

ADVANCED HYDROLOGIC FORECASTING PRODUCTS FOR FLOOD AND DROUGHT MITIGATION

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1. BACKGROUND

The United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), has the responsibility to provide river and flood forecasts and warnings for the protection of life and property within the United States. These forecast services also provide for economic and environmental well-being through improved water resources management. The continuation and advancement of these services is occurring through NOAA's Water Resources Forecasting System (WARFS) program.

2. THE NECESSITY FOR IMPROVED FORECASTS

The deaths and economic losses resulting from The Great Flood of 1993, and our Nation's subsequent floods and droughts, have forced the need for improved predictions to support flood/drought management and damage mitigation. Furthermore, the allocation of water among competing demands (i.e., fisheries, irrigation, hydropower, and municipalities) looms as a national problem that requires improved water quantity forecasts for sustainable use. WARFS products with extended forecast lead times (up to several months) will greatly improve the Nation's capability to take timely and effective actions that will significantly mitigate the impact of major floods and droughts. The system will also provide products to water resource managers for the evaluation of water availability and allocation for water supply, navigation, hydropower, ecosystems, and agriculture.

3. ADVANCED FORECASTING PRODUCTS AND SERVICES

During fiscal year 1995, NOAA began WARFS implementation activities within the upper Mississippi River basin through a significant commitment by personnel of the North Central River Forecast Center (NCRFC), the Regional Hydrologist and other staff of the NWS Central Region, and the NWS Office of Hydrology. WARFS short-term implementation goal is to

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