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The Impact of Stream Gage Closures/Outages on Hydrologic Forecast Services

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/Signed/

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Date

THE IMPACT OF STREAM GAGE CLOSURES ON HYDROLOGIC FORECAST SERVICES

Table of Contents Page

1. Purpose.....3

2. Background.....3

3. Stream Gage Closure Coordination.....3

4. Procedures for Changing Hydrologic Forecast Services Due to Stream Gage Closures.....4

5. Restoration of Hydrologic Forecast Services.....5

1. PURPOSE

The purpose of this supplement is to state regional procedures on the impact of stream gage closures and outages on hydrologic forecast services.

2. BACKGROUND

To ensure accuracy and integrity of hydrologic forecast information, near real-time river stage data should be available, at a minimum, on a daily and criteria basis to support RFC and WFO hydrologic forecast operations. Occasionally, federal, state, and local agencies that support, operate, and maintain stream gages find they must re-evaluate their level of support for their stream gage network. Such evaluations can include the closure of stream gaging stations and the discontinuance of river gage operations. Stream gage closures have a direct effect on NWS hydrologic forecast operations. Such effects can include:

- (1) No available near real-time river gage readings for daily hydrologic forecast operations.
- (2) Discontinuance of archived streamflow information impacting hydrologic model calibration and procedure development activities at the RFC(s).
- (3) Discontinuance of discharge measurements that are used to update existing rating curves.

WFO(s)/RFC(s) are responsible for evaluating stream gage closure impacts on hydrologic forecast services and providing services commensurate with customer requirements and data availability. The types of hydrologic service locations that could be impacted by stream gage closures are defined in Section 3 of Southern Region Supplement 01-2005.

3. STREAM GAGE CLOSURE COORDINATION

3.1 WFO(s) or RFC(s) notified of proposed stream gage closures at river forecast/data points will alert the Southern Region (SR) Hydrologic Services Branch (HSB). If proposed stream gage closures impact more than one river forecast/data point location or if multiple WFOs are affected in the same state, the notified WFO(s) or RFC(s) should talk with gage owners and supporters to see if the affected locations can be prioritized for closure or a reduced level of service. If a priority ranking can be completed for the affected gages, HSB will collect the priority ranking information from the WFO(s). WFO(s) and RFC(s) should contact the affected hydrologic users and discuss what the potential loss of data would mean for the NWS hydrologic warning and forecast program.

3.2 The SR HSB will coordinate with sponsoring agencies at both the regional and national levels about the impacts of proposed stream gage closures to the SR hydrology program.

3.3 Dependent upon the magnitude of the effects/impacts from the potential stream gage closures, SR HSB, in collaboration with the affected WFO(s) and RFC(s), may coordinate with the appropriate sponsoring agencies/organizations to see if further customer outreach is needed.

3.4 Affected WFO(s) and RFC(s) should encourage continued support for the cooperative stream gaging program by highlighting the importance of the stream gaging program to the NWS hydrologic warning and forecast program. If the closure of the stream gage(s) will result in the degradation of hydrologic forecast services, the affected WFO(s) or RFC(s) should contact the appropriate USGS district office and/or federal/state/local cooperators and partners describing the impact of the stream gage closure(s) on NWS hydrologic services. The affected WFO(s) or RFC(s) should include SR HSB on any written or electronic correspondence.

If the cooperator(s) supporting the gage, that is to be closed, is not a sister agency of the USGS, a formal letter should be written, signed by the WFO MIC, and sent directly to the cooperator with a cc: to the USGS State Water Science Center that has responsibility for the gage. A sample "Stream Gage Closure" letter can be found in the appendix of NWS Instruction 10-940.

4. PROCEDURES FOR CHANGING HYDROLOGIC FORECAST SERVICES DUE TO STREAM GAGE CLOSURES

The WFO(s) and RFC(s) will be responsible for evaluating the impact of stream gaging station closures on hydrologic forecast services. The guidelines below should be followed by the WFO if the WFO and RFC deem it appropriate to change hydrologic forecast services due to stream gage closures. These guidelines complement those contained in SR Supplement 01-2005 titled "Authorization for Changes to Hydrologic Services".

4.1 Options for alternative river gage readings (e.g., the installation of a staff gage at the gage site or the appointment of a cooperative observer to take river observations) should be considered. Any options should be coordinated between the WFO and the servicing RFC.

4.2 WFOs, in collaboration with the servicing RFC(s), may consider discontinuance of hydrologic forecast services based on the following three criteria:

- (1) There is no near-real time river stage data available to support hydrologic forecast operations.
- (2) There is limited interest for hydrologic forecast services at the existing service location. *
- (3) The stream channel at the service location is unstable (i.e., requires frequent updates to the rating curve, yet there will be no updates to the rating curve by a cooperating agency).

* At a minimum, coordination with local emergency management must be completed to ensure they are in agreement with the discontinuance of forecast services.

4.3 Requests for changes to hydrologic forecast services should be as specific as possible. They should include customer requirements for hydrologic forecast services and technical evaluations by the servicing RFC (e.g., reliability of rating curve at service location, accuracy of numerical river forecasts based on verification statistics, etc.).

4.4 If approved by the SR HSB, the WFO will be authorized to discontinue hydrologic forecast service at the affected service location(s) or issue categorical flood forecasts (e.g., minor, moderate, major) , where practical, for the affected river forecast point(s), in lieu of site-specific numerical river forecasts.

4.5 Upon approval to discontinue hydrologic forecast services or issue categorical flood forecasts, the WFO should notify customers about the hydrologic forecast service change as described in SR Supplement 01-2005.

4.6 After the specified time period for advertising the service change discontinuance, the integrated hydrologic database, template files associated with the river product formatter application at the WFO, river forecast generation software at the RFC, and hydrology web pages should be updated to reflect the change in hydrologic forecast services.

4.7 Temporary or short-term stream gage outages should not be considered for reduction in forecast services. For short-term stream gage outages at river forecast points, site-specific forecasts should continue to be released. An estimated stage may be provided, where practical, and coordinated with the servicing RFC. Public hydrology text products and web pages containing these data should note that the stream gage data is unavailable, missing, or estimated.

5. RESTORATION OF HYDROLOGIC FORECAST SERVICES

In some cases, discontinued stream gages, at previously closed NWS hydrologic service locations, may be restored to operation. Prior to submitting a service restoral request, the affected WFO should ensure that:

- (1) There are customer requirements for hydrologic forecast service at the location.
- (2) Near-real time river stage data are available.
- (3) A cooperating water resource agency is providing updates to the rating curve.

The affected WFO should submit the service restoral request to the chief of the Hydrologic Services Branch with a copy to the chief of the Operational Services Division.