CST	1.44	30	0	0	100.00K		Tornado (EF0)

An EF-0 tornado produced intermittent damage that began southwest of a Cabelas parking lot then continued east across Interstate 45 and then on toward the NE across a Candlewood Suites hotel and an assisted living center. The tornado continued north-northeast through the Victory Lakes subdivision then to near Lynn Nursery along Pecan Orchard Road where they was some minor tree damage. Vehicles were damaged by swirling winds and debris around the Cabelas and the Candlewood Suites sustained roof damage. In area neighborhoods, damage was mostly minor with numerous fences down and loose objects like basketball goals and trampolines knocked over. One storage shed in Victory Lakes was picked up and thrown approximately 300 yards.

An early evening EF-0 tornado caused minor damage in League City.

Brazos County

1 N Bryan	27	0136CST			0	0			Thunderstorm Wind (60EG)
3 WNW Harvey									

Trees were downed near Old Hearne Road and North Texas Avenue as well as near the FM 1179 and Boonville Road intersection.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Brazos County

College Station	27	0140CST			0	0			Thunderstorm Wind (60EG)
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Trees downed across several locations around the Bryan and College Station areas. Reports of trees down included, but not limited to, Elmo Weeden and Brookwood Roads, FM 1179 and Grassbur Roads, Dick Elliott and the Old Spanish Trial, Old Bundick and Macey Road and FM 974 and North Country Drive.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

Burleson County
Caldwell

27	0230CST				0	0			Thunderstorm Wind (55EG)
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Trees were reported downed around the county.
Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Waller County
10 NNE Waller

27	0330CST				0	0			Thunderstorm Wind (58EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees and power lines were downed near Oak Hollow Boulevard and FM 1488.
Note: The estimated wind gust of 58 knots is equivalent to 67 mph.

Walker County
1 ENE New Waverly

27	0340CST				0	0			Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Numerous trees were reported downed in the area.
Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Harris County
2 N Houston Hooks Arpt

27	0343CST								
	0347CST	0.41	40	1	0	200.00K	0.00K		Tornado (EF0)

NWS surveyed storm damage in the Willow Creek area. A west-northwest to east-southeast damage path was found just less than a half mile long. Numerous large trees were uprooted, several onto homes. An elderly woman died with a large tree crashed into her mobile home. Soils were extremely soft from recent rains and flooding. F?MH

Montgomery County
Willis

27	0345CST				0	0			Thunderstorm Wind (60EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were reports of numerous trees downed, residential damage and power outages.
Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Harris County
4 W Tomball

27	0348CST				0	0			Thunderstorm Wind (60EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Four large pine trees were downed by severe thunderstorm winds.
Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Montgomery County
Willis

27	0348CST				0	0			Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A large tree was downed by severe storm winds along FM 1097.
Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Montgomery County
1 NNE Conroe Arpt

27	0353CST				0	0	0.00K	0.00K	Thunderstorm Wind (51MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The wind gust was reported by the Conroe ASOS instrumentation.
Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Harris County
Spring

27	0406CST				0	0			Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Large trees were downed by severe storm winds in the Spring area.
Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Harris County
2 WNW Houston Hgts

27	0415CST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were downed by severe thunderstorm winds.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Harris County
3 NW Harmaston

27	0424CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A large tree was downed onto a vehicle and garage.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

Polk County

Indian Vlg

27	0450CST 0455CST				0	0			Thunderstorm Wind (55EG)
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Severe storm winds caused tree damage along FM 190.

A late night through early morning storm system moved east and southeast across the area and produced strong winds and an EF-0 tornado. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Houston County

Kennard

30	0140CST				0	0			Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Large trees were downed and partially blocking road in the town of Kennard.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Polk County

1 ENE Blanchard

3 NE Onalaska

30	0500CST 0800CST				0	0	0.00K	0.00K	Flash Flood
----	--------------------	--	--	--	---	---	-------	-------	-------------

Roads were inundated with water around the towns of Onalaska and West Livingston. Water also covered FM 3126 between FM 2457 and Cedar Valley Road.

Burleson County

Deanville

30	0524CST				0	0			Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Severe storm winds caused tree damage in the town of Deanville.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Burleson County

1 NNE Snook

30	0538CST				0	0			Thunderstorm Wind (53EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were downed in Snook.

Note: The estimated wind gust of 53 knots is equivalent to 61 mph.

Polk County

1 NW Corrigan

2 N Lake Livingston Dam

30	0600CST 0900CST				0	0	0.00K	0.00K	Flash Flood
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High rainfall created countywide flooding. Sections of FM 350, FM 1988, FM 352, and FM 1276 between Livingston and Corrigan were flooded.

San Jacinto County

1 SSE Urbana

3 SSW Coldspring

30	0615CST 0915CST				0	0	0.00K	0.00K	Flash Flood
----	--------------------	--	--	--	---	---	-------	-------	-------------

There was street flooding in the town of Coldspring. There was also water inundating Highway 59 south of the town of Goodrich.

Montgomery County

3 SW Pinehurst

30	0636CST				0	0			Thunderstorm Wind (53EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A tree was downed on Old Coach Road in the town of Stagecoach.

Note: The estimated wind gust of 53 knots is equivalent to 61 mph.

Montgomery County

3 E Willis

30	0637CST				0	0			Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A tree was downed by severe thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Montgomery County

6 NW Spring

30	0652CST				0	0			Thunderstorm Wind (53EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There was a tree down on Dawnwood Drive in The Woodlands township.

Note: The estimated wind gust of 53 knots is equivalent to 61 mph.

Montgomery County

3 E Willis

30	0657CST 1000CST				0	0	0.00K	0.00K	Flash Flood
----	--------------------	--	--	--	---	---	-------	-------	-------------

Heavy rainfall caused the flooding, and the subsequent closure, of Rose Road. There was also flooded streets in the nearby Royal Forest subdivision.

Storm Data and Unusual Weather Phenomena

April 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

TEXAS, Central Southeast

A weak disturbance passing ahead of a western upper level trough of low pressure moved through a regional unstable and moist environment. This initiated strong discrete thunderstorm cells that traveled across the northern half of the forecast area, producing flash flooding and wind damage.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

GULF OF MEXICO

GMZ355

High Is To Freeport Tx Out 20nm

02	0100CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Late night isolated severe thunderstorms developed across parts of the coastal waters and produced strong wind gusts.

GMZ335

Galveston Bay

12	0805CST				0	0	0.00K	0.00K	Waterspout
----	---------	--	--	--	---	---	-------	-------	------------

A water spout was sighted in Galveston Bay.

GMZ335-350-355

Freeport To Matagorda Ship Chnl Out 20nm - Galveston Bay - High Is To Freeport Tx Out 20nm

16	0739CST 1300CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A large storm complex moved across southeast Texas and the coastal waters and produced a couple of marine thunderstorm wind gusts.

GMZ330-335-355

Galveston Bay - High Is To Freeport Tx Out 20nm - Matagorda Bay

19	1248CST 1536CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A fast eastward moving storm system tracked across the area during the day and produced several marine thunderstorm wind gusts.

GMZ355

High Is To Freeport Tx Out 20nm

21	2116CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Evening thunderstorms moving northeast along the coast produced a marine thunderstorm wind gust.

22	0842CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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22	0900CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Marine thunderstorm wind gusts were observed from storms moving to the northeast along the coast.

ILLINOIS, Northwest

McDonough County 2 SE Bushnell

09	1615CST 1617CST	0.1	15	0	0	0.00K	0.00K	Tornado (EF0)
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The tornado width was 25 to 50 yards, and on the ground for about 2 minutes with no damage.

Warren County 1 S Greenbush

09	1641CST 1642CST	0.09	25	0	0	0.00K	0.00K	Tornado (EF0)
----	--------------------	------	----	---	---	-------	-------	---------------

There was a brief tornado touchdown with no damage.

A weak disturbance ahead of a storm system in the southern plains spawned a couple of brief, weak tornadoes with an area of showers and thunderstorms in west central Illinois.

McDonough County 2 SW Fandon

11	2020CST				0	0	0.00K	0.00K	Hail (1.00)
----	---------	--	--	--	---	---	-------	-------	-------------

Hail was reported up to the size of one inch in diameter.

Isolated to scattered thunderstorms developed mid to late afternoon along a weak boundary. The strongest storms produced a single report of large hail.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northwest

Carroll County

Lanark

28	1700CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A trained spotter reported 3 to 6 inch diameter tree limbs down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Whiteside County

2 W Rock Falls

28	1715CST				0	0	0.00K	0.00K	Hail (0.75)
----	---------	--	--	--	---	---	-------	-------	-------------

Reported hail up to the size of dimes along with 40 MPH winds.

A low pressure system with an accompanying cool front produced showers and thunderstorms. The main threat were isolated reports of damaging winds of 60 to 70 MPH occurred, along with isolated reports of large hail.

Henry County

3 N Atkinson

31	1040CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Report of tree branches down of up to the size of 5 inches in diameter along with numerous smaller limbs.

A weak cool front produced afternoon showers and thunderstorms with an isolated, severe wind report. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

IOWA, East Central and Southeast

Louisa County

2 E Wyman

09	1618CST 1619CST	0.09	10		0	0	0.00K	0.00K	Tornado (EF0)
----	--------------------	------	----	--	---	---	-------	-------	---------------

There was a brief tornado touchdown with no damage.

A weak disturbance ahead of a storm system in the southern plains spawned a brief, weak tornado with an area of showers and thunderstorms in southeast Iowa.

Clinton County

4 NW Clinton

11	1830CST 1845CST				0	0	0.00K	0.00K	Hail (0.88)
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Hail the size of dimes to nickels was reported to fall in a time estimated between 730 and 745 PM.

Clinton County

1 SE Elvira

11	1842CST				0	0	0.00K	0.00K	Hail (1.25)
----	---------	--	--	--	---	---	-------	-------	-------------

Hail size was reported from public with a picture received from social media.

Isolated to scattered thunderstorms developed mid to late afternoon along a weak boundary. The strongest storms produced a few reports of large hail.

Washington County

2 WSW Wellman

24	1530CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

This was a delayed report. A large tree was downed at a farm near Elm Avenue and 135th street about 2 miles west southwest of Wellman. The tree fell onto a minivan.

A few small thunderstorms developed in the mid afternoon hours in a moist air-mass. The strongest storm produced some damaging wind. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Buchanan County

1 W Hazleton

26	0336CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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A report was received of a 20 inch diameter limb on wires just south of 3rd and Benton in Hazleton.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Buchanan County

Independence

26	0340CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Several tree branches and a flag pole were blown down.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Buchanan County

1 W Independence

26	0343CST				0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
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Report from the AWOS site at Independence.

Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

IOWA, East Central and Southeast

Buchanan County

1 SSE Stanley

26	0343CST 0353CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Report of sustained winds of 50 MPH with gusts to near 70 MPH for the past 10 minutes.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Buchanan County

2 W Independence

26	0345CST				0	0	0.00K	0.00K	Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The estimated max wind speeds were received from a trained spotter.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Linn County

3 S Cedar Rapids

26	0347CST 0348CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Winds were reported to gust to about 60 MPH for roughly a minute.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Buchanan County

1 NNW Independence

26	0350CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Reports of the electrical power out in the neighborhood.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Linn County

2 ESE Cedar Rapids

26	0353CST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Report of large tree limbs that are blown down.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Iowa County

1 E Millersburg

26	0355CST				0	0	0.00K	0.00K	Hail (1.75)
----	---------	--	--	--	---	---	-------	-------	-------------

This report was received via the county emergency manager with winds estimated up to 50 MPH.

Buchanan County

1 W Aurora

26	0355CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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The local coop observer reported a 30 to 40 foot tall tree was blown down into a farm field near 115th street and Reed avenue.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Buchanan County

1 SSE Stanley

26	0355CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Report from a local coop observer of a tree blown down onto an unoccupied house in Stanley.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Buchanan County

3 W Lamont

26	0355CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A local coop observer reported a cattle shed was destroyed and blown into a farm field.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Buchanan County

1 W Independence

26	0355CST				0	0	0.00K	0.00K	Thunderstorm Wind (61MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Note: The measured wind gust of 61 knots is equivalent to 70 mph.

Buchanan County

Aurora

26	0355CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The local coop observer reported a large tree was snapped in city park and second tree was down onto a Van at 103 main street.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

IOWA, East Central and Southeast

Iowa County

1 NNE Millersburg

26 0359CST 0 0 0.00K 0.00K Hail (1.00)

Delaware County

2 SSE Dundee

26 0400CST 0 0 0.00K 0.00K Thunderstorm Wind (61EG)
The local coop observer reported a 2 foot diameter tree was snapped about 4 to 5 feet above the ground at 1435 165th street. This is roughly 2 miles South Southeast of Dundee.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Delaware County

1 S Edgewood

26 0415CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)

A report of 3 inch diameter branches that are down.

A cold front produced thunderstorms with some severe storms with damaging winds to over 70 MPH and some large hail up to the size of golf balls. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Jones County

1 SSW Amber

28 1356CST 0 0 0.00K 0.00K Thunderstorm Wind (56EG)

The county emergency manager reported power lines down and the roof blown off a machine shed at the intersection of county road X44 and highway 64 south of Amber.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Dubuque County

1 E Cascade

28 1417CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)

The fire department reported an estimated wind gust of 60 MPH and was relayed by the Dubuque County EOC.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Dubuque County

1 N Peosta

28 1445CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)

The emergency manager reported a two foot diameter tree was snapped off.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Dubuque County

2 SE Sageville

28 1446CST 0 0 90.00K 0.00K Thunderstorm Wind (56EG)

The emergency manager reported a roof was partially ripped off of a school.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Dubuque County

1 E Center Grove

28 1448CST 0 0 0.00K 0.00K Thunderstorm Wind (56EG)

Received via social media reports of power lines down and roof damage on the northwest side of Dubuque.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Dubuque County

1 E Centralia

28 1450CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)

The emergency manager reported wires were down along old highway road near Hilldale Lane west of the fairgrounds.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Dubuque County

2 SE Durango

28 1500CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)

The emergency manager reported a tree fell onto an occupied vehicle near 5200 N and Rupp Hollow Road.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Dubuque County

2 SE Durango

28 1500CST 0 0 0.00K 0.00K Thunderstorm Wind (61MG)

Reports of multiple trees down in the area. One tree fell onto a bicyclist on a bike path along highway 52. The person was not injured but was temporarily trapped.

Note: The measured wind gust of 61 knots is equivalent to 70 mph.

Scott County

1 NW West Lake Park

28 1530CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)

A large tree branch down was also reported.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

IOWA, East Central and Southeast

Scott County

2 NNW Davenport

28	1543CST				0	0	0.00K	0.00K	Hail (0.75)
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Received via local media a report of dime sized hail in Davenport.

A low pressure system with an accompanying cool front produced showers and thunderstorms. Several reports of damaging winds of 60 to 70 MPH occurred, along with isolated reports of large hail.

Van Buren County

Selma

30	1630CST				0	0	0.00K	0.00K	Hail (0.75)
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A trained spotter reported mostly pea sized hail with a few dime to penny sized stones.

Buchanan County

1 E Independence Arpt

30	1830CST				0	0	0.00K	0.00K	Thunderstorm Wind (57MG)
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The AWOS measured a gust of 57 Knots from an isolated down-burst with no damage reported.

Note: The measured wind gust of 57 knots is equivalent to 66 mph.

Cedar County

1 E Mechanicsville

30	1916CST				0	0	0.00K	0.00K	Hail (0.75)
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Linn County

Toddville

30	1933CST				0	0	0.00K	0.00K	Hail (0.88)
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A report relayed by local broadcast media of pea to nickel sized hail.

Benton County

3 NNW Keystone

30	1945CST				0	0	0.00K	0.00K	Hail (0.75)
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Cedar County

3 N Mechanicsville

30	1945CST				0	0	0.00K	0.00K	Hail (0.75)
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Buchanan County

2 W Independence

30	2015CST				0	0	0.00K	0.00K	Hail (0.75)
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Jones County

5 ENE Wyoming

30	2038CST				0	0	0.00K	0.00K	Hail (0.75)
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Buchanan County

1 W Hazleton

30	2043CST				0	0	0.00K	0.00K	Hail (0.75)
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A weak upper level disturbance produced isolated afternoon thunderstorms with penny to nickel sized hail the main threat.

Clinton County

3 ENE Elvira

31	0904CST				0	0	0.00K	0.00K	Tornado (EF0)
	0905CST	0.03	10		0	0	0.00K	0.00K	

A traveler spotted a funnel going up and down which briefly touched down in a field with dirt debris about 2 miles northeast of Elvira. This report was relayed by the Clinton County Law Center.

A weak cool front produced afternoon showers and thunderstorms with an isolated, brief tornado reported.

KANSAS, North Central

Osborne County

2 SW Alton

07	2245CST				0	0	15.00K	150.00K	Hail (1.75)
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Golf ball size hail occurred over Osborne County late on this Saturday evening. A few very isolated thunderstorms had been ongoing through the evening hours over western Kansas. The storm that eventually became severe over Osborne County began developing along the Trego-Gove County line around 8:30 p.m. CST. This storm moved east-northeast, entering Osborne County by 10:30 p.m. CST. The golf ball size hail was reported at 10:45 p.m. CST near the town of Alton. No other severe weather was reported with this storm.

Lee cyclogenesis was underway over Colorado. This storm formed just south of a cold front that had moved south through Nebraska during the day and become quasi-stationary over northern Kansas. In the upper levels, split flow was over North America, with closed lows over the western U.S., along the Mid-Atlantic Coast, as well as Hudson Bay. A ridge was over the Central and Southern Plains and was slowly inching eastward. By mid-evening, surface temperatures had cooled into the middle 60s, with dewpoints around 50. MUCAPE was around 500 J/kg. These storms were developing just ahead of a pool of very steep mid-level lapse rates (8-9 degrees C/km) which was advancing toward the region. Effective deep layer shear was around 40 knots.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

KANSAS, North Central

Phillips County Long Is	08	1740CST			0	0	0.00K	0.00K	Hail (1.00)
Phillips County Logan	08	1802CST			0	0	0.00K	0.00K	Hail (1.00)
Phillips County Logan	08	1802CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
Wind gusts were estimated to be near 60 MPH. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.									
Rooks County 8 NNE Plainville	08	1820CST			0	0	0.00K	0.00K	Hail (0.88)
Rooks County 5 S Codell	08	1821CST 1823CST	0.38	440	0	0	2.00K	0.00K	Tornado (EF2)
This tornado was the continuation and end of the tornado that started in Ellis County north of the town of Catharine. In Rooks County, the overall damage was minimal and confined to trees as the tornado lifted within a mile of the county line. The entire path length through the 2 counties was 7 miles. At its peak in Ellis County, the maximum wind speed was estimated to be 125 MPH.									
Rooks County 4 SSE Codell	08	1827CST 1833CST	2.82	500	0	0	15.00K	0.00K	Tornado (EF1)
This tornado, the second to affect Rooks County on this day, touched down approximately 4 miles south of Codell, moved northeast and lifted approximately 2 miles southeast of Codell. Damage along its path was confined to trees, fencing and several power poles. The maximum wind speed was estimated to be 110 MPH.									
Rooks County Codell	08	1832CST			0	0	5.00K	150.00K	Hail (1.50)
Osborne County Natoma	08	1850CST			0	0	5.00K	175.00K	Hail (1.75)
Mitchell County 8 WSW Hunter	08 09	1900CST 0300CST			0	0	0.00K	0.00K	Heavy Rain
Storm total rainfall was 3.77 inches.									
Osborne County 8 NNE Natoma	08	1905CST			0	0	10.00K	200.00K	Hail (2.00)
Osborne County 4 NE Covert	08	1921CST			0	0	5.00K	175.00K	Hail (1.75)
Mitchell County Tipton	08	2002CST			0	0	0.00K	125.00K	Hail (1.25)
Mitchell County Cawker City	08	2016CST			0	0	0.00K	0.00K	Hail (0.88)
Mitchell County 5 N Victor	08	2317CST			0	0	0.00K	0.00K	Hail (1.00)
Mitchell County 12 ENE Hunter	08	2321CST			0	0	5.00K	175.00K	Hail (1.75)
Mitchell County 8 S Beloit	08	2321CST			0	0	0.00K	125.00K	Hail (1.25)
Mitchell County 10 SSW Beloit	08	2324CST			0	0	0.00K	125.00K	Hail (1.25)

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

KANSAS, North Central

Osborne County 11 ESE Covert	08	2342CST			0	0	0.00K	100.00K	Hail (1.00)
Mitchell County 2 NNE Asherville	08	2344CST			0	0	0.00K	100.00K	Hail (1.00)
Mitchell County Hunter	09	0001CST			0	0	5.00K	175.00K	Hail (1.75)
Mitchell County 5 N Victor	09	0013CST			0	0	0.00K	0.00K	Hail (0.88)
Mitchell County 10 SSW Beloit	09	0022CST			0	0	0.00K	125.00K	Hail (1.25)

Very large hail and a tornado occurred over north central Kansas on this Sunday afternoon and evening. Thunderstorms had developed over western Kansas by mid-afternoon and, by 5:30 p.m. CST, they began moving into north central Kansas. The storms were mostly short line-segments of multicell storms, but there was one supercell that lifted out of Ellis County into southeastern Rooks County. This storm was producing a tornado upon entering Rooks County, but the tornado quickly dissipated after crossing into the County. This supercell cycled and did spawn another short-track EF-1 tornado just northeast of where the previous tornado ended. This storm then merged with the developing squall line which swept east across the rest of north central Kansas. Severe hail was reported in many locations across Rooks, Osborne, and Mitchell Counties, the largest of which was 2 inches over west-central Osborne County. This line of storms exited north central Kansas by 11 p.m. CST. However, new severe thunderstorms were already developing to the southwest, apparently along the outflow boundary left by the preceding storms. These storms produced hail up to the size of golf balls in multiple locations between 11:15 p.m. and 12:30 a.m. CST. Cell training occurred with these storms and, when combined with the previous line, a CoCoRaHS observer measured 3.77 inches of rain which fell in less than 12 hours.

A low pressure center was located over western Kansas. A warm front extended east from this low through northern Kansas. This front lifted north into Nebraska during the afternoon hours. These storms developed in the vicinity of this front and in the warm sector. Prior to convective initiation, temperatures were in the middle 70s with dewpoints in the middle 50s. Mid-level lapse rates were very steep, between 8 and 8.5 degrees C/km, resulting in MLCAPE between 1500 and 2000 J/kg. Effective deep layer shear was between 35 and 40 knots. In the upper-levels, split flow was over North America, with a closed low over Wyoming and Colorado.

Jewell County Mankato	09	1622CST			0	0	0.00K	0.00K	Hail (1.00)
Jewell County 3 E Mankato	09	1627CST			0	0	0.00K	0.00K	Hail (0.88)
Jewell County 1 SE Mankato	09	1648CST			0	0	15.00K	175.00K	Hail (1.75)
Jewell County Formoso	09	1727CST			0	0	0.00K	0.00K	Hail (1.25)

Hail up to the size of golf balls occurred over parts of Jewell County on this Monday afternoon. A few very isolated general thunderstorms developed across north central Kansas beginning around 3 p.m. CST. Most storms were brief and not severe. However, shortly after 4 p.m. CST, a storm intensified over east central Jewell County. Severe hail occurred between Mankato and Formoso, the largest of which was the size of golf balls. The limited thunderstorm activity dissipated or moved out of north central Kansas by 7 p.m. CST.

Surface low pressure remained quasi-stationary over western Kansas. The warm front extending east from the low lifted into central Nebraska and became stationary. Just prior to most of the thunderstorm development, temperatures were in the lower to middle 70s with dewpoints in the middle to upper 50s. With mid-level lapse rates near 8 degrees C/km, this resulted in MLCAPE of 1500-2000 J/kg. Effective deep layer shear was 15-20 knots, barely supportive of multicell storm mode. In the upper levels, a longwave trough was over the western U.S. with a lead low exiting Nebraska into South Dakota, and a new more potent low dropping into the backside of the trough over the Northern Rockies.

Phillips County Prairie View	10	1735CST			0	0	0.00K	0.00K	Hail (1.00)
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Funnel clouds and quarter size hail occurred in Phillips County on this Tuesday afternoon. Between 1 and 3 p.m. CST, a few showers developed over northwest Kansas. By 4 p.m., one of these showers intensified into a severe thunderstorm as it crossed Decatur and Norton Counties. This storm continued eastward, passing through most of western and northern Phillips County between 4:30 p.m. and 5:30 p.m. CST. Hail as large as quarters was reported in Prairie View, and funnel clouds were reported just northwest of Phillipsburg.

This storm formed as a cold front was pressing into the area from the north and west. Temperatures were in the lower 80s with dewpoints in the upper 50s, but since mid-level lapse rates were low (6.5 degrees C/km), MLCAPE was only around 1000 J/kg. Effective deep layer shear was 30-35 knots. In the upper-levels, a low was over Montana, embedded within a long-wave trough over the West.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

KANSAS, North Central

Jewell County 2 E Webber

13	1018CST				0	0	0.00K	0.00K	Hail (1.00)
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One isolated thunderstorm developed all by itself, dropping one inch hail over part of Jewell County on this Friday morning. The storm started developing over extreme northern Smith County just after 9 a.m. CST. It headed due east, entering northwestern Jewell County around 9:30 a.m. CST. The storm strengthened over north central and northeastern Jewell County, with 1 inch hail being reported just southeast of Webber at 10:18 a.m. CST.

This storm developed as a strong cold front entered northern Kansas during the mid to late morning hours. Temperatures quickly warmed into the middle 70s, and with dewpoints in the lower 50s and mid-level lapse rates in excess of 8 degrees C/km, SBCAPE was around 1000 J/kg. MLCAPE was more than 500 J/kg, but less than 1000 J/kg. Effective deep layer shear was around 35 knots.

Rooks County 4 WNW Plainville

23	0600CST				0	0	0.00K	0.00K	Heavy Rain
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24

A 24-hour rainfall total of 4.28 inches was reported.

Jewell County 7 N Burr Oak

23	2110CST				0	0	15.00K	175.00K	Hail (1.75)
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Phillips County 5 W Phillipsburg

23	2215CST				0	0	0.00K	0.00K	Hail (1.00)
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Rooks County 4 WNW Plainville

24	0014CST				0	0	0.00K	0.00K	Hail (0.88)
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Rooks County 2 NNW Palco 5 SE Webster

24	0300CST				0	0	25.00K	250.00K	Flash Flood
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Heavy rainfall of 3 to 6 inches resulted in flash flooding of county roads. The cooperative observer 4 miles west-northwest of Plainville reported a rainfall total of 4.28 inches.

A couple storms produced hail as large as golf balls, and flash flooding also occurred on this Monday. During the late afternoon and evening hours, a couple small, isolated thunderstorms developed over northern Phillips and Smith Counties. They quickly crossed the state line into Nebraska, where thunderstorms were more widespread. One such storm formed over northeastern Phillips County around 6 p.m. CST. This storm moved east-northeast into Nebraska by 7 p.m., but then turned east along the state line and expanded slightly back into northern Kansas, tracking across extreme northern Jewell County. Hail as large as golf balls occurred just after 9 p.m. CST. Around 9:30 p.m. CST, a new storm formed over western Phillips County. This storm intensified and produced quarter size hail a little after 10 p.m. CST. Other storms also developed between these two dominant cells. In addition, numerous other storms formed in an east-west orientation across Rooks, Osborne, and Mitchell Counties. Cells propagated eastward as additional storms formed in their wake. Cell training occurred between 11 p.m. and 4 a.m. and resulted in flash flooding in parts of Rooks County. Widespread rainfall in excess of 2 inches occurred over the county, with 4.28 inches the highest measured amount near Plainville.

A north-northeast to south-southwest oriented quasi-stationary front extended from the eastern Dakota's through western Kansas into New Mexico. A lee-side low was near Colorado Springs. In the upper levels broad southwest flow was over much of the United States, with a ridge over the Great Lakes, and an elongated trough from Hudson Bay to central California. A weak shortwave trough was passing over the Central Plains. When the first storms initiated, late in the afternoon, temperatures were in the middle to upper 70s, with dewpoints in the lower 60s. MLCAPE was between 1500 and 2000 J/kg. Effective deep layer shear was around 45 knots. This environment was more than supportive of organized, persistent storms.

Smith County 11 NE Cora

26	1538CST				0	0	0.00K	0.00K	Hail (1.00)
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Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

KANSAS, North Central

Hail up to the size of quarters occurred in Smith County on this Thursday afternoon. Many thunderstorms formed from central Kansas into northeast Kansas in the early- to mid-afternoon hours. Storms predominantly exhibited multicell storm mode. Around 2 p.m. CST, several new storms developed near Interstate 70, between Hayes and Russell. These storms quickly merged into a line and lifted into Osborne and Mitchell Counties shortly thereafter. This line continued lifting north over the following two hours, affecting Smith and Jewell Counties as well. These storms were mostly sub-severe, but one inch hail was reported in extreme northeast Smith County, just before the storms crossed the state line into Nebraska around 4 p.m. CST.

A quasi-stationary front extended from New Mexico across Kansas into Missouri. This front lifted north through the day as a warm front, but was effectively forced back to the south as thunderstorm outflows cooled temperatures over northern Kansas. In the upper levels, a longwave trough was over the western United States, with broad southwest flow from Texas to New England. A subtropical high was over the western Atlantic. During the day, a shortwave trough ejected out of the Desert Southwest into the Southern Plains, aiding in thunderstorm development. Just prior to thunderstorm initiation, temperatures were generally in the upper 70s to near 80, with dewpoints around 70. This surface environment was overlaid with very steep mid-level lapse rates around 9 degrees C/km, resulting in MLCAPE between 3000 and 4000 J/kg. Strong mid-level winds, combined with directional shear in the low-levels, produced effective deep layer shear between 40 and 50 knots.

Phillips County 12 NNW Agra

29	1520CST			0	0	15.00K	150.00K	Hail (1.50)
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Mitchell County Cawker City

29	1922CST			0	0	15.00K	175.00K	Hail (1.75)
	1927CST							

Jewell County 5 S Ionia

29	1943CST			0	0	15.00K	175.00K	Hail (1.75)
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Severe thunderstorms produced hail up to the size of golf balls on this Sunday afternoon and evening. A couple isolated thunderstorms began developing across north central Kansas around 3 p.m. CST. The first report of severe hail occurred fairly early, with up to 1.5 inch diameter hail reported from a small storm over northeast Phillips County. There was a lull in thunderstorms for about an hour beginning around 4 p.m. CST. Other isolated storms then developed. None were apparently severe until 7:30 p.m. CST. A small cluster of several storms developed over Russell County between 5 and 6 p.m. CST. One storm on the northern side broke off and moved northeast across Osborne and Mitchell Counties between 6:30 and 7:30 p.m. CST. It produced hail up to 1.5 inches in diameter near Waconda Lake, at Cawker City around 7:30 pm CST. A little while later, golf ball size hail was reported as the storm crossed into Jewell County. The storm then rapidly weakened after 8 p.m. CST. The rest of the night was quiet.

All of this thunderstorm activity formed along and ahead of a weak warm front that was lifting north through Kansas. High pressure centers were over the Northern Plains and Southern Plains. In the upper levels, fairly weak, zonal flow was covered most of the Lower 48. Nebraska was in the wake of a weak shortwave trough moving into the Great Lakes. A subtle shortwave ridge was over the Central Plains. Prior to thunderstorm development, temperatures were in the middle 80s, with dewpoints in the middle to upper 50s. Mid-level lapse rates were modestly steep, around 7 degrees C/km. Combined with the surface environment, this resulted in MLCAPE around 2000 J/kg. With weak wind fields through the troposphere, deep layer shear was approximately 20 to 25 knots.

MONTANA, East

Phillips County 6 E Saco 6 NW Dodson

09	0900MST			0	0	0.00K	0.00K	Flood
13								

Two to four inches of rainfall as well as 2 to 3 feet of snow that eventually melted contributed to flooding in the southern portions of Phillips County. Beaver Creek remained in it's banks south of Saco, but as it got closer to Saco the water left it's banks, and at least 100 yards of the Beaverton Road was underwater. Peoples Creek near Dodson was flooded out of it's banks in the Dodson area.

A very strong low pressure system from the pacific northwest stalled over southern Montana and northern Wyoming with plentiful moisture. Significant amounts of moderate and heavy rain spread across many locations while enough cold air from the Canadian Rockies wrapped around the system to change the precipitation to a heavy, very wet snow for some higher elevations of central and northern Montana.

Sheridan County 3 S Homestead

09	1825MST			0	0	0.00K	0.00K	Tornado (EF0)
	1828MST	0.46	30	0	0	0.00K	0.00K	

Public reported a tornado moving across Highway 16 in Sheridan County. Subsequent photos and video suggest it was a weak landspout amid convective showers in the area near a front. Landspout occurred in an open field and pulled up some dirt, lasting for about 3 minutes.

A large, slow-moving low pressure system from the west provided just enough instability and general convection to allow this one brief weak landspout to form in an open field in Sheridan County.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MONTANA, East

MTZ060

Little Rocky Mountains

09	2100MST								
11	0500MST				0	0	160.0K	0.00K	Blizzard

MTZ021-022

Garfield - Petroleum

10	1600MST								
11	0800MST				0	0	290.0K	0.00K	Blizzard

Valley County

1 SSW Ft Peck

10 ENE King Coulee Raws

11	1100MST								
15	0900MST				0	0	0.00K	0.00K	Flood

From 2 to 4.5 inches of rainfall occurred across the county from May 9th through the 12th, with Glasgow to Fort Peck Dam area seeing the highest totals. Flood waters inundated a ranch on Antelope Creek. Water went across the Tampico Highway west of Glasgow, and several gravel roads were under water west of Glasgow and south of Hinsdale from smaller creeks in the area. One pickup truck was swept downstream a ways along the Billingsley Rd and the Tampico Highway when it encountered deep waters at the intersection. A stock dam also broke on the Maxness Road near Fort Peck. It caused no property damage according to law enforcement.

Beaver Creek near Hinsdale crested at 16.74 feet around 1 am on Friday May 13th. Flood stage is 14 feet. It hit 14 feet around 5 am Thursday May 12th. It went below flood stage around 1 am Saturday May 16th.

The Milk River at Glasgow hit flood state around noon on Thursday May 12th and peaked around 15.62 feet on Friday May 13th. It dropped below flood stage 24 hours later.

A very strong low pressure system from the pacific northwest stalled over southern Montana and northern Wyoming with plentiful moisture. Significant amounts of moderate and heavy rain spread across many locations while enough cold air from the Canadian Rockies wrapped around the system to change the precipitation to a heavy, very wet snow for some higher elevations of central and northern Montana.

Garfield County

6 SE Sand Spgs

21	1530MST								
	1600MST				0	0	0.00K	0.00K	Hail (1.00)

Public reported quarter sized hail for this 30 minute period.

Garfield County

1 W Jordan

21	1630MST								
					0	0	0.00K	0.00K	Thunderstorm Wind (70EG)

Public reported estimated 70-80 mph wind gusts.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Garfield County

1 W Jordan

21	1649MST								
					0	0	0.00K	0.00K	Thunderstorm Wind (56MG)

The Jordan Airport ASOS site recorded 64 mph wind gusts.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Garfield County

11 N Jordan Airport (KJDN)

21	1705MST								
					0	0	0.00K	0.00K	Hail (1.75)

Public reported golf ball sized hail and windows broken out of the west side of a ranch home.

Garfield County

11 N Jordan Airport (KJDN)

21	1705MST								
					0	0	0.00K	0.00K	Thunderstorm Wind (61EG)

Public reported 70 mph wind gusts.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Phillips County

14 WSW Sun Prairie

21	1715MST								
					0	0	0.00K	0.00K	Hail (1.00)

Trained spotter reported mostly nickel and pea sized hail with some as large as quarters. Strong winds also reported.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MONTANA, East

Phillips County

4 NNE Harb

21	1722MST				0	0	0.00K	0.00K	Hail (1.50)
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Trained spotter reported mostly small hail mixed with a few ping pong ball sized hailstones.

Garfield County

11 N Jordan Airport (KJDN)

21	1724MST				0	0	0.00K	0.00K	Hail (1.75)
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Public reported golf ball sized hail.

Valley County

4 NNW Glasgow Intl

Airport (KGGW)

21	1730MST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Public reported a cedar wood swing set lifted up and tipped over by strong thunderstorm wind gusts.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Valley County

8 WNW Hinsdale

21	1735MST				0	0	0.00K	0.00K	Hail (1.00)
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Public reported quarter sized hail.

Valley County

8 WNW Hinsdale

21	1735MST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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Public reported a tin roof torn off a building and tree branches downed.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Valley County

8 WNW Hinsdale

21	1735MST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Public estimated 60 mph wind gusts with heavy rain and visibility less than 50 feet.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Valley County

5 SW Hinsdale

21	1738MST				0	0	0.00K	0.00K	Hail (0.88)
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Trained spotter reported nickel sized hail.

Valley County

Glasgow

21	1738MST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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Glasgow Airport ASOS measured a 58 mph wind gust.

Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Valley County

5 SW Hinsdale

21	1738MST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Trained spotter reported 60 mph wind gusts.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Valley County

13 N Hinsdale

21	1745MST				0	0	0.00K	0.00K	Hail (1.25)
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Trained Spotter reported half dollar sized hail.

Valley County

13 N Hinsdale

21	1745MST				0	0	0.00K	0.00K	Thunderstorm Wind (78EG)
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Trained spotter estimated wind gusts of 80-90 mph.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

Valley County

13 N Hinsdale

21	1745MST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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Trained spotter reported a 20-foot section of roof blown off a shed.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Valley County

2 NNW Park Grove

21	1758MST				0	0	0.00K	0.00K	Hail (1.50)
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Public estimated ping pong ball sized hail near the confluence of the Milk and Missouri Rivers.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MONTANA, East

Valley County

1 SSE Thoeny

21	1805MST				0	0	0.00K	0.00K	Thunderstorm Wind (72MG)
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The Bluff Creek RAWS site measure an 83 mph wind gust.
Note: The measured wind gust of 72 knots is equivalent to 83 mph.

McCone County

1 W Ft Peck Lake Handar

21	1807MST				0	0	0.00K	0.00K	Hail (1.00)
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An NWS employee reported quarter sized hail near Signal Hill.

Valley County

2 WNW Frazer

21	1807MST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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An NWS employee reported wind gusts up to 65 mph.
Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Garfield County

5 ESE Cohagen

21	1810MST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Trained spotter reported 50 to 60 mph wind gusts.
Warm, moist air from the southeast interacted with a low pressure system from the Pacific Northwest to generate multiple strong and severe thunderstorms which were focused mainly near the system's cold front as it passed through northeast Montana. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

NEBRASKA, South Central

Dawson County

5 NNE Farnam

07	1950CST				0	0	0.00K	0.00K	Hail (0.88)
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Furnas County

Edison

07	2209CST				0	0	0.00K	0.00K	Hail (0.88)
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Nickel size hail occurred in a couple locations over south central Nebraska on this Saturday evening. During the mid to late evening hours, a couple small arcs of thunderstorms developed over southwest and south central Nebraska, between Highways 83 and 183. The first arc was more of a solid squall line and began developing around 7 p.m. CST. One of the storms embedded within this line produced nickel size hail over southwestern Dawson County. The second arc was not solid, but comprised of individual storms. This arc began to take shape around 9:30 p.m. CST. One of these storms had a long history, originating over west-central Kansas well before 9:30 p.m. CST. This storm briefly strengthened and produced nickel size hail over northeastern Furnas County, a little after 10 p.m. CST, before rapidly weakening and dissipating.
Lee cyclogenesis was underway over Colorado. These storms formed just north of a cold front that had moved south through Nebraska during the day and had become quasi-stationary over northern Kansas. In the upper levels, split flow was over North America, with closed lows over the western U.S., along the Mid-Atlantic Coast, as well as Hudson Bay. A ridge was over the Central and Southern Plains and was slowly inching eastward. By mid-evening, surface temperatures had cooled into the middle 60s, with dewpoints in the lower to middle 50s. MUCAPE was between 500 and 1000 J/kg. These storms were developing just ahead of a pool of very steep mid-level lapse rates (8-9 degrees C/km) which was advancing toward the region. Effective deep layer shear was around 40 knots.

Dawson County

Cozad

08	1638CST				0	0	0.00K	0.00K	Hail (1.25)
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Dawson County

Gothenburg

08	1902CST				0	0	0.00K	0.00K	Hail (0.75)
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Dawson County

Gothenburg

08	1904CST				0	0	0.00K	0.00K	Hail (1.00)
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Dawson County

Lexington

08	1913CST				0	0	0.00K	0.00K	Hail (0.75)
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Sherman County

3 N Litchfield

08	1916CST				0	0	5.00K	150.00K	Hail (1.50)
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Dawson County

Sumner

08	1919CST				0	0	0.00K	0.00K	Hail (0.88)
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Kearney County

Minden

08	1930CST				0	0	10.00K	0.00K	Thunderstorm Wind (52EG)
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Two large trees limbs of 10 to 15 inches in diameter were downed in town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Webster County Red Cloud

08	1948CST				0	0	5.00K	0.00K	Thunderstorm Wind (65EG)
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Several trees were uprooted at the local golf course. Other trees were damaged.

Hail up to the size of half dollar coins and some wind damage occurred on this Sunday afternoon and evening. Isolated storms began developing over Dawson County around 3 p.m. CST. Hail up to the size of half dollars was reported in Cozad. As the late afternoon and evening hours wore on, more storms developed over south central Nebraska. Most of them were not severe, but nickel to quarter size hail fell over parts of Dawson County between 7 and 8 p.m. CST. Hail up 1.5 inches in diameter fell over part of Sherman County as well. Thunderstorms eventually formed into two small arc's. One formed from the Sandhills back down to Lexington. The other formed over northern Kansas and its northern fringe moved into south central Nebraska. This second arc produced wind damage in Minden and Red Cloud, with downed trees and snapped off tree limbs. Winds at Red Cloud were estimated around 75 mph.

A low pressure center was located over western Kansas. A warm front extended east from this low through northern Kansas. This front lifted north into Nebraska during the afternoon hours. These storms developed in the vicinity of this front and in the warm sector. Prior to convective initiation, temperatures were in the middle 70s with dewpoints in the middle 50s. Mid-level lapse rates were very steep, between 8 and 8.5 degrees C/km, resulting in MLCAPE between 1500 and 2000 J/kg. Effective deep layer shear was between 35 and 40 knots. In the upper levels, split flow was over North America, with a closed low over Wyoming and Colorado. Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Clay County 4 W Clay Center

09	1515CST				0	0	0.00K	0.00K	Hail (1.00)
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Buffalo County 2 N Odessa

09	1530CST	0.01	20		0	0	0.00K	0.00K	Tornado (EF0)
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A brief landspout tornado touched down near Odessa. No damage was reported.

Clay County 5 WSW Fairfield

09	1542CST				0	0	5.00K	0.00K	Hail (1.50)
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Clay County 3 E Fairfield

09	1606CST				0	0	75.00K	0.00K	Tornado (EF0)
	1614CST	2.67	35		0	0	75.00K	0.00K	Tornado (EF0)

This tornado touched down approximately 2 miles east of Fairfield, traveling east-northeast before lifting approximately 5 miles east of Fairfield. Damage along this path included at least one irrigation pivot as well as minor damage to the front walkway overhang at the school. Windows were blown out of numerous vehicles in the school parking lot, and a concession area under construction suffered minor damage. The tornado crossed Highway 14, damaging fencing and trees before lifting a couple miles east of the highway. The maximum wind speed was estimated to be 85 MPH.

Phelps County 8 NNE Holdrege

09	1615CST				0	0	0.00K	0.00K	Hail (1.25)
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Hamilton County 7 ENE Stockham

09	1622CST				0	0	0.00K	0.00K	Hail (1.00)
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Clay County 1 E Fairfield

09	1629CST				0	0	25.00K	150.00K	Hail (1.50)
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Fillmore County Strang

09	1637CST				0	0	15.00K	0.00K	Hail (1.75)
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Phelps County 4 NW Loomis

09	1713CST				0	0	0.00K	0.00K	Hail (0.75)
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Two tornadoes occurred along with hail up to the size of golf balls on this Monday afternoon. A few very isolated general thunderstorms developed across south central Nebraska beginning around 1:30 p.m. CST. However, storms did not become severe until after 3 p.m. CST. Severe hail up to the size of golf balls occurred with some storms, which was impressive given the weak shear and pulse-type nature of the storms. A non-supercell tornado occurred near Odessa, in Buffalo County. Somehow, a lone supercell managed to develop over Clay County, and it was responsible for producing a tornado and hail up to 1.5 inches in diameter. Both of these tornadoes were rated EF-0. By 7 p.m. CST, all of the thunderstorm activity had dissipated or moved out of south central Nebraska.

Surface low pressure was quasi-stationary over western Kansas. The warm front extending east from the low lifted into central Nebraska and became stationary. Just prior to most of the thunderstorm development, temperatures were in the lower to middle 70s with dewpoints in the middle to upper 50s. With mid-level lapse rates near 8 degrees C/km, this resulted in MLCAPE of 1500-2000 J/kg. Effective deep layer shear was 15-20 knots, barely supportive of multicell storm mode. In the upper levels, a longwave trough was over the western U.S. with a lead low exiting Nebraska into South Dakota, and a new more potent low dropping into the backside of the trough over the Northern Rockies.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Hamilton County

3 NE Marquette

10 0600CST 0 0 0.00K 0.00K Heavy Rain

11

Storm total rainfall report was 6.50 inches.

Hamilton County

2 S Hordville

10 0600CST 0 0 0.00K 0.00K Heavy Rain

11

Storm total rainfall report was 4.36 inches.

Hamilton County

4 SE Hordville

10 0600CST 0 0 0.00K 0.00K Heavy Rain

11

Storm total rainfall report was 4.35 inches.

Hamilton County

1 SE Marquette

10 0600CST 0 0 0.00K 0.00K Heavy Rain

11

Storm total rainfall report was 6.77 inches.

Hamilton County

4 N Aurora

10 0600CST 0 0 0.00K 0.00K Heavy Rain

11

Storm total rainfall report was 4.01 inches.

York County

3 W Gresham

10 0600CST 0 0 0.00K 0.00K Heavy Rain

11

Storm total rainfall report was 3.35 inches.

Merrick County

2 NE Chapman

10 1649CST 0 0 250.00K 250.00K Thunderstorm Wind (61EG)

1700CST

Wind gusts estimated to be near 70 MPH resulted in some irrigation pivot damage in the area. Wind was accompanied by half dollar size hail.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Merrick County

2 NE Chapman

10 1700CST 0 0 0.00K 0.00K Hail (1.25)

Hail was accompanied by 60 MPH wind gusts.

Hamilton County

Marquette

10 1705CST 0 0 0.00K 0.00K Hail (1.25)

Harlan County

9 NE Oxford

10 1725CST 0 0 250.00K 250.00K Thunderstorm Wind (74EG)

Wind gusts were estimated to be as high as 85 MPH.

Note: The estimated wind gust of 74 knots is equivalent to 85 mph.

Hamilton County

6 N Hampton

10 1741CST 0 0 0.00K 0.00K Hail (1.75)

Hamilton County

2 E Marquette

10 1800CST 0 0 250.00K 250.00K Thunderstorm Wind (61EG)

Wind gusts estimated to be near 70 MPH resulted in some pivot damage in the area.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

York County

5 W Benedict

10 1808CST 0 0 0.00K 0.00K Hail (0.88)

Hamilton County

3 WNW Marquette

10 1810CST 0 0 25.00K 1.00M Flash Flood

11 0030CST

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Training, slow moving thunderstorms with torrential rainfall resulted in flash flooding across northern Hamilton, far southwestern Polk and far north-northwestern York Counties. Hamilton County was the hardest hit, with radar estimates of 5 to 8 inches of rain. Numerous county roads were covered with water and were closed. One home near Marquette in Hamilton County had about 2 feet of water inside and around the house. Animals at the farmstead had to be moved, and witnesses claimed the horses were nearly belly-deep in water at one point. This water moved downstream into Polk and York Counties, causing flooding along the Big Blue River.

Polk County 3 SSW Polk

10	1810CST								
11	0030CST				0	0	75.00K	3.00M	Flash Flood

Training, slow moving thunderstorms with torrential rainfall resulted in flash flooding across northern Hamilton, far southwestern Polk and far north-northwestern York Counties. Hamilton County was the hardest hit, with radar estimates of 5 to 8 inches of rain. Numerous county roads were covered with water and were closed. One home near Marquette in Hamilton County had about 2 feet of water inside and around the house. Animals at the farmstead had to be moved, and witnesses claimed the horses were nearly belly-deep in water at one point. This water moved downstream into Polk and York Counties, causing flooding along the Big Blue River.

York County 2 NW Arborville

10	1810CST								
11	0030CST				0	0	10.00K	500.00K	Flash Flood

Training, slow moving thunderstorms with torrential rainfall resulted in flash flooding across northern Hamilton, far southwestern Polk and far north-northwestern York Counties. Hamilton County was the hardest hit, with radar estimates of 5 to 8 inches of rain. Numerous county roads were covered with water and were closed. One home near Marquette in Hamilton County had about 2 feet of water inside and around the house. Animals at the farmstead had to be moved, and witnesses claimed the horses were nearly belly-deep in water at one point. This water moved downstream into Polk and York Counties, causing flooding along the Big Blue River.

York County 7 N Bradshaw

10	1838CST				0	0	0.00K	0.00K	Hail (1.00)
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Hail was accompanied by 60 MPH winds.

York County 7 N Bradshaw

10	1838CST				0	0	15.00K	250.00K	Thunderstorm Wind (52EG)
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Wind gusts were estimated to be near 60 MPH and were accompanied by quarter size hail.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Adams County Kenesaw

10	1912CST				0	0	0.00K	0.00K	Hail (0.88)
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York County Benedict

10	2000CST				0	0	0.00K	0.00K	Hail (1.00)
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Clay County 5 WSW Sutton

10	2026CST				0	0	0.00K	0.00K	Hail (1.00)
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Fillmore County Shickley

10	2044CST				0	0	0.00K	0.00K	Hail (0.88)
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Thunderstorms produced mostly hail along with a little wind damage, and excessive rainfall on this Tuesday afternoon and evening. The first thunderstorms began forming just after 3 pm and were part of a broken line of isolated storms that extended from O'Neill south to near Kearney, and then southwest into Kansas. A dominant storm developed along the Hall-Howard County line by 4 p.m.. This storm became severe as it continued east, affecting adjoining portions of Hamilton and Merrick Counties through 5:30 pm CST. Around 4:50 pm CST, this storm produced a gustnado near Chapman, along with hail up to 1.5 inches in diameter, and estimated winds around 70 mph. After 5:30 pm, other storms developed in close-proximity, displaying multicell characteristics. An east-west oriented line segment of storms formed across Hamilton and York Counties. This line remained intact until 8 p.m. CST. Storms within this line trained, producing severe hail up to the size of golf balls and flash flooding from several inches of rain. Outflow winds overturned an irrigation pivot and produced blowing dust that reduced the visibility to near zero near Bradshaw. Several reports of gustnadoes were received along the leading edge of the outflow.

Meanwhile, one storm crossed into Furnas County from Kansas beginning around 4 p.m. CST. Several other thunderstorms developed around it, forming a small mostly sub-severe cluster. The initial storm briefly became severe, producing estimated winds of 85 mph in northern Furnas County. This cluster moved northeast and eventually formed a short line segment that was oriented from northwest to southeast. This line produced winds of 50 to 55 mph in a couple locations in Adams and Clay Counties. It then crossed Hall, Hamilton, and York Counties from 7 to 9 p.m. CST, adding to the already impressive rainfall amounts. Much of northeastern Hamilton County received 4 to 6 inches of rain in less than 6 hours. The highest total was 6.77 inches at Marquette. These high rainfall amounts were surrounded by a larger area of 2 to 3 inches which extended across Hall, Hamilton, and York Counties. This rain resulted in extensive flooding over northeastern Hamilton County and along the Big Blue River in Polk County.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Occluding low pressure was along the Montana-North Dakota border on this day. The triple point was over South Dakota, with a quasi-stationary warm front extending east through the Midwest and Mid-Atlantic States. The cold front was advancing eastward across Nebraska, and was moving through south central Nebraska during the late afternoon and early evening hours. In the upper levels, a broad trough covered much of the United States, anchored by an intensifying upper-low over Montana. A closed high was over Ontario, Canada. Temperatures in the pre-storm environment climbed to around 80 degrees, with dewpoints in the middle to upper 50s. Mid-level lapse rates were poor resulting in MLCAPE of not more than 1500 J/kg. Effective deep layer shear was 30 to 35 knots.

Hamilton County

1 NW Giltner

23	1634CST								
	1640CST				0	0	1.00M	500.00K	Hail (2.50)

Hail ranging from quarter to tennis ball size was reported, with the largest located northwest of town. Car windows were broken.

Clay County

3 WSW Harvard

23	1648CST								
					0	0	0.00K	0.00K	Hail (1.00)

Hamilton County

4 ESE Phillips

23	1648CST								
					0	0	0.00K	0.00K	Hail (1.00)

Clay County

Inland

23	1701CST								
					0	0	0.00K	0.00K	Hail (0.75)

Hamilton County

3 SSE Marquette

23	1707CST								
					0	0	15.00K	175.00K	Hail (1.75)

Hall County

4 NW Alda

23	1838CST								
					0	0	0.00K	0.00K	Hail (1.00)

Hall County

Grand Is

23	1857CST								
					0	0	0.00K	0.00K	Hail (1.00)

Hall County

4 NW Grand Is

2 E Alda

23	1915CST								
	2215CST				0	0	25.00K	0.00K	Flash Flood

Heavy rainfall of 2 to 3 inches resulted in flash flooding across Grand Island. The emergency manager reported that an underpass had to be closed, and that manhole covers were displaced.

Hall County

5 NNW (GRI)Grand Is Rgnl A

23	1915CST								
					0	0	150.00K	0.00K	Hail (1.75)

Webster County

Red Cloud

23	2020CST								
					0	0	0.00K	0.00K	Hail (0.88)

Hamilton County

Aurora

23	2025CST								
	2030CST				0	0	0.00K	0.00K	Hail (1.00)

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Several storms produced severe hail on this Monday late in the afternoon and into the early evening. Between noon and 1 p.m. CST, scattered showers developed over Webster and Adams Counties. There were a few embedded rumbles of thunder. These showers expanded and lifted northeast into Hall, Hamilton, and Merrick Counties. A brief non-supercell tornado touched down near Juniata, in Adams County, around 1:40 p.m. CST. This tornado occurred in the absence of any lightning and rain, although there was a shower off to the east. By 4 p.m. CST, a couple of the showers strengthened into thunderstorms. Scattered thunderstorms actually started increasing in coverage after 6 p.m. CST as an approaching shortwave trough began influencing the region. Several storms produced at least quarter size hail over Clay, Hall, Hamilton, and Webster Counties. Larger hail did occur, with tennis ball size being the largest, reported near Giltner, in southwestern Hamilton County. Car windows were broken. Between 6:30 p.m. and 8:30 p.m. CST, storms formed into a southwest-northeast oriented line across Hall and Hamilton Counties, resulting in cell-training. This resulted in rainfall totals exceeding 2 inches over Grand Island, including 2.72 inches on the northeast side of the city. Some urban flash flooding occurred, with roads being closed due to flooded underpasses. Manhole covers were also removed in some locations. The thunderstorm activity had moved east and south of south central Nebraska by 11 p.m. CST.

A north-northeast to south-southwest oriented quasi-stationary front extended from the eastern Dakota's through western Kansas into New Mexico. A lee-side low was near Colorado Springs. In the upper levels broad southwest flow was over much of the United States, with a ridge over the Great Lakes, and an elongated trough from Hudson Bay to central California. A weak shortwave trough was passing over the Central Plains. When the first storms initiated, late in the afternoon, temperatures were in the middle 70s, with dewpoints in the lower 60s. MLCAPE was between 1500 and 2000 J/kg. Effective deep layer shear was 40 to 45 knots. This environment was more than supportive of organized, persistent storms.

Furnas County

Edison

25	0023CST				0	0	0.00K	0.00K	Hail (1.00)
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Dawson County

2 S Cozad

25	1950CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts were estimated to be near 60 MPH.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Gosper County

4 N Smithfield

25	2001CST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Gosper County

6 E Johnson Res

25	2015CST				0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
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Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Phelps County

Bertrand

25	2020CST				0	0	175.00K	0.00K	Thunderstorm Wind (61EG)
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Wind gusts estimated to be as high as 70 MPH resulted in blowing dust and visibility dropping to near zero. A few large tree branches were downed in town, while just outside of town, a few irrigation pivots suffered damage.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Kearney County

2 E Norman

25	2115CST				0	0	50.00K	0.00K	Thunderstorm Wind (61MG)
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Note: The measured wind gust of 61 knots is equivalent to 70 mph.

Adams County

(HSI)Hastings Arpt

25	2139CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

One storm produced severe hail during the early morning hours, then more storms produced severe hail and near-severe wind gusts in the evening on this Wednesday. Around midnight, a strong squall line was moving out of western Nebraska into central Nebraska. To its south, numerous small cells developed between McCook and Franklin. Just after 12:20 a.m. CST, nickel to quarter size hail was reported in Edison. More storms formed with several short line segments moving across south central Nebraska during the night. The resultant mesoscale convective system completely exited the region by 8 a.m. CST. The rest of the daylight hours were quiet. A small cluster of multicell thunderstorms formed over southwest Nebraska during the late afternoon. This cluster began moving into south central Nebraska after 7:30 p.m. CST. It affected all of south central Nebraska north of Highway 6 until 11:30 pm CST. These storms produced widespread strong winds of 50 to 55 mph. There were a few severe gusts measured, the highest of which was 70 mph near the town of Norman in Kearney County and Bertrand in Phelps County.

Very little in the pattern had changed from recent days. A north-northeast to south-southwest oriented quasi-stationary front extended from the eastern Dakota's south through the Plains into New Mexico. Several weak lows were along the front, one over the Dakota's, another over Kansas, and another over southeast Colorado. In the upper levels broad southwest flow was over much of the United States, with a ridge over the Great Lakes, and an elongated trough from the Canadian Prairies to southern California. Temperatures had cooled into the lower 70s by the time the thunderstorms began to move into the region. Dewpoints were in the lower to middle 60s. However, with mid-level lapse rates around 7.5 degrees C/km, MUCAPE was 2000 -2500 J/kg. MLCAPE was around 2000 J/kg. Effectively deep layer shear was 40-45 knots. Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Fillmore County

4 W Geneva

26	0600CST			0	0	0.00K	0.00K	Heavy Rain
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27
A 24-hour rainfall total of 3.55 inches was reported.

Clay County

Edgar

26	1257CST			0	0	0.00K	0.00K	Hail (1.00)
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Webster County

3 SSW Blue Hill

26	1257CST 1307CST			0	0	15.00K	150.00K	Hail (1.50)
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Clay County

Ong

26	1307CST			0	0	0.00K	0.00K	Hail (1.75)
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Adams County

Ayr

26	1327CST			0	0	15.00K	175.00K	Hail (1.50)
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Thayer County

3 S Gilead

26	1531CST			0	0	0.00K	0.00K	Hail (0.88)
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Thayer County

Gilead

26	1542CST			0	0	0.00K	0.00K	Hail (1.00)
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Franklin County

Naponee

26	1615CST			0	0	0.00K	0.00K	Hail (1.00)
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Clay County

6 S Glenville

26	1626CST			0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
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Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Franklin County

7 W Hildreth

26	1647CST			0	0	0.00K	0.00K	Hail (1.00)
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Phelps County

3 S Funk

26	1715CST			0	0	0.00K	0.00K	Hail (0.88)
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Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Several storms produced hail up to the size of golf balls on this Thursday. Storms began forming early, with the first storms forming just after 12 p.m. CST over Webster, Nuckolls, and Thayer Counties. These storms rapidly intensified, merged into a solid line, and lifted north into Adams, Clay, and Fillmore Counties. These storms produced hail up to the size of golf balls in a few locations over Adams and Clay Counties. This line of storms stalled and gradually weakened from west to east. However, before the storms weakened over Fillmore county, multiple storms moved east within the line and resulted in 2.57 inches of rain falling between 1 and 3 p.m. CST in Geneva. A CoCoRaHS station reported a 24-hour total of 3.55 inches just west of Geneva. Before the tail end of this line exited Fillmore County, a couple small storms developed just to the south over Thayer County and they produced 1 inch hail in Gilead. While all this was in progress, another line of storms had formed over north central Kansas and this line lifted north as well. Just as the initial line of storms exited south central Nebraska and moved east into southeast Nebraska, this line of storms crossed the border into Franklin, Webster, Nuckolls, and Thayer Counties around 3:45 p.m. CST. The storms then started weakening as they lifted further north. However, nickel to quarter size hail fell in a few spots and a severe wind gust of 62 mph was measured near Glenvil. No other storms were severe after 5 p.m. CST. The depiction of surface fronts was complex. Occluding low pressure was over southern Manitoba. Early in the day, a slow-moving cold front extending south from Minnesota and Iowa into Nebraska. This front appeared to weaken during the afternoon. Meanwhile, a quasi-stationary front extended from New Mexico across Kansas into Missouri. This front lifted north through the day as a warm front, but was effectively forced back to the south as thunderstorm outflows cooled temperatures over Nebraska. In the upper levels, a longwave trough was over the western United States, with broad southwest flow from Texas to New England. A subtropical high was over the western Atlantic. During the day, a shortwave trough ejected out of the Desert Southwest into the Southern Plains, aiding in thunderstorm development. Just prior to thunderstorm initiation, temperatures were generally in the upper 70s and lower 80s, with dewpoints varying from the upper 50s to lower 70s. This surface environment was overlaid with very steep mid-level lapse rates around 9 degrees C/km, resulting in MLCAPE between 2000 and 3000 J/kg. Strong mid-level winds, combined with directional shear in the low-levels, produced effective deep layer shear between 40 and 50 knots.

Thayer County

Bruning

27	0700CST								
28				0	0	0.00K	0.00K		Heavy Rain

A 24-hour rainfall total of 4.35 inches was reported, with a 2-day total of 5.93 inches.

Nuckolls County

3 E Hardy

27	1625CST								
				0	0	0.00K	0.00K		Hail (0.88)

Thayer County

1 SE Bruning

27	1631CST								
				0	0	0.00K	0.00K		Hail (1.00)

Thayer County

Bruning

27	1639CST								
				0	0	0.00K	0.00K		Hail (1.00)

Fillmore County

5 S Strang

6 E Geneva

27	1745CST								
	2000CST			0	0	150.00K	5.00M		Flash Flood

Rainfall of 3 to 5 inches fell over a short period of time, resulting in flash flooding over portions of Fillmore and Thayer Counties. In Bruning, a storm total amount of 4.35 inches was reported. Local law enforcement reported water running over portions of Highway 14 approximately 4 miles west of Milligan.

Thayer County

4 E Bruning

27	1745CST								
	2000CST			0	0	25.00K	3.00M		Flash Flood

Rainfall of 3 to 5 inches fell over a short period of time, resulting in flash flooding over portions of Fillmore and Thayer Counties. In Bruning, a storm total amount of 4.35 inches was reported. Local law enforcement reported water running over portions of Highway 14 approximately 4 miles west of Milligan.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Isolated flash flooding occurred on this Friday afternoon and evening, along with some marginally severe hail in a couple spots. Between 3 and 5 p.m. CST, numerous small, mostly single-cell thunderstorms developed over south central Nebraska, primarily south-to-north along Highway 81. Between 4:30 and 4:40 p.m. CST, hail as large as 1 inch in diameter occurred in a couple locations in and around the town of Bruning, which is in Thayer County. Nickel size hail also occurred nearby in Hardy, which is in Nuckolls County. Several storms affected northeast Thayer and southeast Fillmore Counties, with cell training noted especially between 5 and 6:30 p.m. CST. Storms temporarily became oriented in a north-south line during that time. The 24-hour rainfall at Bruning, which is in north central Thayer County, was 4.35 inches. Most of that fell in the late afternoon and early evening hours.

These storms formed north of a wavy quasi-stationary front that extended from Michigan to low pressure over Kansas, then south through Oklahoma to New Mexico. In the upper levels, a longwave trough was moving over the Great Plains, with a small low along the Colorado-Kansas border. A large ridge was along the East Coast, anchored by a subtropical high over the western Atlantic. Extensive cloudiness kept temperatures unseasonably cool, with temperatures only in the upper 60s and low 70s as thunderstorms began to form. Dewpoints were around 60. Over north central Kansas, where the stronger storms formed, temperatures had climbed into the middle 70s with dewpoints in the middle 60s. MLCAPE was between 500 and 1000 J/kg. Deep layer shear was between 30 and 35 knots.

Furnas County
2 SW Edison

29	1431CST 1444CST						15.00K	0.00K	Hail (1.50)
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Furnas County
6 S Beaver City

29	1500CST 1800CST						0.00K	0.00K	Heavy Rain
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A storm total rainfall amount of 3.24 inches was reported.

Gosper County
17 SSW Elwood

29	1505CST						0.00K	0.00K	Hail (1.00)
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Furnas County
Beaver City

29	1531CST						0.00K	0.00K	Hail (0.88)
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Furnas County
6 S Beaver City

29	1554CST 1556CST						15.00K	150.00K	Hail (1.50)
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Harlan County
5 NE Oxford

29	1619CST						15.00K	175.00K	Hail (1.75)
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Furnas County
2 W Beaver City

29	1628CST						0.00K	0.00K	Hail (1.00)
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Adams County
9 NNE Hastings

29	1650CST						0.00K	0.00K	Hail (0.75)
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Adams County
9 NNE Hastings

29	1706CST						0.00K	0.00K	Hail (1.00)
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Clay County
Trumbull

29	1722CST 1730CST						15.00K	150.00K	Hail (1.50)
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Clay County
1 NW Harvard

29	1725CST						0.00K	0.00K	Hail (1.00)
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Webster County
2 SW Guide Rock

29	1742CST						0.00K	0.00K	Hail (1.00)
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Clay County
3 E Inland

29	1806CST						0.00K	0.00K	Hail (1.00)
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Dawson County
Gothenburg

29	1809CST						0.00K	0.00K	Hail (0.88)
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Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Dawson County 2 WNW Willow Is	29	1816CST			0	0	0.00K	0.00K	Hail (1.00)
Clay County Edgar	29	1848CST			0	0	0.00K	0.00K	Hail (1.00)
Clay County 1 SE Glenville	29	1856CST			0	0	0.00K	0.00K	Hail (1.25)
Clay County Glenville	29	1924CST			0	0	0.00K	0.00K	Hail (0.88)
Adams County 3 ESE Hastings	29	2037CST			0	0	0.00K	0.00K	Hail (0.75)
Clay County 2 S Glenville	29	2042CST			0	0	0.00K	0.00K	Hail (0.88)
Adams County 2 E Hastings	29	2050CST			0	0	0.00K	0.00K	Hail (1.00)

Severe thunderstorms produced many reports of 1 to 1.5 inch diameter hail on this Sunday, along with very heavy rain and some localized flooding. Scattered thunderstorms began forming just after 1 p.m. CST over Furnas County. The first storm to dominate produced hail up to the size of ping pong balls around the town of Edison between 2:30 and 3 p.m. CST. However, most of the hail was the size of nickels and quarters and was covering the ground. As that storm weakened, other severe storms formed, including a severe multi-cell storm which formed near and over Beaver City. This storm produced hail up to 1.5 inches in diameter. It became quasi-stationary just south of town between 3:30 p.m. CST and when it dissipated around 5 p.m. CST. A CoCoRaHS observer measured 3.24 inches of rain. Another nearby, short-lived storm produced golfball size hail over northwest Harlan County. That was the largest hail size reported in this event. Other scattered storms developed and became severe, between 3:30 p.m. and 7:30 p.m. CST, over western Dawson County, Adams, Clay, and Webster Counties. The storms over Clay County, as well as neighboring counties, were very slow-moving. The storm along the Adams-Clay County line was even quasi-stationary, resulting in very heavy rain that produced minor flooding in and around the town of Glenvil. Unfortunately, no rainfall measurements were available. Minor flooding was also reported near Sutton. The storms over northeast Adams and western Clay Counties produced a lot of hail, with quarter to ping-pong ball size hail occurring in several locations. Penny size hail was nearly covering Highway 6, southeast of Hastings, making the roads slippery. Thunderstorm development was very persistent just east and southeast of Hastings from 4 p.m. to 10 p.m. CST. Quarter size hail was reported near Hastings as late as 8:50 p.m. CST. Thunderstorm activity finally was over by 11 p.m.

All of this thunderstorm activity formed along and ahead of a weak warm front that was lifting north into Nebraska. High pressure centers were over the Northern Plains and Southern Plains. In the upper levels, fairly weak, zonal flow was covered most of the Lower 48. Nebraska was in the wake of a weak shortwave trough moving into the Great Lakes. A subtle shortwave ridge was over the Central Plains. Prior to thunderstorm development, temperatures were in the middle 80s, with dewpoints in the middle to upper 50s. Mid-level lapse rates were modestly steep, around 7 degrees C/km. Combined with the surface environment, this resulted in MLCAPE around 2000 J/kg. With weak wind fields through the troposphere, deep layer shear was approximately 20 to 25 knots.

Furnas County 2 E Cambridge

30	1925CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts were estimated to be near 60 MPH.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Clay County 2 W Inland

30	2213CST			0	0	5.00K	0.00K	Thunderstorm Wind (58MG)
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Thunderstorms produced strong, but mostly sub-severe winds on this Monday evening. They formed over southwest Nebraska, and with a combined cold pool, moved east as a squall line across all of south central Nebraska. This line moved into the Highway 283 corridor just after 7 p.m. CST and exited the Highway 81 corridor just after midnight CST, crossing the region in roughly five hours. Winds remained below 50 mph at most locations, but there were a couple spots that gusted to 50 mph, including near the towns of Elwood, in Gosper County, and Henderson in York County. Two locations did report severe winds. The highest was a measured gust of 67 mph along the Adams-Clay County line, east of Hastings. The other was an estimated gust of 60 mph over western Furnas County.

This squall line occurred in the warm sector of a low pressure system over the Dakota's. By early evening, the associated cold front was just entering the Nebraska Panhandle, and extended further southwest through Wyoming into Utah and Nevada. The original storms initiated along the lee-side trough. In the upper-levels, a ridge was long the West Coast, anchored by a subtropical high over the eastern Pacific. Downstream, fairly weak, zonal flow extended from the Northern Rockies east to New England. A shortwave trough was over Montana and Wyoming. By the time the squall line affected the region, temperatures had cooled into the 70s, with dewpoints in the middle 50s to around 60. Despite a cooling boundary layer, and the storms moving into an area of poor mid-level lapse rates, MLCAPE was still between 1000 and 2000 J/kg. Weak tropospheric winds and a unidirectional wind profile resulted in lower deep layer shear of approximately 15 to 20 knots. The squall line appeared to be outflow dominant, with upshear-tilted updrafts. Note: The measured wind gust of 58 knots is equivalent to 67 mph.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

Polk County

1 NE Blanchard 01 2200CST 0 0 0.00K 0.00K Hail (0.88)
Nickel size hail was reported near Blanchard.
A severe thunderstorm developed late in the evening and produced some nickel size hail.

Galveston County

1 ENE (GLS)Scholes Fld Gal 02 0000CST 0 0 0.00K 0.00K Hail (1.00)
Quarter size hail was reported near the intersection of 67th Street and Heards Lane.

Montgomery County

Willis 02 0130CST 0 0 0.00K 0.00K Hail (1.75)
Golf ball size hail was reported near Willis.
Late night isolated severe thunderstorms developed across parts of Southeast Texas and produced large hail.

TXZ238

Galveston

09 1115CST
1245CST 0 0 0.00K 0.00K Coastal Flood
Some coastal flooding was observed due to the combination of above normal water levels and wave run up.

Harris County

2 NNW Fairbanks 12 1913CST 0 0 3.00K 0.00K Hail (1.00)
Quarter size hail was observed near Jersey Village.

Harris County

1 ENE Jersey Village 12 1913CST
1933CST 0 0 5.00K 0.00K Hail (1.75)
Quarter to golf ball size hail that lasted for around 20 minutes was observed in the Lakeview Drive area of Jersey Village.

Harris County

1 E Fairbanks 12 1913CST 0 0 0.00K 0.00K Hail (0.75)
Penny size hail was observed.

Harris County

1 WSW Barker 12 2007CST 0 0 3.00K 0.00K Hail (1.00)
Quarter size hail was observed neat the intersection of South Fry Road and Kingsland Blvd.

Harris County

1 SW Barker 12 2010CST 0 0 0.00K 0.00K Hail (0.88)
Nickel size hail was observed near the intersection of South Fry Road and Greenwind Chase Drive.
Severe thunderstorms developed in the evening and produced large hail in and around the Houston area.

Brazoria County

1 SW El Bernardo 13 1333CST 0 0 Hail (1.00)
Quarter size hail was reported about two miles southeast of Sweeney.

Brazoria County

1 SSW Pearland 13 1533CST 0 0 Hail (0.75)
Pea to dime size hail was reported near the intersection of Walnut Street and Highway 35 in Pearland.

Harris County

3 ENE Pearland 13 1555CST 0 0 Hail (1.50)
Ping pong ball size hail was reported near the South Sam Houston Tollway.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

Harris County

3 SW Barrett

13	1658CST				0	0			Hail (0.75)
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Penny size hail was reported off the Crosby Freeway (Highway 90).

Isolated severe thunderstorms produced hail, with some up to ping pong ball size.

Harris County

1 NW Channelview

14	1435CST				0	0			Hail (0.88)
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Dime to nickel size hail from near the intersection of Interstate 10 and Beltway 8 East to the Channelview area.

Montgomery County

2 ESE Egypt

14	1445CST				0	0			Hail (0.75)
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Dime to penny size hail in The Woodlands near the intersection of Research Forest Drive and Alden Bridge Drive.

Washington County

2 WNW Brenham Muni Arpt

14	1505CST				0	0			Hail (0.75)
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Dime size hail in the vicinity of Highway 36 and Tommelson Creek.

Fort Bend County

2 W Sugarland

14	1614CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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This wind gust was measured at the Sugar Land ASOS site.

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Harris County

1 WSW Bellaire Jct

14	1709CST				0	0	50.00K	0.00K	Flash Flood
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Heavy rains produced flash flooding that lead to water rescues from vehicles in the Bellaire, Meyerland and Westbury areas.

Afternoon thunderstorms developed and produced some hail, gusty winds and flash flooding.

Brazoria County

2 W West Columbia

19	1300CST				0	0			Thunderstorm Wind (52EG)
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Thunderstorm winds downed trees and damaged power lines near the intersection of County Road 376 and FM 1301.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Brazoria County

1 NW Brazoria

19	1300CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Severe thunderstorm winds downed trees and damaged power lines near the intersection of County Road 3467 and County Road 654B.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Brazoria County

1 NE Angleton

19	1356CST				0	0			Thunderstorm Wind (52EG)
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Severe thunderstorm winds downed a tree near Northside Elementary School.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Galveston County

1 WSW Galveston

19	2115CST				0	0	0.00K	0.00K	Flash Flood
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Flash flooding occurred near the intersection of Interstate 45 and 61st Street in Galveston.

A fast eastward moving storm system tracked across the area during the day. One county reported some wind damage, and there was one flood report on Galveston Island.

Austin County

1 E Bellville

21	1007CST				0	0	0.00K	0.00K	Hail (0.75)
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Penny size hail reported near the intersection of Highway 159 East and FM 1456.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

Brazoria County
2 E Iowa Colony

21	1521CST				0	0	0.00K	3.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds downed trees on Iowa Lane just south of Highway 6.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Harris County
1 WSW Clinton Park

21	1623CST				0	0	0.00K	0.00K	Flood
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Flash flooding made roads impassable at the intersection of Interstate 45 and North Wayside Drive.

Harris County
3 E Jacinto City

21	1645CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter size hail was observed near the intersection of Beltway 8 and Interstate 45.

Harris County
1 NE Crosby

21	1700CST				0	0	0.00K	3.00K	Thunderstorm Wind (54EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Severe thunderstorm winds downed trees in Crosby.

Note: The estimated wind gust of 54 knots is equivalent to 62 mph.

Brazoria County
1 NW Manvel

21	1715CST				0	0	5.00K	0.00K	Thunderstorm Wind (52EG)
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Severe thunderstorm winds blew over a metal carport.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Brazoria County
3 SSE El Bernardo

21	1736CST				0	0	15.00K	0.00K	Thunderstorm Wind (56EG)
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Severe thunderstorm winds damaged a barn near the intersection of County Road 521 and County Road 729.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Liberty County
3 NW Kenefick

21	1753CST				0	0	0.00K	0.00K	Thunderstorm Wind (54EG)
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A severe thunderstorm caused wind damage near the intersection of FM 1008 and FM 2331 west of Dayton Lakes.

Note: The estimated wind gust of 54 knots is equivalent to 62 mph.

Brazoria County
2 W Jones Creek

21	1811CST				0	0	2.00K	0.00K	Hail (1.50)
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Ping pong ball size hail was observed in Jones Creek from this severe thunderstorm.

Brazoria County
2 W Freeport

21	1859CST				0	0	3.00K	0.00K	Lightning
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Lightning that struck and knocked over a power pole in Freeport caused power outages throughout the city.

Late afternoon through early evening severe thunderstorms developed across Southeast Texas and produced large hail, strong winds, flooding and a lightning strike.

Brazos County
3 NW Harvey

26	1130CST				0	0	7.00M		Tornado (EF1)
	1138CST	2.86	50						

Tornado touched down in College Station near the 900 block of Lincoln Avenue. It then followed an intermittent track through the Home Depot parking lot then across Route 6 just north of the intersection with University Drive. It crossed a field then produced a more continuous damage path through the Wheeler Ridge subdivision then across the Miramont subdivision. The tornado was observed to lift just north near the intersection of route 1179 and Riverstone Drive. The tornado was rated at the top of the EF1 scale as a few of the homes had significant portions of roofs removed. Majority of damage was EF0 to low-end EF1. Damage dollar amounts are estimated.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

Madison County

5 NNE Midway	26	1215CST							
4 SSE Connor		1645CST			0	0	100.00K	0.00K	Flash Flood

Numerous roads were flooded and impassable around Madisonville. SH 21 from Madisonville to FM 2548, Old Spanish Trail between I-45 and US 190, and US 190 from Madisonville to Bedia were all under water, impassable and therefore closed.

Brazos County

1 NNW Smetana	26	1250CST							
Allenfarm	27	0615CST			0	0	100.00K	0.00K	Flash Flood

High water made roads impassable including US 190 in Kurten, and SH 6 southbound at FM 2818. Many roadways were flooded and impassable between Bryan and College Station. Tennessee Road in North Bryan as well as Villa Maria Road between Texas and Cavitt Roads were impassable due to flood waters.

Burleson County

2 S Snook	26	1334CST							
		1337CST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)

Trees downed near Snook.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Houston County

3 WNW Lovelady	26	1400CST							
		1650CST			0	0	0.00K	0.00K	Flash Flood

SH 19 and FM 1280 were closed due to high flood waters covering the roadway.

Washington County

3 E William Penn	26	1403CST							
		1406CST	0.35	30	0	0	10.00K	0.00K	Tornado (EF0)

Short damage path near William Penn Rd. Numerous trees downed, few uprooted, in convergent pattern along path.

Grimes County

1 WSW Navasota Muni Arpt	26	1405CST							
					0	0	0.00K	0.00K	Thunderstorm Wind (55EG)

Thunderstorm winds downed a tree next to the bridge at the Navasota River along FM 105.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Grimes County

3 SSE Navasota Muni Arpt	26	1420CST							
		1421CST	0.11	30	0	0	50.00K	0.00K	Tornado (EF0)

Numerous trees uprooted around Wallace Pack prison complex. One of the watch tower standers witnessed tremendous increase in wind embedded in heavy rain; vehicles in parking lot were moved in different directions.

Grimes County

3 NNE Courtney	26	1428CST							
		1431CST	0.1	50	0	0	100.00K		Tornado (EF1)

Large number of large trees uprooted west of Route 6. Just east a home had its roof taken off. Damage was consistent with EF2 rating.

Grimes County

3 NNE Courtney	26	1429CST							
3 W White Hall		1432CST	1.28	100	0	0	200.00K		Tornado (EF2)

Large damage path extended from a large commercial metal building across a ranchers property and on east into a wooded area. The large metal building and a house of the property were destroyed. Around this area and in wooded area numerous large trees were uprooted and snapped. Worst of the damage was consistent with EF2 rating.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

TEXAS, Central Southeast

Washington County 6 W Burton

26	1450CST								
27	0245CST				4	0	10.00M	10.00K	Flash Flood

Flood waters inundated homes and there were numerous water rescues in the town of Brenham and around the county. Sections of Highway 36 were impassable due to water over the roadway from Brenham and Somerville. FM 2935 at New Year's Creek was closed due to flooding. All of FM 390 from Burton eastward to FM 105, as well as SH 36 at Highway 290, was closed. There were four fatalities in Washington County. Over 20 inches of rain was measured at one gauge. Damages are estimated. M16OU, F64PH, M21VE, M59VE, M49VE

Grimes County 1 NE Plantersville 3 ENE Apolonia

26	1530CST								
27	1230CST				0	0	500.00K	50.00K	Flash Flood

Water rescues were occurring through the county. FM 362 at Beason Creek was closed due to flooding. Washington Street at Foster Street, Buckingham Lane at FM 379 and Courtney Street in the town of Navasota were all impassable and closed as they were inundated with nearly two feet of water.

Montgomery County 4 WNW Bobville Station 5 S Mostyn

26	1600CST								
27	1300CST				0	0	50.00K	30.00K	Flash Flood

There were numerous water rescues around the county. Flooding caused the closure of FM 1774 at Buddy Riley Boulevard in Magnolia. Numerous other flooded roadways.

Washington County 1 ENE Prairie Hill

26	1610CST 1620CST				0	0	80.00K	0.00K	Thunderstorm Wind (60EG)
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Trailers being towed by cars and trucks were toppled along FM 50 between Brenham and Independence. The severe winds also destroyed a roof on a shed.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Montgomery County 1 SE Granger 2 SW Montgomery

26	1648CST 1708CST				0	0	10.00K	0.00K	Thunderstorm Wind (60EG)
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There was a swath of wind damage that lasted about 20 minutes between Montgomery and Conroe. Just southeast of Montgomery, a large tall tree sliced through a home. Just outside Cut and Shoot, ten trees were downed included a 100-year-old oak tree. In and around the Conroe area, large tree limbs were stripped off of trees.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Montgomery County 2 WNW Granger

26	1652CST 1653CST	0.96	300	0	0	100.00K	0.00K	Tornado (EF1)
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Isolated straight line wind damage, mainly in the form of downed trees, was found across Montgomery county (particularly the southern 2/3s part of the county). However, it appears a definitive tornado track started in western Conroe from in and just west of the Canyon Creek subdivision off of Longmire Rd. This small tornado tracked generally west-northwest to the south of FM 3083 for about a mile. The strongest winds, likely reaching 90 mph EF1 range, was near the start of the tornado just to the east of Longmire. Most of the rest of the tree damage was consistent with EF0 winds before the tornado dissipated.

Storm Data and Unusual Weather Phenomena

May 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, Central Southeast

Montgomery County

1 NE Conroe Arpt

26	1707CST				0	0	0.00K	0.00K	Thunderstorm Wind (57MG)
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This wind gust was measured at the KCXO ASOS site.
 Note: The measured wind gust of 57 knots is equivalent to 66 mph.

Washington County

1 S Brenham

26	1712CST				0	0	0.00K	0.00K	Hail (1.00)
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Quarter size hail was observed in Brenham.

Washington County

4 WSW Burton

7 E Chappell Hill

26	1715CST				0	0	0.00K	0.00K	Thunderstorm Wind (57EG)
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There were numerous reports of damage through much of the southern half of the county from near Carmine to Brenham to the Brazos River as a series of severe thunderstorms moved eastward across the county.

Strong upper level disturbances combined with above average moisture levels and favorable upper level wind patterns to produce a round of severe thunderstorms that eventually trained and produced excessive rainfall and flash flood during the afternoon hours of the 26th and on into the overnight and early morning hours of the 27th. Rainfall totals of 6 to 10 inches were common over the north and northwestern parts of Harris County into Waller, Montgomery, and Washington Counties, with much of the rain falling in a 3 to 6 hour period. Portions of Washington County recorded over 12 inches of rainfall in a 3 hour period. This event was the fourth federal disaster declaration for Harris County in the last year. Note: The estimated wind gust of 57 knots is equivalent to 66 mph.

Storm Data and Unusual Weather Phenomena

June 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northwest

Stephenson County 2 WNW Mc Connell

09	1837CST				0	0	0.00K	0.00K	Hail (1.00)
	1840CST								

The trained spotter also reported heavy rainfall.
An isolated hail storm impacted Stephenson County Illinois.

Whiteside County 2 NE Leon Corners 1 NNW Tampico

14	1632CST				0	0	0.00K	0.00K	Flash Flood
	1832CST								

A 5 inch rainfall event in one hour produced flash flooding in and around Tampico Illinois. A road 1 mile west of Tampico was closed due to flooding, and other roads in an around Tampico were reported to be covered in water. The city park in Tampico was flooded.

Heavy rain producing storms impacted Tampico, IL.

Stephenson County Loran

14	2055CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Emergency management reported tree limbs down over portions of Stephenson county in and around Freeport. Some tree limbs blocked roads. Power outages reported from Loran through Freeport around 1020 PM. The time of this report is estimated from radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Carroll County 1 E Fairhaven

14	2157CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Emergency Management reported an area of damage at 1280 Morrison Road where several trees are topped off and a silo roof is damaged. Time of this report is estimated from radar.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Carroll County 1 NE Fairhaven

14	2157CST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
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Emergency manager reported a grain bin blown inward, outbuildings damaged, and trees blown down at 19980 Thomson Road. The time is estimated from radar.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Carroll County 1 S Milledgeville

14	2205CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Emergency manager reports a large tree limb down at a residence. The time is estimated from radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Jo Daviess County 1 NW Galena

14	2250CST				0	0	0.00K	0.00K	Flash Flood
15	0400CST				0	0	0.00K	0.00K	Flash Flood

Law enforcement reported flash flooding in the city of Galena.

Carroll County 2 NNW Marcus 1 ESE Ms Pallasades Sp

15	0000CST				0	0	0.00K	0.00K	Flash Flood
	0830CST				0	0	0.00K	0.00K	Flash Flood

Emergency manager reported fairly widespread flash flooding over the northern half of Carroll county, with several roads closed in the Woodland and Washington townships in rural areas. The Plum River well out of its banks, over roads. Five mudslides occurred over highway 84 in the bluff area adjacent to Mississippi Palisades State Park, just north of the junction of highway 64 and highway 84. Plows were required to re-open the highway.

Bureau County 4 E La Moille

15	0150CST				0	0	0.00K	0.00K	Flash Flood
	0350CST				0	0	0.00K	0.00K	Flash Flood

Law enforcement reported water inundating portions of Highway 92/Highway 34 just east of La Moille, resulting in the highway being blocked off with barriers.

A cluster of strong to severe thunderstorms, with frequent lightning, a brief tornado, and heavy rain moved across eastern Iowa and northwest Illinois the afternoon and early evening of June 14, 2016. This produced flash flooding over northeast Iowa and northwest Illinois.

Storm Data and Unusual Weather Phenomena

June 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northwest

Warren County 1 SW Monmouth

22	0210CST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
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A member of the public reported two locations of trees down, one on homes in Monmouth College, and another on a mobile home in Monmouth. The time of this report has been estimated from radar.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Mercer County Seaton

22	0227CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Mercer county sheriffs office reported a large tree limb down along route 17.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Warren County 2 W Eleanor

22	0235CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A public report of 4 inch diameter tree branches blown down and flattened young corn was received.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Warren County 2 SW Monmouth

22	0255CST				0	0	0.00K	0.00K	Thunderstorm Wind (67MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

An Illinois DOT station measured a 77 mph gust along and multiple reports of flattened corn were also received from near that area.

Note: The measured wind gust of 67 knots is equivalent to 77 mph.

Bureau County 3 SSW Van Orin

22	1840CST								
	1842CST	0.58	25	0	0	0.00K	0.00K		Tornado (EF0)

National Weather Service survey found a path of minor damage in fields from a weak tornado that touched down about 4 miles west of La Moille Illinois. Storm chaser video of this tornado was seen touching down live on The Weather Channel.

Bureau County 3 ESE New Bedford

22	1904CST								
	1905CST	0.28	10	0	0	0.00K	0.00K		Tornado (EF0)

A weak tornado touched down in northwestern Bureau county shortly after 8 PM CST, June 22. A path of very minor damage was noted in a field.

Bureau County 2 SW Dover

22	1925CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Several pine trees snapped off above the ground, with numerous small to large limbs blown down. Survey confirms this straight line wind damage was caused by the rear flank downdraft.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Bureau County 2 S Dover

22	1930CST				0	0	0.00K	0.00K	Thunderstorm Wind (64EG)
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Hardwood tree branched were snapped off as reported by NWS storm survey. This straight line wind damage was caused by the rear flank downdraft of the severe thunderstorm.

Note: The estimated wind gust of 64 knots is equivalent to 74 mph.

Bureau County 2 NE Princeton

22	1932CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
	1935CST								

Law enforcement reported a semi trailer blown onto its side between Princeton and Dover.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Rock Island County 5 NE Cordova

22	1934CST				0	0	0.00K	0.00K	Funnel Cloud
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Law enforcement reported a funnel cloud.

Storm Data and Unusual Weather Phenomena

June 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northwest

Bureau County Malden

22	1935CST								
	1938CST	0.48	50	0	0	0.00K	0.00K		Tornado (EF1)

A tornado touched down in a field about 2 miles south of Malden, and moved east around one half mile before lifting. Crop damage occurred along the path length as well as damage to shingles on a residence, and several mature hardwood trees snapped off about 20 feet above the ground.

Putnam County 1 S Granville

22	2005CST			0	0	0.00K	0.00K		Thunderstorm Wind (61EG)
----	---------	--	--	---	---	-------	-------	--	--------------------------

Emergency manager reported several power lines down from trees blown down in near Granville. Time of the report is estimated from radar.

The afternoon of June 22, saw strong to severe thunderstorms form over eastern Iowa, and move into northern Illinois. The storms became supercell thunderstorms as they moved into Illinois, and produced tornadoes over portions of northern Illinois, along with wind damage and hail. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

ILLINOIS, Southwest

Montgomery County 5 SSE Coalton 9 SE Nokomis

04	0830CST								
	1200CST			0	0	0.00K	0.00K		Flash Flood

Up to four inches of rain fell in a short amount of time causing flash flooding. Several roads were flooded, including Illinois Route 16 on the northeast side of Nokomis. Two to three feet of water covered the roadway in this location.

Several storms dumped up to 4 inches of rain over portions of Montgomery County Illinois.

St. Clair County 1 ESE Roachtown

13	1630CST								
	1633CST	0.41	25	0	0	0.00K	0.00K		Tornado (EF0)

Short lived landspout type tornado observed in an open field south of Belleville off of Route 159. No damage.

St. Clair County 1 W Royal Hgts 1 SSE Hilltop

13	1810CST			0	0	0.00K	0.00K		Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several trees and power lines between 74th Street and Frank Scott Parkway.

Isolated storms developed across the area. Some of the storms produced damaging winds. Also, a landspout type tornado briefly touched down in a field just south of Belleville, Illinois. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

ILZ100-101

Madison - St. Clair

14	1100CST								
16	1800CST			0	0				Heat

High temperatures rose to the middle to upper 90s with the Heat Index around 105 degrees.

ILZ069-074-079-102

Clinton - Monroe - Randolph - Washington

15	1100CST								
16	1800CST			0	0				Heat

High temperatures rose into the middle to upper 90s with the Heat Index around 105 degrees.

ILZ074-095-097>102

Adams - Calhoun - Jersey - Madison - Monroe - Pike - St. Clair - Washington

22	1100CST								
	2000CST			0	0				Heat

High temperatures rose into the middle 90s with the Heat Index around 105 degrees.

Storm Data and Unusual Weather Phenomena

June 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

IOWA, East Central and Southeast

Linn County

Troy Mills

14	1315CST 1317CST				0	0	0.00K	0.00K	Funnel Cloud
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Law enforcement relayed numerous reports of a brief funnel cloud between the city of Troy Mills and Walker. The time and location is approximate.

Benton County

1 W Cheney

14	1616CST 1617CST	0.17	10	0	0	0.00K	0.00K	Tornado (EF0)
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Emergency management confirmed that a brief tornado touchdown occurred in a field. No damage occurred. Emergency manager confirmed video taken of the tornado shows the location and full duration of just less than 30 seconds before lifting. This tornado was seen by a large area that afternoon and was reported by numerous funnel cloud reports.

Buchanan County

2 NNW Lime Creek Co Park

14	1838CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Law enforcement reported several trees blown down and a grain bin blown down near 280th Street and Dugan Ave. The time is estimated from radar.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Delaware County

1 SE Manchester

14	1922CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Law enforcement reported a tree branch down in the 2200 block of Jefferson Road. The branch was large enough to require a deputy to remove it from the road. The time of this event is estimated from radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Dubuque County

2 NE Centralia

2 SE Peosta

14	1933CST 2333CST			0	0	0.00K	0.00K	Flash Flood
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Flash flooding was reported by spotters in an around the city of Dubuque, and surrounding rural areas near creeks. Catfish creek, southwest of the city of Dubuque was reported well out of its banks and rapidly flowing. Spotters remarked that they had not seen it this high before. Reported rainfall in Dubuque county, the evening of June 14, was 3 to 5 inches.

Jones County

1 NE Monticello

14	1955CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Local emergency management reported a large tree blown down in the city of Monticello.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Jackson County

4 SE Andrew

2 WSW La Motte

14	2036CST			0	0	0.00K	0.00K	Flash Flood
15	0000CST			0	0	0.00K	0.00K	Flash Flood

Jackson county law enforcement reported several creeks in eastern Jackson county out of their banks.

A cluster of strong to severe thunderstorms, with frequent lightning, a brief tornado, and heavy rain moved across eastern Iowa and northwest Illinois the afternoon and early evening of June 14, 2016. This produced flash flooding over northeast Iowa and northwest Illinois.

Johnson County

1 N North Liberty

22	0056CST 0101CST			0	0	0.00K	0.00K	Hail (0.75)
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Trained spotters reported 5 to 6 minutes of dime size hail.

Benton County

1 NE Newhall

22	0115CST			0	0	0.00K	0.00K	Hail (0.75)
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Law enforcement reported dime size hail.

Storm Data and Unusual Weather Phenomena

June 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

IOWA, East Central and Southeast

Muscatine County

Muscatine Muni Arpt

22	0155CST				0	0	0.00K	0.00K	Thunderstorm Wind (57MG)
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Iowa DOT AWOS observations at Muscatine airport reported 66 mph.

Note: The measured wind gust of 57 knots is equivalent to 66 mph.

Benton County

2 NNE Watkins

1 WNW Norway

22	0334CST				0	0	0.00K	0.00K	Flash Flood
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The creek running near county road E66 near the intersection with 77th street between Norway and Atkins is well out of its banks.

Linn County

3 S Cedar Rapids

4 N Western

22	0600CST				0	0	0.00K	0.00K	Flash Flood
----	---------	--	--	--	---	---	-------	-------	-------------

Law enforcement reports portions of the Sac and Fox Trail and Jones Golf Course are under water and closed.

Johnson County

Iowa City

1 SSE Iowa City Muni Arpt

22	1230CST				0	0	0.00K	0.00K	Flash Flood
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Emergency management reported the Iowa River Bike Path inundated with water, near the Highway 6 overpass.

The afternoon of June 22, saw strong to severe thunderstorms form over eastern Iowa, and move into northern Illinois. The storms became supercell thunderstorms as they moved into Illinois, and produced tornadoes over portions of northern Illinois, along with wind damage and hail.

MISSOURI, East

Cole County

1 SW Russellville

06	1857CST				0	0	0.00K	0.00K	Hail (0.88)
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Some isolated storms over central Missouri produced hail up to the size of nickels.

MOZ061-063-064

St. Charles - St. Louis - St. Louis (c)

14	1100CST								
16	1800CST				1	30			Heat

High temperatures rose into the middle to upper 90s with the Heat Index around 105 degrees. One death occurred in the City of St. Louis and the St. Louis County Health Department reported 30 injuries.

MOZ041-047>051-059>060-062-065-072>075-084>085-099

Boone - Callaway - Cole - Crawford - Franklin - Gasconade - Iron - Jefferson - Madison - Moniteau - Montgomery - Osage - Reynolds - St. Francois - Ste. Genevieve - Warren - Washington

15	1100CST								
16	1800CST				0	0			Heat

High temperatures rose into the middle to upper 90s with the Heat Index around 105 degrees.

Audrain County

4 WSW Larrabee

20	1900CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down a large tree across Highway Y about a half of a mile north of intersection with Highway 22.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Boone County

Sturgeon

1 ESE Hallsville

20	1910CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Thunderstorm winds caused scattered damage extending from Sturgeon to Hallsville. Numerous trees, tree limbs and power lines were blown down. Also, about a dozen power poles were damaged. In Sturgeon, a porch roof was blown off of a house.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Storm Data and Unusual Weather Phenomena

June 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

Audrain County

2 ENE Thompson

3 SSW Mexico Mem Arprt

20	1925CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Thunderstorm winds blew down several large trees blocking roadways. In Mexico, one tree fell onto a house causing moderate damage. Also, several power lines were blown down around town.

Isolated severe storms developed over central Missouri causing wind damage in a few locations. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

MOZ018-026>027-034>036-041>042-047>052-059>065-072

Audrain - Boone - Callaway - Cole - Crawford - Franklin - Gasconade - Jefferson - Knox - Lewis - Lincoln - Marion - Moniteau - Monroe - Montgomery - Osage - Pike - Ralls - Shelby - St. Charles - St. Louis - St. Louis (c) - Warren

22	1100CST				0	9			Heat
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High temperatures rose into the middle 90s with the Heat Index around 105 degrees. The St. Louis County Health Department reported 9 injuries.

MOZ063

St. Louis

24	1800CST				1	0	0.00K	0.00K	Heat
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The St. Louis County Health Department reported 1 heat related death. The high temperature was in the lower 90s with the Heat Index around 100 degrees. F80PH

Westwood

25	1515CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
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Three 75 foot tall trees were uprooted in the 300 block of Ladue Oaks Drive by thunderstorm winds. Also, several power lines were blown down in the area.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Jefferson County

2 WNW Danby

25	1530CST				1	0	0.00K	0.00K	Lightning
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A 72 year old man and his dog were struck and killed by lightning as storms moved through the area. They were in the front yard of the residence when it happened. M72UT

Isolate severe storms moved through the region. Some of the storms caused wind damage. Also, one person was struck and killed by lightning. M72UT

Osage County

2 N Westphalia

2 S Shubert

26	1430CST				0	0	0.00K	0.00K	Thunderstorm Wind (70EG)
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Thunderstorm winds blew down a tree onto a house causing moderate damage. Also, several other trees and power lines were blown down in the area.

Isolated severe storms moved through portions of central Missouri. There were several reports of damaging winds. Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northeast

Mchenry County

Harvard

06	0034CST				0	0	0.00K		Thunderstorm Wind (50EG)
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Large branch or portion of tree down onto fence, which destroyed the fence and laying into the neighboring yard. Relayed via Facebook. Time estimated by radar.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mchenry County

Crystal Lake

06	0100CST				0	0	0.00K		Thunderstorm Wind (50EG)
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Trees down just west of downtown Crystal Lake.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

De Kalb County

3 SW Waterman

06	0139CST				0	0	0.00K	0.00K	Hail (0.88)
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Cook County

2 S Evanston

06	0146CST				0	0	0.00K		Thunderstorm Wind (60EG)
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Tree down on car across Callan Avenue near Howard St. in Evanston. Time estimated by radar.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

La Salle County

Mendota

06	0147CST				0	0	0.00K		Thunderstorm Wind (52EG)
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Scattered tree limbs up to 4 inches in diameter down throughout town. Relayed via twitter. Time estimated by radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

La Salle County

1 NNW Ottawa

06	0200CST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Several large trees down along Oaklane Drive. Relayed via Facebook.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Cook County

3 S Alsip

06	0218CST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Aluminum flagpole bent over and snapped off. Branches off of trees. Aluminum panels pulled off fascia on home. Relayed via twitter. Time estimated by radar.

A complex of strong to severe thunderstorms producing heavy rainfall, gusty winds and prolific lightning moved across northern and central Illinois and northwest Indiana early Wednesday. Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Kane County

2 SSE Geneva

07	1355CST 1624CST				0	0	0.00K	0.00K	Flood
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Street flooding at Kirk Rd and Wilson. Water up to the tops of tires on turning lanes.

Kendall County

Plano

07	1608CST 1610CST				0	0	0.00K	0.00K	Funnel Cloud
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Funnel cloud lasted a few minutes and extended about half way to the ground.

Cook County

1 NNW Deering

07	1640CST 1745CST				0	0	0.00K	0.00K	Flood
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About a foot of standing water on some streets near Damen Ave and Melrose St.

La Salle County

5 W Leland

07	1719CST				0	0	0.00K	0.00K	Funnel Cloud
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Near LaSalle/DeKalb county line.

During the late afternoon of Thursday, July 7th, scattered storms developed across northern Illinois and slowly moved east-northeast. As the storms grew, their slow movement helped to produce locally heavy rainfall. The Doppler Radar estimated rainfall maps show the localized nature of the heavy rainfall. In addition, there were a handful of funnel cloud reports from the storms due to large scale rotation in the atmosphere. Concentrated storm rotation for tornadoes was not favored.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northeast

La Salle County

Peru	13	1614CST			0	0	0.00K	0.00K	Thunderstorm Wind (55MG)
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Note: The measured wind gust of 55 knots is equivalent to 63 mph.

La Salle County

Mendota	13	1616CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Large tree down in the 1000 block of Illinois Avenue.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

La Salle County

Streator	13	1652CST			0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
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Tree limbs of four to five inches down across the city. Largest limb is 2 feet in diameter. Average is 8 inches in diameter.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Livingston County

Forrest	13	1657CST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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There were a couple of large trees down in and near town. Time was estimated from radar.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Livingston County

Chatsworth	13	1657CST 1700CST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Trailer was blown over. Also a 10 inch diameter tree down on a carport.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

La Salle County

1 SW Ottawa	13	1700CST			0	0	0.00K	0.00K	Hail (1.00)
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Intersection of Boyce Memorial Drive and Ottawa Avenue.

La Salle County

4 ENE Sheridan	13	1700CST			0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
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Note: The measured wind gust of 54 knots is equivalent to 62 mph.

La Salle County

1 SSW Ottawa	13	1700CST			0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
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Measured by U.S. Army Corp of Engineers sensor.

Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Livingston County

Cullom	13	1705CST			0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Large tree downed. Time estimated by radar.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Kendall County

3 NE Newark	13	1715CST			0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
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Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Kankakee County

3 E Herscher	13	1722CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
---------------------	----	---------	--	--	---	---	-------	-------	--------------------------

Large tree downed onto care and home. Time estimated from radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Will County

1 SSW Braidwood	13	1727CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
------------------------	----	---------	--	--	---	---	-------	-------	--------------------------

Also pea size hail.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Kankakee County

Kankakee	13	1730CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
-----------------	----	---------	--	--	---	---	-------	-------	--------------------------

Across central and southern Kankakee County, over 200 trees and powerlines down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northeast

Kankakee County
1 E Fortinville

13	1734CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
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Stoplight damaged at Illinois Routes 1 and 17.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Kendall County
5 SE Yorkville

13	1736CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Kankakee County
1 SE Momence

13	1737CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Trees up to one and a half feet in diameter down. One tree blocking Route 1.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Kendall County
1 S Oswego
7 ENE Plattville

13	1741CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Mature trees were bending. Tree fell on Ashbrook Lane in Plainfield covering most of street. 56 knot winds were reported by broadcast media.
Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Kankakee County
Bourbonnais

13	1745CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Cook County
1 E Hazel Crest

13	1814CST				0	0		0.00K	Thunderstorm Wind (54EG)
----	---------	--	--	--	---	---	--	-------	--------------------------

Large tree over one foot in diameter downed.
A well-organized complex of thunderstorms progressed from west to east across northern Illinois and northwest Indiana, bringing scattered wind damage to mainly areas along and south of the I-80 corridor. Some of the more pronounced wind damage occurred in Kankakee County based on reports. In addition, heavy rainfall occurred causing patchy minor flooding.
Note: The estimated wind gust of 54 knots is equivalent to 62 mph.

Will County
3 ENE Beecher

17	2035CST				0	0	0.00K	0.00K	Hail (1.00)
----	---------	--	--	--	---	---	-------	-------	-------------

Kankakee County
4 SSW Buckingham

17	2041CST				0	0			Tornado (EF1)
	2048CST	2.16	100		0	0			

The tornado started approximately three quarters of a mile east-northeast of Cabery. As it crossed S 17000W Rd, there were several large metal corrugated pipes probably 10 feet in diameter rolled long distances. The tornado headed east to S 16000W Rd, and a farm outbuilding lost its roof and part of the walls collapsed. Two grain bins were destroyed. Many power lines down 7-8 mile south of Rt. 17.

Will County
2 ESE Brunning

17	2105CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Live power lines down at 13400 S. Archer in Lemont.
Very warm and moist conditions developed ahead of a cold front, which allowed strong to severe thunderstorms to develop.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mchenry County
2 ENE Belden

21	1804CST				0	0		0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	-------	--------------------------

Trees down along Rt 173 and Keystone Rd.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mchenry County
1 SE Hartland

21	1824CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Trees down near intersection of Nelson Rd and Rose Farm Rd.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Mchenry County
1 WSW Solon Mills

21	1834CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Trees down near intersection of Pioneer and Hart Roads.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northeast

Winnebago County

Beloit

21	1843CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Measured near intersection of Hayes Ave and Liston Ave.
Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Lake County

Lindenhurst

21	1845CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Numerous small to medium size tree limbs blown down. Time estimated.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Kane County

Elgin

21	1858CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Power lines blown down as well as tree limbs of 4 to 6 inches diameter blown down. Time estimated.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Winnebago County

Durand

21	1910CST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Two trees down across road with one utility pole pulled down by trees. Time estimated.
Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Cook County

Tinley Park

21	2051CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Power lines blown down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

La Salle County

Streator

21	2118CST				0	0		0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	-------	--------------------------

Multiple power poles, power lines and trees down. Several trees on houses.
Two rounds of thunderstorms bring isolated wind damage near the Illinois Wisconsin state line. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Boone County

1 NNE Belvidere

23	1557CST 2200CST				0	0	24.00K	0.00K	Flash Flood
----	--------------------	--	--	--	---	---	--------	-------	-------------

Multiple roads flooded and closed on the south side of town. Belvidere Police Department had to replace a police car damaged by flood waters.

Winnebago County

1 NNE Perryville

23	1557CST 2200CST				0	0	0.00K	0.00K	Flash Flood
----	--------------------	--	--	--	---	---	-------	-------	-------------

Roads flooded with multiple vehicles stranded and flooded along Interstate 39 and Rt. 20. A lane of traffic on Interstate 39 was closed near the Magic Waters water park in Cherry Valley.

Boone County

Belvidere

23	1558CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Numerous large branches downed in the city. Radar estimated time.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lake County

1 WNW Ft Sheridan

23	1605CST 2245CST				0	0	0.00K	0.00K	Flash Flood
----	--------------------	--	--	--	---	---	-------	-------	-------------

Car stranded in two and a half feet of water at Green Bay and Burchell Ave.

Mchenry County

Marengo

23	1615CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Large tree blown down. Time estimated by radar.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northeast

Winnebago County Cherry Vly

23	1632CST				0	0	0.00K	0.00K	Hail (1.00)
----	---------	--	--	--	---	---	-------	-------	-------------

There were also reports of 55 to 60 mph winds and very heavy rainfall with visibilities around 200 feet.

Cook County 1 WSW Kenilworth

23	1640CST 2245CST				0	0	0.00K	0.00K	Flash Flood
----	--------------------	--	--	--	---	---	-------	-------	-------------

Numerous stranded cars at the viaduct at Wilson St and Winnetka Rd.

Cook County 1 SE Northfield

23	1640CST 2245CST				0	0	0.00K	0.00K	Flash Flood
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Traffic standstill on Interstate 94 at Winnetka Rd. Flooded roads have forced people onto roofs of cars.

Cook County Evanston 1 ENE Morton Grove

23	1715CST 1728CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Several 6 inch diameter branches down in Evanston. In Wilmette, IL lightning struck and downed a 30 ft long branch which took down power lines with an estimated 200 homes without power. Winds estimated at 60 mph on Dempster St just west of Skokie Blvd in Skokie, IL.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Cook County 3 S Evanston

23	1742CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A few large limbs downed. Radar estimated time.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Cook County 3 S Evanston

23	1742CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A few large limbs downed. Radar estimated time.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Kane County 4 NNE Elgin

23	1808CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Branches down Rt. 25 and Sunset Park Dr.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Ogle County 5 NW Polo

23	1858CST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Old shed knocked down, with a portion of an old barn damaged and branches downed. Radar estimated time.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Lee County Dixon

23	1908CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Multiple power lines down in the town of Dixon. Time estimated from radar.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lee County 2 SE Scarboro

23	2013CST				0	0	0.00K	0.00K	Thunderstorm Wind (55EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Heavy rain and continuous lightning.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Grundy County 3 S Morris

23	2139CST				0	0	0.00K	0.00K	Thunderstorm Wind (57EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Couple trees downed. Numerous large branches downed. Outbuilding damaged. Radar estimated time.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northeast

An extremely humid and unstable air mass on Saturday July 23 set the stage for strong to severe storms to develop mid to late afternoon along the I-90 corridor in far northern Illinois. These storms ended up shifting very slowly southeast, bringing flash flooding to parts of Belvidere and Rockford, as well as near the Lake and Cook Counties border. Severe winds with gusts around 60 mph were scattered within this area. Another potent round of storms developed across northeast Iowa and moved eastward into northern Illinois around sunset. These brought isolated severe winds in north central Illinois as well as additional heavy rainfall. Note: The estimated wind gust of 57 knots is equivalent to 66 mph.

Kane County

5 SSE Algonquin

24	1606CST				0	0	0.00K	0.00K	Hail (0.88)
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Relayed via social media.

Cook County

2 WSW Sutton

24	1612CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Nine trees blown down near Shoe Factory Rd and I-90. Time estimated.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Cook County

5 NNW Chicago 1 SE Kedzie

24	1728CST 2130CST				0	0	0.00K	0.00K	Flash Flood
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Flooded viaduct along with multiple reports of water on roads on the north side of the city of Chicago.

Cook County

Kedzie

24	1729CST				0	0		0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--	-------	--------------------------

Numerous large branches down. Estimated time per radar.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Cook County

2 ESE Avondale

24	1738CST				0	0	0.00K	0.00K	Hail (1.00)
----	---------	--	--	--	---	---	-------	-------	-------------

Hail near Buena Park.

Cook County

3 NNW Chicago

24	1740CST 1745CST				0	0		0.00K	Thunderstorm Wind (63MG)
----	--------------------	--	--	--	---	---	--	-------	--------------------------

At 540 pm CST, Racine blue line station canopy collapsed due to wind, with the structure falling onto the third rail apparently causing the sparking and explosions seen on video. At 540 pm CST, wires downed onto CTA Brown Line approximately 3 miles north-northwest of Chicago. At 544 pm CST, there was a measured 73 mph wind gust approximately 1 mile south-southeast of Chicago near Michigan and Roosevelt in the South Loop. Multiple street lights were damaged. Numerous trees blown down approximately 2 miles south-southeast of Chicago.

Note: The measured wind gust of 63 knots is equivalent to 72 mph.

Cook County

Blue Is

24	1830CST				0	0	0.00K	0.00K	Thunderstorm Wind (59MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Numerous trees down and snapped, power lines down, and numerous power poles down. A couple of power poles were snapped. Radar indications show this was a microburst. Radar estimated time.

Note: The measured wind gust of 59 knots is equivalent to 68 mph.

Kankakee County

3 ENE Momence

24	1942CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Six utility poles bent on 4000N between 6000E and 8000E and a half dozen trees downed. Radar indications are this was a microburst.

Heat indices of 100 to 115 allowed thunderstorms to sweep through northern Illinois bringing isolated wind damage as well as localized flooding. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Winnebago County

Winnebago

28	1214CST				0	0	0.00K	0.00K	Funnel Cloud
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Multiple reports of funnel clouds from the Seward and Winnebago area.

Scattered thunderstorms went through northern Illinois during the afternoon and evening. Heavy rain brought some minor flooding, and there were some reports of funnel clouds.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northeast

Cook County

1 SW Berger

1 ENE Phoenix

29	1240CST								
	2145CST				0	0	0.00K	0.00K	Flash Flood

Numerous roads closed due to flooding. Houses with 3 feet of water in them and parking lots flooded.

Du Page County

Willowbrook

29	1240CST								
	2145CST				0	0	0.00K	0.00K	Flash Flood

Multiple roads blocked by flood waters. Damage to an electrical substation because of continued rising waters. Over a foot of water in parking lots.

Du Page County

2 S Belmont

2 W Woodridge

29	1240CST								
	1915CST				0	0	0.00K	0.00K	Flash Flood

Water estimated about 6 inches deep on 75th St west of Janes Ave. Sections of Janes Avenue are impassable between 75th and Boughton. Water also reported up to the base of car doors in parking lots at Boughton and Janes Ave. Rains of over three inches were reported in under an hour. Southbound Rt 53 closed near 83rd St due to flooding.

Winnebago County

2 E Camp Grant

29	1544CST								
					0	0	0.00K	0.00K	Thunderstorm Wind (50EG)

Large tree blown down on Linden Rd.

Scattered thunderstorms quickly became numerous along the I-88 corridor on the early afternoon of Friday, July 29th. These were extremely slow moving, leading to large totals in a short amount of time. With antecedent wet conditions, this rainfall brought flash flooding to DeKalb, Kane, DuPage, and Cook Counties. Some of the flooding persisted into the day after. In addition, the DuPage River at Bolingbrook reached a top 10 crest in its 20 year period of record. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

ILLINOIS, Northwest

Jo Daviess County

2 NW Council Hill Station

05	2335CST								
					0	0	0.00K	0.00K	Thunderstorm Wind (61EG)

Several trees were down near Council Hill Road and W East Road. The time of the event was estimated by radar.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Jo Daviess County

3 E Galena

05	2335CST								
					0	0	0.00K	0.00K	Thunderstorm Wind (56EG)

A few trees were down near Guildford Road and Stagecoach Trail. The time of the event was estimated based on radar.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Stephenson County

Davis

06	0015CST								
					0	0	0.00K	0.00K	Thunderstorm Wind (50EG)

One large tree limb was down over 4 inches in diameter with numerous smaller ones. This report was a delayed report.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Whiteside County

1 W Sterling

06	0054CST								
					0	0	0.00K	0.00K	Thunderstorm Wind (50EG)

Strong winds blew a tree onto power lines and damaged the power pole.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Henry County

1 ESE Nekoma

06	0315CST								
					0	0	0.00K	0.00K	Thunderstorm Wind (60EG)

A few large trees were reported down. The time was estimated based upon radar.

A thunderstorm complex moved south from Wisconsin into northwestern Illinois producing several reports of damaging wind. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northwest

Warren County
Gerlaw

10	1430CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A trained spotter reported several tree branches were down, including one branch on a power pole. The time was estimated by radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Warren County
1 SW Alexis

10	1435CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported estimated winds of 50 to 60 MPH.

An upper level disturbance produced a line of thunderstorms with isolated damaging winds. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Mcdonough County
2 SSW Macomb

13	1426CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported several tree branches were down with diameters up to 5 inches.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Mercer County
Aledo

13	1430CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The emergency manager reported furniture blown around and a semi trailer was blown over at the Mercer County Fair in Aledo. Some trees were also blown down in town. Winds were estimated around 60 MPH.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Rock Island County
1 N Coyne Center

13	1433CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The public reported a large power pole was snapped half way up near 106th Ave and US 67 with the report received via Facebook. The time of the event was estimated by radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Warren County
Woodvale

13	1434CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Local law enforcement reported large tree branches were down across the road 1 mile north of Lake Warren.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Rock Island County
1 NW Blackhawk State Park

13	1435CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported a large tree branch was blown down. The time was estimated by radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Rock Island County
1 E (MLI) Quad City Arpt

13	1440CST				0	0	0.00K	0.00K	Thunderstorm Wind (51MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The Quad City Airport ASOS at Moline reported a measured wind gust of 59 MPH.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Henry County
1 E Orion

13	1445CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The local law enforcement reported trees down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Rock Island County
1 E (MLI) Quad City Arpt

13	1447CST				0	0	0.00K	0.00K	Thunderstorm Wind (51MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The Quad City Regional Airport ASOS at Moline measured a peak wind gust of 59 MPH.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Henry County
1 N Colona

13	1450CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported numerous tree branches were blown down around town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northwest

Henry County 1 N Colona

13	1455CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported a couple of tree branches down that were 3 to 4 inches in diameter.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Henry County Geneseo

13	1500CST				0	0			Thunderstorm Wind (60EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Local law enforcement reported trees were down.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Henry County 1 E Galva

13	1503CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Local law enforcement reported trees were down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Henry County 3 S Bradenburg Corners

13	1506CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Local law enforcement reported trees were down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Bureau County 1 N Princeton

13	1545CST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported a 3 inch diameter tree limb was down.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Putnam County 2 WSW Goose Lake

13	1549CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The emergency manager reported several large trees were down near Goose Lake.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Putnam County 1 S Magnolia

13	1606CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The emergency manager reported trees and power poles were down near town. The time was estimated by radar.

A cold front moved across the area spawning numerous severe thunderstorms with damaging winds during the afternoon hours.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Putnam County 2 ENE Putnam

17	1918CST 1919CST	1.19	25	0	0	0.00K	0.00K	Tornado (EF0)
----	--------------------	------	----	---	---	-------	-------	---------------

The local fire chief reported a brief touchdown with no significant damage. The time was estimated by radar.

Putnam County 1 S Florid

17	1924CST 1925CST	0.24	25	0	0	0.00K	0.00K	Tornado (EF0)
----	--------------------	------	----	---	---	-------	-------	---------------

Local law enforcement reported a brief touchdown. Most of the time it was a funnel going up and down from the cloud base.

A cold front produced late afternoon thunderstorms with a couple of brief Tornadoes spotted just before sunset.

Stephenson County Lena

21	1920CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The emergency manager reported trees were down in the area. The time was estimated by radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Jo Daviess County 1 E Apple River

21	1927CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Local law enforcement reported trees were down along with some power lines near Stagecoach Trail west of Apple River. A tree was also down across the railroad tracks along Stagecoach Trail. Winds were estimated to be up to near 70 MPH.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Northwest

Stephenson County

1 N Dakota

21	1930CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported tree limbs greater than 2 inches in diameter were down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Jo Daviess County

1 N Nora

21	1934CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported a tree branch 4 inches in diameter was down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Carroll County

1 W Shannon

21	1950CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported tree branches were down. The time was estimated by radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Jo Daviess County

1 W Stockton

21	2010CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Local law enforcement reported trees and power lines were down. The time was estimated by radar.

A convective complex moved into Northwest Illinois from Wisconsin producing several damaging winds across this area. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Jo Daviess County

1 W Galena

23	1628CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A state official reported power lines were down from strong winds.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Henry County

3 N Geneseo

23	2028CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A NWS employee reported numerous large trees were down over property fences. Several trees were down or uprooted in the town of Geneseo. The event time was estimated by radar.

Thunderstorms from an upper level disturbance moved into the region from Iowa with a couple of damaging wind events reported. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

McDonough County

1 SE Argyle Lake Sp

24	2003CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter report tree branches in excess of 2 inches in diameter were blown down.

Pulse thunderstorms formed late in the afternoon in a hot, moist unstable airmass with one storm producing damaging winds in the early evening hours. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Whiteside County

Unionville

29	1710CST 1850CST				0	0	0.00K	0.00K	Flash Flood
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The emergency manager reported water was over Highway 30 near Sawyer Road.

Whiteside County

Unionville

29	1751CST 1851CST				0	0	500.00K	500.00K	Flash Flood
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The public reported several roads were closed in Morrison due to high water across the roads.

An upper level disturbance produced thunderstorms with heavy rain that resulting in a couple of localized flash flooding events.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Southwest

Adams County
2 NE Quincy

07	0705CST				0	0	0.00K	0.00K	Hail (1.00)
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ILLINOIS, Southwest

Adams County
(UIN)Quincy Muni Arp
1 N Camp Pt

07	0711CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Brown County
1 WNW Ripley

07	0746CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down several trees around town.

A mesoscale convective complex moved across the region during the morning hours of July 7th. There were numerous reports of wind damage associated with these storms. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Pike County
1 SSW Hull

13	1320CST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down several trees in Hull.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Adams County
1 SSW Quincy
Coatsburg

13	1325CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down numerous trees and tree limbs, especially on the south and southeast side of Quincy. One large tree fell onto a house on the southeast side of town causing moderate damage. Numerous tree limbs were blown down in Coatsburg.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Pike County
1 SSE Pleasant Hill
Greenpond

13	1348CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down several large trees as well as numerous tree limbs. A couple of trees were blown down at the intersection of Illinois Route 96 and County Road 10. Also, several trees were blown down onto Illinois Route 100 south of Milton.

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Calhoun County
Bellevue

13	1355CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down several power lines around town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Calhoun County
1 N Hardin
Brussels

13	1405CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down numerous trees between Hardin and Brussels.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Jersey County
Grafton
1 SW Dow

13	1430CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down several trees onto Illinois Route 100 in Grafton. Also, in Dow, several trees were blown down.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Madison County
Alton
1 NNW Alhambra

13	1445CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

As a line of severe storms moved through northern Madison County, numerous trees, tree limbs and power lines were blown down between Alton, Worden and Alhambra.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Southwest

Monroe County

1 NE Columbia Gebhardt Ar Waterloo	13	1445CST 1450CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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As a line of severe thunderstorms moved through, numerous trees, tree limbs and power lines were blown down between Columbia and Waterloo. One fallen tree damaged the roof of house near Waterloo, causing moderate damage.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

St. Clair County

1 N East Carondelet 3 E (BLV)Scott Afb Belle	13	1445CST 1505CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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A line of severe storms moved through St. Clair County. Numerous trees, tree limbs and power lines were blown down in Dupo, Centreville, Belleville, Swansea, Scott Air Force Base, Lebanon, and Mascoutah. Also, part of a roof was blown off of a structure in East Carondelet. In Belleville, a man was electrocuted after the storms moved through when he made contact with a fence that was charged by a live downed power line while trying to move a fallen tree limb.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Macoupin County

Modesto	13	1448CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down several power lines around town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Macoupin County

1 WNW Hettick	13	1450CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down several power lines around town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Madison County

Granite City 1 S Highland	13	1450CST 1520CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Another enhanced area of wind damage occurred along and south of Interstate 70 in Madison County. Numerous trees, tree limbs and power lines were blown down in Granite City, Mitchell, Edwardsville, Maryville, Collinsville, Troy, St. Jacob, and Highland. Two houses in Highland sustained minor guttering and siding damage.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Macoupin County

Chesterfield 1 E Carlinville	13	1455CST 1510CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large trees, numerous tree limbs and power lines in an area from Chesterfield to Carlinville.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Randolph County

2 WSW Red Bud 1 NE Sparta	13	1500CST 1520CST			0	0	0.00K	0.00K	Thunderstorm Wind (60MG)
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Thunderstorm winds blew down numerous trees, tree limbs and power lines in Red Bud, Baldwin, and Sparta.

Note: The measured wind gust of 60 knots is equivalent to 69 mph.

St. Clair County

1 W Freeburg Old Marissa	13	1505CST 1515CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Another area of enhanced wind damage in St. Clair County extended from Freeburg to Marissa from this line of severe storms. Numerous trees, tree limbs and power lines were blown down. In Freeburg, several homes sustained damage from fallen trees and a couple of power poles were snapped off. Also, a number of homes sustained shingle and siding damage.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Southwest

Randolph County

**1 WSW Menard
1 ENE Steeleville**

13	1510CST 1520CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down several trees, numerous tree limbs and power lines from Chester to Steeleville.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Washington County

**1 SSE Venedy Station
Richview**

13	1514CST 1540CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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A line of severe storms moved through the northern portions of Washington County. Numerous trees, tree limbs and power lines were blown down in Okawville, Addieville, Nashville, Hoyleton, and Irving.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Clinton County

**2 SSW Trenton
1 SE Carlyle**

13	1515CST 1535CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A line of severe storms moved across Clinton County blowing down numerous trees, tree limbs and power lines. The towns that sustained damage were New Baden, Trenton, St. Rose, Damiansville, Breese, Bartelso, and Carlyle. A couple of homes in Carlyle had minor shingle damage.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Bond County

**Pocahontas
Mulberry Grove**

13	1520CST 1540CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds caused widespread damage between Pocahontas, Greenville, and Mulberry Grove. Numerous trees, tree limbs and power lines were blown down. In Greenville, an amateur radio antenna was bent and one fallen tree caused moderate damage to a home. In Mulberry Grove, the winds caused some damage to the roof of a mobile home.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Montgomery County

**Waggoner
3 SSE Coffeen**

13	1520CST 1535CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

A line of severe storms moved through Montgomery County. Numerous trees, tree limbs and power lines were blown down countywide. Damage was reported in Waggoner, Litchfield, Hillsboro, Donnellson, and Coffeen. In Donnellson, two grain bins and a shed were destroyed.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Washington County

Lively Grove

13	1520CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down several trees, tree limbs and power lines around town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Marion County

**1 ESE Junction City
3 S Salem**

13	1538CST 1551CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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A line of storms moved through Marion County. The most significant damage was across the southern half of the county. Numerous trees, tree limbs, power lines and a few power poles were blown down in Centralia, Odin and Salem.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Fayette County

1 S Ramsey

13	1543CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several trees and numerous tree limbs and power lines around town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Southwest

Fayette County

**Vandalia
St Elmo**

13	1543CST 1600CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down numerous trees, tree limbs and power lines in Vandalia, Brownstown, and St. Elmo. A few of the fallen trees blocked U.S. Highway 51 in Vandalia.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Marion County

Alma

13	1555CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down a couple of trees, tree limbs and power lines around town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Fayette County

1 W Farina

13	1558CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down a few trees and numerous tree limbs and power lines around town.

A line of severe storms moved across the region during the afternoon hours of July 13th. There were numerous reports of wind damage with this line of storms. In Belleville (St. Clair County, Illinois), a man was electrocuted after the storms moved through when he made contact with a fence that was charged by a live downed power line while trying to move a fallen tree limb. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

St. Clair County

(BLV)Scott Afb Belle

14	1758CST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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Isolated severe storms popped up across the area with some severe thunderstorm winds. Note: The measured wind gust of 50 knots is equivalent to 58 mph.

**ILZ058>060-064>
065-069>070-074-
079-095>102**

**Adams - Bond - Brown - Calhoun - Clinton - Fayette - Greene - Jersey - Macoupin - Madison - Marion -
Monroe - Montgomery - Pike - Randolph - St. Clair - Washington**

18	1100CST								
24	1800CST				0	0			Excessive Heat

Excessive Heat gripped the region from July 18 - July 24. High temperatures rose into the mid to upper 90s with the Heat Index up to 110 degrees.

Brown County

1 WNW Hersman

19	1640CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down two trees.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Adams County

(UIN)Quincy Muni Arp

19	1643CST				0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Brown County

1 NW Versailles

19	1655CST 1704CST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
----	--------------------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down at least 6 trees along Illinois Route 99 from Versailles southeastward towards the Brown/Pike County line.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Pike County

1 NNE Pittsfield

19	1730CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down several large tree limbs on the north side of town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Pike County

1 N Pearl

19	1755CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Thunderstorm winds blew down a few trees around town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

ILLINOIS, Southwest

Calhoun County 1 NNW Hardin

19	1825CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down a number of trees around town.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

St. Clair County 1 E East Swansea

19	2040CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds uprooted a tree on North Charles Street near intersection with Illinois Route 161. Also, numerous tree limbs were blown down in the area.
Scattered strong to severe storms moved southeast across the region. There were reports of damaging winds with some of the storms. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Madison County 3 WSW St Jacob 1 W Pontoon Beach

20	0645CST 0945CST				0	0	0.00K	0.00K	Flash Flood
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Up to 6 inches of rain fell in a short amount of time causing flash flooding. Numerous roads were flooded including the intersection of Illinois Route 140 at Prairie Street in Bethalto, a railroad under pass just northwest of Edwardsville, and several streets in Moro.

Macoupin County 2 SSW Brighton

20	0900CST 1030CST				0	0	0.00K	0.00K	Flash Flood
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Up to 4 inches of rain fell in a short amount of time causing flash flooding. Several roads across southwestern Macoupin County were flooded, including Piasa Road just northeast of Brighton.

A line of slow moving storms tracked south across west central, southwest Illinois on July 20th. Up to 4 inches of rain was reported with these storms, with locally higher amounts. There were several reports of flash flooding.

INDIANA, Northwest

Benton County Fowler

07	1840EST				0	0	0.00K	0.00K	Funnel Cloud
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Benton County Emergency Manager relayed reports of funnel clouds, near and south of Boswell and south of Fowler.

During the late afternoon of Thursday, July 7th, scattered storms developed across northern Illinois and slowly moved east-northeast. In addition, there were a handful of funnel cloud reports from the storms due to large scale rotation in the atmosphere.

INZ001

Lake

09	1330CST 1530CST				3	3	0.00K	0.00K	Rip Current
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Hazardous swim conditions existed across northwest Indiana beaches during the day and evening hours as gusty northwest winds caused wave heights up to 9 feet. M26IW, M37IW, ??IW

Newton County 1 NW Kentland Muni Arpt

13	1705CST 1810CST				0	0	1.00K	0.00K	Flash Flood
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U.S. Highway 41 closed due to water. Almost two and a half inches fell in 2 hours across the area.

Newton County 2 SW Roselawn

13	1759CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Large tree downed on State Route 55.

A well-organized complex of thunderstorms progressed from west to east across northern Illinois and northwest Indiana, bringing scattered wind damage to mainly areas along and south of the I-80 corridor. In addition, heavy rainfall occurred causing patchy minor flooding. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Lake County 2 SSW (GYG) Gary Muni Arpt

21	1204CST				0	0	0.00K		Thunderstorm Wind (55EG)
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Two large trees downed in residential neighborhood near 165th St. and Cline Ave. Time estimated from radar.

Note: The estimated wind gust of 55 knots is equivalent to 63 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

INDIANA, Northwest

Lake County

(GYG) Gary Muni Arpt

21 1214CST 0 0 0.00K 0.00K Thunderstorm Wind (54MG)

Measured at Gary Airport.

Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Porter County

Chesterton

South Haven

21 1238CST 0 0 0.00K Thunderstorm Wind (52EG)

Numerous branches off of trees in Chesterton. In South Haven several medium size tree branches and power lines downed.

Two rounds of thunderstorms bring isolated wind damage to far northwest Indiana. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

IOWA, East Central and Southeast

Linn County

3 S Cedar Rapids

06 0132CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)

A trained spotter reported 55 to 60 MPH winds and power out at his residence.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Linn County

(CID) Cedar Rapids Ar

06 0135CST 0 0 0.00K 0.00K Thunderstorm Wind (55MG)

The ASOS measured maximum wind gust at Cedar Rapids Regional Airport.

Note: The measured wind gust of 55 knots is equivalent to 63 mph.

Johnson County

2 ENE Iowa City Muni Arpt

06 0143CST 0 0 0.00K 0.00K Thunderstorm Wind (50EG)

A trained spotter reported several tree branches around 4 inches in diameter were down around the neighborhood. The time was estimated based upon radar.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Linn County

1 NE Marion

06 0146CST 0 0 0.00K 0.00K Thunderstorm Wind (52MG)

Received from a local Iowa Mesonet RWIS site of a measured maximum wind gust.

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Linn County

4 NNW Ely

06 0147CST 0 0 0.00K 0.00K Thunderstorm Wind (54MG)

Measured wind gust from an Iowa Mesonet site southeast of Cedar Rapids.

Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Johnson County

Iowa City Muni Arpt

06 0149CST 0 0 0.00K 0.00K Thunderstorm Wind (51MG)

The Iowa City ASOS site just southwest of Iowa City measured maximum wind gust.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Jones County

1 S Anamosa

06 0152CST 0 0 0.00K 0.00K Thunderstorm Wind (50EG)

A large tree was down across a road near the intersection of north Ford and East Liberty Streets. The time of the event was estimated based upon radar.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Jones County

1 NE Monticello

06 0155CST 0 0 0.00K 0.00K Thunderstorm Wind (50EG)

A public report of several tree limbs over 3 inches in diameter down within town. Also, one large tree was also down north of town on Highway 38. This report was relayed by KCRG.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Delaware County

1 S Hopkinton

06 0157CST 0 0 0.00K 0.00K Thunderstorm Wind (50EG)

A large tree was reported down blocking a road. The time was estimated based upon radar.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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CORRECTIONS

IOWA, East Central and Southeast

Dubuque County

1 E Cascade

06	0207CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported multiple trees and power lines were down within town. The time was estimated based upon radar.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Dubuque County

1 E Cascade

06	0207CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported wind gusts up to 70 MPH in Cascade.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Scott County

1 NW Plainview

06	0218CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

An area of corn was flattened by high winds. The time was estimated based upon radar.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Scott County

2 NNW Davenport

06	0230CST				0	0	0.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Many tree limbs over 3 inches in diameter were blown down near 42nd and Division Street. An 8-inch diameter tree was also snapped off near its base.

A weak cool front spawned widespread thunderstorms resulting in numerous reports of winds between 40 to 70 MPH along and north of I-80 in Iowa. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Scott County

2 NNW Davenport

12	0230CST				0	0	2000.00K	0.00K	Thunderstorm Wind (43EG)
----	---------	--	--	--	---	---	----------	-------	--------------------------

A large, old tree fell onto three vehicles near Davenport Avenue and Kirkwood Boulevard during the early morning. A few utility lines were also knocked down by the tree. The time was estimated by radar.

An isolated thunderstorm in a very moist, unstable air mass resulted in a damaging wind report. Note: The estimated wind gust of 43 knots is equivalent to 49 mph.

Keokuk County

1 N Sigourney

13	1250CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported 3 trees were down in the town of Sigourney. The time was estimated by radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Keokuk County

1 W South English

13	1310CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The town fire department report power was out in portions of the town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Washington County

1 E Washington

13	1335CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

The county emergency manager reported some trees were down in the city of Washington.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Washington County

1 E Washington

13	1335CST				0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The AWOS site at Washington reported a 54 Kt wind gust.

Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Muscatine County

1 W Muscatine

13	1340CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A trained spotter reported several branches were down varying in size from 2 to 18.5 inches in diameter along Peartree Lane.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Louisa County

1 NE Columbus City

13	1344CST				0	0	2000.00K		Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	----------	--	--------------------------

A trained spotter reported several limbs and trees were down in town. A few of the trees fell on homes.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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CORRECTIONS

IOWA, East Central and Southeast

Muscatine County

3 NNE Muscatine

13	1355CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A trained spotter reported several small trees were snapped and branches were down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Muscatine County

Wildcat Den State Pk

13	1408CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A trained spotter reported a single 16.5 inch diameter tree branch was down near the Wildcat Den State Park.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Scott County

2 NNW Davenport

13	1448CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A NWS employee reported a few 4 to 6 inch diameter tree branches were down near Royal Oaks Drive and Marquette Street.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Scott County

1 E Bettendorf

13	1450CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A NWS employee reported several tree branches were down with the largest a foot in diameter near the village of East Davenport.

A cold front moved across the area spawning numerous severe thunderstorms with damaging winds during the afternoon hours.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Buchanan County

1 W Jesup

17	0349CST				0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Local media report of an empty grain bin that was destroyed and blown into another structure.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Buchanan County

1 W Jesup

17	0354CST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The fire department reported a grain bin was destroyed with another having its side pushed in by the wind.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Buchanan County

1 NNW Independence

17	0355CST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter estimated winds of 70 to 75 mph based on the movement of the trees. No damage was visible at the time of the report.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Benton County

1 S Vinton

17	0358CST 0400CST	1.59	100	0	0	5			Tornado (EF2)
----	--------------------	------	-----	---	---	---	--	--	---------------

A tornado tracked across the southern parts of Vinton, with damage to over a dozen homes, an apartment complex and other buildings including some roofs removed. Numerous power poles and trees were down with damage to other structures like a cell phone tower and some corn fields.

Linn County

1 SE Palo

17	0410CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter observed power flashes around 5:10 AM CDT this morning and later in the morning there were power lines observed down in the area with the power out.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Linn County

2 SSW Cedar Rapids

17	0415CST				0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The KCRG weather equipment measured 61 MPH at the Xavier High School on the west side of Cedar Rapids.

Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Benton County

1 ESE Norway

1 E Walford

17	0415CST 0419CST	3.46	75	0	0	25.00K	15.00K		Tornado (EF1)
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Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

IOWA, East Central and Southeast

A tornado touched down southeast of Norway and tracked southeast to Walford and then into Linn County. It damaged 2 farmsteads before reaching Walford. In Walford, it damaged the roofs of numerous homes.

Linn County 4 SW Fairfax

17	0419CST								
	0421CST	0.53	75	0	4	250.00K	0.00K	Tornado (EF2)	

A tornado from Benton County continued southeast through southeastern portions of Walford. The tornado damaged the roofs of numerous homes. One home was completely destroyed when it collapsed on itself, apparently aided by wind blown debris.

Delaware County 1 SSW Manchester

17	0425CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	---	---	-------	-------	--------------------------

A storm survey team observed numerous tree branches down that were greater than 6 inches in diameter. The time is estimated based on radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Jackson County 1 E Maquoketa

17	0502CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	---	---	-------	-------	--------------------------

The emergency manager reported a couple of trees were uprooted in the town of Maquoketa.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Jackson County Andrew

17	0503CST							
	0504CST	1	50	0	0	5000.00K		Tornado (EF1)

A NWS storm survey team reported an EF-1 tornado crossed the southern parts of the town of Andrew. A building at the local coop was destroyed and numerous trees were snapped.

Clinton County 3 SSE Calamus

17	0513CST			0	0			Thunderstorm Wind (52EG)
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A public drone video showed that two apparent severe thunderstorm down-bursts had damaged corn in a field south of Calamus.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Scott County 2 SSW Scott County Park

17	0522CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Estimated winds of 60 MPH by a NWS Employee.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Scott County 1 N Gambrell

17	0522CST			0	0			Thunderstorm Wind (52EG)
----	---------	--	--	---	---	--	--	--------------------------

A COOP Observer reported a Mulberry tree was blown over, numerous other tree limbs were down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Clinton County Dewitt

17	0523CST			0	0			Thunderstorm Wind (52EG)
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The De Witt law enforcement reported trees were down in the town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Clinton County Dewitt

17	0525CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	---	---	-------	-------	--------------------------

The emergency manager reported numerous trees were down on the southeast side of the town of De Witt. A few trees fell on the roofs of houses.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Scott County 1 S Parkview

17	0525CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	---	---	-------	-------	--------------------------

A NWS employee reported a 3 inch tree limb was down in a driveway.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

IOWA, East Central and Southeast

Scott County

1 WNW Davenport

17	0525CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A trained spotter reported tree branches were down along the 2200 block of North Washington Street in Davenport. The time was estimated using radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Scott County

2 SE Parkview

17	0527CST								
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4 SSE Scott County Park

	0530CST	1.95	10	0	0				Tornado (EF0)
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A NWS storm survey team reported a brief EF-0 tornado did damage to trees and downed corn stalks.

Scott County

1 NNE Davenport Arpt

17	0530CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A NWS employee reported 4 to 6 inch diameter branches were broken off and blown 100 to 200 yards. The tree was along U.S. 61 north of Le Claire road east of Eldridge.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Scott County

2 NW Bettendorf

17	0535CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A NWS employee reported a tree was uprooted and the crown of a tree was snapped along with several 6 inch diameter branches down. Time was estimated by the radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Scott County

3 SW Princeton

17	0536CST								
	0539CST	2.09	100	0	0				Tornado (EF1)

A NWS storm survey team reported a brief EF-1 tornado did some damage to corn crops and some hardwood trees were snapped off.

A nearly stationary frontal boundary spawned a line of thunderstorms that produced numerous reports of damaging winds and isolated tornadoes.

Cedar County

1 NE Tipton

21	2225CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A tree a foot and a half in diameter was down.

An isolated thunderstorm formed in a moist, unstable air mass that produced one damaging wind report. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Buchanan County

2 W Independence

23	1430CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter estimated winds up to 65 MPH along with very heavy rain.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Buchanan County

1 NNW Independence

23	1435CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter estimated wind speeds of 60 to 65 MPH.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Buchanan County

1 NNW Independence

23	1435CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported a 4 inch diameter tree branch was snapped off a tree.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Buchanan County

1 E Fontana County Park

23	1449CST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The emergency manager estimated winds of up to 70 to 80 MPH with downed trees at the local campground.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Buchanan County

1 E Fontana County Park

23	1449CST				0	0			Thunderstorm Wind (65EG)
----	---------	--	--	--	---	---	--	--	--------------------------

The emergency manager reported several trees were down at the local campground.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons		Estimated Damage		Character of Storm
					Killed	Injured	Property	Crops	

CORRECTIONS

IOWA, East Central and Southeast

Buchanan County

Independence

23	1503CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported numerous tree branches were down across town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Buchanan County

5 NE Monti

23	1505CST				0	0	0.00K	0.00K	Tornado (EF1)
	1506CST	0.05	25		0	0	0.00K	0.00K	

A tornado touched down near the county line and moved east into Delaware County.

Delaware County

3 SSW Masonville

23	1506CST				0	0	5.00K	0.00K	Tornado (EF1)
	1507CST	0.11	25		0	0	5.00K	0.00K	

A tornado moved east from Buchanan County and a roof of a barn was removed before lifting.

Delaware County

1 NW Manchester

23	1510CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A public report of 2 estimated 8 inch in diameter trees were down. This report was received by Twitter and the time was estimated by radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Delaware County

1 WSW Turtle Creek Park

23	1518CST				0	0			Tornado (EF1)
	1519CST	0.22	10		0	0			

A public video of a waterspout crossing a portion of Lake Delhi and coming ashore and damaging some trees.

Delaware County

Delhi

23	1521CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A trained spotter reported 3 tree limbs approximately 6 to 12 inches in diameter were down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Delaware County

1 S Hopkinton

23	1525CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A trained spotter reported via facebook several large trees and some branches were down. The time was estimated using radar.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Buchanan County

1 WNW Independence

23	1536CST				0	0	2000.00K	500.00K	Flash Flood
	1736CST								

A trained spotter reported flash flooding in Independence. The gravel road at the high school complex was washed out and the parking lot was under several inches of water.

Dubuque County

2 NNW Worthington

23	1546CST				0	0	0.00K	0.00K	Tornado (EF0)
	1548CST	0.78	25		0	0	0.00K	0.00K	

Local law enforcement reported a brief tornado between Farley, Worthington, and Dyersville.

Buchanan County

2 WNW Independence

23	1615CST				0	0	500.00K	500.00K	Flash Flood
	1815CST								

A trained spotter reported small streams are out of their banks with localized flash flooding in some parts of the town. Received over 2.5 inches of rain in 40 minutes.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

IOWA, East Central and Southeast

Jones County
1 S Wyoming

23	1630CST				0	0	0.00K	0.00K	Thunderstorm Wind (60EG)
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The emergency manager reported partial trees were down. The time was estimated based on radar.

Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Dubuque County
2 S Sageville
2 SW Center Grove

23	1650CST				0	0	500.00K	500.00K	Flash Flood
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Amateur radio report received of water over several roads in downtown Dubuque including Central Avenue and Jackson Streets which were closed.

Jackson County
1 SW Monmouth

23	1718CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A NWS employee reported large branches were downed by the high wind.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Jones County
1 N Monticello

23	1730CST				0	0	1000.00K	1000.00K	Flash Flood
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The emergency manager reported water up to 1.5 feet in depth on the outdoor track at the fairgrounds.

A disturbance interacting with a frontal system produced an area of severe thunderstorms with numerous damaging winds, some flash flooding and a few isolated, brief tornadoes.

Lee County
Montrose

24	1911CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A trained spotter reported estimated winds of 50 to 60 MPH.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Lee County
Montrose

24	1911CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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A trained spotter reported a large tree branch was down at the local residence.

The back end of a passing cold front spawned an isolated severe thunderstorm in extreme southeastern Iowa. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Louisa County
2 W Gladwin

29	1936CST				0	0	2000.00K	500.00K	Flash Flood
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A trained spotter reported heavy rains had produced washed out locations on gravel roads in the area.

A passing upper level disturbance interacting with a cold front produced thunderstorms with heavy rain and an isolated flash flooding event due to heavy rain.

KANSAS, North Central

Osborne County
3 E Osborne

05	2230CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts were estimated to be near 60 MPH.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

KANSAS, North Central

There was a single severe wind gust over Osborne County late on this Tuesday evening. Thunderstorms affected portions of northwest Kansas as early as late afternoon, but north central Kansas was not impacted until later. Between 9 and 10 p.m. CST, scattered storms developed over Phillips, Rooks, and Osborne Counties. The only storm in which severe weather was reported was over northern Osborne County. Around 10:30 p.m. CST, the public estimated winds around 60 mph in the town of Osborne. A mesonet site from the Kansas State University, just northwest of town, measured 53 mph.

At dawn, a quasi-stationary front extended from the Ohio Valley through Missouri, turning northwest across northeast Kansas into south central Nebraska. This front lifted northeast as a warm front and was out of Kansas by midday. A very weak cold front was sagging southward through the Northern Plains. This front entered northern Nebraska during the afternoon and extended roughly along I-80, in Nebraska, from west to east by mid-evening. The upper levels were characterized by zonal flow, with a very slight trough over the Pacific Northwest and a slight ridge over the Great Lakes. Despite Kansas being just south of the Westerlies, a weak/subtle shortwave trough was moving through. This was a hot day, with high temperatures in the upper 90s to near 100, and dewpoints in the lower to middle 60s. However, by the time thunderstorms began developing, temperatures had cooled into the lower 80s, and dewpoints had climbed upper 60s. Combined with very steep mid-level lapse rates of 8 deg C/km, MLCAPE was around 3000 J/kg. Due to the weak wind profile, effective deep layer shear was only 25 kts. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Smith County 1 NNW Cora

06	2340CST				0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
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The tail end of a bow echo produced severe winds over part of north central Kansas on this Wednesday night. This was a very busy evening and night for thunderstorms over Nebraska. Three individual squall lines formed from northeast to southwest, two of which evolved into small-scale bow echoes. The southernmost bow echo began as a small cluster of storms early in the evening, just north of the state line in southwest Nebraska. By 9 p.m. CST, the bow echo had formed in the McCook vicinity, with a measured gust of 62 mph at the McCook airport, at 8:58 p.m. CST. This bow echo expanded in size and tracked mostly across south central Nebraska, between Interstate 80 and the Kansas state line. Shortly after 10 p.m. CST, the gust front penetrated north Phillips County, and by 11 p.m. CST, thunderstorms at the tail end of the bow crossed the state line into northeast Phillips County. These storms advanced into Smith and Jewell Counties through 2 a.m. CST, gradually becoming oriented from west to east before exiting north central Kansas. A mesonet station a few miles northwest of Lebanon measured a gust of 62 mph a little before midnight CST.

A very weak cold front sagged into Nebraska the previous night and was located roughly along the northern Kansas border daybreak Wednesday. As the day progressed, the front gradually lifted north as a warm front as low pressure over Wyoming deepened to 1000 mb. In the upper levels, the flow was zonal with the Westerlies confined to the northern third of the United States. A subtropical high was over Texas. 500 mb observations suggest there was a weak/subtle shortwave trough moving across the Central Plains, possibly aiding thunderstorm development. Just prior to thunderstorms moving into north central Kansas, temperatures were in the upper 70s, and dewpoints were around 70. Yet, mid-level lapse rates were very steep (8 degrees C/km), resulting in MLCAPE between 2000 and 4000 J/kg. Effective deep layer shear was around 50 kts. Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Mitchell County 1 NW Asherville

11	2233CST				0	0	0.00K	0.00K	Hail (1.00)
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Mitchell County Beloit

12	0012CST				0	0	0.00K	0.00K	Hail (0.88)
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Mitchell County Beloit

12	0015CST				0	0	0.00K	0.00K	Hail (1.00)
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Multicell thunderstorms produced minimally severe hail in Mitchell County around midnight CST on this Monday night. A couple of very isolated thunderstorms tried to form during the evening, but storms struggled to develop. It wasn't until 9:30 p.m. CST that a short line segment of storms rapidly initiated over Mitchell County, from southwest to northeast. These storms weren't severe and moved east of the county. Numerous thunderstorms then fired in a southwest-northeast line across north central Kansas into eastern Nebraska around 11 p.m. CST, including isolated cells developing ahead of the line. This line formed across Rooks, Osborne, Mitchell, and Jewell Counties. These storms migrated out of these Counties by 1 a.m. CST. One of the embedded storms tracked across northern Mitchell County and produced hail up to the size of quarters from Beloit down to near Simpson.

A very weak, slow-moving cold front was advancing through north central Kansas. These storms developed along and just behind the front. In the upper levels, the Westerlies were zonal, with a slight trough from the Pacific Northwest into the Northern Plains, and a slight ridge over the Great Lakes. A closed, baroclinic low was over southern Canada, just north of North Dakota. Just prior to widespread thunderstorm initiation, temperatures remained very warm, in the lower to middle 80s, with dewpoints in the lower 70s. With mid-level lapse rates around 7.5 degrees C/km, MLCAPE was slightly more than 3000 J/kg. Deep layer shear was around 35 kts right along the front.

Rooks County 4 ESE Palco

13	0416CST				0	0	10.00K	0.00K	Thunderstorm Wind (56MG)
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Power outages were reported in the area.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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CORRECTIONS

KANSAS, North Central

Mitchell County

Glen Elder

13	0550CST				0	0	10.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts estimated to be near 60 MPH knocked down tree limbs of 3 to 5 inches in diameter.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Mitchell County

Beloit

13	0620CST				0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
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Severe winds and some tree damage occurred across portions of north central Kansas around daybreak on this Wednesday. Scattered thunderstorms had been in progress over northwest Kansas after midnight. Between 2 and 3 a.m. CST, multicell cluster of thunderstorms intensified between Hoxie and Hill City, with severe hail and wind reported. By 4 a.m. CST, the northern portion of this cluster began moving into Rooks County. It continued east through Osborne and Mitchell Counties, exiting Mitchell County by 6:45 a.m. CST. Widespread wind gusts between 53 and 57 mph were measured. The highest winds measured were a gust of 65 mph at Beloit and near the village of Palco, in Rooks County. Small to medium size tree limbs were also snapped off in Glen Elder and Cawker City.

A deep, occluded low pressure system was over southern Manitoba, with the trailing cold front extending from the Midwest through Nebraska and northwest Kansas into Colorado. The initial storms developed near this front, but subsequently propagated into the warm sector. In the upper levels, low pressure was over south-central Canada with fairly zonal, but cyclonic, flow across the northern half of the U.S. A suppressed subtropical high was along the Mexico-U.S. border. In the pre-storm environment, temperatures were in the lower to middle 70s, and dewpoints were in the lower 70s. With steep mid-level lapse rates between 7.5 and 8 degrees C/km, MLCAPE was around 3000 J/kg, with MUCAPE between 3500 and 3900 J/kg. Effective deep layer shear was around 30 kts. Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Phillips County

Prairie View

6 E Phillipsburg

28	1515CST				0	0	25.00K	0.00K	Thunderstorm Wind (61EG)
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Wind gusts were estimated to be near 70 MPH. Near Prairie View, an under-construction grain bin was blown over. In Phillipsburg, several trees up to 12 inches in diameter were downed, causing power outages. A local business lost a portion of its roof.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Phillips County

3 W Logan

3 WSW Speed

28	1520CST				0	0	25.00K	0.00K	Thunderstorm Wind (61MG)
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A mesonet site located 3 miles west-southwest of Speed measured a peak gust of 70 MPH. Another mesonet site located in Logan measured a peak gust of 62 MPH.

Note: The measured wind gust of 61 knots is equivalent to 70 mph.

Smith County

1 N Kensington

Smith Center Arpt

28	1555CST				0	0	25.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gust estimates of 60 to 70 MPH were reported, with the AWOS at the Smith Center Airport measuring a peak gust of 71 MPH. Tree damage was reported in Athol.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Osborne County

2 SW Alton

28	1611CST				0	0	25.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts were estimated to be near 60 MPH.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Mitchell County

Beloit

28	1643CST				0	0	25.00K	0.00K	Thunderstorm Wind (59MG)
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A peak wind gust of 68 MPH was measured by a mesonet site in Beloit. Tree damage was reported in town, with limbs up to 6 inches in diameter downed.

Note: The measured wind gust of 59 knots is equivalent to 68 mph.

Smith County

Smith Center Arpt

28	1647CST				0	0	25.00K	0.00K	Thunderstorm Wind (66MG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

This peak gust was measured on the backside of the storm. Tree damage was reported in Smith Center.

Note: The measured wind gust of 66 knots is equivalent to 76 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

KANSAS, North Central

Smith County

Smith Center Arpt

28	1654CST				0	0	5.00K	0.00K	Thunderstorm Wind (54MG)
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This gust was measured on the backside of the storm.

Widespread severe winds and some wind damage occurred over much of north central Kansas on this Thursday afternoon. A couple small areas of thunderstorm activity were ongoing over the Nebraska panhandle during the morning. Between 10 a.m. and noon CST, a short squall-line (roughly 2 counties wide) developed and was moving through northeast Colorado and southwest Nebraska. It continued southeastward and entered north central Kansas a little after 3 p.m. CST. In the preceding 30 minutes, it had taken on a bow shape. This bow echo raked north central Kansas between 3 and 5:30 p.m. CST. The apex of the bow tracked across southern Phillips County, along the Smith-Osborne County line into northern Mitchell County. This is where the most intense winds and damage occurred. Winds were measured between 50 and 62 mph along its entire path, with a peak gusts of 68 mph in Beloit and 71 mph at Smith Center. Blown down trees and snapped off branches were reported in a few spots, and a roof was blown off part of a business in Phillipsburg.

The initial storms developed in upslope flow behind a weak cold front that had passed through the area the previous evening. By the time the storms were affecting north central Kansas, the front was along the Kansas-Oklahoma border, and weak high moved into Nebraska. In the upper levels, a broad trough extended across the north central and northeast U.S., while a low amplitude subtropical high was over the West. A weak shortwave trough was over Montana and Wyoming at 6 a.m. CST. By early evening, it had migrated into Minnesota, northwest Iowa, and Nebraska. The pre-convective environment was characterized by temperatures in the 80s, with dewpoints in the upper 60s. Mid-level lapse rates were poor, resulting in modest MLCAPE of only 900 to 1400 J/kg, and MUCAPE was not much higher. Effectively deep layer shear was around 35 kts. Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Osborne County

1 NNW Osborne

30	2300CST				0	0	0.00K	0.00K	Heavy Rain
31	0300CST				0	0	0.00K	0.00K	Heavy Rain

Rainfall total of 3.68 inches was measured by a KSU mesonet site.

Rooks County

4 N Stockton

31	0035CST				0	0	25.00K	100.00K	Hail (1.50)
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Osborne County

Osborne

31	0500CST				0	0	0.00K	0.00K	Heavy Rain
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A storm total rainfall amount of 3.36 inches was reported.

Osborne County

1 NNW Osborne

31	0500CST				0	0	0.00K	0.00K	Heavy Rain
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A storm total rainfall amount of 3.85 inches was reported, most of which fell between 1-3 a.m.

Osborne County

2 SW Alton

31	0700CST				0	0	0.00K	0.00K	Heavy Rain
----	---------	--	--	--	---	---	-------	-------	------------

A storm total rainfall amount of 3.27 inches was reported.

Heavy rain and a little severe hail occurred on this Saturday night. The first couple storms initiated over Norton County between 9 and 10 p.m. CST. Additional storms formed southeastward across Phillips into Rooks County. A short line segment of multi-cell storms evolved, with new development extending further southeast into Osborne County after 11 p.m. CST. Numerous other single cell storms then developed across Rooks, Osborne, and Mitchell Counties, with cell mergers eventually resulting in a large cluster of storms that propagated east across Osborne and Mitchell Counties. Two to four inches of rain fell across Rooks, Osborne, and Mitchell Counties, mostly within a 2-hour period. The highest rainfall reported was 3.85 inches in Osborne. One storm did produce hail up to 1.5 inches in diameter just north of Stockton. That was the only severe weather reported, but winds were measured at 56 mph in rural Mitchell County, a few miles east of Tipton.

At sunset Saturday evening, a quasi-stationary front was oriented east-to-west from the Mid-Atlantic and Ohio Valley through the mid-Mississippi Valley to near the Kansas-Oklahoma border. Its western extent was banked up against the Rockies. A low pressure system was over Montana. As the low continued to mature, the front began lifting north as a warm front. These storms formed on the cool side of the surface front and by daybreak Sunday, the front extended from northwest-to-southeast across Kansas. In the upper levels, the Westerlies were over the northern half of the U.S. and were characterized by low amplitude. A slight ridge was over the Northern Rockies, with a slight trough over the Midwest and Great Lakes. A low was over southwest Canada, with a shortwave trough moving into the Pacific Northwest. In the pre-convective environment, surface temperatures were in the middle 70s, with dewpoints in the upper 60s to near 70. Mid-level lapse rates were between 7 and 7.4 degrees C/km, resulting in MUCAPE of 2000-2500 J/kg. Effective deep layer shear was 25-30 kts.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

LAKE MICHIGAN

LMZ741-745

Burns Harbor To Michigan City In - Wilmette Harbor To Northerly Island II

06	0206CST 0249CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A complex of strong to severe thunderstorms producing heavy rainfall, gusty winds and prolific lightning moved across northern and central Illinois, northwest Indiana and Lake Michigan early Wednesday.

LMZ741-745

Burns Harbor To Michigan City In - Wilmette Harbor To Northerly Island II

13	1900CST 1910CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A well-organized complex of thunderstorms progressed from west to east across northern Illinois and northwest Indiana, bringing scattered wind damage to mainly areas along and south of the I-80 corridor.

LMZ741

Wilmette Harbor To Northerly Island II

17	1242CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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LMZ745

Burns Harbor To Michigan City In

18	0036CST 0048CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Very warm and moist conditions developed ahead of a cold front, which allowed strong to severe thunderstorms to develop.

LMZ740

Winthrop Harbor To Wilmette Harbor II

20	2351CST				0	0	0.00K	0.00K	Marine High Wind
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A wake low moved across the area during the early morning hours, bringing gusty winds to Lake Michigan.

21	1110CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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21	1130CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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LMZ740-744

Gary To Burns Harbor In - Winthrop Harbor To Wilmette Harbor II

21	1240CST 2120CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Two rounds of thunderstorms bring isolated wind damage in far northwest Indiana and near the Illinois Wisconsin state line.

LMZ740-742-745

Burns Harbor To Michigan City In - Northerly Island To Calumet Harbor II - Winthrop Harbor To Wilmette Harbor II

23	1655CST 1840CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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An extremely humid and unstable air mass on Saturday July 23 set the stage for strong to severe storms to develop mid to late afternoon along the I-90 corridor in far northern Illinois, and these storms moved over Lake Michigan. Severe winds with gusts around 60 mph were scattered within this area.

LMZ741-744-745

Burns Harbor To Michigan City In - Gary To Burns Harbor In - Wilmette Harbor To Northerly Island II

24	1744CST 1840CST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Thunderstorms swept across Lake Michigan bringing isolated wind damage.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

LAKE SUPERIOR

LSZ145>147-162

Duluth Mn To Pt Wing Wi - Ls W Of In Saxon Hbr Wi To Grand Portage Mn Byd 5nm - Pt Wing To Sand Is Wi - Sand Is To Bayfield Wi

21	0239CST 0340CST				0	0			Marine Thunderstorm Wind
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A cluster of thunderstorms developed over eastern North Dakota and northwestern Minnesota the evening of Wednesday July 20th. The outflow from the storms coalesced into a couple main bow echoes that quickly sped across northeast and central Minnesota and then over western Lake Superior during the early morning hours of Thursday July 21st. It produced widespread straight-line wind gusts of 60 to 80 mph across northeast Minnesota, especially closer to the Duluth area by the time it reached Lake Superior. One of the hardest hit areas was Duluth, with a couple wind gust reports around 100 mph, including from the Algoma Guardian, a ship that was moving through the Duluth ship canal when the winds struck. The derecho raced across Lake Superior, doing damage to parts of the south side of the Lake along northwest Wisconsin, including to the Apostle Islands.

MINNESOTA, Northeast

**Itasca County
7 N Ball Club**

05	1625CST				0	0			Hail (0.88)
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The hail lasted for about 2 minutes. The largest stones were about the size of nickels.

**Cass County
8 E Bena**

05	1625CST				0	0			Thunderstorm Wind (56EG)
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Many trees were blown down on Highway 2 between mile marker 145 and 157.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

**Itasca County
7 N Ball Club**

05	1628CST				0	0			Thunderstorm Wind (52EG)
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A couple of 8 to 10 diameter trees were blown down. The power was out.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

**Itasca County
Zemple**

05	1645CST				0	0			Thunderstorm Wind (61EG)
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The spotter estimated wind gusts to 70 mph. There were a lot trees blown down across the county roads in and near Deer River.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

**Itasca County
4 NNW Grand Rapids**

05	1700CST				0	0			Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Multiple trees were blown down in the area. The largest trees were 2' to 3' in diameter.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

**Itasca County
(GPZ)Grand Rapids Ar**

05	1702CST				0	0			Thunderstorm Wind (52EG)
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Six to eight inch diameter trees were blown down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

**Itasca County
Big Fork Muni Arpt**

05	1707CST				0	0			Thunderstorm Wind (51MG)
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The wind measurement was from the station EFFM5.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

**St. Louis County
2 ESE Toivola**

05	1756CST				0	0			Thunderstorm Wind (56EG)
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A 14 to 16 diameter maple tree split just above the trunk and was knocked over.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

**St. Louis County
Island Lake**

05	1838CST				0	0			Thunderstorm Wind (56EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Large trees and power lines were blown down.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MINNESOTA, Northeast

St. Louis County

6 NE Arnold

05	1845CST				0	0			Thunderstorm Wind (62MG)
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The measurement was from a public weather station.
Thunderstorms brought hail and damaging winds to parts of northeast Minnesota during the late afternoon and early evening of July 5th. Note: The measured wind gust of 62 knots is equivalent to 71 mph.

Cass County

2 SSW Backus

07	1721CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A 10 to 12 diameter pine tree was blown down.
A thunderstorm brought damaging winds to the Backus, MN area of north central Minnesota during the early evening of July 7th. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Crow Wing County

1 S Jenkins

11	0230CST				0	0			Thunderstorm Wind (52EG)
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A 10 diameter tree was blown down.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Crow Wing County

2 ENE Manhattan Beach

11	0235CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A small evergreen tree was snapped.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Crow Wing County

1 W Pelican Lakes

11	0239CST				0	0			Hail (0.75)
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The report was via mping.

Crow Wing County

(BRD)Weiland Fld Bra

11	0241CST				0	0			Thunderstorm Wind (51MG)
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The weather station which recorded the wind was the Brainerd RAWS.
Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Crow Wing County

1 SE Brainerd

11	0246CST				0	0			Hail (1.50)
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Crow Wing County

1 S Brainerd

11	0250CST				0	0			Hail (0.88)
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There were dime to nickel sized hail.

Crow Wing County

Crosby

11	0258CST				0	0			Hail (1.00)
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Crow Wing County

1 NE Ironton

11	0259CST				0	0			Hail (1.50)
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Crow Wing County

1 N Crosby

11	0300CST				0	0			Hail (1.00)
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Thunderstorms brought hail and damaging winds to parts of Crow Wing County, in central Minnesota, during the early morning hours of July 11th, including the Brainerd area.

Crow Wing County

1 N Ironton

11	1354CST				0	0			Hail (0.88)
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Crow Wing County

1 S Deerwood

11	1402CST				0	0			Hail (1.00)
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There was video of the falling hail up to the size of quarters.

Pine County

Sandstone

11	1417CST				0	0			Thunderstorm Wind (52EG)
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Downed trees also brought down power lines.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Aitkin County

1 S Kimberly

11	1630CST				0	0	0.00K	0.00K	Flash Flood
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There was 10 to 12 of water on the Roadway at the intersection of County Road 5 and Rice River Crossing near Kimberly, MN.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MINNESOTA, Northeast

Aitkin County 5 S East Lake

11	1630CST				0	0	0.00K	0.00K	Flash Flood
	2130CST								

Ten to 12 of water covered County Road 4 near the bridge over the Rice River.

Aitkin County 2 SSE Aitkin

11	1630CST				0	0	0.00K	0.00K	Flash Flood
	2130CST								

There was 10 to 12 of water of the roadway at the intersection of 344th Street and County Road 12. A car was pushed by the water.

Crow Wing County Crosby

11	1726CST				0	0	0.00K	0.00K	Flash Flood
	2130CST								

There was flooding in low-lying areas of Crosby, MN, such as in the park near Serpent Lake.

Crow Wing County 2 E Baxter 2 SW Brainerd

11	1815CST				0	0	0.00K	0.00K	Flash Flood
12	0015CST								

There was 1' of water on the road in the Industrial Park area in Baxter, MN. There was also water covering a stretch of Highway 371 in Baxter.

Crow Wing County 5 N Baxter

11	1815CST				0	0	0.00K	0.00K	Flash Flood
12	0015CST								

Water covered the intersection of Highway 371 and Birchdale Road.

Aitkin County 1 SSE East Lake

11	1851CST				0	0	0.00K	0.00K	Flash Flood
12	0100CST								

The Aitkin County Sheriff's Office reported flooding along a stretch of County Road 13 between the communities of East Lake and Lawler.

Carlton County 3 WNW Frogner

11	1925CST				0	0	0.00K	0.00K	Flash Flood
12	0125CST								

Floodwaters washed out parts of Sheetz Road, and water was flowing into the windows and garage of a residence on the road.

Carlton County 7 NE Automba

11	2000CST				0	0	0.00K	0.00K	Flash Flood
12	0200CST								

Floodwaters near the intersection of County Roads 129 and 73 made the road impassable.

Carlton County 1 N Moose Lake

11	2000CST				0	0	0.00K	0.00K	Flash Flood
12	0200CST								

Floodwaters washed out a stretch of County Road 61 near the intersection with Mills Road. There was about 1' of standing water.

Carlton County 1 WNW Moose Lake

11	2000CST				0	0	0.00K	0.00K	Flash Flood
12	0200CST								

There was a lot of standing water at the intersection of Elm Avenue and Arrowhead Lane.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MINNESOTA, Northeast

Carlton County

1 NW Moose Lake

11	2000CST								
12	0200CST				0	0	0.00K	0.00K	Flash Flood

There was flooding in front of the Moose Lake Implement and Sport Monday evening, as well the nearby areas of Fifth Street and Industrial Road.

Pine County

1 W Hinckley

11	2112CST								
12	0312CST				0	0	0.00K	0.00K	Flash Flood

Some low-lying areas of Hinckley had more than 6 of water over the roads, including on a stretch of Dunn Avenue, and near the intersection of 3rd Street and Lawler Avenue.

Aitkin County

6 WNW Solana

11	2200CST								
12	0400CST				0	0	0.00K	0.00K	Flash Flood

The Duluth News Tribune reported that the Aitkin County Sheriff's Office reported Highway 27 and 65 were under water in the Dads Corner, MN area.

Crow Wing County

2 NE Baxter

2 W Brainerd

11	2200CST								
12	0400CST				0	0	0.00K	0.00K	Flash Flood

There was standing water near the intersection of Highway 371 and Wioda Road in Baxter, MN.

Crow Wing County

7 SSE Emily

11	2200CST								
12	0400CST				0	0	0.00K	0.00K	Flash Flood

The Crow Wing County Sheriff's Office reported a stretch of County Road 105 near Thompson Lake was closed due to flooding.

Pine County

3 ENE Finlayson

11	2200CST								
12	0400CST				0	0	0.00K	0.00K	Flash Flood

The Pine County Sheriff's Office reported water over the road near the intersection of Highway 61 and Eds Road.

Pine County

Askov

11	2200CST								
12	0400CST				0	0	0.00K	0.00K	Flash Flood

The Pine County Sheriff's Office reported Pioneer Lane was under water in Askov, MN.

Pine County

1 NNE Sandstone

11	2200CST								
12	0400CST				0	0	0.00K	0.00K	Flash Flood

The Pine County Sheriff's Office reported Ash Avenue in Sandstone, MN, near the park, was under 4 to 5 feet of water.

Pine County

1 WNW Sturgeon Lake

11	2200CST								
12	0400CST				0	0	0.00K	0.00K	Flash Flood

The Moose Horn River swelled and flooded the Farm to Market Road (Highway 46) bridge just west of the Sturgeon Lake, MN.

Pine County

1 WNW Sturgeon Lake

11	2200CST								
12	0400CST				0	0	0.00K	0.00K	Flash Flood

The Pine County Sheriff's Office reported roads and yards within Sturgeon Lake, MN under water.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MINNESOTA, Northeast

Pine County

1 NE Bruno

11	2200CST								
12	0400CST			0	0	0.00K	0.00K	Flash Flood	

The Minnesota Department of Transportation closed Highway 23 in and near Bruno, MN because of flooding.

Crow Wing County

2 ENE Baxter

11	2230CST								
12	0430CST			0	0	0.00K	0.00K	Flash Flood	

There was water covering the road at the intersection of Highway 371 and Excelsior Road in Baxter, MN.

Pine County

1 NW Sandstone Arpt

1 N Hinckley

11	2230CST								
12	0430CST			0	0	0.00K	0.00K	Flash Flood	

The Minnesota Department of Transportation closed the stretch of Interstate 35 between Hinckley and Sandstone for a short period around midnight because of water on the roadway. Traffic was re-routed to Highway 61. The interstate was partially opened by 1 am in the morning.

Thunderstorms brought hail and damaging winds to isolated parts of central and east central Minnesota during the afternoon of July 11th, as well as a long period of heavy rains into the evening. A stationary front pumped very humid air into Minnesota later in the day, with precipitable water values reaching around 2 inches, and brought a long duration of moderate to heavy rains to the area. There were widespread rainfall totals (Multi-Radar/Multi-Sensor analysis) of 3 to 6 inches stretching from Pine and southern Carlton Counties to the southern half of Cass County. There was a corridor of about 6 to 9 stretching from east central Pine County to near and just north of the Brainerd area. There were rainfall reports around 9 near Cloverton (east central Pine County), Finlayson and Hinckley (west central Pine County), and near Brainerd. The subsequent flooding caused closures and/or damage to some roads across the region. The stretch of Interstate 35 from Hinckley to Sandstone was fully closed for about a couple hours late Monday evening into early Tuesday morning, around midnight. There was a lot of street flooding in Moose Lake and Brainerd.

MNZ034-036-038

Crow Wing - Pine - Southern Aitkin

20	1200CST								
	2000CST			0	0			Excessive Heat	

MNZ025-033-035-037

Northern Aitkin - Northern Cass - Southern Cass - Southern Itasca - Southern St. Louis / Carlton

20	1200CST								
	2000CST			0	0			Heat	

Very warm air in the 80s and lower 90s, combined with dew point temperatures in the low 70s to around 80 degrees, resulted in widespread heat indices of 95 to 105 degrees across parts of east central Minnesota on July 20th. The area of heat index readings over 95 degrees stretched as far north as Highway 2 from the Grand Rapids area to nearly Duluth. The highest readings were across Pine and southern Aitkin Counties.

Koochiching County

1 SSW Grand Falls

20	2351CST								
				0	0			Thunderstorm Wind (61EG)	

There were a few trees blown down on County Road 31 and Highway 6 in Big Falls.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Cass County

6 SSW Ah Gwan Ching

21	0020CST								
				0	0			Thunderstorm Wind (61EG)	

There were numerous trees blown down near Big Bass Lake, including at least 130 trees on Big Bass Lake Drive.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Cass County

Backus

21	0025CST								
				0	0			Thunderstorm Wind (61EG)	

There were numerous trees blown down in Backus.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MINNESOTA, Northeast

Cass County

Pine River

21	0035CST				0	0			Thunderstorm Wind (61EG)
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An 18 to 24 diameter tree was blown down.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

St. Louis County

Kabetogama

21	0035CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees were uprooted on the south side of Lake Kabetogama.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Lake County

17 NNW Sawbill Lndg

21	0037CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were over 70 trees blown over on and near Browns Lake.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County

5 SE Kabetogama

21	0040CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were two 2.5' diameter trees uprooted near the Ash River.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Cass County

1 NW Longville

21	0045CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Trees and power lines were blown down in Longville.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Crow Wing County

6 W Manhattan Beach

21	0045CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were numerous large trees blown down along Highway 1.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Crow Wing County

(P39)Pequot Lakes

21	0045CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Many trees were blown down.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Crow Wing County

2 ENE Cross Lake

21	0048CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Fifteen trees were blown down in the individual's yard.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Crow Wing County

2 SW Nisswa

21	0048CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Many trees were blown down.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Crow Wing County

2 NE Manhattan Beach

21	0050CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Several large oak trees were blown down.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Cass County

1 NNW Outing

21	0052CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Many trees were blown down near Washburn Lake.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Cass County

8 NE Bena

21	0055CST				0	0			Thunderstorm Wind (63MG)
----	---------	--	--	--	---	---	--	--	--------------------------

Note: The measured wind gust of 63 knots is equivalent to 72 mph.

Itasca County

4 SW Inger

21	0055CST				0	0			Thunderstorm Wind (59MG)
----	---------	--	--	--	---	---	--	--	--------------------------

Note: The measured wind gust of 59 knots is equivalent to 68 mph.

St. Louis County

Cook

21	0057CST				0	0			Thunderstorm Wind (61EG)
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Trees were blown down in the Cook area.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed Injured	Estimated Damage Property Crops	Character of Storm
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CORRECTIONS

MINNESOTA, Northeast

Cass County

Cass Lake

21	0101CST						
				0	0		Thunderstorm Wind (53MG)

The gust was recorded by the Cass Lake remote automatic weather station.

Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Cass County

1 SSE Remer Muni Arpt

21	0102CST						
				0	0		Thunderstorm Wind (61EG)

A 12 diameter tree broke near the ground and partially uprooted. There were several other smaller trees snapped off higher up off the ground.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Crow Wing County

1 SSE Brainerd

21	0103CST						
				0	0		Thunderstorm Wind (52EG)

The emergency manager estimated gusts to around 60 mph.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

St. Louis County

7 WSW Tower Muni Arpt

21	0114CST						
				0	0		Thunderstorm Wind (61EG)

There were numerous trees blown down.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Aitkin County

3 NNE Bennettville

21	0116CST						
				0	0		Thunderstorm Wind (70EG)

Numerous trees were damaged or blown down near Little Pine Lake and Hickory Lake.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Aitkin County

1 NNE Hill City

21	0116CST						
				0	0		Thunderstorm Wind (78EG)

There were numerous trees snapped near Hill City.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

Aitkin County

4 W Aitkin

21	0116CST						
				0	0		Thunderstorm Wind (70EG)

The wind caused downed trees and structural damage to a home. A previously secured deck was thrown to the other side of a home.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Aitkin County

Aitkin

21	0118CST						
				0	0		Thunderstorm Wind (70EG)

There were numerous trees blown down in the Aitkin area.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County

1 SE Tower Muni Arpt

21	0118CST						
				0	0		Thunderstorm Wind (61EG)

There were numerous trees blown down in Tower. A vehicle was damaged by a fallen tree.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Itasca County

9 SSE Grand Rpd Sugar Arp

21	0120CST						
				0	0		Thunderstorm Wind (61EG)

There were numerous trees blown down, including an uprooted 12 diameter spruce.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Itasca County

1 N Grand Rapids Arpt

21	0124CST						
				0	0		Thunderstorm Wind (61EG)

There were large tree branches up to 10 in diameter blown down on the northeast side of Grand Rapids.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Itasca County

12 E Marcell

21	0125CST						
				0	0		Thunderstorm Wind (61EG)

There were trees blown down near Antler Lake.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MINNESOTA, Northeast

St. Louis County 2 NW Burnside

21	0132CST				0	0			Thunderstorm Wind (70EG)
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There were about 200 trees blown down at Camp Van Vac on Burntside Lake.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County 2 NW Burnside

21	0133CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

The boathouse at the historic Burntside Lodge was destroyed and numerous trees were blown down.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Aitkin County 2 N Minnewawa

21	0135CST				0	0			Thunderstorm Wind (70EG)
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There were multiple trees and power lines blown down near Big Sandy Lake Reservoir and Lake Minnewawa.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Lake County 17 NNW Sawbill Lndg

21	0137CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were over 70 trees blown over on and near Browns Lake.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County Ely

21	0138CST				0	0			Thunderstorm Wind (65EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A softball dugout was destroyed.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

St. Louis County 1 NE Ely

21	0138CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were multiple trees and power lines blown down in and around Ely. A roof was blown off an enclosed softball shed at the school.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County 4 NE Floodwood

21	0154CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were many trees blown down, including some that were uprooted.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Lake County 12 NW Forest Center

21	0155CST				0	0			Thunderstorm Wind (61EG)
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There was at least one large tree blown down at the Kawishiwi Lodge on Lake One.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Lake County 18 NNW Forest Center

21	0203CST				2	2			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Severe thunderstorm winds knocked down numerous trees near the Prairie Portage area of Basswood Lake right on and near the Canadian border. Trees were blown down near the campsite of 9 campers who were affiliated with the Boy Scouts of America. One woman (age 39) and one boy (age 13) were killed when trees fell on their tent. Two other campers were injured with non-life-threatening injuries. The campers were technically in Canada, but added this to the event record for historical purposes since the campers were so close to the US border. F39CA, M13CA

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

St. Louis County 1 SE Alborn

21	0204CST				0	0			Thunderstorm Wind (78EG)
----	---------	--	--	--	---	---	--	--	--------------------------

The winds blew down a 100 yard wide swath of trees just south of Alborn near Highway 7.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

St. Louis County Prosit

21	0205CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A larger than 10 diameter popple tree fell with power lines wrapped in it along the west side Aerie Lake. There were many 8 to 10 diameter popple trees down along Highway 47.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MINNESOTA, Northeast

Aitkin County

1 N Hill City Quanda Arp

21	0207CST				0	0			Thunderstorm Wind (56MG)
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This measurement was from station HCYM5.
Note: The measured wind gust of 56 knots is equivalent to 64 mph.

St. Louis County

1 E Burnett

21	0210CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were numerous trees blown down.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County

1 SSE Canyon

21	0210CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were a lot of large trees blown down along Highway 53 south of Canyon.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Carlton County

2 N Sawyer

21	0211CST				0	0			Thunderstorm Wind (70EG)
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Campers and recreational vehicles were damaged when numerous trees were blown down at the Big Lake Shores Campground.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Lake County

13 NW Forest Center

21	0213CST				0	0			Thunderstorm Wind (54MG)
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Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Carlton County

2 WNW Scotts Corner

21	0220CST				0	0			Thunderstorm Wind (70EG)
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Numerous trees were blown down between Chub Lake and Hay Lake.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Carlton County

Cloquet

21	0220CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were numerous trees blown down across Cloquet, which was reported from a retired NWS employee.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County

1 SE Bartlett

21	0220CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Numerous trees were blown down on the northwest side of Caribou Lake on Birch Point Road. A pontoon boat was flipped over on Caribou Lake.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County

1 SE Four Corners

21	0221CST				0	0			Thunderstorm Wind (70EG)
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There were numerous trees down along Minnesota Highway 194 just west of Highway 53.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County

2 WSW (DLH)Duluth Intl Arp

21	0223CST				0	0			Thunderstorm Wind (61EG)
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There was a power line down at the corner of Highway 53 and Ugstad Road. There numerous trees and large branches down near this location.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

St. Louis County

2 NNW Hermantown

21	0223CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were trees down along Ugstad Road.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

St. Louis County

1 NW (DLH)Duluth Intl Arp

21	0225CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A tree fell down onto the wires for a 150' tall radio tower, which pulled down the tower. The tower crashed onto part of a home and caused damage.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MINNESOTA, Northeast

St. Louis County 2 NW Duluth Hgts

21	0225CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were two large birch trees snapped off. The power was out.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County 1 W Duluth Hgts

21	0225CST				0	0			Thunderstorm Wind (70EG)
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There were multiple power lines down along Anderson Road near Duluth's Coffee Creek neighborhood between Central Entrance and Highway 53 in Duluth.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County 3 NE Hermantown

21	0225CST				0	0			Thunderstorm Wind (61EG)
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There were a few large trees blown down in front of the Deerfield Townhomes.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

St. Louis County 1 SW (DLH)Duluth Intl Arp

21	0225CST				0	0			Thunderstorm Wind (61EG)
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A large branch was down at the National Weather Service office in Duluth, near the airport, and which narrowly missed the cars of two employees.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

St. Louis County 1 N Duluth Hgts

21	0226CST				0	0			Thunderstorm Wind (78EG)
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A Holiday gas station near the intersection of Arrowhead and Rice Lake Roads in Duluth took heavy damage to its roof structure over the gas pumps.

Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

St. Louis County 4 NW Arnold

21	0228CST				0	0			Thunderstorm Wind (61EG)
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There were several trees down on the roads.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

St. Louis County 1 S Duluth

21	0229CST				0	0			Thunderstorm Wind (87EG)
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The Duluth Board of Trade Building in downtown Duluth was damaged. The chimney was first struck by lightning, then strong winds knocked it down and it crashed through the roof of the seventh floor. The damage also affected the storage room for costumes for the Minnesota Ballet. The anemometer is on top of the nearby county government building, which measured gusts to around 100 mph.

Note: The estimated wind gust of 87 knots is equivalent to 100 mph.

St. Louis County Hunters Park

21	0230CST				0	0			Thunderstorm Wind (61EG)
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A large tree fell and damaged a vehicle.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

St. Louis County 1 E Eldes Corner

21	0230CST				0	0			Thunderstorm Wind (53MG)
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This was a Minnesota Department of Transportation weather station on Interstate 35 at Thompson Hill. The station is MM248.

Note: The measured wind gust of 53 knots is equivalent to 61 mph.

St. Louis County 1 S Duluth Intl Arpt

21	0232CST				0	0			Thunderstorm Wind (60MG)
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Note: The measured wind gust of 60 knots is equivalent to 69 mph.

St. Louis County 2 ESE Hunters Park

21	0232CST				0	0			Thunderstorm Wind (70EG)
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There were numerous trees down in the Lakeside neighborhood on London Road.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County 2 ESE Hunters Park

21	0235CST				0	0			Thunderstorm Wind (70EG)
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A 90' tall tree was blown down and laying across 52nd Avenue East.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MINNESOTA, Northeast

St. Louis County

1 SSE Duluth

21	0236CST				0	0			Thunderstorm Wind (55MG)
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This was the weather station DULM5.
Note: The measured wind gust of 55 knots is equivalent to 63 mph.

Cook County

36 NNW Lutsen

21	0237CST				0	0			Thunderstorm Wind (61EG)
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There were many trees blown down. The largest diameter trees were 16 to 20. There were some trees uprooted and sheared off.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

St. Louis County

Duluth Sky Harbor Apt

21	0237CST				0	0			Thunderstorm Wind (58MG)
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This was the maximum wind gust heard over the voice line into the weather station. It was not reported in the following observation.
Note: The measured wind gust of 58 knots is equivalent to 67 mph.

Aitkin County

176 ENE Rose City

21	0250CST				0	0			Thunderstorm Wind (70EG)
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There were multiple large popple and spruce trees down.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

St. Louis County

Duluth Sky Harbor Apt

21	0253CST				0	0			Thunderstorm Wind (51MG)
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This was the station at Sky Harbor Airport. The station's identification is DYT.
Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Cook County

20 N Marais

21	0313CST				0	0			Thunderstorm Wind (70EG)
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Three trees were blown down. One downed tree was a 2 to 3 foot diameter pine tree.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Lake County

1 W Larsmont

21	0320CST				0	0			Thunderstorm Wind (52EG)
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A tree fell on a cabin.
A cluster of thunderstorms developed over eastern North Dakota and northwestern Minnesota the evening of Wednesday July 20th. The outflow from the storms coalesced into a couple of main bow echoes that quickly sped across northeast and central Minnesota during the wee hours of the morning of Thursday July 21st. The multi-bow storm quickly spread across northern and central Minnesota in the hours before sunrise, causing extensive damage across the region from widespread straight-line winds of 60 to 80 mph. One of the hardest hit areas was Duluth, with a couple wind gust reports around 100 mph. The bow echo that moved through far northern Minnesota killed two people in Quetico Provincial Park, only about 1 mile into Canada from the Boundary Waters Wilderness area of far northern Minnesota. Power was out to 75,000 customers. many homes were without power for as long as a week. lost power because of so many downed power lines. One hundred power poles were damaged and needed replacing. Minnesota Power, the main provider of power in northeast Minnesota, described the storm and its resulting devastation in Duluth, as the worst in at least a half century. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Crow Wing County

Crosby Beach

23	2341CST				0	0			Thunderstorm Wind (52EG)
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A tree was blown down on a powerline on Beach Road.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Aitkin County

1 SSW Malmo

24	0007CST				0	0			Thunderstorm Wind (52EG)
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A few trees were blown down.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Pine County

1 N Willow River

24	0106CST				0	0			Thunderstorm Wind (52EG)
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A few trees were blown down in the Willow River Campground area.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MINNESOTA, Northeast

Pine County 1 N Kerrick	24	0115CST			0	0			Hail (0.75)
Pine County 1 N Kerrick	24	0115CST			0	0			Thunderstorm Wind (52EG) A 10 diameter birch tree was blown down. Thunderstorms dropped hail and brought damaging winds to isolated parts of northeast Minnesota during the wee hours of the morning on July 24th. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.
Lake County 10 S Sawbill Lndg	26	0400CST			0	0			Thunderstorm Wind (61EG) A multiple trees snapped near its base. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.
Lake County 3 NW Finland	26	0432CST			0	0			Thunderstorm Wind (56EG) Two power lines fell on two motor homes. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.
Lake County 1 E Finland	26	0442CST			0	0			Thunderstorm Wind (56EG) There was a power line down on County Road 6. A thunderstorm developed over northern Minnesota during the wee hours of the morning on July 26th, tracking across the Minnesota Arrowhead to western Lake Superior. It brought damaging winds to some parts of Lake County in the Arrowhead, knocking down trees and some power lines. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

MISSOURI, East

Boone County 2 SSE Harrisburg 2 ESE Rocheport	03	0500CST 1015CST			0	0	0.00K	0.00K	Flash Flood Up to 7 inches of rain fell over two days in Boone County causing flash flooding. Numerous roads were flooded including U.S. Highway 40 near W. Cunningham Drive, Gillespie Bridge Road near Coats Lane, Strawn Road near Broadway, Brown School Road, and Twin Bridges on Route E. Several rounds of storms moved through Central Missouri between July 2nd and 3rd. Up to 7 inches of rain was reported over this area causing flash flooding.
Boone County Midway	06	0945CST			0	0	50.00K	0.00K	Lightning Lightning struck a large tree, causing it to fall onto a house. The house sustained moderate damage. No injuries were reported.
Boone County Columbia	06	0950CST			0	0	0.00K	0.00K	Hail (1.00)
Boone County 2 SE Cou Cotton Mem Arprt	06	0955CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG) Thunderstorm winds blew over a large tree onto Rice Road near intersection with McKee Street. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.
Reynolds County 1 ENE Centerville Lesterville	06	1020CST 1030CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG) Thunderstorm winds blew down numerous trees in an area from Centerville to Lesterville. Some trees partially blocked roads in the area. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.
Iron County 1 NE Belleview 1 ESE Pilot Knob	06	1042CST 1045CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG) Thunderstorm winds blew down numerous trees and power lines in an area from Belleview to Pilot Knob. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

St. Francois County

Doe Run	06	1050CST							
1 SE Hurryville		1100CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)

A line of severe storms moved through the southern half of Ste. Francois County. Numerous trees, tree limbs and power lines were blown down, especially in Doe Run, Park Hills, Farmington and Desloge. In Farmington, two mobile homes were destroyed by fallen trees. Fortunately neither mobile home was occupied. One person had to be rescued from a vehicle that a tree had fallen on. No injuries were reported.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Washington County

1 SE Caledonia	06	1050CST			0	0	0.00K	0.00K	Thunderstorm Wind (70EG)
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Thunderstorm winds snapped off a power pole in Caledonia.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Madison County

1 ESE Stringtown	06	1107CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down two trees onto Highway OO north of Fredericktown.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Ste. Genevieve County

4 SSW Sprott	06	1110CST							
Ste Genevieve		1136CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)

A line of severe storms moved across Ste. Genevieve County. Numerous trees, tree limbs and power lines were blown down countywide, especially between Farmington and Ste. Genevieve.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Shelby County

3 WNW Hagers Grove	06	1130CST							
4 W Maud		1300CST			0	0	0.00K	0.00K	Flash Flood

Up to 3 inches of rain fell in a short amount of time causing flash flooding. Several roads were flooded including U.S. Highway 36 southwest of Shelbina and at the intersection of Highway 151 and Highway K.

Strong to severe storms developed across the region. Some of the storms produced large hail and damaging winds.

Boone County

Harrisburg	07	0534CST							
1 SSW Centralia		0602CST			0	0	0.00K	0.00K	Thunderstorm Wind (65EG)

Widespread wind damage across the northern portions of Boone County. Numerous trees, tree limbs and power lines were blown down in Harrisburg, Sturgeon, Hallsville and Centralia. Two miles west of Hallsville, one residence had a section of its roof torn off and a mile south of Sturgeon a barn was destroyed and pushed onto a nearby road.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Boone County

4 E Harrisburg	07	0545CST							
		0547CST	0.34	50	0	0	0.00K	0.00K	Tornado (EF0)

Video of a short lived tornado. No damage reported by Boone County Emergency Manager. Open field.

Monroe County

2 S Madison	07	0558CST							
Monroe City		0630CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)

A wide swath of wind damage extended across Monroe County from Madison through Paris to Monroe City. Numerous trees, tree limbs and power lines were blown down. One large tree was uprooted in Paris and fell onto a house causing moderate damage.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

Knox County

Novelty	07	0602CST			0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
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Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Callaway County

Kingdom City	07	0611CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
Holts Summit		0618CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)

A line of severe storms moved through Callaway County. Numerous trees, tree limbs and power lines were blown down between Kingdom City, New Bloomfield and Holts Summit. A couple of utility poles were blown down along US Highway 54 near Kingdom City. Three miles north of New Bloomfield, a fallen tree damaged the roof of a large shed.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Shelby County

Bethel	07	0611CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
Shelbina		0612CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)

A line of severe storms blew down numerous trees, tree limbs and power lines, especially between Bethel and Shelbina. Some of the trees blocked US Highway 36 in Shelbina.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Audrain County

2 SSE Ortiz	07	0620CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
1 ESE Mexico		0625CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)

Thunderstorm winds blew down numerous tree limbs and a few large trees. Six miles southwest of Mexico, winds blew off a section of a roof on a house.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Cole County

2 ENE Scruggs	07	0625CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)
2 SE Jefferson City		0627CST			0	0	0.00K	0.00K	Thunderstorm Wind (61EG)

Thunderstorm winds blew down numerous tree limbs across the city as well as a few trees.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Montgomery County

Montgomery City	07	0646CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down a large tree in town, but did not cause any structural damage to a house nearby.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Ralls County

New London	07	0651CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several power lines around town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Marion County

1 S Hannibal Muni Arpt	07	0659CST			0	0	0.00K	0.00K	Hail (0.75)
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St. Charles County

1 NE Flint Hill	07	0740CST			0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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Note: The measured wind gust of 52 knots is equivalent to 60 mph.

St. Louis County

1 SW Rock Hill	07	0830CST			0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down a couple of large tree limbs in Webster Groves.

A mesoscale convective complex moved across the region during the morning hours of July 7th. There were numerous reports of wind damage associated with these storms. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

St. Francois County 1 W Farmington

08	0330CST 0332CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large tree limbs and a couple of trees around town. A few of the fallen trees blocked roads in the area.

Isolated severe storms moved through the region. Some of the storms produced damaging winds. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Boone County 4 SW Columbia 2 E Cou Cotton Mem Arpt

13	1210CST 1215CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down numerous trees, tree limbs and power lines throughout town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Moniteau County California Jamestown

13	1210CST 1215CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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A line of severe storms moved through Moniteau County. Numerous trees, tree limbs and power lines were blown down between California and Jamestown.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Monroe County 1 N Paris

13	1228CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large trees across the intersection of Highway 15 and U.S. Highway 24, just north of Paris.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Callaway County New Bloomfield 2 WSW Williamsburg

13	1245CST 1251CST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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A line of severe storms moved through Callaway County. Numerous trees, tree limbs and power lines were blown down, especially in the New Bloomfield and Fulton areas.

Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Monroe County 4 SW Monroe City

13	1245CST 1250CST				0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
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Thunderstorm winds caused roof and structural damage to a home about 4 miles southwest of Monroe City. There were several trees, tree limbs and power lines blown down in Monroe City.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Cole County Jefferson City

13	1250CST				0	0	0.00K	0.00K	Thunderstorm Wind (60MG)
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Note: The measured wind gust of 60 knots is equivalent to 69 mph.

Ralls County Perry New London

13	1250CST 1305CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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A line of severe storms moved through Ralls County. Numerous trees, tree limbs and power lines were blown down across the county, especially in Perry, Center and New London.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Montgomery County 1 NNW Montgomery City 1 NNW Liege

13	1300CST 1315CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down several tree limbs and power lines between Montgomery City and Bellflower.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

Pike County
5 SE Frankford

13	1305CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Marion County
2 WNW Hannibal

13	1307CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large trees and numerous tree limbs, mainly on the south side of Hannibal.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Osage County
2 W Byron

13	1317CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large trees onto Highway 89 between Highways Y and D.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Gasconade County
Owensville

13	1324CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down numerous large tree limbs around town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Franklin County
1 WNW Gerald

13	1335CST				0	0	0.00K	0.00K	Hail (0.88)
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Lincoln County
Troy
Moscow Mills

13	1337CST				0	0	0.00K	0.00K	Thunderstorm Wind (52MG)
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Thunderstorm winds blew down several large trees and numerous tree limbs in Troy and Moscow Mills.

Note: The measured wind gust of 52 knots is equivalent to 60 mph.

Crawford County
Cuba
1 WNW Bourbon

13	1345CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several trees, numerous tree limbs and power lines between Cuba and Bourbon.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Warren County
5 SE Truesdale
4 S Wright City

13	1345CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large trees in Innsbrook.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

St. Charles County
O Fallon

13	1350CST				0	0	0.00K	0.00K	Hail (1.00)
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Crawford County
1 WSW Steelville

13	1355CST				0	0	0.00K	0.00K	Thunderstorm Wind (65EG)
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Thunderstorm winds blew down several large trees, numerous tree limbs and power lines around town.

Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Franklin County
1 SW St Clair
1 WNW Pacific

13	1355CST				0	0	0.00K	0.00K	Thunderstorm Wind (59EG)
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A line of severe storms moved through the eastern half of Franklin County. Numerous trees, tree limbs and power lines were blown down in Union, St. Clair, Pacific, Catawissa and Lonedell.

Note: The estimated wind gust of 59 knots is equivalent to 68 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

St. Charles County 1 SSE Gilmore St Charles

13	1407CST				0	0	0.00K	0.00K	Thunderstorm Wind (56MG)
	1425CST								

A line of severe storms moved across St. Charles County. Numerous trees, tree limbs and power lines were blown down in Dardenne Prairie, Lake St. Louis, O'Fallon, Cottleville, St. Peters and St. Charles. One house on Friedens Road in St. Charles had a large tree fall on it causing major damage. No injuries were reported.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Washington County 3 E Shirley 1 ESE Old Mines

13	1410CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
	1425CST								

Thunderstorm winds blew down several large trees 5 miles southwest of Potosi and several large trees in Old Mines.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Crawford County Cherryville

13	1415CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down a couple of large trees, numerous tree limbs and power lines.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

St. Louis County 1 SW Ellisville 1 E Gravois

13	1420CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
	1445CST								

A line of storms moved through St. Louis County. The worst damage was across the southern half of the county. Over 200 trees sustained damage at Jefferson Barracks National Cemetery, with 50 large trees were blown down down on the grounds. Up to 40 headstones were broken at the cemetery due to fallen trees and limbs. Also, numerous trees, tree limbs and power lines were blown down in Ellisville, Ballwin, Kirkwood, Webster Groves, Ladue, Clayton, Sunset Hills, Shrewsbury, Mehlville and Oakville. In Kirkwood, one tree fell onto a house causing moderate damage. In Oakville, two large trees landed on a house causing extensive damage. No deaths or injuries were reported.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Jefferson County 1 S De Soto

13	1425CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down numerous large tree limbs and power lines around town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Jefferson County 1 WNW Dittmer Arnold

13	1425CST				0	0	0.00K	0.00K	Thunderstorm Wind (58MG)
	1440CST								

A line of severe storms moved through northern Jefferson County. Numerous trees, tree limbs and power lines were blown down, especially in Dittmer, High Ridge, Arnold and Pevely. In Arnold, a restaurant sustained roof damage from the winds.

Note: The measured wind gust of 58 knots is equivalent to 67 mph.

Washington County 1 SE Caledonia

13	1425CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down a tree. It fell onto nearby power lines, pulling them down as well.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

St. Francois County 1 SSW Cantwell 1 W Halifax

13	1427CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
	1435CST								

Thunderstorm winds blew numerous trees, tree limbs and power lines down in Bonne Terre, Desloge and just south of Valles Mines. Five miles north of Bonne Terre, near Valles Mines, two trees fell onto a home causing major damage. No injuries were reported.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

St. Louis County

1 N Vigus

Flordell Hills

13	1430CST	1445CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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A line of severe storms moved through St. Louis County. Across the northern portions of the county, damage was reported in Maryland Heights, Bridgeton, Berkeley and Jennings. Several large trees, numerous tree limbs and power lines were blown down. In Maryland Heights, one person sustained minor injuries due to a folding table hitting them on the head at an amphitheater. In Berkeley, a large tree crashed through the roof of a house into a bedroom. Fortunately no one in the home was hurt.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Iron County

1 W Viburnum

13	1440CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down a couple of trees, as well as numerous tree limbs and powerlines.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Ste. Genevieve County

1 SSW Bloomsdale

13	1445CST				0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down several large trees and power lines around town.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

St. Louis (c) County

1 SE Baden

1 E Carondelet

13	1445CST	1450CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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A line of severe storms moved through the City of St. Louis. Numerous trees, tree limbs and power lines were blown down, including in Forest Park and Tower Grove Park. The worst damage was across the southern portions of the city. One power pole was snapped off in the Soulard area. On the north side of the city, a large tree fell onto an unoccupied pickup truck destroying it.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Ste. Genevieve County

1 NNE Weingarten

Ste Genevieve Arpt

13	1450CST	1455CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down numerous trees, tree limbs and power lines down between Weingarten and Ste. Genevieve.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

St. Francois County

1 E De Lassus

1 E Farmington

13	1450CST	1455CST			0	0	0.00K	0.00K	Thunderstorm Wind (56EG)
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Thunderstorm winds blew down numerous trees, tree limbs and power lines around town.

A line of severe storms moved across the region during the afternoon hours of July 13th. There were numerous reports of wind damage with this line of storms. In Belleville (St. Clair County, Illinois), a man was electrocuted after the storms moved through when he made contact with a fence that was charged by a live downed power line while trying to move a fallen tree limb. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

MOZ018-026>027-034>036-041>042-047>052-059>065-072>075-084>085-099

Audrain - Boone - Callaway - Cole - Crawford - Franklin - Gasconade - Iron - Jefferson - Knox - Lewis - Lincoln - Madison - Marion - Moniteau - Monroe - Montgomery - Osage - Pike - Ralls - Reynolds - Shelby - St. Charles - St. Francois - St. Louis - St. Louis (c) - Ste. Genevieve - Warren - Washington

18	1100CST								
24	1800CST				1	70			Excessive Heat

Excessive Heat gripped the area July 18th - July 24th. High temperatures ranged from the middle to upper 90s with the Heat Index up to 110 degrees. The St. Louis County Health Department reported 1 death and 70 injuries.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, East

Marion County

Palmyra

19	1555CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down several trees around town. A few of the fallen trees blocked roadways.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Lewis County

4 NE Ewing

1 S La Grange

19	1610CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
	1615CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)

A large tree was blown down onto a pickup truck on Route C between Routes BB and Z, northeast of Ewing. No injuries were reported. Also, a tree was blown over blocking the railroad tracks just south of La Grange.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Ralls County

1 SSW New London

19	1630CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds bent two power poles over Highway 19 just southwest of New London, blocking the roadway.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

St. Charles County

1 WSW Wentzville

1 WNW St Charles

19	1920CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
	1925CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)

Thunderstorm winds blew down several trees in Wentzville, Dardenne Prairie and St. Charles.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

St. Louis County

1 S Twin Oaks

Vly Park

19	1950CST				0	0	0.00K	0.00K	Thunderstorm Wind (52EG)
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Thunderstorm winds blew down a tree. It fell onto some power lines knocking them down as well.

Scattered strong to severe storms moved southeast across the region. There were reports of damaging winds with some of the storms. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Cole County

3 NNW Marion

4 SW Russellville

31	2300CST				0	0	0.00K	0.00K	Flash Flood
	2359CST				0	0	0.00K	0.00K	Flash Flood

Up to five inches of rain fell in a short amount of time causing flash flooding during the late evening hours of July 31st into the early morning hours of August 1st. Numerous roads were flooded including Missouri Boulevard in Jefferson City. Five water rescues were performed due to stranded motorists. Also, a body was discovered in Wears Creek in Washington Park near the ice arena after the flood waters went down. It was determined that it was a 51 year old homeless man who had drowned in the flood waters during the early morning hours of August 1st. Occupants of a home in the 1300 block of Satinwood drive had to be rescued when a nearby creek overflowed its banks surround the structure. The ice arena at Washington Park was flooded with about 3 feet of water from Wears Creek.

Moniteau County

6 NNW Lupus

3 ENE Clarksburg

31	2315CST				0	0	0.00K	0.00K	Flash Flood
	2359CST				0	0	0.00K	0.00K	Flash Flood

Up to five inches of rain fell in a short amount of time causing flash flooding. Numerous roads were flooded including Highway 179. Also, there were several roads in Jamestown flooded.

Several rounds of storms trained over central Missouri during the evening hours of July 31st through the morning hours of August 1st. There were several reports of flash flooding with one fatality in Cole County which occurred during the early morning hours of August 1st.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

MISSOURI, Northeast

Scotland County

4 SE Show Me Lake

07 0615CST 0 0 0.00K 0.00K Hail (0.75)

Trained spotter also reported wind gusts to around 40 MPH.

An upper level disturbance interacting with a stalled boundary produced nocturnal thunderstorms with one report of hail and also gusty winds.

MISSOURI, Northeast

Clark County

Kahoka

10 1428CST 0 0 0.00K 0.00K Thunderstorm Wind (52EG)

A public report received via facebook of a small tree that was 4 to 6 inches in diameter which was snapped near the base. The time of the event was estimated from radar.

An upper level disturbance produced an area of thunderstorms that moved southeast across northeast Missouri in the afternoon. An isolated wind damage report to a tree was received. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Scotland County

1 SW Rutledge

24 1736CST 0 0 Thunderstorm Wind (52EG)

A trained spotter reported some 6 inch in diameter tree branches were down.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Clark County

2 NW Fox City

24 1830CST 0 0 Thunderstorm Wind (52EG)

Local law enforcement reported a few large trees were down over a roadway in the county.

A passing cold front produced early evening severe thunderstorms with a couple of damaging wind reports of tree damage. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

NEBRASKA, South Central

Furnas County

Arapahoe

05 1509CST 0 0 0.00K 0.00K Hail (1.00)

Gosper County

15 S Elwood

05 1513CST 0 0 0.00K 0.00K Hail (1.00)

Furnas County

Edison

05 1540CST 0 0 0.00K 0.00K Hail (0.75)

Adams County

1 SE (HSI)Hastings Arpt

05 1654CST
1707CST 0 0 0.00K 0.00K Hail (1.25)

Adams County

6 NNE (HSI)Hastings Arpt

05 1730CST 0 0 0.00K 0.00K Hail (1.00)

Hall County

3 E Grand Is

05 1807CST 0 0 0.00K 0.00K Hail (0.88)

Hall County

Grand Is

05 1807CST 0 0 5.00K 0.00K Thunderstorm Wind (52EG)

Wind gusts estimated near 60 MPH resulted in a few downed trees and power outages.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Hall County

2 S Doniphan

05 1816CST 0 0 5.00K 0.00K Thunderstorm Wind (52EG)

Wind gusts were estimated to be near 60 MPH.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Merrick County

2 N Chapman

05 1836CST 0 0 0.00K 0.00K Hail (0.88)

Hamilton County

2 WSW Hordville

05 1840CST 0 0 0.00K 0.00K Hail (1.00)

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Howard County 3 SE Dannebrog

05	1840CST			0	0	0.00K	0.00K	Hail (1.25)
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Howard County 1 S St Paul

05	1849CST			0	0	5.00K	0.00K	Thunderstorm Wind (61EG)
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Local country club and golf course suffered tree damage as a result of damaging winds. One extremely large tree approximately 5 feet in diameter was blown down. Large branches were downed from other trees.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Hamilton County Hordville

05	1853CST			0	0	10.00K	0.00K	Hail (1.50)
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Merrick County 9 NW Clarks

05	1911CST			0	0	0.00K	0.00K	Hail (1.25)
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Merrick County Clarks

05	1912CST			0	0	0.00K	0.00K	Hail (0.88)
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Polk County 12 NNE Shelby

05	1955CST			0	0	20.00K	0.00K	Thunderstorm Wind (61EG)
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Wind gusts estimated to be near 70 MPH resulted in tree damage and a semi truck being tipped over on Highway 81 between Roads 42 and 43.

Damaging winds and hail up to the size of ping pong balls occurred in some locations on this Tuesday afternoon and evening. This event began with the initial thunderstorms forming near the state line just south and east of McCook between 2 and 3 p.m. CST. These storms expanded northeast into Gosper and Furnas Counties, where 1 inch hail fell in and just north of Arapahoe. They continued moving northeast into Phelps County, and eventually into Buffalo County through 6 p.m. CST where they dissipated. No additional severe weather was reported with these storms once they left Gosper and Furnas Counties. However, around 4:30 p.m. CST, new storms formed over Adams County. Multicell development resulted in storms expanding into a cluster that enveloped northern Adams and southern Hall Counties. This cluster of storms eventually tracked northeast all the way to Columbus, affecting Hamilton, Howard, Merrick, Nance, and Polk Counties. These storms produced multiple reports of severe hail, the largest of which was the size of ping pong balls near Hordville, in northeast Hamilton County. Snapped off branches and trees were blown down in portions of St. Paul and Grand Island. A semi trailer was also blown over on Highway 81 in Polk County.

At dawn, a quasi-stationary front extended from the Ohio Valley through Missouri, turning northwest into Kansas and Nebraska. This front lifted northeast as a warm front and was east of Nebraska by midday. A very weak cold front was sagging southward through the Northern Plains. This front entered northern Nebraska during the afternoon and extended roughly along I-80 from west to east by mid-evening. The upper levels were characterized by zonal flow, with a very slight trough over the Pacific Northwest and a slight ridge over the Great Lakes. Despite Nebraska being just south of the Westerlies, a weak/subtle shortwave trough was moving through. This was a hot, humid day, with high temperatures in the lower to middle 90s, and dewpoints in the lower to middle 70s. Combined with very steep mid-level lapse rates of 8 deg C/km, MLCAPE was between 2000 and 4000 J/kg, with the highest values where dewpoints were highest, north and east of Grand Island. Due to the weak wind profile, effective deep layer shear was only 25 kts. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Furnas County Cambridge

06	2122CST			0	0	3.00K	0.00K	Thunderstorm Wind (61EG)
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Wind gusts were estimated to be between 60 and 70 MPH. Tree branches of an unknown size were downed.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Greeley County Greeley

06	2152CST			0	0	3.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts were estimated to be near 60 MPH. Tree branches were downed in portions of town, some of which were several inches in diameter.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Greeley County Spalding

06	2152CST			0	0	3.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts were estimated to be near 60 MPH. Tree branches were downed in town.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Phelps County Atlanta

06	2226CST			0	0	0.00K	0.00K	Hail (0.75)
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Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Kearney County

Axtell

06	2255CST				0	0	50.00K	0.00K	Thunderstorm Wind (56EG)
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Wind gusts estimated to be between 60 and 70 MPH downed a large tree in town. This tree landed on a home, punching a hole through the bedroom ceiling. The tree also landed on power lines.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

York County

1 SW York

06	2300CST								
07	0600CST				0	0	0.00K	0.00K	Heavy Rain

A total of 3.04 inches was measured since midnight.

York County

1 E York

06	2300CST								
07	0600CST				0	0	0.00K	0.00K	Heavy Rain

A total of 3.08 inches was measured since midnight.

Franklin County

8 N Franklin

06	2302CST				0	0	0.00K	0.00K	Hail (1.00)
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Webster County

9 NW Red Cloud

06	2324CST				0	0	0.00K	0.00K	Thunderstorm Wind (54MG)
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Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Adams County

4 NE (HSI)Hastings Arprt

06	2337CST				0	0	100.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts were estimated to be near 60 MPH. Penny size hail was also reported. There were several reports of larger tree branches downed and power outages across town. On the west side of Hastings, a large tree branch fell onto a vehicle, causing major damage. A tree uprooted near the high school in the middle of town was lying across 14th Street.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Adams County

4 NE (HSD)Hastings Arprt

06	2346CST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Hamilton County

Marquette

07	0015CST				0	0	5.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts estimated to be near 60 MPH resulted in tree damage in Marquette.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Kearney County

2 S Axtell

07	0020CST				0	0	5.00K	0.00K	Thunderstorm Wind (54MG)
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This gust occurred behind the squall line in a pressure minimum.

Pockets of wind damage and/or strong winds occurred with bowing convective line segments on this Wednesday night. Isolated supercells developed over western Nebraska late in the afternoon, with multiple tornadoes, spotty wind damage, and large hail occurring. During the evening hours, cell coverage increased leading to multiple cell mergers. By 9 p.m. CST, this resulted in several lines segments that stretched from Yankton, SD to Broken Bow to McCook. Two small bow echoes tracked through south central Nebraska, from Interstate 80 south to the state line, and another across central Nebraska which affected Valley and Greeley Counties. After 11 p.m. CST, the outflow from extensive thunderstorms over northeast Nebraska sagged to Interstate 80, from York west to Grand Island where it intersected the comma head of the bow echo moving across southern Nebraska. An east-west oriented line of storms developed along Interstate 80. Cell training between 11:30 p.m. and 1 a.m. CST resulted in a swath of 2 to 3 inches of rain from eastern Hamilton County across central York County. The highest rainfall amount was 3.08 inches just east of the city of York. These bow echoes produced multiple measured gusts between 50 and 62 mph. Snapped tree limbs and blown over trees were most extensive in the city of Hastings and the towns of Greeley and Spalding.

A very weak cold front sagged into Nebraska the previous night and was located roughly along the southern state line at daybreak. As the day progressed, the front gradually lifted north as a warm front as low pressure over Wyoming deepened to 1000 mb. In the upper levels, the flow was zonal with the Westerlies confined to the northern third of the United States. A subtropical high was over Texas. 500 mb observations suggest there was a weak/subtle shortwave trough moving across the Central Plains, possibly aiding thunderstorm development. Just prior to thunderstorms moving into south central Nebraska, temperatures were in the middle 70s to lower 80s, and dewpoints ranged from the lower 60s west to the upper 60s east. Yet, mid-level lapse rates were very steep (8 degrees C/km), resulting in MLCAPE between 2000 and 4000 J/kg. Effective deep layer shear was around 50 kts. Note: The measured wind gust of 54 knots is equivalent to 62 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Nuckolls County

1 N Nora

11	1833CST				0	0	0.00K	0.00K	Hail (0.75)
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Nuckolls County

Superior

11	1928CST				0	0	0.00K	0.00K	Hail (0.88)
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Nuckolls County

Superior

11	1932CST				0	0	0.00K	0.00K	Hail (1.00)
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A thunderstorm produced minimally severe hail in Nuckolls County early on this Monday evening. Thunderstorms struggled to develop, but a couple isolated single cell storms managed to do so over Nuckolls, Thayer, and Fillmore Counties between 5 and 8 p.m. CST. The first storm that developed was over Nuckolls County and it briefly produced three-quarter inch hail in the village of Nora. As that storm weakened, another storm briefly developed a little further southwest along the state line. This storm briefly produced hail up to the size of quarters in the town of Superior before weakening. After 7:45 p.m., these storms dissipated. Around 11 p.m. CST, a line of multicell storms developed from southwest to northeast across Nuckolls, Thayer, and Fillmore Counties. This line exited and/or weakened over these counties by midnight. No severe weather occurred with these storms.

A very weak, slow-moving cold front was advancing through south central Nebraska. These storms developed along and just behind the front. In the upper levels, the Westerlies were zonal, with a slight trough from the Pacific Northwest into the Northern Plains, and a slight ridge over the Great Lakes. A closed, baroclinic low was over southern Canada, just north of North Dakota. Just prior to widespread thunderstorm initiation, temperatures remained very warm, in the middle 80s, with dewpoints in the lower 70s. With mid-level lapse rates around 7.5 degrees C/km, MLCAPE was around 3500 J/kg. Deep layer shear was around 35 kts right along the front.

Kearney County

Axtell

17	0215CST				0	0	2.00K	0.00K	Thunderstorm Wind (56EG)
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Wind gusts estimated to be near 65 MPH resulted in a tree being uprooted. These winds were likely associated with outflow from storms several miles to the south.

A very small area of severe winds resulted from nearby thunderstorms during the very early morning hours on this Sunday. Throughout the nighttime hours, a small mesoscale convective system, comprised primarily of multicell thunderstorms, propagated east along and just south of the Nebraska-Kansas state line. Northward moving outflow resulted in a little tree damage in the town of Axtell. Nearby observations at Holdrege and Hastings suggested these winds were associated with a heat burst. At 4 a.m. CST, the temperature at Hastings rocketed to 89 degrees, and the dewpoint plunged to 48. The previous hour both values were 76 and 64, respectively. That 89 degrees was the high temperature for the date. Winds at Holdrege gusted to 45 mph. The temperature and dewpoint changes there were not quite as impressive.

These thunderstorms formed in the warm sector, south of a wavy front that extended from New England, through the Ohio Valley, then northwest to low pressure over South Dakota. The rest of the front trailed southwest to Nevada. Convective initiation was most likely associated with the low-level jet, which had increased to 55 kts by daybreak. In the upper levels, forcing was negligible. Zonal flow was over the northern half of the United States, with weak anticyclonic flow over the southern U.S. A closed high was over New Mexico. Prior to the outflow moving through, temperatures were in the middle 70s, with dewpoints in the middle 60s. Mid-level lapse rates were steep, at least 8.5 degrees C/km. This resulted in MLCAPE of 1500 to 1900 J/kg. The nearest sounding, at North Platte, a few hours later (1200 UTC or 6 am CST), indicated a loaded gun profile, except winds were weak below 500 mb. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Valley County

Ord

26	2340CST				0	0	5.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts estimated to be near 60 MPH resulted in tree branches 3-4 inches in diameter being downed. The town of Ord lost power.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Sherman County

Loup City

26	2345CST				0	0	5.00K	0.00K	Thunderstorm Wind (52EG)
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Wind gusts were estimated to be near 60 MPH. Two tree limbs approximately 6-8 inches in diameter were downed, and a roof-mounted TV antenna was left hanging off the side of the house.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Buffalo County

8 N Miller

26	2355CST				0	0	5.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Wind gusts were estimated to be near 60 MPH. Tree damage was reported near Highway 183 and the South Loup River.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Dawson County
Lexington Arpt

26	2355CST				0	0	5.00K	0.00K	Thunderstorm Wind (56MG)
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Damage reported across town included tree and minor roof damage, as well as a lighted restaurant sign blown off.

Note: The measured wind gust of 56 knots is equivalent to 64 mph.

Buffalo County
3 NNE Kearney

27	0012CST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
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Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Kearney County
3 W Newark

27	0025CST				0	0	0.00K	0.00K	Thunderstorm Wind (50MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Furnas County
5 NNW Oxford

27	0026CST				0	0	5.00K	0.00K	Thunderstorm Wind (55MG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

These winds were associated with a gust front from a squall line that passed just to the northeast.

Note: The measured wind gust of 55 knots is equivalent to 63 mph.

Furnas County
Edison

27	0027CST				0	0	15.00K	0.00K	Thunderstorm Wind (66MG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

These winds were associated with a gust front from a squall line that passed just to the northeast. Tree limbs were downed and power was out in town.

Note: The measured wind gust of 66 knots is equivalent to 76 mph.

Hall County
(GRI)Grand Is Rgnl A

27	0153CST				0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
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Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Buffalo County
2 NW Miller

27	1930CST				0	0	0.00K	0.00K	Hail (1.00)
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Buffalo County
Miller

27	1938CST				0	0	0.00K	0.00K	Hail (0.75)
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Buffalo County
7 W Amherst

27	1950CST				0	0	0.00K	0.00K	Hail (0.88)
----	---------	--	--	--	---	---	-------	-------	-------------

A squall line brought wind damage and strong to severe wind gusts to much of south central Nebraska during the very early morning hours on this Wednesday. Then, isolated storms developed in the afternoon and produced severe hail. During the evening hours Tuesday, a mature squall line developed over the Sandhills. It propagated southeast and into the region beginning around 11:30 p.m. CST. The squall line was at peak intensity as it entered Dawson, Howard, and Valley Counties. It rapidly weakened after 12:30 a.m. CST. However, the remnant outflow continued to produce strong to severe winds through 3 a.m. CST, well after the deep convection had dissipated. Widespread winds between 50 and 60 mph were measured, but peak wind gusts included 61 mph at Grand Island, 63 mph near Oxford, 64 mph at Lexington, and 76 mph at Edison. Tree damage was reported in several locations, with trees blown over and tree limbs snapped off. The last strong wind gust measured was 56 mph at York, at 3:03 a.m. CST. Isolated power outages occurred across the region.

Later in the afternoon, a small cluster of multicell thunderstorms developed over the Sandhills. A few isolated storms managed to develop along the southwest flank of its outflow boundary, though most of them were weak, short-lived, and sub-severe. A single-cell storm, which exhibited multi-cell characteristics at times, dominated the other cells over Custer County. Just after 7 p.m. CST, this storm moved into northwest Buffalo County and produced a few reports of dime to quarter size hail. By 8 p.m. CST, the storm began weakening and then rapidly dissipated over southwest Buffalo County.

The surface map was complex. The thunderstorms that initially spawned the squall line developed between two fronts. A stationary front extended west from the mid-Atlantic region, through the mid-Mississippi Valley into Oklahoma, then northwest into western Kansas and Nebraska. A weak cold front extended from Lake Superior to the northwest tip of Nebraska into Wyoming and Idaho. The afternoon storms formed behind this front which was surging southward. It was located along the Nebraska-Kansas state line by 6 p.m. CST. In the upper levels, the Westerlies were fairly zonal over the northern third of the U.S., with subtropical highs over the Southwest and off the Carolina Coast. A weak shortwave trough was embedded in the Westerlies over the Dakota's Tuesday evening. By Wednesday evening, it had progressed into Minnesota and Iowa, with some slight amplification and more of a cyclonic look between the two highs. Just prior to the arrival of the squall line, surface temperatures were in the upper 60s to lower 70s, with dewpoints in the middle 60s. Mid-level lapse rates were steep, between 7.5 and 7.9 degrees C/km, resulting in MLCAPE around 1000 J/kg. Effectively deep layer shear was less than 25 kts. The MCS was moving out of an area of more favorable shear, resulting in the shear within the cold pool becoming dominant, and the demise of the deep convection. With the isolated hail producer later that evening, temperatures behind the front were in the lower 80s, with dewpoints still in the middle to upper 60s. Mid-level lapse rates were moist adiabatic. Nevertheless, MLCAPE was between 1500 and 2000 J/kg. Effective deep layer shear was around 30 kts.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Howard County

Dannebrog

29	0700CST				0	0	0.00K	0.00K	Heavy Rain
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Total rainfall over the past 24 hours was 3.13 inches, much of which fell in past 3-4 hours.

Sherman County

7 NNE Loup City

29	0700CST				0	0	0.00K	0.00K	Heavy Rain
----	---------	--	--	--	---	---	-------	-------	------------

Total rainfall over the past 24 hours was 3.76 inches, much of which fell in past 3-4 hours.

Valley County

4 E Arcadia

29	0700CST				0	0	0.00K	0.00K	Heavy Rain
----	---------	--	--	--	---	---	-------	-------	------------

Total rainfall over the past 24 hours was 4.25 inches, much of which fell in past 3-4 hours.

Valley County

5 SW Elyria

29	0700CST				0	0	0.00K	0.00K	Heavy Rain
----	---------	--	--	--	---	---	-------	-------	------------

Total rainfall over the past 24 hours was 3.55 inches, much of which fell in past 3-4 hours.

Valley County

2 NE Arcadia

30	0315CST				0	0	0.00K	0.00K	Heavy Rain
----	---------	--	--	--	---	---	-------	-------	------------

Report of 4.75 inches of rain in the past 24 hours, with approximately 4 inches of that falling in the past 3 hours.

Sherman County

10 NW Loup City

30	0600CST				0	0	25.00K	0.00K	Flash Flood
----	---------	--	--	--	---	---	--------	-------	-------------

Heavy rainfall over a few hours resulted in water running over the intersection of Highways 70 and 58 east of Arcadia for a short time. There were portions of a number of county roads and driveways covered with water. Ground truth rainfall totals ranged from 3 to 5 inches.

Valley County

3 SE Arcadia 9 SSW North Loup

30	0600CST				0	0	25.00K	0.00K	Flash Flood
----	---------	--	--	--	---	---	--------	-------	-------------

Heavy rainfall over a few hours resulted in water running over the intersection of Highways 70 and 58 east of Arcadia for a short time. There were portions of a number of county roads and driveways covered with water. Ground truth rainfall totals ranged from 3 to 5 inches.

Merrick County

8 SW Chapman

30	0646CST				0	0	0.00K	0.00K	Hail (1.00)
----	---------	--	--	--	---	---	-------	-------	-------------

Penny to quarter size hail was reported on the Hall and Merrick County line.

Howard County

3 NE Nysted 1 WSW Dannebrog

30	0715CST				0	0	15.00K	0.00K	Flash Flood
----	---------	--	--	--	---	---	--------	-------	-------------

Heavy rainfall over a few hours resulted in water running over a portion of Highway 11 approximately 2 miles north of Dannebrog for a short time. Radar estimates showed that 3 to 5 inches of rain may have fallen over the area. There was one ground truth rainfall report of 3.13 inches in Dannebrog.

Hall County

5 SSW Alda

30	0725CST				0	0	3.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

A semi truck and trailer were blown over near the Alda interchange of Interstate 80.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEBRASKA, South Central

Hall County

3 E Grand Is

30	0730CST			0	0	15.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	---	---	--------	-------	--------------------------

A large tree was blown down, covering a portion of Shady Bend Road on the east side of Grand Island. The exact diameter of the tree was unknown, but a front-end loader was required to move the tree from the road.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Hall County

3 S Doniphan

30	0754CST			0	0	5.00K	0.00K	Thunderstorm Wind (52EG)
----	---------	--	--	---	---	-------	-------	--------------------------

Wind gusts were estimated to be 60 MPH. Spotter was pulled over on the side of Highway 281 due to blinding rain, and also reported that vehicle was rocking due to the strong winds.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Hall County

2 S Doniphan

30	0755CST			0	0	0.00K	0.00K	Hail (0.75)
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Adams County

4 NE (HSD)Hastings Arpt

4 ENE Hastings

30	0802CST			0	0	0.00K	0.00K	Hail (0.75)
	0808CST			0	0	0.00K	0.00K	Hail (0.75)

Heavy rain and flash flooding occurred on this Saturday morning, along with a few reports of severe hail and winds between Grand Island and Hastings. Between midnight and 1 a.m. CST, small, isolated single-cell thunderstorms developed over central Nebraska, between Ainsworth and Lexington. As the night progressed, they were joined by more storms with an increasing trend toward a multicell convective mode as a common cold pool formed. The southern end of the developing MCS drifted eastward into Valley and Sherman Counties, with the deep convection on the west side of the MCS remaining quasi-stationary. After 6 a.m. CST, the northern portion of the MCS (over the Sandhills) weakened while the southern portion became dominant. By 6:30 a.m. CST, the dominant storms evolved into a short east-west oriented squall line across Sherman and Howard Counties. This line subsequently dropped southeast across Hall between 7 and 8 a.m. CST, then continued all the way down to Hebron, exiting south central Nebraska a little after 10 a.m. CST. Cell training produced a north-northwest to south-southeast oriented swath of 3 to 5 inches of rain across Valley, Sherman, and Howard Counties. Minor flash flooding resulted in water covering roads in some areas. As the storms tracked across Hall and northern Adams Counties, some low-end severe hail (dime to quarter size) occurred in a few spots. The most significant report of severe weather was a blown over tractor-trailer near the Interstate 80 interchange at Alda.

This MCS developed far from any fronts, but on the eastern edge of a tongue of higher theta-e air in the lower levels, in the presence of warm air advection and deep convergence. A 25-30 kt low level jet over and just west of the genesis region. The front that moved through the region, on Wednesday the 27th, was quasi-stationary from the Ohio Valley southwest to Oklahoma, with its western extent banked up against the Rockies in Colorado and Wyoming. High pressure encompassed much of the north central and northeast U.S. These elevated thunderstorms developed in a regime in which surface temperatures were in the lower to middle 60s, with dewpoints in the upper 50s to lower 60s. In the upper levels, the Westerlies were weak and covered the northern half of the U.S. They were fairly zonal in character, but did exhibit a slight ridge over the Northern Rockies, with a pair of weak shortwave troughs moving through the mid-Mississippi Valley and Nebraska and Kansas. This MCS occurred along the eastern fringe of a tight instability gradient in which MUCAPE was between 500 and 900 J/kg. Mid-level lapse rates were moist adiabatic. Effective deep layer shear was between 35 and 45 kts.

OREGON, Northwest

Washington County

North Plains

10	1045PST			0	0	0.00K	0.00K	Funnel Cloud
	1050PST			0	0	0.00K	0.00K	Funnel Cloud

A funnel cloud was reported by the public near North Plains, OR.

Clackamas County

Canby

10	1115PST			0	0	0.00K	0.00K	Funnel Cloud
	1120PST			0	0	0.00K	0.00K	Funnel Cloud

A funnel cloud reported by general public around Canby, OR.

Low pressure system moving across the area generated several showers. Weak veering low levels winds and low LCLs generated two reported funnel clouds in Northwest Oregon associated with these showers.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

WASHINGTON, Southwest

Cowlitz County

1 SE Kalama

10	0845PST 0850PST				0	0	0.00K	0.00K	Funnel Cloud
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A funnel cloud was observed by a NWS Employee from Interstate 5 near Kalama, Washington.

A low pressure system moved across the area and generated several showers. Weak veering low levels winds and low Lifted Condensation Levels (LCLs) generated a reported funnel cloud in Southwest Washington.

WISCONSIN, Northwest

WIZ004

Iron

08	1500CST				0	0			Heat
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A 79-year-old man with medical complications died in his trailer after a recent heat wave. The cause of death was listed as cardiac arrhythmia secondary to dehydration. He had a history of hypertension, which was treated with medication, and he was a smoker. He had a syncopal episode one month prior to his death when sitting at picnic table by his trailer home. He had been working on window replacements and remodeling the interior. The following day he went to the emergency department for work up, was found to be mildly dehydrated. The trailer home he was working on is located in the Kimball Township of Iron County Wisconsin. The date of death was July 8, 2016. He was found July 9, 2016. The exact time of death is unknown, but thought to be late afternoon. There was a single small room fan running in the trailer.

It was in the upper 60s and low 70s the day he died, but it had been well into the 80s a few days earlier.

The heat was a contributing factor along with insufficient ventilation and proper re-hydration.

Sawyer County

1 S Hayward

11	0555CST				0	0			Hail (0.75)
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A thunderstorm dropped hail, up to the size of pennies, on Hayward during the early morning of July 11th.

Douglas County

3 S Winneboujou

11	1645CST				0	0			Thunderstorm Wind (61EG)
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A couple dozen trees were down along Highway 27 about 2 or 3 miles south of the intersection with County Road B.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Bayfield County

1 S Cable

11	1732CST				0	0			Thunderstorm Wind (56EG)
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A few trees were blown down.

Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Sawyer County

2 SW Round Lake

11	1744CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Several trees were blown down. The largest was 14 to 18 in diameter.

Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Bayfield County

Washburn

11	1752CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A large tree was blown down. Report forwarded by the media.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Bayfield County

1 ESE Ashland Jct

11	1800CST 2145CST				0	0	1.00K	0.00K	Flash Flood
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Flash flooding along South Fish Creek flooded the nearby stretch of Highway 137.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

WISCONSIN, Northwest

Ashland County 2 W Ashland

11	1830CST 2130CST				0	0	0.00K	0.00K	Flash Flood
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The Sheriff office in Ashland County reported nearly every street in the city of Ashland was under water.

Ashland County 42 W Clam Lake

11	1830CST 2145CST				0	0	1.00K	0.00K	Flash Flood
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Flash flooding along Frog Creek washed out the nearby stretch of Highway 77.

Ashland County 1 SSE Sanborn

11	1830CST 2145CST				0	0	1.00K	0.00K	Flash Flood
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Flash flooding along Trout Brook washed out the nearby stretch of Highway 13.

Ashland County 3 SE Odanah

11	1830CST 2145CST				0	0	1.00K	0.00K	Flash Flood
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Flash flooding along the Denomie Creek washed out a portion of Highway 2.

Ashland County 1 WNW Ashland

11	1830CST 2145CST				0	0	1.00K	0.00K	Flash Flood
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The Ashland County Sheriff Office reported nearly all roads across the city of Ashland were under water.

Douglas County 2 N Patzau

11	1830CST 2130CST				0	0	0.00K	0.00K	Flash Flood
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Water covered County Road B about 6 miles west of Pattison State Park.

Bayfield County 2 ENE Washburn

11	1850CST 2145CST				0	0	1.00K	0.00K	Flash Flood
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There was flash flooding in Washburn with backups from storm drains in town. There were several inches of water on roadways.

Bayfield County Grandview

11	1900CST 2145CST				0	0	1.00K	0.00K	Flash Flood
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Highway 61 was washed out due to flash flooding along Twentymile Creek.

Bayfield County 1 WSW Grandview

11	1900CST 2145CST				0	0	1.00K	0.00K	Flash Flood
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Highway 61 was washed out due to flash flooding along Eighteenmile Creek.

Iron County 4 NE Cedar

11 12	2100CST 0300CST				1	0	1.00K	0.00K	Flash Flood
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Flash flooding along the Oronto and Parker Creeks damaged the infrastructure of Saxon Harbor and parts of the Saxon Harbor Campground. One man died from the flooding. M56Unknown

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

WISCONSIN, Northwest

Iron County

2 SW Van Buskirk

11	2241CST 2244CST		1.4	20	0	0			Tornado (EF1)
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There was enough evidence to indicate a quasi-linear convective tornado developed over rural east-central Iron County, south of Van Buskirk, during the late evening. It heavily damaged a barn structure and a car, and it also damaged some homes and mangled some trees.

Bayfield County

1 NNE Cable Union Arpt

12	1000CST				1	1	0.00K	0.00K	Flood
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An 84-year-old Illinois man died when his car became partially submerged into floodwaters along a ditch along County Highway M, about 3 miles east of Cable. The man and his 84-year-old wife were attempting to turn around after encountering a washed out section of the Highway near the Namekagon River, but accidentally backed up into the flooded ditch. The man drowned, but a firefighter saved the wife. M84VE

Ashland County

1 NW Marengo

14	0900CST				1	0	0.00K	0.00K	Flood
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An 82-year-old man from Marengo was found dead in his pickup truck in the flooded waters along the Marengo River near the Riemer Road Bridge west of Marengo. The exact circumstances of how, when, and where he died are not known, only that he was found a few days after the heavy rains some time early Thursday. M82VE

Thunderstorms brought heavy rain to northwest Wisconsin early Monday, July 11th which helped to saturate the soil. During the day a strong low level jet pumped very moist air into the region. The jet and a west to east stationary front were the triggers for thunderstorms that developed later in the day. Rounds of thunderstorms brought some damaging winds to parts of northwest Wisconsin late Monday afternoon and evening. These storms were followed by evening storms that began training as the night wore on. The training storms resulted in very heavy rain over the region. Historic flooding followed the extremely high average rainfall amounts of 4 to 8 inches. There was a wide corridor of about 8 to 10 inches of rain from northern Iron County to northern Burnett County, including Saxon Harbor on Lake Superior, and the towns of Marengo, Cable, Hayward, Wascott, Minong, and Danbury. The initial squall line of storms brought down many trees. The effects of the wind and a raging, flooded Oronto Creek caused enormous damage at Saxon Harbor. At Saxon Harbor, where 70 vessels were moored, 6 boats sank and the rest were set afloat. Most vessels were recovered. One man drowned in these floodwaters. The Bad River, which flows north through Ashland County into Lake Superior, set a new record, with the river level at Odanah reaching around 27.3 feet Tuesday morning, shattering the previous record of 22.2 feet set on June 24th, 1946. The Bad River Tribe of the Lake Superior Chippewa was totally cut off by the floodwater for days.

Total damage to roads and public infrastructure across northern Wisconsin was \$35 million. In Ashland County, road washouts and bridge repair costs were estimated at \$2 to \$4 million. Washburn County damage was about \$2.5 million. The Bad River Band of Ojibway had \$2.3 million damage to roads. Forty-three miles of roads were damaged and closed on tribal land.

The Wisconsin governor declared states of emergency for the following counties: Iron, Ashland, Bayfield, Douglas, Burnett, Washburn, Sawyer, and Price. The President later declared disasters for all of the same counties, except for Price. The USDA secretary declared the following counties agricultural disaster areas due to destroyed crops or sharply reduced yields: Douglas, Bayfield, Ashland, Iron, Washburn, Sawyer and Price. M82VE

WIZ001-006-007

Burnett - Douglas - Washburn

20	1200CST 2000CST				0	0			Excessive Heat
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WIZ002>004-008>009

Ashland - Bayfield - Iron - Price - Sawyer

20	1200CST 2000CST				0	0			Heat
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Very warm air in the 80s and 90s and dew point temperatures in the lower and middle 70s resulted in heat index readings of 95 to 105 degrees across much of northwest Wisconsin on July 20th. The highest readings were for areas closer to the Minnesota border.

Douglas County

1 W Superior

21	0230CST				0	0			Thunderstorm Wind (52EG)
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There was a large tree down along Belknap Street.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

WISCONSIN, Northwest

Douglas County 2 E Superior

21	0231CST				0	0			Thunderstorm Wind (61EG)
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Two docks on Barker Island were damaged.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Douglas County 1 NE Superior Bong Fld Ar

21	0231CST				0	0			Thunderstorm Wind (52EG)
----	---------	--	--	--	---	---	--	--	--------------------------

Susquehanna Avenue near 17th St was blocked by fallen tree branches.
Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Douglas County 2 SW Blueberry

21	0253CST				0	0			Thunderstorm Wind (61EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were large trees down along County Road F.
Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Douglas County 1 NW Brule

21	0258CST				0	0			Thunderstorm Wind (65EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were trees and at least one power line down along the county road near Brule.
Note: The estimated wind gust of 65 knots is equivalent to 75 mph.

Bayfield County Oula

21	0259CST				0	0			Thunderstorm Wind (78EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A trailer home, which was built in the 1980s, was destroyed by the straight-line winds. The trailer was in the middle of a wide open field. There were some trees down along the tree line.
Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

Bayfield County Oula

21	0259CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

A 5' diameter tree was down. Other trees 5 to 12 in diameter were snapped. There were widespread power outages.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Bayfield County 2 SE Iron River

21	0305CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were numerous trees down.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Bayfield County 3 NE Iron River

21	0305CST				0	0			Thunderstorm Wind (70EG)
----	---------	--	--	--	---	---	--	--	--------------------------

There were numerous trees down near Jackman Lake.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Bayfield County 8 N Moquah 8 NW Barksdale

21	0317CST				0	0			Thunderstorm Wind (78EG)
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Groves of trees were flattened to the west-northwest of Birch Grove Campground near Forest Road 437.
Note: The estimated wind gust of 78 knots is equivalent to 90 mph.

Bayfield County 8 NW Barksdale

21	0318CST				0	0			Thunderstorm Wind (70EG)
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There were numerous trees down at the Birch Grove Campground, which trapped some campers. Four campers sustained non-life-threatening injuries.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Bayfield County 4 NW Sand Bay

21	0320CST				0	0			Thunderstorm Wind (70EG)
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There were numerous trees down on Sand Island.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Bayfield County 2 NW Leonards

21	0326CST				0	0			Thunderstorm Wind (70EG)
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There were numerous trees down along Sunset Road west of Cable.
Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

WISCONSIN, Northwest

Bayfield County

2 NNW Washburn

21 0328CST 0 0 Thunderstorm Wind (70EG)
There were 8 to 9 diameter trees down and the power was out. There were other trees damaged.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Ashland County

Ashland Arpt

21 0329CST 0 0 Thunderstorm Wind (65MG)
Note: The measured wind gust of 65 knots is equivalent to 75 mph.

Ashland County

Ashland

21 0330CST 0 0 Thunderstorm Wind (70EG)
There were numerous trees down in the city of Ashland. The tree diameters ranged from 8 to 10. Some branches were thrown 100' feet away.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Ashland County

11 N La Pointe Madeline I

21 0331CST 0 0 Thunderstorm Wind (70EG)
There were numerous trees down on Oak Island.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Ashland County

18 NNE La Pointe Madeline I

21 0338CST 0 0 Thunderstorm Wind (70EG)
There were numerous trees down on Cat Island.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Ashland County

14 NE La Pointe Madeline I

21 0338CST 0 0 Thunderstorm Wind (70EG)
There were numerous trees down on Stockton Island.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Ashland County

14 ENE La Pointe Madeline I

21 0340CST 0 0 Thunderstorm Wind (70EG)
There were numerous trees down on Michigan Island.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Sawyer County

2 NE Grindstone Lake

21 0345CST 0 0 Thunderstorm Wind (70EG)
There were trees snapped and uprooted. A tree fell onto a garage.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Sawyer County

1 SW The Northwoods Beach

21 0345CST 0 0 Thunderstorm Wind (70EG)
There were numerous trees down near the Northwoods Beach.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Sawyer County

1 SE The Northwoods Beach

21 0346CST 0 0 Thunderstorm Wind (70EG)
There were numerous trees down along and near Skunawong Lane on East Side of Lac Courte Oreilles.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Bayfield County

3 ENE Topside

21 0402CST 0 0 Thunderstorm Wind (51MG)
The weather station was the RAWS near Washburn with the identification WSHW3.

Note: The measured wind gust of 51 knots is equivalent to 59 mph.

Iron County

Iron Belt

21 0405CST 0 0 Thunderstorm Wind (70EG)
There were many trees and power lines down in Iron Belt.

Note: The estimated wind gust of 70 knots is equivalent to 81 mph.

Price County

5 NE Cranberry Lake

21 0440CST 0 0 Thunderstorm Wind (61EG)
Two 50' tall pine trees were knocked down on County Road D.

Storm Data and Unusual Weather Phenomena

July 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

WISCONSIN, Northwest

A cluster of thunderstorms developed over eastern North Dakota and northwestern Minnesota the evening of Wednesday July 20th. The outflow from the storms coalesced into a couple main bow echoes that quickly sped across northeast and central Minnesota, and then into northwest Wisconsin, during the early morning hours of Thursday July 21st. The multi-bow derecho caused extensive damage across the region from widespread straight-line winds of 60 to 80 mph. There were some isolated higher gusts to around 90 mph. Note: The estimated wind gust of 61 knots is equivalent to 70 mph.

Bayfield County

Barnes

24	0235CST			0	0			Thunderstorm Wind (56EG)
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Many large pine trees were uprooted or snapped near the intersection of County Highway N and Barnes Road. The largest trees were approximately 12 in diameter.

A thunderstorm brought damaging winds to parts of southern Bayfield County, near the town of Barnes, during the early morning hours of July 24th. Note: The estimated wind gust of 56 knots is equivalent to 64 mph.

Iron County

1 NNE Mercer

26	1718CST			0	0			Hail (0.88)
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The hail fell for about 5 minutes. The largest stones were a little less than one inch in diameter.

A thunderstorm dropped hail, up to the size of nickels, near the town of Mercer in Iron County Wisconsin during the early evening of July 26th.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

FLORIDA, West Central

Levy County

Bronson

11	1835EST				0	0	1.00K	0.00K	Thunderstorm Wind (40EG)
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One tree was reported to be knocked down in Bronson as a result of thunderstorm wind gusts.

Easterly flow and deep moisture supported numerous thunderstorms moving west across the Florida Peninsula. Winds from one of these storms knocked down a tree in Levy County. Note: The estimated wind gust of 40 knots is equivalent to 46 mph.

Sarasota County

1 SW Bee Ridge

13	1530EST				0	0	50.00K	0.00K	Thunderstorm Wind (40EG)
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Broadcast media relayed pictures of a tree that was knocked down on a house and broke through the roof.

Note: The estimated wind gust of 40 knots is equivalent to 46 mph.

Manatee County

Tallevast

13	1535EST				0	0	0.00K	0.00K	Thunderstorm Wind (53MG)
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The ASOS at Sarasota Bradenton International Airport measured a 53 knot thunderstorm wind gust.

Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Lee County

1 SE Tice

13	1826EST				0	0	20.00K	0.00K	Tornado (EF0)
	1828EST	0.1	15		0	0			

Lee County Emergency Management reported that 4 businesses along Zip Drive and Corporation Circle in Fort Myers sustained damage along a narrow path. Multiple funnel cloud photographs were also taken in the vicinity, hinting that the damage was likely caused by a brief tornado touchdown. Damage was mostly being partially peeled back, and gutters being ripped off of buildings.

Abundant tropical moisture and intense solar heating helped fuel scattered thunderstorms that moved northwest across the Florida Peninsula during the afternoon and early evening hours. One of these storms spun up a brief tornado in Lee County. Other storms produced severe wind gusts.

Charlotte County

1 ENE Gasparilla

14	1740EST				1	0	0.00K	0.00K	Lightning
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William Coty Steffanni was struck by lightning while jet skiing near 1500 Gulf Boulevard in Englewood. A Sheriff Deputy dove into the water and brought Coty to shore where another deputy performed CPR. Coty was transferred to the hospital where he passed from his injuries three days later. M22BO

Pinellas County

Highpoint

17	2047EST				0	0	400.00K	0.00K	Lightning
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Lightning struck a house and started a fire in the attic. The fire smoldered for an hour or so before flames ensued and ultimately the house was destroyed. The structure never collapsed but the inside of the house has been gutted.

Late evening thunderstorms across the area produced widespread lightning across Lee, Sarasota counties, and Pinellas County. Lightning struck a 22-year-old man on a jet ski near the border of Englewood and Venice. A lightning strike is believed to have hit a home in Pinellas County and subsequently started a fire in the attic.

Sarasota County

1 SW Newton Hgts

26	1549EST				1	0	0.00K	0.00K	Lightning
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A 50 year old homeless woman was struck and killed by lightning. She was seeking shelter under a gazebo in the park. F500U

Easterly flow pushed seabreeze thunderstorms towards the west coast during the mid afternoon hours. These storms produced widespread lightning across the area. One lightning strike killed a woman in Sarasota. F500U

Pinellas County

Indian Rocks Beach

1 SSW South Pasadena

31	0530EST				0	0	0.00K	0.00K	Flood
	0730EST								

Excessive rainfall from a deeply moist environment ahead of Hurricane Hermine led to numerous reports of street flooding in southern and central Pinellas County. Cars were reported to be stalled in high water at 54th Avenue and Interstate 275, and additional flooding was reported in Saint Petersburg, Gulfport, and Indian Rocks Beach.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

FLORIDA, West Central

Sarasota County

2 WNW Newton Hgts

31	1515EST 1700EST				0	0	0.00K	0.00K	Flood
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Excessive rainfall in the moist environment ahead of Hurricane Hermine caused flooding in parts of Sarasota. Fire and Rescue crews helped 7 people evacuate their homes near 40th Street and Coconut Avenue where flood waters were up to the front of houses.

Pasco County

1 E Hudson

31	1712EST				0	0	0.00K		Lightning
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A lightning strike to Bayonet Point Medical Center caused a fire on the roof and damaged the electrical system. The backup generators came on but the electricity traveled through damage electrical lines and was immediately turned off leaving the entire hospital in the dark. All 224 patients had to be evacuated while power was out. Mutual aide was received from neighboring communities with 70 ambulances taking patients to areas hospitals. The hospital reopened 5 days after the incident forgoing \$2.6 million in net operating revenue. Damage due to the lightning strike and resulting fire was unknown. There was one burn injury from the fire.

Deep moisture to the east of Hurricane Hermine produced numerous thunderstorms across West-Central and Southwest Florida. Several hours of heavy downpours led to rainfall accumulations of as much as 10 inches along the coast, causing minor flooding in several locations. Additionally, a lightning strike from one storm caused an electrical fire at a hospital.

GULF OF MEXICO

GMZ853

Englewood To Tarpon Springs Fl Out 20nm

06	1651EST 1706EST				0	0	0.00K	0.00K	Waterspout
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A stalled trough over northern Florida fueled numerous showers and thunderstorms developing over the Gulf of Mexico and moving into the coast. One of these showers developed a waterspout off of Venice Beach.

07	0740EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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A stalled trough over northern Florida fueled numerous showers and thunderstorms developing over the Gulf of Mexico and moving into the coast. Some of the stronger storms produced gusty winds along the coast.

13	1555EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Abundant tropical moisture and intense solar heating helped fuel scattered thunderstorms that moved northwest across the Florida Peninsula during the afternoon and early evening hours. One of these storms produced marine wind gusts along the coast.

GMZ830

Tampa Bay

14	1340EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Sea breeze thunderstorms developed during the afternoon over the Florida Peninsula and shifted west into the Tampa Bay, with gusty winds.

16	1454EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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GMZ853

Englewood To Tarpon Springs Fl Out 20nm

16	1513EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Deep tropical moisture and easterly winds allowed for scattered thunderstorms to develop and move east to west across the Florida Peninsula. A couple of these storms produced gusty winds along the coast.

17	1900EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Easterly wind flow allowed for thunderstorms to develop during the late afternoon and early evening hours across the Tampa Bay area. A thunderstorm moving offshore produced gusty winds over the waters near Dunedin.

GMZ830

Tampa Bay

18	1506EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Afternoon seabreeze thunderstorms developing over Tampa Bay produced gusty winds across the Bay waters.

23	1643EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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23	1705EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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23	1724EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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CORRECTIONS

GULF OF MEXICO

Afternoon seabreeze thunderstorms across the Bay Area produced widespread gusty winds over the Bay Waters.

26	1607EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
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Afternoon thunderstorms moving across Old Tampa Bay produced gusty winds near the Courtney Campbell Bridge.

27	1500EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
27	1515EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
27	1515EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
27	1519EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
27	1524EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
27	1531EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind
27	1532EST				0	0	0.00K	0.00K	Marine Thunderstorm Wind

Scattered to numerous thunderstorms developed over the Florida Peninsula under a moist air mass, and moved west northwest into the Gulf of Mexico. Several of these storms produced marine wind gusts over Tampa Bay.

LAKE ERIE

LEZ061

Lake Erie Ripley To Buffalo Ny 5nm Offshore To Intl Border

21	1850EST				0	0	0.00K		Waterspout
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Thunderstorms moving across Lake Erie produced waterspouts over the open waters of the Lake. Photos of the waterspouts were posted on social media.

LAKE ONTARIO

LOZ043

Thirty Mile Point To Sodus Bay Ny

12	1420EST				0	0	0.00K		Marine Thunderstorm Wind
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Thunderstorms developed along the Lake Ontario breeze boundary. Wind gusts to 36 knots were measured with these thunderstorms.

NEW YORK, West

NYZ001>003-010> 014-019>021-085

Allegany - Cattaraugus - Chautauqua - Genesee - Livingston - Monroe - Niagara - Northern Erie - Ontario - Orleans - Southern Erie - Wyoming

01	0000EST								
31	2359EST				0	0			Drought

A weather pattern supporting dry conditions was prevalent across weather New York resulting in below normal precipitation. There were periodic showers and thunderstorms during this time but these were localized with precipitation generally coming from frontal boundaries rather than widespread rainfall from larger systems. Impacts have deteriorated due to hot summer temperatures which increased the evaporation rate and quickly dried out the soil. In addition, below normal snow pack from a mild winter left conditions drier than normal going into spring. These were the primary factors which led to the drought conditions. The driest conditions were across the Buffalo metro area and Niagara Frontier where lake shadowing reduced the frequency of showers and thunderstorms. The USGS ground water level network showed that numerous wells are in the driest 10th percentile. The dry conditions are beginning to have an impact on crops.

Chautauqua County 2 NNW Stillwater

10	1715EST						10.00K	0.00K	Flash Flood
	1815EST				0	0			

Slow moving thunderstorms developed along the Lake Erie Lake Breeze. The rainfall rates peaked at four to five inches per hour as the storms neared Jamestown. Route 60 between Peck Settlement Road and Johns Place was closed due to flooding. Other reports of more minor flooding were received including numerous manhole covers displaced due to overflowing storm drains, and an inch or two's worth of water flowing down the stairs near Jamestown High School.

Orleans County 1 E Albion

12	1341EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement report trees downed by thunderstorm winds.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEW YORK, West

Orleans County

1 SW Holley

12	1355EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement report wires downed by thunderstorm winds.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Orleans County

Clarendon

12	1357EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement report wires downed by thunderstorm winds on Powerline Road.

Thunderstorms developed along the Lake Ontario breezy boundary during the afternoon hours. The thunderstorms produced winds that downed trees and wires in Albion, Holley and Clarendon. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wayne County

2 W North Wolcott

13	1353EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Oswego County

1 N Granby Center

13	1421EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Oswego County

1 SE Volney

13	1426EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Livingston County

2 WNW Caledonia

13	1433EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Oswego County

Palermo

13	1435EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Oswego County

1 S Mexico

13	1440EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Genesee County

Bethany Center

13	1445EST				0	0	8.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Livingston County

1 S Inverness

13	1450EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Ontario County

1 NE Phelps

13	1512EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEW YORK, West

Monroe County 1 SW Brighton

13	1519EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Monroe County 1 S Greece

13	1519EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Ontario County 1 W Victor

13	1524EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Livingston County 1 S Mt Morris

13	1528EST				0	0	8.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wayne County 1 S Palmyra

13	1531EST				0	0	35.00K	0.00K	Thunderstorm Wind (50EG)
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Thunderstorm winds blew down a large barn.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wayne County Macedon

13	1535EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Lewis County 1 W Lyonsdale

13	1537EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wayne County 1 SE Lyons

13	1543EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Ontario County 1 NE Phelps

13	1551EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Wayne County 1 E Clyde

13	1551EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Chautauqua County Mayville

13	1625EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

NEW YORK, West

Erie County

3 WNW Sardinia

13	1635EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Local fire responders reported power poles and wires downed by thunderstorm winds.

Thunderstorms developed across the region in a moist unstable air mass. Numerous thunderstorms developed on outflow and lake breeze boundaries. The thunderstorms downed trees and wires throughout the region. In Palmyra, a large barn was blown down by the winds. Near Sardinia, the thunderstorm winds downed power poles and lines. Power outages were scattered throughout the region. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Oswego County

3 SSW Redfield

16	1713EST				0	0	0.00K	0.00K	Funnel Cloud
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Multiple public reports of a funnel cloud were received.

Lewis County

1 E Osceola

16	1715EST				0	0	8.00K	0.00K	Thunderstorm Wind (52EG)
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Law enforcement reported wires downed by thunderstorm winds.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Lewis County

1 WSW Constableville

16	1734EST				0	0	8.00K	0.00K	Tornado (EF0)
	1738EST	0.22	10		0	0			

A video of a small rope tornado was posted to social media.

Lewis County

1 W Turin

16	1752EST				0	0	10.00K	0.00K	Thunderstorm Wind (52EG)
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Law enforcement reported wires downed on Route 26 by thunderstorm winds.

Thunderstorms accompanied the passage of a cold front during the late afternoon hours. One of the thunderstorms tracked from Monroe to Oswego County and eventually southern Lewis County. In Lewis County, thunderstorm winds downed trees and wires in Osceola and Turin. In Constableville, a small tornado touched down. A small section of a cornfield was flattened by this weak tornado. The small rope tornado was caught on video. There were many pictures and videos on social media of a larger, well developed funnel cloud as the thunderstorm moved across southeast Oswego and southern Lewis Counties. The ground survey conducted uncovered no visible evidence that touchdown of that funnel occurred. It is a heavily wooded area however and damage may have happened that was not located as the damage may not be visible from public roadways or at ground level. Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

NYZ004>007

Jefferson - Northern Cayuga - Oswego - Wayne

18	0000EST								
31	2359EST				0	0			Drought

A weather pattern supporting dry conditions was prevalent across weather New York resulting in below normal precipitation. There were periodic showers and thunderstorms during this time but these were localized with precipitation generally coming from frontal boundaries rather than widespread rainfall from larger systems. Impacts have deteriorated due to hot summer temperatures which increased the evaporation rate and quickly dried out the soil. In addition, below normal snow pack from a mild winter left conditions drier than normal going into spring. These were the primary factors which led to the drought conditions. The driest conditions were across the Buffalo metro area and Niagara Frontier where lake shadowing reduced the frequency of showers and thunderstorms. The USGS ground water level network showed that numerous wells are in the driest 10th percentile. The dry conditions are beginning to have an impact on crops. The area expanded to include Wayne, northern Cayuga, Oswego and Jefferson counties during the second half of the month.

Cattaraugus County

1 N Lime Lake

25	1810EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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A trained spotter reported trees downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Cattaraugus County

1 NW New Albion

25	1842EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees on Leon Road downed by thunderstorm winds.

Thunderstorms developed during the evening hours in a moist, unstable atmosphere. A cluster of storms along the Erie / Cattaraugus County line produced damaging winds that downed trees and power lines. Damage was reported near Machias and in New Albion. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Damage Property	Estimated Damage Crops	Character of Storm
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CORRECTIONS

NEW YORK, West

Niagara County

1 NW Veterans Hgts

28	1419EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported a shed blown onto Grauer Road by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Niagara County

1 S Sanborn

28	1432EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and power lines on Lockport Road downed by thunderstorm winds.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Niagara County

1 SSW Cambria

28	1438EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and power lines on Shawnee Road downed by thunderstorm winds.

Thunderstorms developed along the Lake Ontario breeze over Southern Ontario and Niagara County. The thunderstorms produced damaging winds the downed trees and power lines near Sanborn and Cambria. Near Niagara Falls, a shed was blown onto Grauer Road. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Jefferson County

1 SW Pt Vivian

31	1125EST				0	1	0.00K	0.00K	Lightning
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A man was struck by lightning during the early afternoon at a car dealership on Route 12 in Alexandria Bay. The 21-year-old man was sitting outdoors against an open garage door when he was struck. He was taken to the hospital with minor injuries.

OHIO, East

Columbiana County

1 WSW Logtown

05	1647EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported large tree limbs down.
Scattered thunderstorms developed ahead of a weak cold front late in the afternoon of the 5th. Isolated tree damage occurred in Columbiana county in Ohio, and Hancock county in West Virginia. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Coshocton County

2 WNW Warsaw

10	1130EST				1	0	0.00K	0.00K	Lightning
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Local media reported a 9 year old boy was struck by lightning and later died. The boy was outside attempting to bring horses into a barn when he was struck. M9OU
Scattered thunderstorms were across eastern Ohio the afternoon of the 10th. A 9 year old boy died after being struck by lightning while attempting to move horses into a barn. M9OU

Belmont County

1 SSE Crescent
1 W Barton

14	1258EST				0	0		0.00K	Tornado (EFU)
	1259EST	0.53	1		0	0			

An NWS storm survey confirmed an EFU tornado through video. No visible evidence was found on the ground to assign a rating.

Scattered thunderstorms developed along a weak boundary the afternoon of the 14th. A weak EFU tornado occurred in Belmont county, Ohio, while isolated flash flooding was reported in Fayette county in Pennsylvania.

Columbiana County

1 W Union Ridge

28	1638EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Emergency management reported numerous trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Columbiana County

1 N East Carmel

28	1701EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Emergency management reported numerous trees down.

A weak cold front moved southeast across eastern Ohio and western Pennsylvania the afternoon and evening of the 28th. While some wind damage was reported, more significant flash flooding occurred over portions of Allegheny and Fayette counties in Pennsylvania, with the widespread flash flooding across Bullskin Township in Fayette county, including the town of Connellsville. Between 75 to 100 homes sustained damage from flood waters in Bullskin Township, including 29 single family homes with major damage, 8 mobile homes destroyed, a bridge destroyed, and 3 to 4 bridges suffering major structural damage. 50 people were evacuated, with damage estimates in the millions of dollars. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

PENNSYLVANIA, West

Butler County

2 ENE Windward Hgts

11	1650EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Local media reported trees and power lines were down in Oakland Township.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Butler County

1 ESE Bruin

11	1745EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Local media reported trees and power lines down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Armstrong County

1 SE Frogtown

11	1830EST 2000EST				0	0	5.00K	0.00K	Flash Flood
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Emergency management reported the Sugar Creek Ambulance Station flooded.

Armstrong County

2 SSE Blanco

11	1835EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

Emergency management reported trees down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Indiana County

1 W Hooverhurst

11	1910EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Trees were reported down at the Post Office.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Indiana County

1 S Rossiter

11	1912EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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The Department of Highways reported trees down on Spaulding Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Indiana County

Urey

11	1916EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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The Department of Highways reported trees down on Johnsonburg Road.

Very moist and unstable conditions were across the region on the backside of an upper level ridge. Scattered thunderstorms developed in the afternoon with isolated damage and flash flooding. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Forest County

1 N Gilfoyle

13	1835EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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A trained spotter reported multiple large trees down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Jefferson County

1 W Harlan

13	1910EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	-------	-------	--------------------------

The Fire Department reported trees down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Jefferson County

1 W Summerville

13	1912EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees down around Summerville.

Scattered thunderstorms developed ahead of a weak frontal boundary, some of which were severe. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Fayette County

1 E Perryopolis

14	1530EST 1700EST				0	0	5.00K	0.00K	Flash Flood
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The Fire Department reported Washington Run overflowed with flash flooding bringing water into a business for a time, with limited damage.

Scattered thunderstorms developed along a weak boundary the afternoon of the 14th. A weak EFU tornado occurred in Belmont county, Ohio, while isolated flash flooding was reported in Fayette county in Pennsylvania.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

PENNSYLVANIA, West

Allegheny County

1 N Gayly

16	1640EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Emergency management reported trees and wires down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Allegheny County

1 E Montrose Hill

16	1655EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

A trained spotter reported trees and wires down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Westmoreland County

Murrysville

16	1710EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Emergency management reported trees and wires down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Indiana County

2 WNW White

16	1723EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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The public reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Westmoreland County

1 N Boquet

16	1725EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Emergency management reported trees and wires down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Westmoreland County

1 NW Hawkeye

16	1730EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Emergency management reported trees and wires down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Westmoreland County

1 W Bridgeport

16	1732EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Emergency management reported trees and wires down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Westmoreland County

1 S Donegal

16	1750EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Emergency management reported trees and wires down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Indiana County

1 SW Commodore

16	1751EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Public reported trees down.
Thunderstorms developed along a pre-frontal boundary across western Pennsylvania and northern West Virginia, some of which were severe. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Washington County

Donora

17	1341EST 1342EST	0.87	250		0	0	10.00K	0.00K	Tornado (EF0)
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An NWS Storm Survey found an EF0 touched down in Donora and then moved to the Monongahela River and dissipated. Damage was found to trees and porch awnings, as well as some shingles and siding blown off of homes. Some bricks were loosened from chimneys, and a garage with an open door had a wall blown down. The path length of the storm was near one half mile, with a maximum width of 250 yards. Estimated maximum winds were 80 to 85 MPH.

A rain shower moving north of a weak boundary produced an EF0 tornado in Donora.

Clarion County

1 SSE Frogtown

25	2017EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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A trained spotter reported a 60 foot tree down along Kelly Estate Road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Butler County

1 W Zeno

25	2043EST 2044EST	2.08	350		0	0	5.00K	0.00K	Tornado (EF0)
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Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

PENNSYLVANIA, West

A NWS Storm Survey found a brief EF0 tornado occurred east of Evans City. Damage was limited to broken large hardwood trees, shingles removed from several outbuildings, and a natural gas well pad blown onto a fence. The tornado was on the ground for nearly 2 miles, with a maximum width of 350 yards. The estimated maximum winds were near 80 MPH.

As a shortwave moved across the eastern Great Lakes, a weak boundary moved south across western Pennsylvania. Thunderstorms developed along the boundary in the evening, with isolated severe thunderstorms. One storm produced a weak and brief EF0 tornado in southern Butler county.

Allegheny County

1 N Option

28	1805EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees down on Carnegie Mellon University.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Allegheny County

1 SSW Sharpsburg

1 W Aspinwall

28	1809EST				0	0	250.00K	0.00K	Flash Flood
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Emergency management reported flash flooding on Washington BLVD, and elsewhere in the Highland Park area. Water was quickly rising to the tops of cars, with one woman rescued from her vehicle.

Allegheny County

2 E Option

28	1810EST				0	0		0.00K	Hail (1.00)
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Jefferson County

1 E Sykesville

28	1815EST				0	0	5.00K	0.00K	Flood
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The 911 Call Center reported flooding on SR 119.

Westmoreland County

Merwin

28	1820EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees and wires down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Westmoreland County

1 E Kinlock

28	1825EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Westmoreland County

1 SSE Edgecliff

28	1825EST				0	0	25.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

Law enforcement reported numerous trees and wires down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Allegheny County

1 NE Option

28	1828EST				0	0	5.00K	0.00K	Flood
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The public reported flooding on I-376 near exit 72.

Westmoreland County

1 SW Shearersburg

28	1832EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported several trees down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Westmoreland County

Shearersburg

28	1837EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees down.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Westmoreland County

Kinlock

28	1841EST				0	0	5.00K	0.00K	Flood
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The 911 Call Center reported several roads flooded.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Number of Persons Injured	Estimated Property Damage	Crops	Character of Storm
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CORRECTIONS

PENNSYLVANIA, West

Washington County 1 SE Ellsworth

28	1842EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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The public reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Washington County 2 SSE Venetia

28	1856EST				0	0	25.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees down and a power pole down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Indiana County 2 W Strangford

28	1915EST 2115EST				0	0	10.00K	0.00K	Flood
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The 911 Call Center reported basement flooding in some homes.

Westmoreland County 2 SW Crisp

28	1925EST 2300EST				0	0	25.00K	0.00K	Flood
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The 911 Call Center reported water in residences.

Westmoreland County 1 SW Oak Grove 1 ENE Ligonier

28	1929EST 2230EST				0	0	2.00K	0.00K	Flood
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Emergency management reported SR 711 flooded.

Westmoreland County 1 N Longbridge

28	1938EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported several trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Fayette County 1 SW Rows Run

28	1939EST				0	0	10.00K	0.00K	Thunderstorm Wind (50EG)
----	---------	--	--	--	---	---	--------	-------	--------------------------

Law enforcement reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Fayette County 1 ESE Davistown

28	1940EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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The public reported large tree branches down across the area.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Fayette County 1 ESE Bute 1 SSW Casparis

28	1950EST				0	0	5.00M	0.00K	Flash Flood
29	0300EST				0	0			

Flash flooding caused widespread damage across Bullskin Township, and in the town of Connellsville. Between 75 to 100 homes sustained damage from flood waters in Bullskin Township, including 29 single family homes with major damage, 8 mobile homes destroyed, a bridge destroyed, and 3 to 4 bridges suffering major structural damage. 50 people were evacuated, with damage estimated to be over 5 million dollars.

Washington County 1 WNW Vanceville

28	2025EST 2230EST				0	0	5.00K	0.00K	Flood
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The 911 Call Center reported Donley Road closed due to flooding.

Jefferson County Harlan

28	2330EST				0	0	10.00K	0.00K	Flood
29	0130EST				0	0			

Law enforcement reported flooding with a rock slide on State Route 28.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

PENNSYLVANIA, West

A weak cold front moved southeast across eastern Ohio and western Pennsylvania the afternoon and evening of the 28th. While some wind damage was reported, more significant flash flooding occurred over portions of Allegheny and Fayette counties in Pennsylvania, with the widespread flash flooding across Bullskin Township in Fayette county, including the town of Connellsville. Between 75 to 100 homes sustained damage from flood waters in Bullskin Township, including 29 single family homes with major damage, 8 mobile homes destroyed, a bridge destroyed, and 3 to 4 bridges suffering major structural damage. 50 people were evacuated, with damage estimates in the millions of dollars.

TEXAS, North Panhandle

Wheeler County

2 NNW New Mobeetie	23	1555CST			0	0			Hail (1.00)
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Wheeler County

4 NNE New Mobeetie	23	1615CST			0	0			Thunderstorm Wind (52EG)
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Large tree limbs blown down...damaging a truck. Time estimated.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Wheeler County

4 NE Briscoe	23	1618CST			0	0			Thunderstorm Wind (52EG)
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Large tree blown in half.

Note: The estimated wind gust of 52 knots is equivalent to 60 mph.

Hemphill County

6 ENE Canadian	23	1619CST			0	0			Thunderstorm Wind (53MG)
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Note: The measured wind gust of 53 knots is equivalent to 61 mph.

Hemphill County

1 N Canadian	23	1710CST			0	0			Thunderstorm Wind (60EG)
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Trees blown down.

A convergence boundary was stretched roughly from Amarillo, TX to Beaver, OK. This was the main surface based focus for convection initiation. Instability values of 1000 - 2500 J/kg MLCAPE and weak deep layer shear developed more pulse like storms. This lead to severe wind gusts as the main severe weather threat on this day. Note: The estimated wind gust of 60 knots is equivalent to 69 mph.

Collingsworth County

4 NW Dodson	25	1545CST			0	0			Hail (1.25)
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Hail damage to about 10 acres of crops. Time estimated.

Potter County

3 ESE (AMA)Amarillo Intl A	25	1627CST			0	0			Hail (1.25)
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Potter County

4 ENE (AMA)Amarillo Intl A	25	1639CST			0	0			Hail (1.25)
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Moore County

2 WNW Four Way	25	1841CST			0	0			Hail (1.25)
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Hartley County

4 SSE Channing	25	1917CST			0	0			Hail (2.50)
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An upper level trough along with a stalled frontal system was set up across the TX Panhandle. An embedded strip of weak 500 hPa vorticity moved NE through the TX Panhandle along with main upper level trough moving NE through the Panhandles. In a high MUCAPE , low shear environment with 500 hPa temps ranging between -8C and -11C, the mid levels supported hail growth. As a result, large hail was the main severe weather report with these complex of storms.

Lipscomb County

2 ENE Booker	27	1604CST			0	0	0.00K	0.00K	Flash Flood
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On county road 4 north of highway 15...two cars went off the road in very heavy rainfall and into a pasture. Sheriffs office said it was weather related and due to alot of water on the road. The two cars hydroplaned and the deputy out there said it was raining really hard. Nobody was hurt and they were able to get the cars out of the pasture.

An upper level trough to the west of the Panhandles and an upper level high pressure system to the east of the Panhandles brought a continuous stream of sub-tropical air into the region. Weak 700-500 hPa mean wind flow in conjunction with SBCAPE between 1000-2000 J/Kg, storms developed and were training, especially over the northeastern TX Panhandle where the flash flooding report occurred.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

TEXAS, North Panhandle

Gray County

2 ENE Mc Lean

28	1505CST				0	0			Thunderstorm Wind (50MG)
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Note: The measured wind gust of 50 knots is equivalent to 58 mph.

Gray County

Mc Lean

28	1610CST				0	0	0.00K	0.00K	Flash Flood
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Reported eight inches of standing water on Interstate 40 around mile marker 140 to 150. Report of cars going off the interstate.

A upper level 500 hPa perturbation upstream of the Panhandles provided the weak source of uplift for the convection development downstream in the eastern Panhandles. Weak 700-500 hPa mean flow in-conjunction with good CAPE values 2000-3000 J/Kg across the eastern Panhandles, a line of storms developed with some training which lead to the Flash Flooding report. Some of these storms along the line helped produced severe wind gust as well.

WEST VIRGINIA, North

Hancock County

Chester

05	1819EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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The public reported large tree limbs down.
Scattered thunderstorms developed ahead of a weak cold front late in the afternoon of the 5th. Isolated tree damage occurred in Columbiana county in Ohio, and Hancock county in West Virginia. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Hancock County

2 NNW Herron Arprt

13	1840EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees down.
Scattered thunderstorms developed ahead of a weak frontal boundary, some of which were severe. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Monongalia County

1 S Browns Chapel

15	1402EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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The Department of Highways reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Preston County

1 NE Gladestown

15	1404EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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The Department of Highways reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Preston County

2 N Manheim

15	1422EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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The Department of Highways reported trees down.
Scattered thunderstorms developed across portions of northern West Virginia ahead of a weak boundary, and some of the storms were severe. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Monongalia County

3 N Jere

16	1758EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Monongalia County

1 N Dellslow

16	1808EST				0	0	2.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Monongalia County

1 NNE Ices Ferry

16	1812EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Emergency management reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Preston County

1 NW Bruceton Mills

16	1825EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Emergency management reported trees down.
Thunderstorms developed along a pre-frontal boundary across western Pennsylvania and northern West Virginia, some of which were severe. Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Marshall County

1 SW Beelers Station

28	1910EST				0	0	15.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported numerous trees down blocking the road.

Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

Storm Data and Unusual Weather Phenomena

August 2016

Location	Date	Time Local/ Standard	Path Length (Miles)	Path Width (Yards)	Number of Persons Killed	Injured	Estimated Damage Property	Crops	Character of Storm
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CORRECTIONS

WEST VIRGINIA, North

**Marshall County
1 NW Rocklick**

28	1915EST				0	0	5.00K	0.00K	Thunderstorm Wind (50EG)
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Law enforcement reported trees down.
Note: The estimated wind gust of 50 knots is equivalent to 58 mph.

**Marshall County
1 NW Knoxville**

28	2015EST 2230EST				0	0	5.00K	0.00K	Flood
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Emergency management reported Middle Grave Creek Road closed due to flooding.

A weak cold front moved southeast across eastern Ohio and western Pennsylvania the afternoon and evening of the 28th. While some wind damage was reported, more significant flash flooding occurred over portions of Allegheny and Fayette counties in Pennsylvania, with the widespread flash flooding across Bullskin Township in Fayette county, including the town of Connellsville. Between 75 to 100 homes sustained damage from flood waters in Bullskin Township, including 29 single family homes with major damage, 8 mobile homes destroyed, a bridge destroyed, and 3 to 4 bridges suffering major structural damage. 50 people were evacuated, with damage estimates in the millions of dollars.