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***SERVICE BACKUP AND MUTUAL AID FOR CENTRAL REGION OFFICES***

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***SUMMARY OF REVISIONS:*** This supplement supersedes National Weather Service Central Region Supplement 02-2004, *Backup Plan for Central Region Offices*, applicable to NWSI 10-2201, dated November 11, 2019.

1. Updated the title of the supplement to include “And Mutual Aid”
2. Added definitions of Mutual Aid, Service Backup
3. Removed CWSU Backup Operations details, ASOS, Upper Air, Verification, and Dissemination Sections; will default to national plans
4. Updated ROC Form link
5. Removed references to expired or missing sections
6. Updated Google Site links
7. Updated WFO Hydro Backup Procedures
8. Updated River Forecast Center Backup procedures
9. Added requirement to update GFE Configuration Files on the Central Server every 6 months
10. Updated Backup Sites to include a third site that is geographically distant from the parent office (Appendix A - “Backup 3” Column)
11. Added an Appendix B - *Primary Mission Essential Functions, Priority, and Mutual Aid Options List*

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Date

**Service Backup and Mutual Aid for Central Region Offices**

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**1. Purpose**

The National Oceanic and Atmospheric Administration's National Weather Service (NWS) field offices provide services to a variety of users. This Supplement outlines a backup plan with detailed instructions for Central Region (CR) offices to follow when they are unable to provide these services. This plan also includes guidelines for mutual aid to increase capacity at an office whose workload is excessive.

The [CR Service Backup Google Site](#) contains several resources to assist with planned and unplanned backup situations. Written instructions cannot cover every situation. Personnel should use sound judgment and initiative, evaluating situations on a case-by-case basis to ensure continuation of essential services as defined in Appendix B.

## 1.2 Definitions

**Service Backup** - defined as the assumption of all service responsibilities of an office, when the office is unable to carry out its assigned responsibilities. An office may go into service backup when the office is unable to perform its duties due to system failures, routine maintenance, and/or various other reasons. In these cases, one or more designated backup offices covers the affected office and issues all products and services for the failed office.

**Mutual Aid** - support provided by one or more offices to another office to increase capacity at an office whose workload is excessive. Mutual aid can also extend beyond WFO, RFC, or CWSU operations into IT Support, training, Electronics Technician duties, and administrative duties as well. Service Backup is a form of Mutual Aid.

## 2. Responsibilities and Operational Considerations

### 2.1 Field Offices

All field offices are responsible for developing specific plans to respond to the disruption of critical services and assuming functions of their backup office(s). Local procedures must reflect plans, procedures, and priorities for backup and evacuation. Each field office is required to test backup operations with each backup office at least annually. Additionally, each office is required to keep their documentation up to date and ensure that their link on the Central Region Service Backup Google Site is active and up to date. Field offices should perform these checks at least annually.

For an extended backup situation, there may be a desire to transfer operational phone lines to a backup office. For these situations, please follow the instructions on the CR Service Backup Google Site.

### 2.2 Weather Forecast Offices (WFO)

WFOs should consider mutual aid for routine products and services in order to allocate resources to higher priority duties that require hyper-local expertise when resources are limited or as workload increases due to planned events or unplanned incidents. Due to circumstances, duties may need to be split by more than one office, or a number of individuals or subject matter experts from multiple offices to ensure a reasonable span of control.

The priority of product and service provision is outlined in Appendix B. Primary mission essential functions (PMEFs) are best kept with the local or requesting office to ensure local office expertise is leveraged. As such, direct support to core partners (IDSS) and short fuse warning operations should be maintained by the local office, as well as other duties that are not transferable to a mutual aid office (e.g. Climate duties, NWR, answering the phone, etc.). WFOs are encouraged to maintain a Google site containing all resources required for mutual aid. This site is linked to and hosted from the Central Region Service Backup Google Site.

In the event of an unplanned outage or to facilitate smoother mutual aid functions, it is still best to maintain service backup “triads.” Tables outlining traditional full-service backup responsibilities are outlined in Appendix A. The Central Region Operations Center (CR ROC) can facilitate additional backup options beyond the three designated backup sites situationally, following the procedures outlined on the Central Region Mutual Aid Google Site.

### 2.3 WFO Operations

There are several levels to the backup of WFO Operations to consider, based upon the scale of services needed. The designated service backup offices, listed in Appendix A, may provide any or all services until the affected office restores normal operations or another backup option based on resource availability and/or mutual aid type is arranged. In addition, subject matter experts from across the agency can provide one-to-one or many-to-one mutual aid, such as the Remote Mesoscale Analysis program (RMA) or the Supplemental Assistance Volunteer Initiative (SAVI), to virtually assist during high-impact events. NWS offices may also use [temporary duty assignments](#) to build on-demand capacity as well.

Examples of mutual aid options are listed in Appendix B, this is not an exhaustive list and additional mutual aid options may be developed based upon office needs. In most situations, mutual aid including service backup, can be arranged between a WFO and their backup offices. For more complicated scenarios, the CR ROC may assist upon request.

Example Scenario where the CR ROC facilitates and coordinates multi-office support:, WFO A is expecting a severe weather event with several outdoor IDSS Events in their forecast area this weekend. WFO A contacts the CR ROC to ask for help with coordinating mutual aid early in the workweek. On a conference call between the WFOs and the CR ROC, WFO B offers to cover Aviation Forecasts and Terminal Aerodrome Forecasts (TAFs) for WFO A, while WFO C covers WFO A’s gridded forecasts and routine products. WFO A would retain IDSS and Convective Warnings for their service area during the event. The CR ROC lines up a facilitator for RMA support, which is provided to WFO A by a cadre of experts from across the agency who specialize in Mesoanalysis. These experts provide real-time analysis to the on-station Mesoanalyst at WFO A who incorporates this intelligence into IDSS for partners and helps inform warning decisions being made by the Radar Operator at WFO A.

Example Scenario where the CR ROC is typically not involved in Mutual Aid coordination: It is 5am and WFO A is off the WAN for at least 10 minutes. WFO A contacts their backup triad to see who is available for Service Backup if communications are not restored. After 30 minutes off the WAN with an unknown time of restoration, WFO B assumes Full Service Backup and sends an ADM and a ROC Form to report unscheduled Service Backup and/or seek ticket escalation if appropriate. WFO A’s ESA and ITO arrive at 6am and find the issue. Communications are restored and WFO A sends an ADM to notify that they are back up.

### 2.3.1 Hydrologic Services

For hydrologic services, the following must be shared between backup triads:

- Relevant parts of the Hydrologic Services Manual (HSM) (including detailed maps, examples of products issued by the office, explanation of special cases or conditions at river points in the HSA, etc.).
- Current E-19s.
- Templates or pre-formats for hydrologic products, along with instructions.
- Current rating curves.
- List of hydrologic partners, including their phone numbers.
- WHFS and HYDROMET at the backup sites must 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 including setting the HydroGen Manager to Backup Mode.

#### 2.3.1.1 WHFS Data Transfer for Hydrologic Service Backup

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 and significant additional interventions. However, the implementation of Hazard services for hydrologic products, along with work by WHFS, now allows all sites to conduct hydro backup without the need for significant intervention.

It is the local office's responsibility to notify the backup office whenever changes are made, and request a data transfer by WHFS to ensure the office database is up to date with backup offices. If an office needs backup by an office in the third column of Appendix A, this backup office will need to contact WHFS to ensure the ability to backup portions of the hydro program. This is not necessary for the offices listed in columns 1 and 2.

#### 2.3.1.2 WFO Responsibilities When a Servicing River Forecast Center (RFC) Requires Backup

While the servicing RFC establishes service backup, each affected CR WFO should have the capability to provide critical hydrological services without RFC river forecasts (RVF) and flash flood guidance (FFG) and related digital guidance within the first 24 hours of a RFC failure (Ref. NWSI 10-2201). Essential services include issuing hydrologic watches, warnings, and statements.

### 2.4 River Forecast Centers (RFC)

When an RFC goes into backup, they will send an ADM message to notify other offices and CRH that backup has been initiated. When returning to normal operations, the RFC will send another ADM to notify impacted parties that normal operations have resumed.

During a period of service backup, the RFC either will use their own systems, if available, or will use resources from the National Water Center to complete operational duties.

During on-site and off-site backup, some aspects of water supply, web page, probabilistic model runs and/or Advanced Hydrologic Prediction Service (AHPS) functions may be performed at local RFC discretion.

## **2.5 Center Weather Service Units (CWSU)**

Service backup of CR CWSU Operations will be in accordance with NWSI 10-803, "Support to Air Traffic Control Facilities."

## **2.6 Central Region Headquarters (CRH)**

CRH responsibilities are to ensure regional data and product flow to support backup operations for all field offices, and to provide administrative support to arrange any necessary travel. If the assigned backups are unavailable, WFOs will contact the Central Region Operations Center (CR ROC). The CR ROC will determine an appropriate backup office based on a number of factors, such as area affected by the event, forecast hazardous weather impacts, etc. The CR ROC will then coordinate backup logistics with appropriate Headquarters resources.

## **3. Reporting Requirements**

Specific instructions for situations requiring service backup can be found on the [CR ROC Google Form for Significant Event Logging and Notification](#). Refer to the appropriate decision tree on that form for guidance. This form is designed to provide clear instructions for a variety of incidents which may require "for the record" information, while minimizing workload on the local office.

For all service backup, the affected office (or its backup) will communicate the beginning of service backup by issuing an AWIPS admin message (CRHADMCRRH). If communications are down at the affected office, the backup office will also complete the CR ROC Google Form for the affected office.

For *unscheduled/emergency* situations, the form will also instruct you to (1) coordinate with affected WFOs, RFCs, and/or CWSUs; (2) call NCF; and (3) notify the CR ROC hot line at 816- 200-1140 (if it is an emergency). As an additional communication safeguard, upon selecting the "Submit" button on the Google Form, an email will automatically be sent to [crhroc@noaa.gov](mailto:crhroc@noaa.gov) mailing list.

Upon restoration of normal operations in all scenarios, the disabled field office will notify affected WFOs, RFCs and/or CWSUs, and close out ROC notification by completing an "update to information already submitted" on the Google Form. (As noted above, this action will trigger an automatic email to the [crhroc@noaa.gov](mailto:crhroc@noaa.gov) mailing list.) The field office will also disseminate an AWIPS admin message (CRHADMCRRH) stating the office has returned to normal operations.

An Unscheduled Outage System (USOS) Report should be submitted for unscheduled service backup. Refer to [30-2112 Reporting Systems, Equipment, and Communication Outages](#) for details.

Examples of situations that may prompt immediate implementation of service backup include:

- Events outside the control of the office (e.g., facility evacuations required for staff safety, equipment failures, communications outages, etc.)
- Maintenance activities (e.g., information technology installations or upgrades, etc.)
- Testing backup plans (i.e., backup drills)

#### **4. Readiness**

NWS Policy Directive 10-22, “Readiness”, describes all readiness activities, including service backup, as essential for the accomplishment of the NWS mission. Each WFO and RFC will maintain a list of web pages, phone numbers, and social media accounts that provide critical and reliable information for use during high impact events, and will store this information on the [Central Region Service Backup Google Site](#). GFE Configuration Files will be refreshed on the central server at least every 6 months to ensure that they are current.

It is the responsibility of each office to ensure that its backup offices have been provided all necessary items, as outlined above, to accomplish backup successfully. The Central Region Operations [Google Site](#) will serve as the repository of this information. Local offices will update this site at least annually.

As stated in section 2.1, WFOs will conduct at least one service backup exercise annually with each of their backup sites. RFCs will conduct a service backup exercise annually. All offices will conduct an annual internal service backup drill, per the [CR supplement on drills](#).

**Appendix A - WFO Service Backup Assignments**

Note: An office that is engaged in service backup for one office may not be able to take on their other backup responsibility. All WFOs will run a CAVE localization for all other CR WFOs, so that they can invoke immediate service backup for convective warnings. The CR ROC will coordinate work with WFOs on a case-by-case basis to configure other AWIPS capabilities (GFE, hydro applications) for backup beyond the designated triad.

<b>WFO</b>	<b>Backup</b>	<b>Backup</b>	<b>Backup<sup>4</sup></b>
ABR	FSD	BIS <sup>1</sup>	GLD
APX	MQT	DTX	LOT
ARX	DMX	DVN	DLH
BIS	FGF	ABR	GID
CYS	RIW	UNR	TOP
DDC	GLD	ICT	FGF
BOU	PUB	GJT	MPX
DLH	MPX <sup>1</sup>	FGF	ARX
DMX	DVN	OAX	LBF
DTX	GRR	APX	MQT
DVN	ARX	DMX	PAH
EAX	SGF	TOP	LMK
FGF	BIS	DLH	DDC
FSD	ABR	MPX <sup>1</sup>	ILX
GID	OAX	LBF	BIS
GJT	SLC	BOU	UNR
GLD	DDC	PUB	ABR
GRB	MKX	MQT	GRR
GRR	DTX	IWX	GRB
ICT	TOP	DDC	IND
ILX	LOT	LSX	FSD
IND	IWX	LMK	ICT
IWX	IND	GRR	MKX



<b>WFO</b>	<b>Backup</b>	<b>Backup</b>	<b>Backup <sup>4</sup></b>
JKL	ILN <sup>2</sup>	RLX <sup>2</sup>	SGF
LBF	UNR	GID	DMX
LMK	PAH	IND	EAX
LOT	ILX	MKX	APX
LSX	EAX	ILX	OAX
MKX	GRB	LOT	IWX
MPX	DLH	ARX	BOU
MQT	APX	GRB	DTX
OAX	GID	FSD	LSX
PAH	LMK	SGF	DVN
PUB	BOU	GLD	RIW
RIW	CYS	BYZ <sup>3</sup>	PUB
SGF	LSX	PAH	JKL
TOP	ICT	EAX	CYS
UNR	LBF <sup>1</sup>	CYS <sup>1</sup>	GJT
ILN (ER)	JKL <sup>2</sup>		
RLX (ER)		JKL <sup>2</sup>	
SLC (WR)	GJT <sup>3</sup>		
BYZ (WR)		RIW <sup>3</sup>	

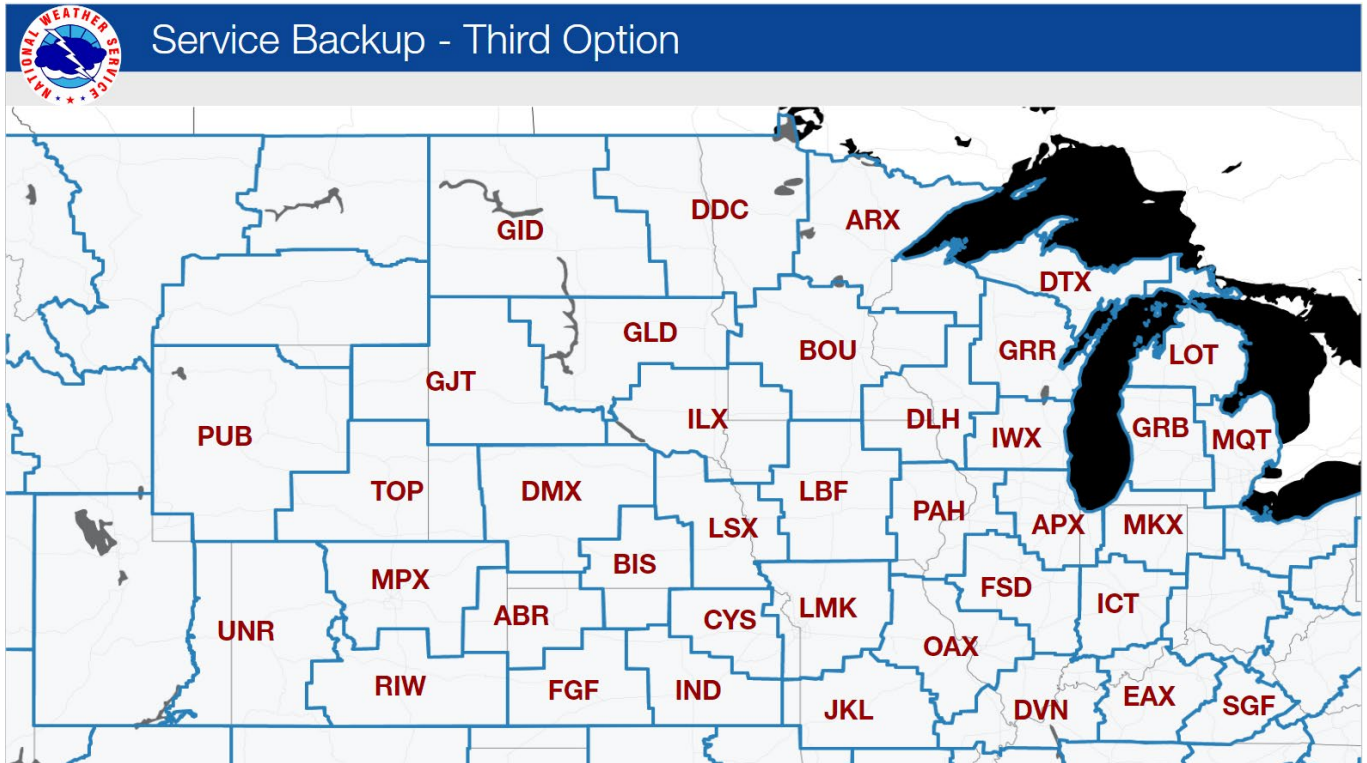
<sup>1</sup> South Dakota WFOs have access to the South Dakota State trunk radio system to facilitate backup communications.

<sup>2</sup> Per Eastern Region Backup Plan

<sup>3</sup> Per Western Region Backup Plan

<sup>4</sup> These offices will require configuration work performed by WHFS to enable the ability to backup portions of the hydro program.

New Backup Option Map:



Above: Regarding the new backup option, offices that are not in close proximity but face similar forecast challenges are sought out. These challenges include forecast difficulties related to the Great Lakes, complex terrain, the presence of Core-30 Airports, urban versus rural forecast challenges, and more. Additionally, all third backup options will be within Central Region. This approach aims to streamline potential issues that may arise when utilizing a “legacy” backup office located in another region (as described in columns 1 and 2 above).

## Appendix B - Mission Essential Functions, Priority, and Mutual Aid Options List

National Weather Service [Instruction 10-2201](#) defines a list of critical products in Appendix A of the Instruction. It is imperative that these products are issued promptly. Whether they are issued by the home office or temporarily by another office through the use of mutual aid or service backup depends on several circumstances and it should be relatively transparent to the public and partners.

To prioritize the products and services, the following list may be used. It emphasizes the reliance on local expertise and the ease of transfer to a backup office; these products and services are at the top of this list.

This list does not encompass all office-provided products and services, but serves as a guideline for triage situations. Local management should consider all relevant factors, including this list, local staffing needs and abilities, as well as the ease of transfer to a mutual aid office(s).

The local office should prioritize the following items:

1. Short-fuse (often convectively driven or polygon-based) warnings, statements, or advisories.
2. Decision Support Services to Core Partners.
  - a. One-to-one forecast provision or interpretation and on-site support.
  - b. Phone calls and other local partners or public reports and inquiries.
  - c. One to many IDSS including webinars and [Decision Support Packets](#) or Emails.
3. Mission Critical Observations including but not limited to Upper Air Observations.
4. Media Interviews.
5. Aviation Forecasts including but not limited to TAFs.
6. Local Storm Reports.
7. Watches, warnings, and advisories for weather events with longer lead time.
8. Hydrologic Forecasts and Products.
9. Storm Damage Survey; including QRT travel or Virtual QRT  
- [Emergency Travel Information](#)
10. Gridded Forecasts and Routine Products.
11. Social Media information push and pull.
12. Routine weather watch and other observations including climate reports.
13. Mesoanalysis ([Remote Mesoanalysis Support](#) may be available).
14. Training.
15. Outreach.
16. Equipment repair and maintenance including COOP.
17. GIS support.
18. Top News Stories and CMS Support.

Items at the end of this list are universal / can be performed by any NWS Employee, are normally considered less time sensitive, or are a combination of the aforementioned qualities.