Product Description Document
Experimental Flood Hazard Outlook Product
April 2024

Part 1 – Mission Connection

a) Product Description:

The experimental Flood Hazard Outlook (FHO) is provided by the NWS Office of Water Prediction (OWP) National Water Center (NWC) to portray the potential inland flash flood and riverine impacts (catastrophic, considerable, and limited) for the next seven days. This comprehensive product depicts the threat of various flood hazards (such as flash, urban, small stream and riverine flooding) based on water resources modeling, forecast, and observations from Weather Forecast Offices (WFOs), River Forecast Centers (RFCs), Weather Prediction Center (WPC), and the NWC.

The only significant change to this product since the comment period began on 7/5/2022 is the addition of a second routine issuance by 1300 UTC during CST/1200 UTC during CDT, as noted below.

Once operational, the FHO is intended to replace the Significant River Flood Outlook (SRFO) product, which is currently a national mosaic depicting significant river flood threat based mainly on an assessment of RFC forecasts.

b) Purpose/Intended Use:

This experimental product is intended for use in Impact-based Decision Support Services (IDSS) briefings which support broad messaging of the flood threat to NWS stakeholders and Federal water partners, such as the Federal Emergency Management Agency (FEMA), the United States Army Corps of Engineers (USACE), and the United States Geological Survey (USGS). This product is issued twice daily, typically around 2100 Coordinated Universal Time (UTC) and 7 AM Central Time (1300 UTC during CST/1200 UTC during CDT).

c) Audience/Users:

During the experimental phase this product will be available to all partners, stakeholders and the public. The users of this product are NWS stakeholders and Federal, State and Regional water partners. Partners have expressed a strong desire for nationally consistent flood hazards information and coordinated hydrologic flood graphics.

d) Presentation Format:

This experimental FHO, which is a graphical depiction of the flood threat with key messages, is available as an interactive Geographic Information System (GIS) service and a static graphic, linked below the interactive map on the National Water Prediction Service (NWPS) at https://water.noaa.gov. It is also available on the NWS GIS Viewer at https://viewer.weather.noaa.gov/water. Additional means of visualization are likely beyond those listed here, which may include event-specific zooms, such as for a tropical cyclone event.

e) Feedback Method:
Comments on the Experimental FHO as a replacement for the current Significant River Flood Outlook product are being collected via online survey at:

https://www.surveymonkey.com/r/ExtExp_FHO_2023_24

If you have additional questions or comments, please contact:

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Part 2 – Technical Description

a) Format and Science Basis:
OWP leads the effort to develop the impact-based FHO by leveraging new techniques to integrate various sources of deterministic and probabilistic forecasts/guidance and feedback from social scientists and stakeholders to effectively communicate flood hazards.

This highly collaborative product benefits from the input of meteorologists and hydrologists among the WFOs, RFCs, and WPC. Currently, over 30 considerations are reviewed by forecasters when populating this experimental product. Some of these include: NWS water resources forecast information including NWM guidance, official RFC deterministic and probabilistic forecasts, and WPC's probabilistic excessive rainfall outlooks.

The experimental graphic depicts potential flooding impacts in the following categories:

Limited: Base flash flooding and/or minor river flooding is expected

- Flash flooding with base to isolated considerable Impact-Based Warning (IBW) tags. In general, minimal or no widespread property damage, but possibly some public threat (e.g., inundation of roads). Local water rescues may occur, but are limited to evacuations of cutoff areas or isolated swift water rescues.
- Minor to isolated moderate riverine flooding. Minor riverine flooding is defined as minimal or no property damage, but possible some public threat (e.g., inundation of roads).

Considerable: Significant flash flooding and/or moderate/major river flooding expected

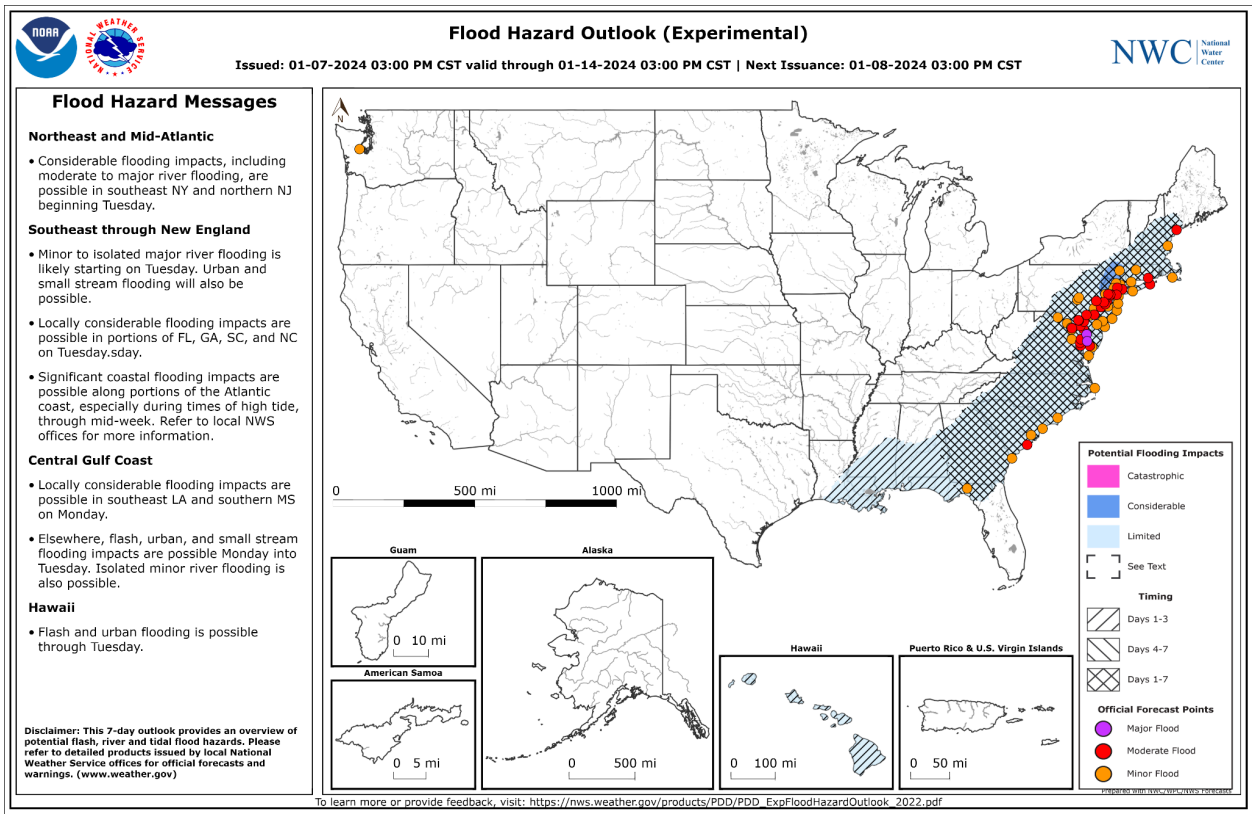
- Flash flooding with numerous considerable IBW tags is possible. Impacts include widespread inundation of roads and structures, evacuations of people and/or transfer of property to higher elevations. Numerous swift/high water rescues may be possible.
- Widespread moderate to scattered major riverine flooding is possible. Moderate riverine flooding is defined as some inundation of structures and roads near streams, evacuations of people and/or transfer of property to higher elevations.
- Messaging of widespread, life threatening flooding that may occur and that urgent actions may be needed to prepare for flooding.

Catastrophic: Exceedingly rare and widespread flash flood and/or river flooding expected

- Flash flooding with considerable IBW tags is likely, with multiple catastrophic tags possible. Impacts include extensive inundation and/or destruction of roads and structures, significant evacuations of people and/or transfer of property to higher elevations. Water rescues of a significant number of persons are likely and overwhelming area and regional resources is possible (e.g., rooftop rescues).
- Widespread major riverine flooding, with "floods of record" possible. Major riverine flooding is defined as extensive inundation of structures and roads, significant evacuations of people and/or transfer of property to higher elevations.
- Messaging includes high end, life threatening flooding with significant disruptions to daily life likely.

Each day (through Day 7) of the outlook is a 1200 UTC - 1200 UTC period, with the days advancing by one, and a new Day 7 therefore added, with each 2100 UTC outlook.

Sample of the experimental FHO:



b) Availability:

This experimental product is issued twice daily. Typically, the product is issued around 2100 Coordinated Universal Time (UTC) and by 7 AM Central Time (1300 UTC during CST/1200 UTC during CDT). This graphical depiction of the flood threat with key messages is available as

an interactive GIS service and a static graphic linked below the interactive map on the National Water Prediction Service (NWPS) at https://water.noaa.gov. It is also available on the NWS GIS Viewer at https://viewer.weather.noaa.gov/water. Additional means of visualization are likely beyond those listed here, which may include event-specific zooms, such as for a tropical cyclone event.

c) Additional Information:

Future product enhancements which would integrate new and additional sources of water resources modeled and forecast information from WFOs, RFCs, WPC, and NWC to characterize the flood threat are expected and will be delivered in a phased implementation approach.