

**Product/Service Description Document**  
**Long Range River Flood Risk Outlook (LRO)**

**Part I - Mission Connection**

- a. Product/Service Description - The National Oceanic and Atmospheric Administration's National Weather Service (NWS) is providing a nationally consistent, long-range river flood risk outlook (LRO), which displays water predictions and probabilistic river forecasts on a national map. Stakeholders can access a single, nationally consistent map depicting the 3-month risk of minor, moderate, and major river flooding, and can also access more detailed probabilistic river forecast information.
- b. Product Type - Operational
- c. Purpose - NWS stakeholders and Federal water partners, including the Federal Emergency Management Agency (FEMA) and the United States Army Corps of Engineers (USACE), have expressed a strong desire for nationally consistent, long-range river flood risk information to be displayed on a national map.
- d. Audience - The target audiences for this service are customers and partners such as emergency managers, federal, state and local officials including water resources managers, engineers, planners, and the general public.
- e. Presentation Format - The LRO will be available on a national map via the following web link: [https://water.weather.gov/ahps/long\\_range.php](https://water.weather.gov/ahps/long_range.php)
- f. Feedback Method - Any new feedback will be gathered through the following link: <http://www.nws.noaa.gov/survey/nws-survey.php?code=lro>

Customer comments or questions on the LRO may also be directed to:

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**Part II - Technical Description**

- a. Format and Science Basis - The Long Range River Flood Outlook (LRO) began as an effort aimed at strengthening the Spring Flood Outlook from the national and regional perspectives. In recent years, NWS leadership and national level stakeholders, such as FEMA and the USACE, have expressed a strong desire for a nationally consistent map displaying long range flood risk at river forecast locations. The requirement was to develop an objective assessment of long range flood risk based on probabilistic river forecasts. As of May 2018, all 13 NWS River Forecast Centers are routinely generating, consistently issuing, and disseminating LRO information onto the Advanced Hydrologic Prediction Service (AHPS) webpages.

This interactive web page shows the long-range(3-month) risk of minor, moderate and major river flooding at locations where probabilistic forecasts are produced. This risk information is currently based on NWS Ensemble Streamflow Prediction (ESP) probabilistic forecasts which address long-range meteorological uncertainty via climatologically-based ensemble forcings. Over time, this risk information is expected to transition to updated probabilistic forecasts produced by the Hydrologic Ensemble Forecast Service (HEFS), which incorporates weather and climate forecasts and explicitly accounts for the uncertainty inherent in the meteorological predictions. HEFS also accounts for the uncertainty associated with the hydrologic models.

- b. Availability - These products will be accessible at [https://water.weather.gov/ahps/long\\_range.php](https://water.weather.gov/ahps/long_range.php).