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***Hydrologic Program Management Support at Weather Forecast Offices***

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***SUMMARY OF REVISIONS:***

1. References to SR supplement 11-2005 included in Sections 3.1 and 3.2.
2. Section 3.1 updated to reflect responsibilities associated with E-19s, quality assurance and compatibility of information contained in the hydrologic database, AHPS Content Management System (CMS), and AHPS web pages, and the Flash Flood Monitoring and Prediction (FFMP) application.
3. Section 3.2 updated to reflect responsibilities associated with the maintenance of hydrometeorological database information, hydrologic service program verification and outreach, E-19 dissemination, coastal flooding evaluations, and FFMP.
4. Updated the appendix to reflect changes in WFO Lubbock/San Angelo hydrologic program management oversight for WFO Midland.

<signed by> Melvin R. Mclaughlin for April 4, 2008

Bill Proenza

Date

Director, Southern Region

## HYDROLOGIC PROGRAM MANAGEMENT SUPPORT AT WEATHER FORECAST OFFICES

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**1. Purpose.** This supplement provides guidelines for managing the hydrologic program at a Weather Forecast Office (WFO). The guidelines are applicable to WFO Service Hydrologists whose designated support area includes one or more Hydrologic Service Areas (HSA).

**2. Background.** The Service Hydrologist (SH) serves as the hydrologic program leader for his/her designated support area which may include more than one WFO HSA. The SH is part of the WFO program management team. The Appendix contains a table of the SR WFOs that have a resident SH and the designated support area assigned to the SH.

**3. Responsibilities.** Section 3.1 defines the responsibilities for WFOs with and without a local SH and the SH assigned to support one or more WFO HSAs. If the SH supports more than one WFO HSA, certain responsibilities may be modified by mutual agreement of the local and supported WFO MIC(s) in coordination with the regional Hydrologic Services Branch (HSB). The SH is equally responsible for each WFO HSA under his/her jurisdiction. Each WFO HSA, including those with an SH, will assign a hydrology focal point to support the SH.

### **3.1 Responsibilities of the MICs (both with/without a resident Service Hydrologist)**

- Assigns individuals to be a primary and backup contact for supporting the SH, the servicing RFC(s), and the HSB concerning the hydrologic services program (will be referred to as the hydrology focal point (HFP)).
- Notifies the HSB in advance of any changes to the HFP contacts.
- Ensures the preparation and dissemination of daily hydrologic products.
- Ensures training is provided to staff on hydrologic forecast operations and procedures, basic operational hydrology, WHFS applications (including the WFO Site-Specific Hydrologic Model), the Flash Flood Monitoring and Prediction (FFMP) applications (including GIS tools to customize FFMP basins for the flash flood warning generation process), and specialized hydrologic administrative reports, with assistance from the supporting SH.
- Ensures staff uses current hydrometeorological applications and procedures during operations (e.g., FFMP, WFO Site Specific Hydrologic Model).
- Ensures adequate hydrologic product and service support to local partners and customers in coordination with supporting SH.
- With assistance from the supporting SH, ensures the establishment and dissemination of new E-19s and dissemination of updated E-19s, as per SR Supplement 11-2005.
- Ensures assistance to the resident/supporting SH regarding hydrologic field work in the HSA. Whenever possible, the HFP or other personnel from the local/supported WFO(s) should accompany the resident/supporting SH during field trips to forecast point locations to familiarize themselves with (1) the reach or river associated with the forecast point location; (2) the gauges and telemetry available at the forecast point location; and (3) the local officials and citizens to acquire flood impact information for input into the hydrologic database.
- Ensures accuracy and compatibility of forecast and data point information and other static hydrologic information contained in the hydrologic database, AHPS Content Management System, and AHPS web page, with assistance from the supporting SH.
- Ensures staff conduct observational quality control to support hydrometeorological operations at the WFO and servicing RFC(s) as described in NWS Instructions 10-1305 and 10-940.

- Ensures preparation and dissemination of monthly flood reports (i.e., E-3, E-5) and hydrologic activity reports, as per SR Supplement 11-2005.
- Ensures development of the station Hydrologic Services Manual (HSM) with assistance from the supporting SH.
- With assistance from the supporting SH, ensures preparation and dissemination of specialized hydrologic forecast products such as the Spring Flood Outlook, drought information statements, and post-flood storm surveys and reports.
- Ensures service backup offices are provided with Hydrologic Service Manuals, E19s, and other pertinent hydrologic documentation to support hydrologic operations.
- Ensures RiverPro product templates are current, with assistance from the supporting SH.
- Ensures tabletop exercises are conducted for various hydrologic situations, including dam break scenarios, with assistance from the supporting SH and servicing RFC(s).

### **3.2 Responsibilities of the Service Hydrologist supporting one or more WFO HSAs.**

The Service Hydrologist, whose designated support area includes one or more WFO HSA(s), is the hydrology program leader for those offices listed in the Appendix. As such, the SH provides hydrologic program management and oversight for the operational, technical, outreach, and administrative aspects of the hydrology services program for all WFO HSAs in his/her jurisdiction. The following are the responsibilities of the SH supporting one or more WFO HSA(s):

- Provides administrative, technical, and operational support for the local/supported WFO(s) regarding the hydrologic services program. The level of service/support by the Service Hydrologist will be equitable across the entire designated support area and not focused at the local WFO HSA.
- In collaboration with the appropriate SOO(s), provides training to the local/supported WFO(s) in the following areas:
  1. Hydrologic Operations and Procedures. This includes the various applications and database information included in the WFO Hydrologic Forecast System and the Flash Flood Monitoring and Prediction application.
  2. Basic operational hydrology.

3. Specialized hydrologic forecast products and administrative reports.

- Visits the supported WFO(s) on a routine basis. To the degree that resources permit, the number of routine visits to the supporting WFO(s) will satisfy requirements of the MIC(s) of the supported WFO(s).

Activities that should be performed during such visits include the following:

1. Review accuracy and completeness of the Hydrologic Services Manual and E-19s for the supported WFO(s).
  2. Training sessions on hydrologic operations and procedures, including operations during potential dam failure situations.
  3. Conduct any necessary field work to support hydrologic forecast operations/services and service evaluations. Forecast point locations should be visited a minimum of once every three years, depending on impacts of floods at these locations.
- Ensures the accuracy of information contained in the hydrologic database for the local/supported WFO(s). This includes, but is not limited to, updating flood/low water history, flood/low water impact information, and flood categories and rating curves for forecast points, and updating the local dam catalog/WarnGen product formatters with dam failure scenarios provided by the supporting RFC(s) or other agencies. If the designated supported area includes more than one WFO, the SH should provide any hydrologic database information updates to the supported WFO(s) so the HFP(s) can update the hydrologic database. The SH should also share such information with the supporting RFCs.
  - Assists the local office/supported office(s) in maintaining hydrometeorological databases, (e.g., Hydrometeorological Automated Data System (HADS), NWS Location Identifiers (NWSLI), Cooperative Observer Network (COOP), etc). Coordinates with local staff/supported office(s) and other NWS offices to effect changes to hydrometeorological databases used in operations.
  - Performs procedure development activities to optimize use of the WFO Hydrologic Forecast System (WHFS) at the local/supported WFO(s). This includes, but is not limited to, assisting the appropriate HFP(s) in updating and defining product templates to enhance hydrologic products and services, and establishing the WFO site-specific hydrologic model for small, fast responding streams. The SH should work closely with the supporting RFC(s) to acquire the necessary hydrologic model procedures and model parameters to run the WFO site-specific hydrologic model. Any procedures developed by the SH for the WFO site-specific hydrologic model should be coordinated with the appropriate RFC(s) prior to updating the WFO site-specific hydrologic model at the local/supported WFO(s).

- Ensures the hydrologic database and various WHFS applications at the local WFO contain the necessary information to support primary and secondary hydrologic service backup assignments contained in SR Supplement 01-2004. If the designated support area includes more than one WFO, the SH provides technical support to assist the supported WFO(s) with their primary and secondary hydrologic service backup assignments contained in SR Supplement 01-2004.
- Represents the local/supported WFO(s) at state and federal water-related interagency coordination meetings. In coordination with the appropriate WCM(s), the SH, whose HSA includes the state capitol, provides the primary hydrologic support, liaison, and coordination with state agencies. If the designated support area includes more than one WFO, the supported WFO(s) should also consider sending a representative to state and federal water-related interagency coordination meetings.
- Establishes E-19s and provides timely updates to existing E-19s for the local/supported WFO(s). If the designated support area includes more than one WFO, the SH should work with the appropriate HFP(s) or other personnel at the supported WFO(s) to establish new E-19s and update existing E-19s, as per SR Supplement 11-2005. Ensures E-19s are disseminated to backup WFO(s), servicing RFC, and SR HSB.
- Prepares specialized hydrologic forecast products, such as the Spring Flood Outlook, drought information statements, post-flood storm surveys and reports, and monthly hydrologic administrative reports. If the designated support area includes more than one WFO, the SH provides assistance, as necessary, to the supported WFO(s) in generating these specialized products and reports.
- Works with the appropriate HFP(s), Data Acquisition Program Manager (DAPM)/Observation Program Leader (OPL), and RFC(s) to establish requirements and procedures for hydrologic data collection, and data quality-control techniques.
- Furnishes a copy of the HSM to the supported WFO(s), if appropriate, so they can draft and/or update their own Hydrologic Services Manual. Ensures HSM is disseminated to backup WFO(s), servicing RFC, and SR HSB.
- Provides oversight for the river/small basin flood warning verification program at the local/supported office(s). Assesses the performance of local models such as the WFO Site Specific Hydrologic Model and shares this information with the servicing RFC(s). Evaluates the accuracy of flash flood warnings issued for FFMP basins with established flood stages from field surveys.

- Coordinates WFO hydrologic services, service requirements, and service evaluations with the local/supported WFO(s), associated RFCs, emergency management agencies, other external customers, and the HSB. This includes the following:
  1. Identifies, plans, and coordinates programmatic changes in WFO hydrologic products and services and associated outreach, in collaboration with the local/supported WFO(s), appropriate RFCs, and the HSB.
  2. In collaboration with the local/supported WFO(s) management team, determines products and services for the local/supported WFO(s) and conducts the associated coordination and liaison activities with the local/supported WFO(s), appropriate RFC(s) and external customers.
  3. In collaboration with personnel at the local/supported WFO(s), evaluates sites and areas subject to floods and flash floods for the establishment of new, or changes to existing, hydrologic services for these locations.
  4. Participates in hydrologic service program outreach and evaluations, flood preparedness activities, and table top exercises in the designated support area, in collaboration with the appropriate Warning and Coordination Meteorologist(s).
  5. Determines requirements for hydrologic data network support with assistance from personnel at the local/supported WFO(s).
  6. For offices with coastal responsibilities, evaluates the effects of coastal flooding (e.g., storm surge, astronomical/storm tides) on inland river systems, in collaboration with local staff/supported WFOs, and the servicing RFC(s).
  7. In collaboration with local staff/supported WFOs, ensures that impact and Call-To-Action statements are defined in the WARNGEN application for flood prone FFMP basins.

The SH serves as the WFO expert on hydrologic data network concerns in the designated support area. In collaboration with the appropriate DAPM(s)/OPL(s), the SH may assist owners of hydrometeorological data systems in the requirements, design, and implementation of data networks such as GOES DCPs, mesonetworks, automated local flood warning systems, and stream gauging stations.

#### **4. Administrative Guidelines for Service Hydrologists supporting more than one WFO HSA and performing meteorological forecast shifts**

The SH provides program leadership and oversight for their designated support area's hydrologic services program. The needs of the supported WFO(s) will not be considered any more or less important than those of the local WFO.

The local and supported MIC(s) should ensure that their annual budget requests adequately reflect the resource requirements for their HSAs. The MIC(s) without an SH will be responsible for defining the annual travel funds required for visitations by the supporting SH. These travel funds will reside with the supported WFO(s).

The effectiveness of the SH's program management and oversight responsibilities for the supported WFO(s) will be evaluated in the SH's annual performance appraisal. MICs at the supported WFOs will provide performance plan and appraisal input to the MIC with an SH. Appraisals and awards for the supporting SH will be made by the supervising MIC with input from the MIC(s) of the supported WFO(s).

Selections of Service Hydrologists will be made by the supervising MIC with input from the MIC(s) of the supported WFO(s).

As a program leader and member of the WFO operational team, the SH may work operational shifts up to 20 percent of annual work hours. Service Hydrologists supporting more than one WFO HSA should be assigned lesser operational shift work commensurate with the workload to support the hydrologic programs at the other WFOs.

**Appendix - WFO locations with a Service Hydrologist and their designated support area(s)**

<b>Service Hydrologists Locations</b>	<b>HSA(s) supported</b>
Albuquerque	Albuquerque El Paso
Atlanta	Atlanta
Birmingham	Birmingham Mobile
Fort Worth	Fort Worth
Houston	Houston
Jackson	Jackson
Lake Charles	Lake Charles
Little Rock	Little Rock
Lubbock	Lubbock Amarillo
Memphis	Memphis
Morristown	Morristown
Nashville	Nashville Huntsville
New Orleans	New Orleans
Norman	Norman
Austin/San Antonio	Austin/San Antonio Brownsville Corpus Christi
San Angelo	San Angelo Midland
San Juan	San Juan (includes Puerto Rico and the U.S. Virgin Islands)
Shreveport	Shreveport

<b>Service Hydrologists Locations</b>	<b>HSA(s) supported</b>
Tallahassee	Tallahassee Jacksonville Key West <sup>1</sup>
Tampa Bay	Tampa Bay Melbourne Miami
Tulsa	Tulsa

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<sup>1</sup> To support service backup for WFO Jacksonville

