

Flood Information and Notification System, Mecklenburg County, NC

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Abstract. The U.S. Geological Survey (USGS), in cooperation with Mecklenburg County and the City of Charlotte, NC, operates and maintains an automated and highly complex flood warning network known as the Flood Information and Notification System (FINS). Two primary purposes of FINS are to provide real-time hydrologic data to aid in the mitigation of loss of life and property due to flash flooding in a densely populated urban area, and to provide data for post event analysis. Given its importance, FINS is robustly designed with multiple redundant features to help ensure its operation. FINS consists of 72 raingages and 53 streamgages. All data are recorded in 5-minute intervals and transmitted in real-time using a combination of UHF radios (capable of both two-way polling and ALERT) and GOES satellite equipment. Additionally, there are 9 live web cameras located at strategically selected sites. Generally, sites equipped with UHF radios transmit data every 5 minutes, while sites equipped with GOES radios transmit data every hour. Once received by USGS base stations, data are automatically processed and loaded in the National Water Information System (NWIS), and are available to the public on the internet within 5-10 minutes of reception. During hydrologic events, the rate of data transmission is increased. GOES sites begin transmitting data every 5-15 minutes and UHF sites begin transmitting data every minute using the ALERT protocol. These data are immediately made available to emergency responders and are crucial to the development of a rapid, coordinated and effective response to potential flooding issues.