



NWS Charleston

Flash Flood Program Changes

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Outline

- ★ What and why?
- ★ Flash flood event criteria changes
- ★ Flash Flood Warning (FFW) changes
 - Impact Based Warnings (IBW)
 - Base FFW
 - Considerable FFW
 - Catastrophic FFW
- ★ Anticipated impacts for users





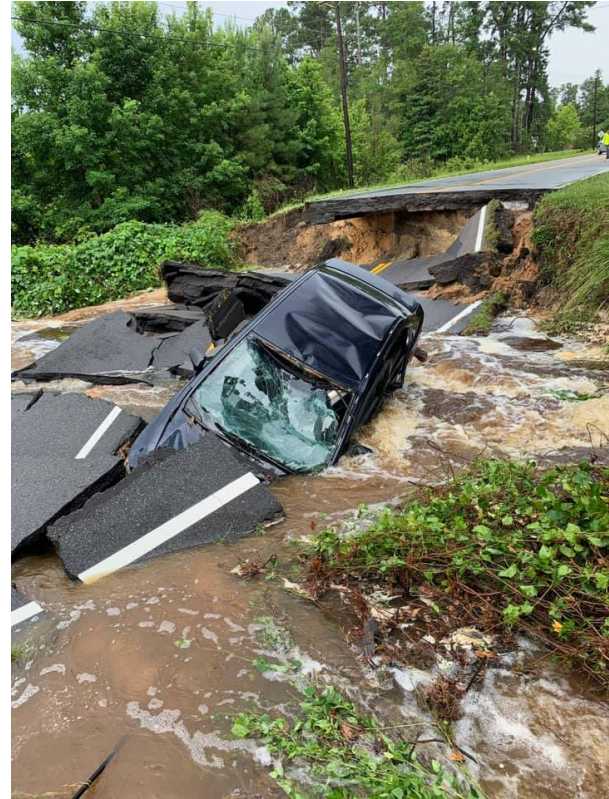
What and Why

★ What

- Lowering the impact threshold for what is considered a “flash flood”
- Begin using the “Base” Flash Flood Warning (FFW)
- Primary change:
 - Use the Base FFW for what we issue a Flood Advisory for now
- Becomes official Friday, 8/1

★ Why

- Improve consistency in products and services from one NWS office to the next
- More effectively highlight minor flooding that we currently cover with a Flood Advisory by using the Base FFW





Flash Flood Event Criteria Changes

★ Current flash flood event criteria:

- Water entering an inhabited structure such as a home or business
- One more more paved roads washed out and/or damaged (two or more dirt roads)
- Vehicle swept off a road by flood waters
- A river or stream gage exceeds its Moderate flood stage
- Dam or levee failure that is occurring or is imminent

★ New flash flood event criteria:

- **Multiple roads or intersections flooded and closed to traffic**
- **Vehicles stranded and/or stalled in flood waters**
- **Structures surrounded by flood waters or flood water entering the crawlspace, basement, or garage**
- **A non-forecast point river gage exceeding its Minor flood stage**
- **Dam or levee failure that is occurring or is imminent (typically handled with a Considerable FFW tag)**





Flash Flood Warnings

★ FFW's based on Impact Based Warning (IBW) guidelines

★ **Base FFW**

- *Impacts meet the flash flood event criteria*
- *Does not activate Wireless Emergency Alert (WEA)*
- *Does activate the Emergency Alert System (EAS) and tone alert on NOAA Weather Radio (NWR)*

★ **Considerable FFW Tag**

- Damaging flash flooding is occurring or is expected to occur, impacts exceed the flash flood event criteria
 - Roadways damaged and/or washed out
 - Vehicles submerged and water rescues needed
 - Water entering the first floor of homes and businesses
 - Non-forecast point river gages exceed Moderate flood stage
- Will activate WEA, EAS, and tone alert on NWR
- Considerable tag can be activated as a new FFW (skipping the Base FFW), or with a Flash Flood Statement (FFS) that increases the damage threat tag from Base to Considerable

★ **Catastrophic FFW Tag**

- Flash flood emergency
- Should be used only for exceedingly rare events
- Will activate WEA, EAS, and tone alert on NWR
- Catastrophic tag can be activated as a new FFW (skipping the Base and Considerable FFW, or with an FFS that increases the damage threat tag from Base to Catastrophic or from Considerable to Catastrophic)

Flash Flood

Impact Based Warning (IBW) Guidelines

	<i>Base</i>	<i>Considerable</i>	<i>Catastrophic</i>
Usage	<i>Most often</i>	<i>Rare, Urgent Action Needed</i>	<i>Exceedingly Rare, aka Flash Flood Emergency</i>
Roads & Small Bridges	Flooded, closed	Impassable, major highways closed, washouts/damage	Significant washouts & structural damage, damage to major highways
Vehicles	Stranded, stalled	Submerged, standing water rescues, isolated swift water rescues	Numerous swift water rescues, vehicles swept away
Structures	Surrounded, entering crawlspace, basement or garage	Water entering first floor, evacuation assists or rescues	Upper floors flooded, structures destroyed or swept away, numerous swift water rescues
Land	Fields, parks, parking lots, yards flooded	Significant inundation of fields, parks, parking lots, yards	Unprecedented inundation outside of 100-year floodplain
Streams, Creeks & Small Rivers	Exceed Flood Stage	Moderate Stage exceeded, water rescues	Major or Record Flooding, multiple swift water rescues

Wireless Emergency Alert (WEA) Criteria

Will it WEA?

- ✓ New Flash Flood Warning (FFW) with Considerable/Catastrophic tag
- ✓ Flash Flood Statement (FFS) with increased damage threat tag
 - *Base -> Considerable/Catastrophic* and
 - *Considerable -> Catastrophic*
- ✓ Flash Flood Statement with an extension (EXT) of Considerable/Catastrophic tagged FFW

- Note: All Flash Flood Warnings will activate EAS, NWR, and post to weather.gov
- Note: Updates (i.e., FFSs) that already carry an elevated tag do not reactivate the WEA unless the above criteria are met

ER FFIP





Flash Flood Warnings

★ Base FFW

- Impacts meet the flash flood event criteria
- Does not activate Wireless Emergency Alert (WEA)
- Does activate the Emergency Alert System (EAS) and tone alert on NOAA Weather Radio (NWR)

★ Will be the most common type of FFW issued by NWS Charleston

★ Typically in effect for 3 hours beyond the issuance time, and updated every ~90 minutes

★ Issued for flooding situations that are expected to be not life threatening and not damaging

Flash Flood Impact Based Warning (IBW) Guidelines

	Base	Considerable	Catastrophic
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 - Base -> Considerable/Catastrophic and
 - Considerable -> Catastrophic
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Flash Flood Warnings

Base Flash Flood Warning Text

Typical FFW wording

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BULLETIN - EAS ACTIVATION REQUESTED
Flash Flood Warning
National Weather Service Raleigh NC
1133 AM EDT Sun Jul 6 2025

The National Weather Service in Raleigh has issued a

* Flash Flood Warning for...
Hoke County in central North Carolina...
Scotland County in central North Carolina...

* Until 245 PM EDT.

* At 1133 AM EDT, Doppler radar indicated thunderstorms producing
heavy rain across the warned area. Between 2 and 4 inches of rain
have fallen. Additional rainfall amounts of 1 to 2 inches are
possible in the warned area. Flash flooding is ongoing or expected
to begin shortly.

HAZARD...Flash flooding caused by thunderstorms.

SOURCE...Radar.

IMPACT...Flash flooding of small creeks and streams, urban
areas, highways, streets and underpasses as well as
other poor drainage and low-lying areas.

* Some locations that will experience flash flooding include...
Laurinburg, Raeford, Antioch, Wagram, East Laurinburg, Bowmore,
Silver City, Camp Mackall, Laurel Hill, Rockfish and Sandhills
Game Land.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Turn around, don't drown when encountering flooded roads. Most flood
deaths occur in vehicles.

Please report observed flooding to local emergency services or law
enforcement and request they pass this information to the National
Weather Service when you can do so safely.

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LAT...LON 3498 7955 3508 7936 3513 7911 3509 7909
3504 7909 3499 7905 3495 7903 3483 7919
3484 7935 3482 7936 3477 7933 3463 7946
3473 7957

FLASH FLOOD...RADAR INDICATED

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No mention of a special
“tag”, could also say
“observed” if flooding is
already occurring





Flash Flood Warnings



Flash Flood

Impact Based Warning (IBW) Guidelines



	Base	Considerable	Catastrophic
Usage	<i>Most often</i>	<i>Rare, Urgent Action Needed</i>	<i>Exceedingly Rare, aka Flash Flood Emergency</i>
Roads & Small Bridges	Flooded, closed	Impassable, major highways closed, washouts/damage	Significant washouts & structural damage, damage to major highways
Vehicles	Stranded, stalled	Submerged, standing water rescues, isolated swift water rescues	Numerous swift water rescues, vehicles swept away
Structures	Surrounded, entering crawlspace, basement or garage	Water entering first floor, evacuation assists or rescues	Upper floors flooded, structures destroyed or swept away, numerous swift water rescues
Land	Fields, parks, parking lots, yards flooded	Significant inundation of fields, parks, parking lots, yards	Unprecedented inundation outside of 100-year floodplain
Streams, Creeks & Small Rivers	Exceed Flood Stage	Moderate Stage exceeded, water rescues	Major or Record Flooding, multiple swift water rescues

Wireless Emergency Alert (WEA) Criteria

Will it WEA?

- ✓ New Flash Flood Warning (FFW) with Considerable/Catastrophic tag
 - ✓ Flash Flood Statement (FFS) with increased damage threat tag
 - Base -> Considerable/Catastrophic and
 - Considerable -> Catastrophic
 - ✓ Flash Flood Statement with an extension (EXT) of Considerable/Catastrophic tagged FFW
- Note: All Flash Flood Warnings will activate EAS, NWR, and post to weather.gov
 - Note: Updates (i.e., FFSs) that already carry an elevated tag do not **re**activate the WEA unless the above criteria are met

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★ Considerable FFW

- **Damaging** flash flooding is occurring or is expected to occur, impacts beyond our Base FFW criteria
 - Roadways damaged and/or washed out
 - Vehicles submerged and water rescues needed
 - Water entering the first floor of homes and businesses
 - Non-forecast point river gages exceed Moderate flood stage
- **Will activate WEA**, EAS, and tone alert on NWR
- Considerable tag can be activated as a new FFW (skipping the Base FFW), or with a Flash Flood Statement (FFS) that increases the damage threat tag from Base to Considerable

★ This is the impact level at which we issue FFW's currently

★ Should be a more uncommon occurrence than the Base FFW

★ Meant to convey the occurrence or enhanced possibility of damaging and possibly life-threatening flooding

★ WEA activation substantially increases the visibility of the FFW and should spur a more significant response

★ No changes with this product





Flash Flood Warnings

Considerable Flash Flood Warning Text

Note the use of “life threatening” wording

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BULLETIN - EAS ACTIVATION REQUESTED
Flash Flood Warning
National Weather Service Raleigh NC
350 PM EDT Sun Jul 6 2025

The National Weather Service in Raleigh has issued a

* Flash Flood Warning for...
Alamance County in central North Carolina...
Chatham County in central North Carolina...
Southwestern Durham County in central North Carolina...
Northern Lee County in central North Carolina...
Southern Orange County in central North Carolina...
Eastern Randolph County in central North Carolina...

* Until 615 PM EDT.

* At 350 PM EDT, Doppler radar indicated heavy rain across the
warned area. Up to 3 inches of rain have fallen. Additional
rainfall amounts of 2 to 4 inches are possible in the warned area.
Flash flooding is ongoing or expected to begin shortly.

HAZARD...Life threatening flash flooding. Heavy rain producing
flash flooding.

SOURCE...Radar.

IMPACT...Life threatening flash flooding of creeks and streams,
urban areas, highways, streets and underpasses.

* Some locations that will experience flash flooding include...
Durham, Chapel Hill, Burlington, Graham, Hillsborough, Pittsboro,
Siler City, North Carolina Zoo, Carrboro, Mebane, Goldston,
Seagrove, Elon, Gibsonville, Liberty, Haw River, Ramseur,
Broadway, Franklinville and Swepsonville.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Turn around, don't drown when encountering flooded roads. Most flood
deaths occur in vehicles.

&&

LAT...LON 3590 7965 3590 7954 3624 7953 3593 7881
3587 7883 3587 7891 3561 7900 3558 7892
3542 7907 3556 7920 3553 7927 3555 7929
3552 7933 3551 7984

FLASH FLOOD...RADAR INDICATED
FLASH FLOOD DAMAGE THREAT...CONSIDERABLE

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Note the threat tag
FLASH FLOOD DAMAGE THREAT...CONSIDERABLE





Flash Flood Warnings

★ Catastrophic FFW

- Flash Flood Emergency
- Will activate WEA, EAS, and tone alert on NWR
- Catastrophic tag can be activated as a new FFW (skipping the Base and Considerable FFW, or with an FFS that increases the damage threat tag from Base to Catastrophic or from Considerable to Catastrophic)

★ Reserved for exceedingly rare events that should pose a particularly high risk to life and property

★ Have been utilized in the past by NWS Charleston (October 2015 flood event)

★ No changes with this product

Flash Flood

Impact Based Warning (IBW) Guidelines

	<i>Base</i>	<i>Considerable</i>	<i>Catastrophic</i>
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- Note: Updates (i.e., FFSs) that already carry an elevated tag do not reactivate the WEA unless the above criteria are met

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Flash Flood Warnings

Catastrophic Flash Flood Warning Text

FLASH FLOOD
EMERGENCY headline

More emergency
wording, including
PARTICULARLY
DANGEROUS
SITUATION

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BULLETIN - EAS ACTIVATION REQUESTED
Flash Flood Warning
National Weather Service Austin/San Antonio TX
1243 AM CDT Sat Jul 5 2025

..FLASH_FLOOD EMERGENCY FOR WESTERN TRAVIS COUNTY AND FAR EASTERN
BURNET COUNTY AROUND LAKE TRAVIS...

The National Weather Service in Austin/San Antonio has issued a

* Flash Flood Warning for...
Northwestern Travis County in south central Texas...

* Until 500 AM CDT.

* At 1241 AM CDT, local law enforcement reported thunderstorms
producing heavy rain in EM 1431 north of Lake Travis. Between 3
and 7 inches of rain have fallen. The expected rainfall rate is 6
inches in 1 hour. Additional rainfall amounts of 2 to 5 inches are
possible in the warned area. Flash flooding is already occurring.

This is a FLASH_FLOOD EMERGENCY for Western Travis County and far
eastern Burnet County around Lake Travis. This is a PARTICULARLY
DANGEROUS SITUATION. SEEK HIGHER GROUND NOW!

HAZARD...Life threatening flash flooding. Thunderstorms
producing flash flooding.

SOURCE...Law enforcement reported.

IMPACT...This is a PARTICULARLY DANGEROUS SITUATION. SEEK
HIGHER GROUND NOW! Life threatening flash flooding of
low water crossings, small creeks and streams, urban
areas, highways, streets and underpasses.

* Some locations that will experience flash flooding include...
Cedar Park, Leander, Lago Vista, Jonestown and Briarcliff.

This includes the following streams and drainages...
Colorado River, Lick Creek, North Fork Brushy Creek, Fall Creek,
Big Sandy Creek, Brushy Creek, Red Bluff Creek, South Fork Brushy
Creek, Negro Branch, Cow Creek, Bee Creek and Post Oak Creek.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

Move to higher ground now! This is an extremely dangerous and
life-threatening situation. Do not attempt to travel unless you are
fleeing an area subject to flooding or under an evacuation order.

Turn around, don't drown when encountering flooded roads. Most flood
deaths occur in vehicles.

Be especially cautious at night when it is harder to recognize the
dangers of flooding.

Flooding is occurring or is imminent. It is important to know where
you are relative to streams, rivers, or creeks which can become
killers in heavy rains. Campers and hikers should avoid streams or
creeks.

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LAT...LON 3039 9813 3041 9814 3047 9810 3050 9810
3049 9812 3050 9807 3050 9792 3058 9792
3057 9793 3056 9792 3057 9790 3057 9789
3056 9789 3055 9787 3053 9787 3043 9797
3036 9807

FLASH_FLOOD...OBSERVED
FLASH_FLOOD DAMAGE THREAT...CATASTROPHIC
EXPECTED RAINFALL RATE...6 INCHES IN 1 HOUR

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Note the threat tag
FLASH FLOOD DAMAGE THREAT...CATASTROPHIC





Expected Implications

★ Significantly fewer Flood Advisories

- But will still be utilized
- Going forward, will probably be used more in rural areas than in urban areas

★ More FFW's, specifically the Base FFW

- Especially in more urbanized areas where it will be easier to reach the new flash flood event criteria

★ Flood Watches

- Will still be geared more towards an increased risk of damaging or life threatening flooding (Considerable FFW) across a larger area (multiple counties)





Main Takeaways

★ **New flash flood event criteria**

- Multiple roads or intersections flooded and closed to traffic
- Vehicles stranded and/or stalled in flood waters
- Structures surrounded by flood waters or flood water entering the crawlspace, basement, or garage
- A non-forecast point river gage exceeding its Minor flood stage
- Dam or levee failure that is occurring or is imminent (typically handled with a Considerable FFW tag)

★ **Begin using the Base FFW**

- Expected impacts meet the criteria listed above
- Will not activate WEA
- Will activate EAS and tone alert on NOAA Weather Radio
- Effectively replacing our current use of the Flood Advisory with the Base FFW

★ **No changes to Considerable and Catastrophic tagged FFW's**

- Considerable meant to highlight damaging flash flooding, alerts WEA
- Catastrophic meant to highlight a rare and uncommonly dangerous situation, "EMERGENCY"

★ **Changes become official on Friday, 8/1**

