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AHPS - Water Predictions for Life Decisions
by Larry Wenzel and Glenn Austin

“The chance of rain is 30% today, 50% tonight and 70% tomorrow.” We have grown accustomed to hearing the chance of precipitation based on percentages. With this information, we plan our daily lives. Farmers decide whether or not to work the fields, road crews decide whether or not to pour concrete, and families decide whether or not to go on picnics.

What if that kind of information was made available for our rivers and streams? What if the National Weather Service (NWS) issued an outlook that said, *“The chance of the river flowing out of its banks at main street in your community is 30% today, 50% tonight, and 70% tomorrow.”*



What would a community do if it had that kind of information? A factory owner might decide to move inventory to the second floor. A car dealer might decide to drive his cars off the lot to higher ground. And a community might decide to sandbag. And what if that kind of information was available weeks in advance? And what if the forecast provided inundation mapping to show

what areas of the community would be affected by a possible flood?

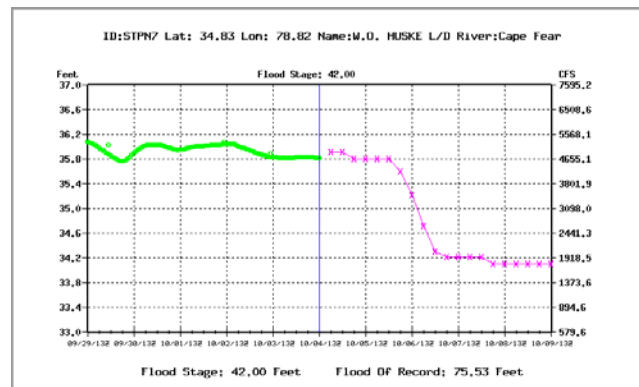
The availability of this kind of river information is closer than you might think, thanks to the NWS Advanced Hydrologic Prediction Service (AHPS). *“With all of the modernized Weather Service technology now in place, we’re starting to reap the benefits of more and higher quality weather and climate data,”* said John Ingram, program manager for AHPS. This type of river and flood forecasting is no longer a pipe dream. AHPS brings the future to our doorsteps.

AHPS represents a combination of software and hardware tools used for analyzing data and creating graphical displays of probability forecasts. AHPS takes advantage of all of the National Oceanic and Atmospheric Administration’s modern technologies: Doppler weather radars, geosynchronous satellites, supercomputers, automated weather observation stations, and the new interactive weather computer and communications system workstations known as AWIPS (Advanced Weather Interactive Processing System).

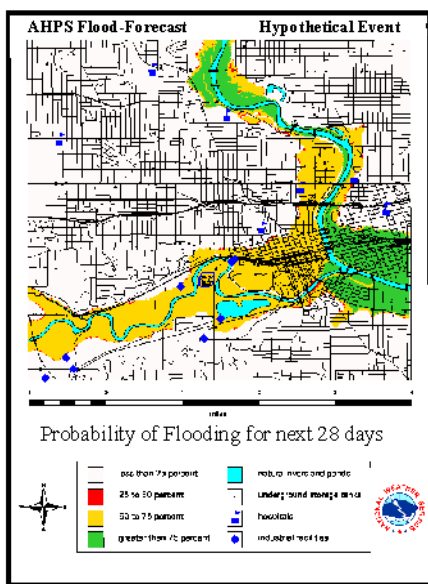
The benefits of such river and flood forecasting information are staggering. Foremost, AHPS will save lives and property and put a major dent in the annual average of 130 lives lost and \$3.5 billion lost in damages due to flooding. Communities could change their strategy from reactive to more pro-active. They could better arm themselves and have a fighting chance against killer and costly floods.

AHPS will help communities, emergency services and communication departments make decisions about:

- C when and where to evacuate people
- C when to move inventory and property
- C where to pre-position emergency response resources
- C plan for extra staff



AHPS will couple NWS weather and climate forecasts with hydrologic models to provide a suite of hydrologic forecast products from days to weeks, and in some cases, months into the future. Text forecasts will be enhanced with graphical displays for easier reading and interpretation. Partnering with Federal agencies and local communities, inundation maps will define the areal extent of flooding. This new information will allow more people to understand their personal level of risk from flooding.



When will America’s community reap the benefits from this new service? In some locations it’s happening now. In 1997, the River Forecast Center in Chanhassen, Minnesota, worked in concert with the Des Moines, Iowa Forecast Office to develop a prototype and successfully demonstrated the future of the NWS’s River and Flood Program.

Initial implementation has begun in other parts of the county, including parts of the Minnesota River, the Missouri River and Ohio River. Based on findings, one to five day graphical forecasts of river heights will be employed nation-wide by 2003.

Inundations maps will be introduced as we partner with Federal and local agencies. Probability products will be implemented by 2012. As resources become available and technologies are developed, these improved capabilities will be employed to other parts of the country. Maps and other information will be produced in common GIS format and distributed through the

internet and other modern communication systems, e.g. wireless and broadband.

AHPS will be like a watchman patrolling America’s rivers and streams. By 2012, America will benefit from the most comprehensive, integrated river forecast system ever dreamed. John Kennedy said, “Some folks look at things as they are and ask, “Why?” Others look at things as they could be and ask, “Why not?” The National Weather Service is looking to the future of

River and Flood Forecasting and asking, Why not?" For additional information" www.nws.noaa.gov/.

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