

**Summary of Comments and Recommendations from
“Assessing the National Streamflow Information Program”
Committee on Water Resources Research, National Research Council**

The National Research Council’s Committee on Water Resources Research has just completed an assessment of the USGS’s plans for the National Streamflow Information Program (NSIP). The Committee was very complimentary of the plan for NSIP, saying, “Overall, the Committee concludes that the National Streamflow Information Program is a sound, well-conceived program that meets the nation’s needs for streamflow measurement, interpretation, and information delivery.” The following are recommendations and comments about NSIP from the Committee’s report. *Information about the status of the issue or USGS response is shown in italics:*

- Federal support of a base streamgaging network is recommended to assure long-term viability of the network for national needs. *At the present time the percentage of streamgages in this base network funded by USGS NSIP funds is 13%.*
- The goals of the NSIP are an appropriate foundation for the program.
- The set of minimum national streamflow information needs that underlie the goals are reasonable and appropriate.
- Designing the base streamgaging network by establishing national goals and then using GIS-based methods to select sites to provide the required national coverage is reasonable.
- Intense data collection and interpretation during floods and droughts is a strength of the USGS and should be continued. *In recent years the USGS has had a flood and drought reserve fund within NSIP to cover some of these kinds of costs.*
- Periodic regional and national assessments of streamflow characteristics are fundamental to NSIP and should be continued. *The USGS is currently completing two reports on trends in the timing of streamflow for large areas of the country.*
- Enhanced data delivery is an important and highly valued component of NSIP. *The USGS water data base system (NWIS) has recently been upgraded to ensure that real-time data is available to users at all times by installing mirror data servers. This capability was funded in a large part by NSIP. The USGS has also worked closely with other agencies such as the National Weather Service and the Corps of Army Engineers to provide them up to date streamflow rating curves so they can more accurately meet their obligations to the nation. In addition, the USGS is currently improving how it delivers streamflow information to the public through the Web page “WaterWatch”.*

The committee also had some suggestions and recommendations for improvement:

- While assuring compatibility between traditional streamgaging data and new technologies, the USGS is encouraged to aggressively pursue new technologies for streamflow and water quality measurements with a view to accelerating the implementation of time and labor saving flow measurement techniques as soon as possible. *The USGS has been actively pursuing new technologies for the measurement of streamflow. Within the last five years, the use of acoustical techniques has been tested, introduced, and rapidly accepted across the USGS. USGS staff have been working with NASA to discuss the possibilities and technical limitations (minimum size of water body that can be seen, inability to look through water) of measuring streamflow from space. Within the USGS, research has been ongoing to develop techniques and equipment to measure streamflow directly without any equipment physically in the streams, and a proof of concept study was recently successfully completed. Other existing technologies the USGS is exploring is the use*

of lasers and radar. In all cases, USGS staff maintain close relationships with academia and private developers.

- *The USGS should provide access to a broader range of geospatially-linked data (unit values, channel cross-sections, remotely sensed images, velocity fields, stream network position, and landscape attributes) to enable richer data interpretations than is presently done. The USGS has two development projects underway right now using NSIP funds. One is for a “unit values warehouse” which is a single national database to supply historical flow data at the original time step at which it was collected (typically 15 minute) for use in studies of floods, water-quality loading, and habitat issues. The other is national implementation of “StreamStats” – a system to provide “point-and-click” GIS capability over the web so that users can obtain estimates of flow statistics for any arbitrary point on any river. These would include statistics like the 100-year flood or 7day-10 year low flow. These use USGS regression equations that predict flow characteristics as a function of watershed characteristics.*
- *The principle of Adaptive Management should be incorporated into NSIP to periodically reevaluate the network to ensure that it meets anticipated future needs for streamflow information. The USGS concurs that the program needs to be reevaluated every few years, in light of changing needs and changing technology.*