



# IMPACT-BASED Flash Flood Warnings



## **Impact-Based Warnings (IBWs) are designed to improve communication**

Each Flash Flood Warning (FFW) will contain a bulleted format of easily readable information describing the flash flood, the source of the information (e.g., radar, gauge, trained spotter, Emergency Manager), and a brief description of the impact of the flash flood. It will also include machine-readable tags to characterize the flash flood damage threat, source information, and causative event.



## **Implementation Timeline**

All NWS Weather Forecast Offices will transition to issuing FFWs in IBW format on or after January 8, 2020.



## **Only high-level flooding will trigger Wireless Emergency Alerts (WEAs)**

Once IBW format is fully implemented, WEAs will be limited to only those FFWs with the damage threat tags of “Considerable” or “Catastrophic”, and third party vendors will be able to identify and extract the “emergency” language in the FFWs.

**The NWS issues more than 4,000 FFWs each year with a range of impacts on lives and livelihoods.**

Currently, all FFWs trigger WEAs, which are free notifications delivered to your mobile device.

Public perception is that the NWS over-alerts FFWs, and the Federal Emergency Management Agency (FEMA) has noted a large number of complaints about overnight WEAs for FFWs with perceived little impact.



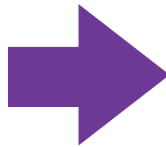
With this change to impact-based FFWs, the NWS is aiming to improve the public response to Flash Flood Warnings by providing easily readable information and issuing WEA alerts only for flash flood events that require immediate life-saving action.



Impact-based warnings contain hazard, source, and impact information, and additional damage threat tags. On the right is a sample impact-based warning.

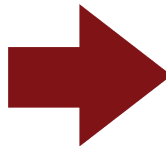
### Hazard, Source, and Impact Information

Each Flash Flood Warning (FFW) will contain individual lines that clearly state hazard, source, and impact information.



### Tags

Tags will appear at the bottom of FFWs and in Flash Flood Statements (FFSs), which provide supplemental information on active FFWs.



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...FLASH FLOOD EMERGENCY FOR LIFE-THREATENING CATASTROPHIC FLOODING...
The National Weather Service in League City has issued a
* Flash Flood Warning for...
  Northeastern Austin County in southeastern Texas...
* Until 715 PM CDT.
* At 119 PM CDT, Doppler radar indicated continued bands of rain and
  thunderstorms across the area. Emergency management reported ongoing
  water rescues. Rainfall rates of 2 to 3 inches per hour will persist
  across the warned area.

This is a FLASH FLOOD EMERGENCY FOR LIFE-THREATENING CATASTROPHIC
FLOODING. This is a PARTICULARLY DANGEROUS SITUATION. SEEK HIGHER
GROUND NOW!

HAZARD...Life-threatening flash flooding caused by thunderstorms.
SOURCE...Emergency management.
IMPACT...Widespread, life-threatening flooding will continue and
  perhaps worsen at some locations. Historic flooding is
  expected to continue in the Houston metropolitan area through
  the foreseeable future.

* Some locations that will experience flooding include...
  Pasadena, Pearland, League City, and Humble.

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.

&&
LAT...LON 2904 9515 2905 9527 2932 9536 2916 9543

FLASH FLOOD...OBSERVED
FLASH FLOOD DAMAGE THREAT...CATASTROPHIC
EXPECTED RAINFALL...2-3 INCHES PER HOUR
  
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Flash Flood Damage Threat Tag	Explanation
"Base" (No Tag)	Use most of the time, when flash flood impact damage is possible.
CONSIDERABLE*	Use rarely, when there are indications flash flooding capable of unusual severity or impact is imminent or ongoing and urgent action is needed to protect lives and property.
CATASTROPHIC**	Use exceedingly rarely, when a flash flood threat to life and catastrophic damage is occurring or is imminent, and floodwaters have risen or will rise to levels rarely if ever seen.
Flash Flooding Source Information Tag	
FLASH FLOOD... RADAR INDICATED	Evidence on radar and near storm environment is supportive, but no confirmation.
FLASH FLOOD... OBSERVED	Flash flood impacts confirmed by trained spotters, law enforcement, media, other credible human observers, etc.
Flash Flooding Causative Event Tag	
EXPECTED RAINFALL... [### ## INCHES PER HOUR] [## INCHES in ## MINUTES]	Use to identify rainfall rate leading to potential or observed flash flooding, including rain falling on a burn scar.
[DAM or LEVEE]FAILURE... [IMMINENT or OCCURRING]	Use to provide additional information about the status of the failing dam or levee, whether it is "imminent" or "occurring".

\* Category utilized for a Wireless Emergency Alert (WEA).

+ Catastrophic equates to a headline and additional language for a "Flash Flood Emergency".