The Charlotte/Mecklenburg Hydrologic Network

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ABSTRACT

Communities across the country have recognized the importance of flood warning systems (FWS) in protecting lives and property. A dense network of more than 70 rain gages and 50 stream gages has been installed and collectively maintained by the United States Geological Survey (USGS) and Charlotte-Mecklenburg Storm Water Services. This network encompasses Mecklenburg County, North Carolina, which includes the city of Charlotte and adjacent areas. Near-real time data is remotely collected and transmitted via radio or satellite telemetry to numerous users at the local, county, state and federal levels. Given the high level of ongoing commitment and support by stakeholders, this well funded network is a great example of an effective FWS. Through local Integrated Flood Observing and Warning System software, and after centralized processing of data via the NWS Automated Flood Warning System program, the NWS at Greenville-Spartanburg is able to monitor the near real-time flow of data to make critical flash flood warning decisions. These warning decisions are often made with greater advanced notice, and for specific stream basins or watersheds, based on the observed and forecast rainfall amounts. In addition to receiving NWS warnings, local emergency personnel are able to provide a faster response to, and the possible mitigation of, flood-related problems by monitoring rainfall and stream levels. The long-standing rapport between the agencies which maintain the network, and the NWS at Greenville-Spartanburg, has allowed this FWS to evolve into an extremely effective local flood warning program. Photographs of typical gage installations, gage location maps, screenshots and descriptions of software used for hydrological analysis, and a description of data flow will be displayed.