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INTERACTIVE HYDROMET INFORMATION SYSTEM FOR REAL-TIME FLOOD FORECASTING AND WARNING

Abstract: Research and development work is being conducted for the National Weather Service on a new-generation flash flood monitoring and forecasting computer workstation. The workstation represents an integration of national data sources, regional networks of real-time rain gages, radar-rainfall and satellite remote sensing, and geographic information system and relational database management software. The HYDROMET system provides for hydrologic forecast analyses and (semi)automatic warning message dissemination.

INTRODUCTION

Floods are the number one natural disaster in the United States in terms of loss of life and property[1]. Since 1970 the average flood-related fatality rate has increased to 200 per year and flood damages continue to increase; in 1983 they were almost $5 billion. The goal of flood warning is to reduce losses by increasing the length of time in which a community can take protective actions. Advance warnings can ideally provide information on the likely location, timing and extent of flooding; and enable activation of alerting, evacuation and rescue teams, and other counter-disaster procedures.

Technical advances in hydrologic data collection, communications, computer processing and modeling, and message dissemination hold promise for increasing lead time during which flood danger and damage reduction actions can be taken. A prototype next-generation hydrometeorological (hydromet) forecasting system for the local scale is being developed as part of the