

***NATIONAL WEATHER SERVICE SOUTHERN REGION SUPPLEMENT 01-2004
APPLICABLE TO NWSI 10-2201
DECEMBER 3, 2020***

***Operations and Services
Readiness, NWSPD 10-22
Backup Operations, NWSI 10-2201***

SOUTHERN REGION BACKUP OPERATIONS

OPR: W/SR11x5 (M. Bailey)

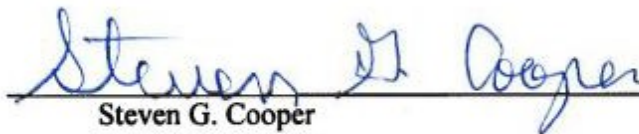
Certified by: W/SR1 (J. Cupo)

Type of Issuance: Routine

SUMMARY OF REVISIONS: This supplement supersedes Southern Region Supplement 01-2004 dated January 4, 2019.

The following changes were made to this issuance:

1. Updated backup pairings.
2. Added a new requirement to call NCF to monitor backups.
3. Included a map of the backup pairings.
4. Added information about using Send2Web in backup.
5. Added the names of the dedicated NWSChat rooms to be utilized during backup.
6. Added information about TAFs during backup.
7. Added a link to instructions how to transfer Voice Over Internet Protocol phones during backup.
8. Added details about hydro tertiary backup.
9. Added information about WFO SR Backup Google Site template.
10. Updated afos2awips information.
11. Updated radar backup information.
12. Incorporated previous Appendix E into the main part of the document.
13. Added AWIPS Remote Display information to Appendix D (CWSU).


Steven G. Cooper
Regional Director

11/19/2020
Date

Southern Region Backup Operations

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1 Purpose

Service backup ensures the NWS maintains continuity of operations and facilitates the performance of our mission essential functions for our partners and the public. The goal of service backup is to ensure the continuation of essential products and services and to ensure the offices are familiar with the programs, products, and customers of their backup partner. Familiarity with each other's programs and responsibilities ensures an effective backup process. This document provides instructions for the transfer of essential operational responsibilities from one Weather Forecast Office (WFO), Center Weather Service Unit (CWSU), or River Forecast Center (RFC) to another during backup situations.

Offices and their backups will:

- a. Put forth a robust effort to share tools/info that facilitate good backup service,
- b. Conduct meaningful training that maximizes service backup readiness, and
- c. Actively accept backup responsibility from each other, unless compelling operational reasons prevent the backup office from doing so.

The [SR Backup Google Site](#) is a valuable resource containing all the documents mentioned in this Supplement, as well as additional links and information.

Written instructions cannot cover every situation and personnel must use initiative and good judgment to ensure the continuity of operations. When invoking service backup, offices should contact Network Control Facility (NCF at 888-808-8624) for monitoring potential Advanced Weather Interactive Processing System (AWIPS) and Graphical Forecast Editor (GFE) issues impacting the transfer of operational responsibilities. Offices may contact the SR ROC (at 682-703-3747) for other issues during service backup. The SR ROC then will contact the appropriate SRH Program Manager.

2 Definitions

- a. Full Backup - All of the requesting office's critical products, services, and responsibilities (e.g., warnings, grids, data collection, etc.) will be backed up by a designated backup office (see Appendix A). A list of critical products is included in Appendix A of [NWSI 10-2201](#).
- b. Partial Backup/Mutual Aid/Workload Sharing - Some of the requesting office's products, services, and responsibilities (e.g., warnings, grids, data collection, etc.) need to be backed up by their backup office. For example, if only AvnFPS is down, a backup office may only need to back up aviation products. Or, to help an office who is in the middle of a big weather event, a backup office can take part of the duties (like Aviation) to help them out. Mutual aid (workload sharing) during significant weather events, allows an office to focus on the most critical services through the use of partial service backup for other services as deemed appropriate.

- c. Multiple Backup Responsibility - In many situations, it would be beneficial for the Primary, Secondary, and Tertiary Backup Offices to share partial backup responsibilities of the requesting office.
- d. Primary Backup Office - If an office is rendered inoperative or is requesting backup services, the Primary Backup Office will assume the inoperative office's designated duties, as defined in either Section 2a and 2b above (Full or Partial Backup).
- e. Secondary Backup Office - The Secondary Backup Office will typically assume the designated duties, as defined in either Section 2a or 2b above, when: (1) Both an office and its Primary Backup Office are rendered inoperative, (2) The Primary Backup Office is unable to assume backup responsibility due to circumstances beyond their control, or (3) It is not feasible for the Primary Backup Office to assume control due to current or anticipated workload.
- f. Tertiary Backup Office - The Tertiary Backup Office will typically assume the designated duties, as defined in either Section 2a or 2b above, when: (1) An office's Primary and Secondary Backup Offices are rendered inoperative, (2) Both the Primary and Secondary Offices are unable to assume backup responsibility due to circumstances beyond their control, or (3) It is not feasible for the Primary or Secondary Backup Offices to assume control due to current or anticipated workload.

3 Service Backup Process

The Meteorologist-In-Charge (MIC), Hydrologist-In-Charge (HIC), or Forecaster in Charge (FIC) is authorized to invoke backup operations. The office should communicate their consideration of service backup with the supporting office as far in advance of the actual transfer of services as possible.

Staff at the requesting office remain the best authorities on local hydrometeorology information and as such know best the needs of their partners, customers, and the local public. To the extent possible, the staff at the requesting office should retain as much responsibility as possible during backup situations.

An office may invoke full or partial service backup and will coordinate the distribution of workload during significant weather events for a number of situations including:

- Planned outages due to hardware or software updates
- Unanticipated outages due to hardware or software failures
- Extended power outages or prolonged communications failures
- Violent acts of nature or other hazards to an office that might cause a threat to personnel if they did not seek shelter or evacuate the facility

NOTE: It's helpful to determine why some systems may not be functional. See this

Google Document [link](#) for a flowchart that can help.

3.1 Backup Google Sites

WFOs are required to maintain a Backup Google Site, which will serve as a critical reference for their backup offices listing duties, station duty manual, and a complete list of operational requirements for the office. The SR Backup Google Sites have been standardized with links going to Google Docs, which makes the updating and sharing of backup information easier. The information on the local Google Site needs to be updated regularly if changes occur.

3.2 Planned Outages

Coordinate with the backup office (or offices) ahead of time (2-3 weeks or more if possible) so appropriate measures can be taken (e.g., providing for adequate staff and/or to update files on Backup Google Sites), for planned outages such as an AWIPS upgrade, drill, operational training exercise, or workload sharing between offices. Follow the procedures in Section 4 for WFOs, Appendix C for RFCs, and Appendix D for CWSUs,

3.3 Evacuations

Ensure the safety of local office personnel *first*. If commercial telephone circuits and cellular phone services are out of service, the office staff must become resourceful to make contacts, including the use of the satellite phone, if available.

Then, immediately contact your Primary Backup Office for backup help. It's also important to notify SRH as soon as possible upon departure. If you are not able to call SRH, have your backup office contact them (SR ROC at 682-703-3747) for you. Contact them immediately about the evacuation. If you need the SR ROCs help contacting any backup office, call them first and let them know so they can assist. Upon return, inform the SR ROC and the backup office.

3.4 Prolonged Outages

To evaluate the need for deployment of personnel or other options for prolonged outages (normally starting at 8-12 hours or more), a member of the office management should email the SR Deployment Team at sr.deployments@noaa.gov. This email list reaches all relevant personnel (email and text) within OSD and the SR ROC to ensure awareness and a timely response to the request.

3.5 Model Usage in Tertiary Backup

Due to the larger forecast domains needed to encompass the new tertiary pairings as well as prioritizing critical operations, tertiary backup services will only use a very small subset of grids in tertiary backup. This is to minimize any system impacts and allow for a focus on higher priorities during tertiary backup. In tertiary backup, along with DSS, offices will focus on the Critical Products listed in Appendix A of [NWSI 10-2201](#).

Therefore, in tertiary:

- (1) Use grids from the National Blended Models (NBM),
- (2) Use grids from the Weather Prediction Center (WPC) Quantitative Precipitation Forecast (QPF),
- (3) Use tropical grids required to populate and issue forecasts in tertiary backup.

The NBM and WPC QPF are already used by most WFOs to initialize the forecast (population procedure, ForecastBuilder, etc.) and the frequent updates from the NBM makes the data set ideal for operations in backup. Additionally, the NBM already incorporates the various forecast models that forecasters use routinely in their daily forecast process.

3.6 Tertiary Hydro Support

Until 2020 and the implementation of hazard services for hydrologic products, traditional AWIPS hydrologic applications could only support primary and secondary backup without the need for WFO Hydrologic Forecast System (WHFS) assistance to set up tertiary hydro backup.

However, the implementation of hazard services for hydrologic products along with work by WHFS now allows for all sites to conduct tertiary hydro backup without the need for additional WHFS support. This change is possible due to two main reasons:

1. NCF/WHFS configured all SR sites with necessary LDM ingest patterns and database tables so that they can issue hydro hazard products for all of their backup sites.
2. The transition to hydro hazard services across the region now facilitates the seamless transfer of VTEC data between all sites.

Note: WFO Hydro backup services do not include generating routine hydro text products such as the RTP, RVD, RVA in RiverPro, but rather for generating hazard products and sending data to AHPS only. Therefore, if a long backup for tertiary support is necessary, call WHFS to set up the database to support non-hazard hydro products.

3.7 Aviation Backup

During backup, offices have the choice to issue TAFs via the traditional method of AvnFPS or via Digital Aviation Services (DAS).

3.8 Unable to Invoke Backup

If a primary backup office is unable to back up their paired office, the requesting office should immediately contact the secondary backup office for assistance and then the tertiary office, if necessary.

If the office who is down cannot be backed up by any of their other pairings listed in Appendix A, the office should contact the SR ROC right away, who then will contact the SRH Service Backup Program Manager to find a solution.

It is impossible to dictate instructions for every possible situation, and office staff must use initiative and good judgment. However, if the event involves a life-threatening situation, the requesting office should make this point clear to the backup offices. Partner offices should recognize the importance of the NWS warning mission, and do everything at their practical disposal to maintain high impact services in the requesting office's area of responsibility.

As a reminder about multiple backup responsibilities, there may be circumstances where it is impossible for one office to effectively provide complete backup for another office. In such circumstances, an office requiring backup may need to have its operations divided between the primary, secondary, and/or tertiary offices. This is a common practice and can be very helpful to backup offices.

Offices who have experienced a rejection of service backup by one of their backup offices without a valid reason will notify the SR ROC as soon as possible. The Hydrologic Services Branch Chief or Meteorological Services Branch (MSB) Chief will, in turn, be informed of these events and will review the situation and collaborate on a solution.

3.9 Notification and Coordination Procedures

Notification and coordination are crucial components to all backups.

3.9.1 Contact Network Control Facility (NCF) for Monitoring when in Backup

In order for NCF to properly monitor the service backup operation, it is required for offices to contact NCF before a backup has been initiated (for all backups - drills or no-notice outage). If the site is unable to contact them ahead of initiation, they should contact them as soon as practical in order to establish monitoring of the backup operation.

Inform NCF of the type of backup (i.e. no-notice, a test, for an AWIPS upgrade, etc).

Document the NCF trouble ticket number that is opened for your backup so that your office, your backup office, and SRH can reference the ticket, if needed.

The requirement to open a ticket allows NCF to be more prepared to assist as well as document system state when issues arise. Roughly half of all service backup drills result in an issue that NCF must help resolve. If NCF is already monitoring the backup, they can more quickly assist in fixing problems that might arise. Therefore, it is very important to take the time to contact NCF and let them know so that they can better support your service backup. This is especially true during backups lasting longer than 24 hours so any needed changes to grid upload locations, file or template transfer, and/or AWIPS configuration can be monitored and executed.

3.9.2 Dedicated Backup NWSChat Rooms

Four dedicated NWSChat rooms for backup coordination are available. These chatrooms provide an effective solution to communicate and collaborate during backups, while not interrupting other NWSChat rooms. Use of the chatrooms is not required, but they provide an additional avenue of communication between the offices during a backup. The backup NWSChat rooms are first come/first serve; pick an available chatroom early and inform your backup pair which chatroom is being used. The SR NWSChat room names are:

- SRBackup1
- SRBackup2
- SRBackup3
- SRBackup4

There are other avenues to communicate if NWSChat is inoperative, including:

- Google Chat/Meet
- AWIPS collaboration tool
- Cell Phone
- Taking photos of the radar screen for the backup office
- Facetime/Skype
- Hurricane Hotline
- GoTo Meeting SR account(s)
- Regular phone line
- Satellite phone

3.9.3 Administrative Alert Message (SRHADASRH)

An Administrative Alert Message (SRHADASRH) is the primary means used to notify SRH, SR ROC, and other surrounding offices when:

- a. backup procedures have been invoked, and
- b. when normal operations are restored.

Importance:

ADA messages are very important as they are the primary way that SRH, SR ROC, and surrounding offices maintain situational awareness about ongoing backups. This is key when it comes to communication between offices, coordination and collaboration calls, and the overall operating picture of the Southern Region.

Safety First:

In cases where an office must seek safer shelter or evacuate, employees will ensure their personal safety first and then complete notification and coordination procedures.

Process for Issuing ADA:

For Regular Backups:

The requirement to send an administrative message applies to planned outages and drills, as well as unplanned outages. The initial ADA will be sent by the office taking over backup operations or conducting backup for the requesting office. After the requesting office is restored, that office will then send an ADA message saying they have taken back over responsibilities.

For Load Sharing Backups:

If offices are load sharing partial duties, an ADA is still required to mark the beginning and end of backup operations. In these cases, offices can discuss who will send the ADAs based on the status of operations at each office.

For Mutual Backups:

If the backup is a mutual backup, then either office can issue the ADA messages for both offices. Be sure to state it is a mutual backup and list both of the offices involved.

The office may use other communication channels (e.g., AWIPS Collaboration Tool, NWChat) to supplement, but not replace, the administrative message.

3.9.4 ADA Format

WFOs should use the SRHADASRH [text formatter available on VLAB](#) which sets up a template and GUI to create ADAs in AWIPS. The formatter will be run by the office

doing the backup for the initial ADA, and then the office returning from backup will run the final ADA.

SRHADASRH products should be addressed to ALL in the AWIPS header block text window to notify other offices, SRH, and the SR ROC that the backup process has been initiated.

The “TO” line of the ADA will state “All Southern Region Offices” and only use the 3 letter XXX format for office names. The formatter automatically creates this format.

See Appendix E for WFO examples, Appendix C for RFC ADA format, and Appendix D for CWSU ADA format.

Further, every office is to ensure SRHADASRH is locally configured to *alarm audibly* on the AWIPS Text Workstation.

4 Operations for WFOs for Planned or Unplanned Backups

When an office becomes inoperative, the below information must be followed for a smooth backup process.

4.1 Notify the Appropriate Backup Office of the Situation

The office requesting backup will contact the backup office. If phone lines are down, be creative:

- a. Cell phone
- b. National Warning System (NAWAS)
- c. Hurricane Hotline or other comms systems
- d. NWSSchat (remember that media can be on NWSSchat so be careful not to state the reason for being down)
- e. HAM radios have been used to ask an amateur radio point-of-contact to call the backup office or SRH.
- f. Satellite phone

Offices should document all actions taken while invoking backup procedures and note them in the office shift log.

4.2 Consider Transferring Phone Lines

If there is a need or desire to transfer operational phone lines to your backup office, follow [these instructions](#). There are a couple of ways to do this and a couple of different types of phones to transfer them to.

4.3 Actions for Backup Office

The office conducting the backup will assume the operations of the requesting office.

4.3.1 Contact NCF

Contact NCF at the start of the backup so they can monitor the backup.

4.3.2 Send SRHADASRH

The office assuming backup will send an Administrative Alert message (SRHADASRH). See Section 3.9.4 for details. This required action notifies other offices, SRH, and the SR ROC that the backup process has been initiated.

4.3.3 Monitor Weather and Assume Operational Responsibility

Monitor the weather across the County Warning Area (CWA) of the requesting office, issue warnings and other hazardous communications, grids, and other routine products as needed until the office has resumed functions.

If the requesting office uses social media and graphiccasts routinely in their operations, the backup office should try to assume that capability to the extent possible. Further, all efforts should be made to emulate the requesting office on NWSSchat.

There are some WFO products and services that do not have a robust backup mechanism in place. These products and services include, but are not limited to, webpage editing, climate products, AHPS updating, and NWR product generation.

Services like the climate products and NWR product generation can be done after an office resumes normal operations. To populate NWR, offices should republish the grids and resend needed text products. For past climate reports (CLIs, CF6s, etc.), the products can be generated with the climate GUI to populate the database of text reports.

As specified in Section 4.2.3 of [Directive 10-1701](#), all products issued by a backup office will contain the product identifiers and mass media headers of the office being backed up. Setting the "Issued By" option in the GFE text formatter window will ensure that the proper backup dissemination header is included. For example, if WFO Midland experiences an outage requiring backup, WFO San Angelo will issue the Midland zone forecast using the appropriate Midland product identifier along with "ISSUED BY NATIONAL WEATHER SERVICE SAN ANGELO TX" line. This format will ensure proper dissemination.

4.4 Once Operations are Restored

When the disabled office becomes operable, they will contact the office backing them up.

4.4.1 Send SRHADASRH

The office who is no longer being backed up will send an SRHADASRH to notify that backup has ended. See Section 3.9.4 for details. This required action notifies other offices, SRH, and the SR ROC that the backup process has ended.

4.4.2 Notify NCF

Notify NCF that the backup service has ended and that they can close out the ticket.

4.4.3 Fill Out Online SRH Notification Form

The office that assumed backup responsibility will fill out [the online notification form after every backup](#) (drills, as well as planned/unplanned outages). If it was a mutual backup, each office must complete the form. SRH uses the form to track all backups performed by offices on the [backup drill spreadsheet](#).

The Google form is the only method to track completion of a backup, gather issues, findings, and best practices. Local focal points, ITOs, and NCF should first troubleshoot issues that arise during the backup. If issues persist, include an explanation and any associated trouble ticket numbers on the form.

After the form is filled out, SRH then receives the information via email. SRH MSB will track all backups and assist offices in resolving any significant issues identified with the help from the SR AWIPS Program Manager and the SR Backup Think Tank.

5 Backup Assignments for Offices

Appendix A details the backup office pairings for WFOs and CWSUs. The SR ROC will coordinate with the other regions when service backup of ROC Operations is required.

During extreme and/or catastrophic events, the pairings may not be feasible due to the event at hand. SRH will discuss (along with input from the affected offices and potential new pairings) plans to potentially alter their backup pairings in those cases.

There have been unusual cases where quaternary backups were planned on-the-fly, set up, and temporarily put in place. When backup pairings go beyond tertiary, MSB works with NWSHQ, the National AWIPS Program Office, the WHFS and the affected local offices, to configure AWIPS for these types of backup situations. An example would be a far inland office under expected fair weather conditions backing up a coastal site

impacted by a hurricane. Preparation, flexibility, and agility are keys to a successful backup program.

6 Drills

6.1 The Importance of Service Backup Drills

Service backup operations are complex and require the staff at the involved offices to be familiar with each other's programs and responsibilities. Management will ensure an adequate degree of awareness by requiring ALL forecast operations personnel to remain proficient in service backup operations. Staff members should review the backup office resources listed in Section 8 on a regular basis.

It is essential that all forecasters be fully trained to provide service backup. Management should have as many staff members as possible participate in each backup drill. This will ensure office personnel are better prepared, able, and confident to handle these situations and the office maintains the greatest capability to perform service backup successfully.

If your office is backing up another for their AWIPS build AND the services provided cover all the requirements in Section 6.3 below, then it can be counted as a backup drill. Further, if a no-notice outage meets or exceeds all the backup drill requirements, it also can count towards a drill.

6.2 Backup Drills Per Calendar Year

WFOs will conduct *at least one* service backup annually for each of their backup pairings. See the requirements in Section 6.3 and a checklist in Appendix B. CWSU and RFCs will conduct two service backups annually.

6.3 Backup Drill Requirements

A formal checklist for the backup drill requirements is located in Appendix B and [also on the Backup Google Site](#). In summary, the following requirements must be met to be counted as a backup drill:

1. Notified NCF (888-808-8624) about the backup and noted the Trouble Ticket number opened for NCF to monitor the backup.
2. Conducted the backup for *at least four hours*.
3. Included the issuance of routine products or services. For a WFO, service backup will include a complete set of forecast grids and subsequent public, aviation forecasts, any required WARNGEN products, and routine hydrologic or fire weather/marine products, which would normally be made during the forecast period.
4. Verified non-routine product configuration to the extent possible. For example, a WFO would verify SVR and TOR text configuration and check wording of

WARNGEN templates. If time permits, load D2D in PRACTICE mode, launch WarnGen, and select the appropriate WFO in the “Backup” WFO dropdown menu.

5. Tested Iridium satellite phone by calling the SR ROC (see Section 7).
6. [Completed online backup notification form.](#)

6.4 SRH Tracks Backups

SRH MSB will [track](#) all backups. MSB, the AWIPS Program Manager, and the SR Backup Think Tank will assist offices with any significant issues identified during backups.

7 Test Satellite Phone during Drill/Backup (WFO and RFC only)

Testing the satellite phone is a part of the backup drill requirements (see Section 6.3).

7.1 Test Every 90 Days

Offices with an Iridium satellite phone will test the phone with the ROC at last every 90 days. The SR ROC [keeps a log](#) of the satellite tests.

7.2 How to Test

To initiate a satellite phone test, simply call the SR ROC any day between 9am and 5pm (at 682-703-3747) using your satellite phone. Identify your office and note that you are conducting a test using your satellite phone. Conversely, you can call the SR ROC via landline to have them initiate a test call to your satellite phone.

Note: During a real backup service event (i.e., not a drill), you can call the ROC during the next business day to fulfill the requirement.

[Guidance and instructions](#) for the use of the Iridium satellite phone should be included in your local office reference materials. These should be printed out for quick access in case of an Internet outage.

8 Backup Preparations

For service backup to be implemented in an orderly and efficient manner, the sharing of updated information is crucial. The goal of service backup is to ensure the continuation of essential products and services and to ensure the offices are familiar with the programs, products, and customers of their backup partner. Familiarity with each other’s programs and responsibilities ensures an effective backup process.

8.1 SDM

Each office will post a copy of their SDM on their office [Google Site so the backup offices can get to it easily](#). In addition, each office will maintain a copy of their SDM on a CD or other electronic media, which will be kept at the office and also be provided to offices assigned backup responsibility. This will ensure availability of these resources in the event traditional access points are not available.

8.2 Impact-based Decision Support Services (IDSS)

IDSS is an important means of conveying potential weather, water, and climate impacts to core partners and other key decision-makers. To the extent possible, offices should mirror the IDSS capabilities of their backup offices and document deficiencies where lack of resources or capabilities precludes them from providing this support. Offices requesting service backup should retain IDSS responsibility as long as possible; IDSS is founded on relationships built over time and the local office best understands the needs and thresholds of their partners and customers.

Backup operations should also be used to further IDSS within your office. Offices are encouraged to coordinate with their backup offices for assistance to allow staff to attend large-scale table top exercises, local Integrated Warning Team meetings, office training and station meetings, and partner visits. These activities build the knowledge base of forecasters and deepen the relationship with core partners.

To support IDSS, it is critical for offices to mirror the capabilities of their backup offices. Therefore, your backup offices should have access to your email distribution lists, email and social media templates, partner contact lists, and applicable local policies and procedures for IDSS delivery.

Keep these actions in mind:

- Provide your backup office with a list of emergency managers, storm spotters, and media in your CWA along with necessary phone numbers and email addresses. When you update the lists, share them with your backup office (if not already on a Google Site).
- Store some (or all) of the contact information on your office Google Site for the backup office to have access.
- If you have any special NWSChat rooms, share that information with your backup office. Remember that you may need to give backup office personnel permission to enter these rooms (the admins can add all NWS personnel from a specific office through the room management web page). Most office's "EMA" rooms are only accessible to that office's staff, not their backup office's staff, as an example.
- Notify emergency managers and other core partners who your backup offices are.
- Introduce your backup office to your emergency managers.

- Have mutual customer service workshops or customer advisory committee meetings.
- Coordinate active customer service outreach programs.
- Coordinate any focal point activity with your backup office (e.g., severe weather, hurricane, hydrology, AWIPS, marine, aviation, radar, weather radio, climatology, etc.).
- Ensure Amateur Radio operators can help others in other CWAs.

8.3 AWIPS

Make sure AWIPS is configured to support the duties of your backup office. Share any local applications necessary for operations with your backup offices to ensure consistency of local applications.

If possible, utilize the AWIPS Collaboration Tool during backup events. AWIPS Collaboration Tool can be configured for service backup so that the backup office's neighbors can see your chats while knowing they are in backup mode.

8.3.1 Graphical Forecast Editor (GFE) (WFO only)

Routinely ensure the Graphical Forecast Editor (GFE) service backup works for backup services. Many times, changes have been made at the backup office, but have not been uploaded to the central server. Doing those checks routinely, can make the backup process easier.

For a successful backup of WFO grids, importing the configuration and digital data for the inoperative site from the national Central Backup Server is required. Offices should keep it updated frequently.

For service backup to function properly, it is critical that all offices share any/all changes to their GFE maps/shapefiles with their backup offices **at the time those changes are made**. Do not wait to share your updated files with your backup office, otherwise valuable time may be lost in a backup situation to fix those files.

8.3.2 Maps/Shapefiles

For service backup to function properly, make sure to have all the **most-up-to-date** maps and backgrounds for any computer programs, such as WARNGEN shapefiles, localization for Thin Client, etc. It is critical that all offices share all changes of any critical maps/shapefiles with their backup offices as soon as possible.

It is important that your backup office is aware of the changes to make the necessary updates. Do **not** wait to share your updated files with your backup office; otherwise, valuable time may be lost in an unplanned backup situation to fix those files.

8.3.3. AFOS2AWIPS Localization (a2a file)

The afos2awips localization in AWIPS is essential for service backup to function properly. This nationally maintained file is available for viewing via the Localization Perspective in Common AWIPS Visualization Environment (CAVE) (EDEX > AFOS2AWIPS). The file lists all text product PILs with the associated issuing offices. An office will be unable to issue products for another office during service backup if the PIL and office are not listed in this file..

Additionally, afos2awips entries can cause issues with GFE if improper PILs are included or proper PILs are missing from the file. Issues with GFE text product formatters can arise from these problems since the a2a file also is used to create *configured* text product formatter files in the localization perspective.

Offices need to keep their national afos2awips.txt file current on their AWIPS system. View the “[Updating AWIPS A2A File Cookbook Instructions](#)” to ensure that your site is maintaining a current version of this file on your system.

Whether using an automated script or manual update, sites need to routinely grab the latest file in order to be sure that they have all necessary PILs for each of your backup offices. Similarly, sites requesting changes, additions, or deletions to PILs need to submit those requests via an National Dataset Maintenance (NDM) ticket to update the national afos2awips.txt file. Requests can be submitted [via this link](#). Finally, once these changes are approved, the requesting site needs to inform all of their backup offices that a new set of NDM files is ready for download and install at their backup offices.

Every office’s a2a file should be synced with the national baseline NDM file. It is critical to smooth service backup operations.

8.3.4 WARNGEN Templates

Any time a change is made to the WARNGEN templates on a local or national level, the updates must be shared with the backup offices right away. Changes to the WARNGEN templates include the products themselves and the configuration for the WARNGEN GUI. Unplanned outages can happen anytime, so sharing updated WARGEN templates is a key step in completing the NWS mission of protecting lives and property. Offices need to share every warning template that would be used during a normal warning environment.

8.3.5 ADA Alerts

Make sure the Administrative Alert Message product is alarmed on AWIPS.

8.3.6 Site Level AWIPS2 Localization Repository

Sites should create a site level repository of AWIPS2 data on VLAB. This repository will serve as a great starting point for sharing data and configuration files between service backup sites. Additionally, the repository also acts as a well-prepared archive of file changes on your own AWIPS system. The process to create this archive can be found in the instructions for Southern Region offices posted to VLAB ([Repo Instructions](#)). Once populated, any other site can access your site files via the link at <https://vlab.ncep.noaa.gov/svn/xxx/trunk/a2/localization/>.

8.4 Text Products

Keep current examples of the various products your backup office issues on your local Backup Google Site. Also, ensure all minor format differences between your products and your backup office's products are completely understood. Further, share listings of meteorological, hydrological, and RFC products on AWIPS.

It is also beneficial to increase the number of versions of various text products for your primary, secondary, and tertiary backup offices within the office Text Database.

8.5 Hydrology

Share E-19s that provide flood damage information, historical crests, and other hydrological information.

Other important hydrologic information that needs to be shared by the local office with the backup offices:

- Relevant parts of the Hydrologic Services Manual (HSM) (including detailed maps, examples of products issued by your office, explanation of special cases or conditions at river points in your HSA, etc.).
- Current E-19s.
- Templates or pre-formats for hydrologic products, along with instructions.
- Current rating curves.
- List of hydrologic customers, including their phone numbers and what products they use.
- WHFS and HYDROMET at the backup sites needs to have access to all hydrometeorological data needed to perform hydrologic backup operations, as well as the forecasts generated by the RFC.

The backup office will ensure that AHPS web page service backup is invoked/terminated, as required. Instructions for invoking/terminating AHPS web page service backup support and other hydro related backup tasks can be found in the [Hydro in Backup](#) and [Common AHPS/HydroGen Operations](#) documents.

8.6 Training Suggestions

1. Conduct seminars and training sessions with your backup office.
2. Share local climatology, hydrologic, and meteorological nuances that your office has discovered through experience and any rules-of-thumb or local forecasting techniques.
3. Share lessons learned from severe weather or unusual weather events/forecasts with your backup office.
4. The backup office could do a case study within the primary offices domain and coordinate the results with the SOO/WCM/designee of the primary office.
5. Develop a forecaster exchange program. Forecasters can be exchanged for a day or two to fully experience the programs of their backup office (if budget allows).

8.7 Social Media, NWSSchat, and Graphicasts

Essential non-AWIPS communications such as social media, NWSSchat, and graphicasts are an important part of the services NWS offices provide. Since philosophies/content differ substantially from office-to-office, coordination is very important to ensure that products and services are, to the extent possible, seamless during backup operations. It's critical for offices to exchange ideas on how (and under what conditions) these communication platforms will be maintained by the backup office.

8.7.1 Social Media

Share social media practices and recommendations for social media interaction during backup services.

There are two Google Documents that provide information about service backup for social media.

- [Service Backup Best Practices for Social Media in SR](#)
- [Social Media Backup for SR](#)

8.7.2 Graphicasts

The recommended dissemination software for graphicasts in service backup is the Send2Web version for Windows. The procedures, install, software instructions, and documentation are located on [VLAB at this link](#).

GraphiDSS backup information is located [here](#).

8.8 ASOS and Upper Air

Share listings of automated gages, sensors, and Automated Surface Observing System (ASOS) units with associated phone numbers, etc.

A WFO providing service backup will provide ASOS observation monitoring as described in NWSI 10-1305.

ASOS and the Upper Air systems automatically connect and/or can be dialed manually to transmit the observations per a network configuration plan including redundant dial backup. This network configuration plan is not a part of this Supplement. If the primary and backup automated communication systems fail and/or manual observations are generated, the responsible WFO will contact AOMC if there are missing observations.

8.9 Phones

Make sure the office emergency phone/satellite phone is charged and everyone knows where it is located, knows how to use it, and that the number is accessible. Ensure necessary phone numbers are preprogrammed into the phone.

Test at least once a year transferring your phone lines (VOIP – Voice Over Internet Protocol) to one of your backup offices. [See this link for more information.](#)

8.10 Broadcast Message Handler (BMH) Preparation

When an office must evacuate, the automated BMH program will be able to continue broadcasting as normal as long as products come into AWIPS from the service backup office and are automatically transmitted to BMH. For those products that are not fully automated, an office should add a short message to the broadcast cycle stating that only limited updates will be available until further notice. **Ensure that no public announcement is made that the office has been evacuated.**

8.11 Radar Data Dissemination Backup

It is now possible to reliably provide service backup for an inoperative office's radar products. The assumptions are that the inoperative office is still on the AWIPS WAN and that the WSR-88D is still functional. If a site has a scheduled, or non-scheduled, outage expected to last for several hours or more, a site's radar backup can act as the transmission/reporting site for the downed office's radar data.

Visit the [Radar Backup Viewer](#) to see which radars are backed up by which office and what data ingest options are available to each. Simply click the down arrow on the button to choose the office that is down. Primary, secondary, and tertiary offices are color coded across the document.

Use the table in the viewer to determine which type of radar data backup is needed for the given situation. The [Southern Region Radar Backup instructions](#) (also linked in the viewer) will help you initiate and terminate each type of radar backup.

These documents are also accessible from the [SR Radar Google Site](#).

9 SR Backup Program

The SR backup program is led by the Communications and Dissemination Program Manager at SRH in MSB (referred to in this document as the Backup Program Manager). The backup to the Backup Program Manager is the MSB Chief.

The backup program also has a “Backup Think Tank,” which consists of a few voluntary members from SR Forecast Offices, the SR AWIPS Program Manager, and the SR Backup Program Manager. The members are listed on the [SR Backup Google Site](#), and they also maintain the Google Site.

The Backup Think Tank tracks all issues that offices report, helps resolve issues, keeps track of action items, prepares instructions, and when necessary, elevates significant backup issues accordingly.

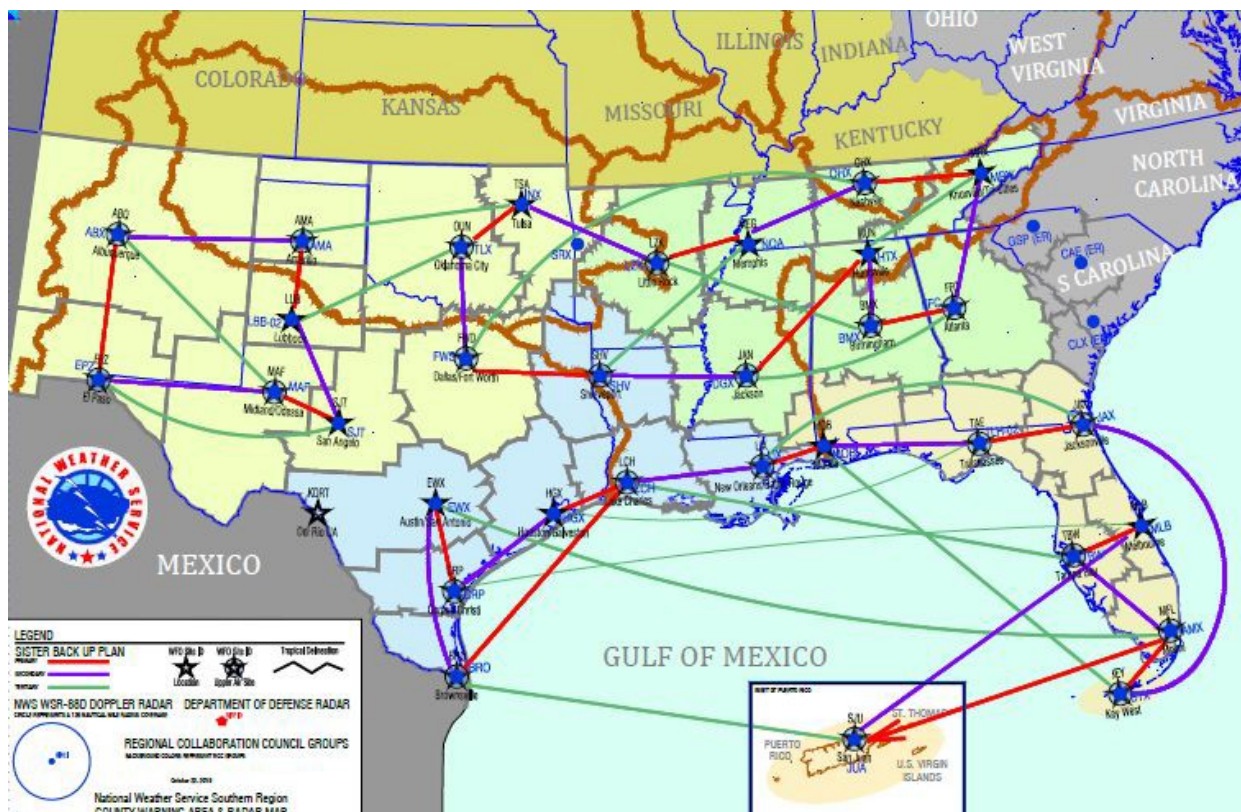
Appendix A:
Southern Region WFO Service Backup Assignments

Requesting/Disabled Weather Forecast Office	Primary Backup	Secondary Backup	Tertiary Backup
Albuquerque, NM	El Paso	Amarillo	Midland
Amarillo, TX	Lubbock	Albuquerque	Tulsa
Atlanta/ Peachtree City, GA	Birmingham	Morristown	Jackson
Birmingham, AL	Atlanta/ Peachtree City	Huntsville	Little Rock
Brownsville, TX	Lake Charles	San Antonio/ Austin	San Juan
Corpus Christi, TX	San Antonio/Austin	Houston/Galveston	Melbourne
El Paso, TX	Albuquerque	Midland	San Angelo
Fort Worth/ Dallas, TX	Shreveport	Norman	Nashville
Huntsville, AL	Jackson	Birmingham	Morristown
Houston/ Galveston, TX	Lake Charles	Corpus Christi	Tallahassee
Jackson, MS	Huntsville	Shreveport	Atlanta/Peachtree City
Jacksonville, FL	Tallahassee	Key West	New Orleans
Key West, FL	Miami	Jacksonville	Mobile
Lake Charles, LA	Houston/Galveston , And Brownsville	New Orleans	Tampa
Little Rock, AR	Memphis	Tulsa	Birmingham
Lubbock, TX	Amarillo	San Angelo	Norman
Melbourne, FL	Tampa	San Juan	Corpus Christi
Memphis, TN	Little Rock	Nashville	Shreveport
Miami, FL	Key West, and for San Juan	Tampa	San Antonio/Austin
Midland, TX	San Angelo	El Paso	Albuquerque
Mobile, AL	New Orleans	Tallahassee	Key West
Morristown, TN	Nashville	Atlanta/ Peachtree City	Huntsville
Nashville, TN	Morristown	Memphis	Fort Worth
New Orleans, LA	Mobile	Lake Charles	Jacksonville
Norman, OK	Tulsa	Fort Worth/Dallas	Lubbock
San Angelo, TX	Midland	Lubbock	El Paso
San Antonio/ Austin, TX	Corpus Christi	Brownsville	Miami
San Juan, PR	By Miami	Melbourne	Brownsville
Shreveport, LA	Fort Worth/Dallas	Jackson	Memphis
Tallahassee, FL	Jacksonville	Mobile	Houston/Galveston

Tampa, FL	Melbourne	Miami	Lake Charles
Tulsa, OK	Norman	Little Rock	Amarillo

Center Weather Service Units:

Center Weather Service Unit	Primary Backup
Albuquerque, NM	Denver (Longmont)
Fort Worth, TX	Houston
Houston, TX	Fort Worth
Memphis, TN	Atlanta
Atlanta, GA	Memphis
Jacksonville, FL	Miami
Miami, FL	Jacksonville



Appendix B:
Backup Requirement Checklist

WFOs who complete all six (6) items below, the backup will be counted as one of their required drills.

_____ **1.** Notify NCF (888-808-8624) about the backup and note the Trouble Ticket number opened for them to monitor the backup. Don't forget to Inform NCF what type of backup this is (no-notice, a test, for an AWIPS upgrade, etc).

_____ **2.** Conducted for *at least four hours*.

_____ **3.** Included the issuance of a complete set of forecast grids and subsequent public and aviation text forecasts, any required WWA or WARNGEN products, and routine hydrologic or fire weather/marine products, which would normally be issued during the forecast period.

_____ **4.** Verified non-routine product configuration to the extent possible. For example, a WFO would verify SVR and TOR text configuration via D2D **PRACTICE** mode and check wording of WARNGEN templates.

_____ **5.** Tested Iridium satellite phone by calling the SR ROC at 682-703-3747 (see Section 7). Note: If this is a real backup event (i.e. not a drill), you can call the ROC during the next business day to fulfill this requirement.

_____ **6.** Completed online [backup notification form](#).

NOTE: All the above requirements must be met to be counted as a drill.

Appendix C:
RFC Specific Backup Instructions for Both WFOs and RFCs

- a. If an RFC goes into backup, they will send an SRHADASRH product which will notify other offices, SRH, and the SR ROC that the backup process has been initiated. When returning to normal operations, the RFC will send another SRHADASRH for notification. See below for ADA examples.
- b. The requesting RFC will notify affected WFOs immediately that they have hydrologic responsibilities until the RFC can commence backup services on their backup system.
- c. Until the RFC has established their backup, the WFO staff should be prepared to take over hydrologic responsibilities. During this time, the WFOs will monitor, and adjust existing river forecasts as necessary until the RFC is able to again assume that responsibility. The WFOs will keep the hydrologic forecasts and warnings as accurate as possible. The WFO staff should access any resources practical in this effort, including phone coordination with the servicing RFC.
- d. RFCs will ensure that staff is trained in the use of the RFC backup system, including procedures to serve as the “backup dissemination office” to another office.
- e. RFCs will determine the best location (off-site if do-able) to store their portable RFC backup system.
- f. RFCs will use the RFC backup system to generate and disseminate a core suite of hydrologic products to support WFO hydrologic operations. See Appendix A in NWSI 10-2201 for a list of critical products.
- g. RFCs will ensure that the RFC backup system is configured with the latest software (e.g., Community Hydrologic Prediction System (CHPS)) to support hydrometeorological operations at the RFC.
- h. SRH, in coordination with the Hydrologic Services Branch and the RFCs, will provide information technology support for RFC backup operations.

g. RFC ADA Examples:

If backup remains at RFC, use this format:

NOUS74 KEHU 262016
ADASRH

Alert Administrative Message
National Weather Service Southern Region Headquarters
316 PM CDT Fri Oct 26 2018

To: All Southern Region Offices

From: SERFC

Subject: SERFC is in backup operations

SERFC has initiated backup.

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If backup is away from the office, use this format:

NOUS74 KEHU 262017
ADASRH

Alert Administrative Message
National Weather Service Southern Region Headquarters
317 PM CDT Fri Oct 26 2018

To: All Southern Region Offices

From: LMRFC

Subject: LMRFC is in backup operations

LMRFC has initiated backup operations. They can still be reached at: [fill in
contact phone #]

Appendix D:
CWSU Specific Service Backup Instructions

CWSU Backup:

CWSU backup office pairings are documented in Appendix B of [NWSI 10-803](#) and also located in Appendix A of this Supplement.

CWSU backup requirements are documented in Chapter 9 of [NWSI 10-803](#).

Further, a CWSU backup of the AWIPS Remote Display (or ARD) connectivity should be tested at least once a year. An ARD is needed if the main servicing WFO AWIPS is down (e.g., El Paso WFO has been designated as the AWIPS Backup site for Albuquerque CWSU). If the primary host AWIPS goes down, CWSUs should re-point their ARDs to the AWIPS backup site. CWSUs should include the procedures in the Standard Operating Procedure (SOP).

CWSU ADAs:

CWSUs will issue an ADA product for backup notification. This ADA product notifies other offices, SRH, and the SR ROC that you are being backed up.

CWSUs will not state in their ADA any reference to short staffing. Also, not required to add a “will resume” sentence, due to another ADA will be sent out when back up ends (e.g. office opens up).

See CWSU ADA example below.

Backup Preparation:

- CWSUs must have access to their backup site’s Station Duty Manual. A copy of your SDM will be located on the office Google Site.
- CWSUs should ensure they are set up to receive the ADA product.
- CWSUs should be able to provide scheduled and on-demand briefings, Pre Duty Weather Briefings (PDWBs), Center Weather Advisories, and Meteorological Impact Statements.

Going into Backup:

If a CWSU goes into backup, the requesting CWSU will call their backup office to notify them. The backup CWSU will send an SRHADASRH product to ALL and state which CWSU has backup responsibility.

When returning to normal operations, the previously requesting CWSU will inform the backup office of the return to normal operations and also send out an SRHADASRH product to notify surrounding offices.

Backup Drills:

CWSUs will conduct two backup drills or full operational backups a year. The results of backup drills and suggestions for improvement will be submitted via the [Google Form](#).

The information will be passed on to the MSB Chief and the Aviation Program Manager. MSB will [keep a record](#) of the backup drills each office conducts and assist the office in resolving any significant issues identified.

Backup of ARDs should be conducted once a year.

CWSU ADA examples:

NOUS74 KEHU 302139
ADASRH

Alert Administrative Message
National Weather Service Southern Region Headquarters
335 Pm Ct Mon Dec 30 2019

To: SRH..SR-ROC.. ZTL..ZHU..ZKC..ZID..ZFW...AWC

From: CWSU ZME

Subject: ZTL BACKUP

CWSU ZME will be backing up CWSU ZTL

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Or

NOUS74 KEHU 202059
ADASRH

Alert Administrative Message
National Weather Service Southern Region Headquarters
500 PM EST Stt Jun 20 2020

To: SRH...MFL...JAX...ZHU...ZTL...ZNY...AWC...SR-ROC
From: CWSU ZMA

CWSU MIAMI will be backing up CWSU Jacksonville from 20/2100Z until 21/0030Z.

Or

NOUS74 KEHU 302139
ADASRH

Alert Administrative Message
National Weather Service Southern Region Headquarters
335 Pm Ct Mon Dec 30 2019

To: SRH..SR-ROC.. ZTL..ZHU..ZKC..ZID..ZFW...AWC

From: CWSU ZME

Subject: ZME BACKUP

ZTL CWSU will resume backup service responsibility for ZME CWSU
Starting at 1100Z

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Appendix E:
Administrative Message Examples for WFOs

Backup Implementation Example. Issued by the office conducting the backup.

NOUS74 KEHU 081321
ADASRH

Alert Administrative Message
National Weather Service Southern Region Headquarters
721 AM CST Thu Nov 8 2018

To: All Southern Region Offices

From: WFO OHX

Subject: WFO OHX providing Service Backup for WFO MRX

WFO OHX has assumed full service backup for WFO MRX due to a service backup test.

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Resumption of Service Example. The office who resumes operations will send the ADA message.

NOUS74 KEHU 262017
ADASRH

Alert Administrative Message
National Weather Service Southern Region Headquarters
317 PM CDT Fri Oct 26 2018

To: All Southern Region Offices

From: WFO MRX

Subject: WFO MRX is resuming normal operations

WFO MRX has returned to service following backup due to a service backup test. Special thanks to WFO JAN for providing service backup.

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Mutual Backup Example:

NOUS74 KEHU 011203
ADASRH

Alert Administrative Message
National Weather Service Southern Region Headquarters
703 AM CDT Wed Jul 1 2020

To: All Southern Region Offices

From: WFO CRP

Subject: WFO CRP and WFO MLB Mutual Backup Swap

WFO CRP and WFO MLB will be conducting a mutual backup swap through 16Z for testing.

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