

**NATIONAL WEATHER SERVICE POLICY DIRECTIVE 10-9**  
**OCTOBER 20, 2021**

**Operations and Services**

**WATER RESOURCES SERVICES PROGRAM**

**NOTICE:** This publication is available at: <http://www.nws.noaa.gov/directives>

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**SUMMARY OF REVISIONS:** This directive supersedes NWS Policy Directive 10-9, “*Water Resources Services Program*,” dated March 19, 2018. Changes made to reflect:

1. Sections 3.1, 3.2.f, 3.3.h, 3.11.f.6, 3.12.f, and 3.13.f were modified to describe the respective roles of the Analyze, Forecast, and Support Office (AFSO), National Centers for Environmental Prediction (NCEP), NWS Regional Headquarters offices, Office of Water Prediction (OWP) National Water Center (NWC), River Forecast Centers (RFC) and Weather Forecast Offices (WFO) in the provision of decision support services.
2. Section 3.2 modified to add NCEP’s role in the operation and maintenance of models and facilitating the transition of hydrometeorological research into operations.
3. Section 3.4 modified to describe the Office of the Assistant Chief Information Officer role in cloud initiatives and foreign national access.
4. Section 3.11 modified to add the Initial Operating Capability of the NWC’s Water Prediction Operations Division (WPOD).

1. As the Nation grows, more segments of society are becoming increasingly vulnerable to an excess or lack of water. Timely and accurate river and flood forecasts, warnings, and water resources information spanning minutes out to months in the future are becoming more critical to decision making processes which affect all citizens. The National Oceanic and Atmospheric Administration National Weather Service’s (NWS) Water Resources Services Program (WRSP) includes the provision of surface water (overland flow, rivers, lakes, soil moisture) and groundwater (shallow to deep aquifer) services spanning the domain from mountain tops to the salt water boundary in the coastal zone. The WRSP is the collective body of resources and activities provided and undertaken by NWS headquarters, regional headquarters, and field offices. Participating entities include the Office of Water Prediction (OWP), National Centers for Environmental Prediction (NCEP), River Forecast Centers (RFC), and Weather Forecast Offices (WFO). These entities support and provide these water-related services in the form of forecasts, warnings, and associated products and information for the Nation’s watersheds. This directive governs the NWS provision of water resources services to its internal and external partners and users.

2. The WRSP provides water resources information, forecasts and warnings for the protection of life and property and the enhancement of the national economy. These information and services form the foundation for water resources Impact-based Decision Support Services.
3. This directive establishes the following authorities and responsibilities:
  - 3.1 The Analyze, Forecast, and Support Office (AFSO) will:
    - a. Establish, collect, consolidate as appropriate, and maintain national policies, procedures, and requirements for the provision of consistent NWS water resources forecast and warning services.
    - b. Identify and validate service needs and establish operational requirements for water resources observations, forecasting and warning applications, and decision support services.
    - c. Coordinate the design, validation, and implementation of new science and technology, and new products and services.
    - d. Oversee weather, water, and climate service programs supporting water resources operations and services.
    - e. Consolidate, analyze, and oversee national performance and effectiveness indicators of water resources services as defined in section 4.
    - f. Provide outreach to national partners and other users to promote and enhance water resources services.
  - 3.2 The NCEP will:
    - a. Execute the numerical analysis, atmospheric and hydrologic forecast models, and ensembles of models, used in everyday hydrometeorological and water resources analysis.
    - b. Provide hydrometeorological forecasts and guidance serving as input to the water resources forecasting process for all time scales to include forecasts of precipitation and storm surge.
    - c. Prepare national products and services that integrate hydrometeorological information produced by WFOs and RFCs.
    - d. Operate and maintain NWS dissemination systems, infrastructure, and services supporting the WRSP, including the NWS Web and IT infrastructure and the OneNWS Network. Also, ensure security for all relevant NWS dissemination systems.
    - e. Develop, maintain and provide user support for hydrometeorological data collection systems and disseminate data products and information for use in NWS operations.
    - f. Facilitate the transition of hydrometeorological research into operations.
    - g. Deliver a set of hydrometeorological decision support services for national partners and users that facilitate decision making associated with events ranging from flash floods to drought.
  - 3.3 NWS regional headquarters will:
    - a. Ensure WFOs and RFCs are organized, trained, and equipped to fulfill the WRSP obligations within their region.
    - b. Provide water resources related requirements to AFSO.

- c. Develop supplements to procedural directives for the WRSP.
  - d. Provide technical and operational support to WFOs and RFCs.
  - e. Oversee water resources service outreach efforts.
  - f. Evaluate performance and effectiveness of water resources services within their region.
  - g. Ensure WFOs and RFCs comply with WRSP directives and regional supplements.
  - h. Through the Regional Operations Centers deliver a set of water resource-related decision support services for regional, state, and local partners and users that facilitate decision making associated with events ranging from flash floods to drought.
- 3.4 The Office of the Assistant Chief Information Officer for Weather Services will:
- a. Provide the key information technology (IT) policy oversight, analysis, planning and execution within the NWS, to include coordination and implementation of all NWS IT security and critical IT infrastructure activities.
  - b. Manage a comprehensive program of IT systems investment, planning, and review to ensure high quality, cost-effective IT initiatives.
  - c. Oversee the development of a data architecture/strategic data management plan for increased accessibility, interoperability, and stewardship of data including implementation of geospatial information services (GIS).
  - d. Provide overall planning and policy oversight for the NWS use of the Internet, telecommunications, cloud initiatives, and foreign national access.
- 3.5 The Office of Central Processing will:
- a. Provide system engineering, software management, facilities engineering, communications, maintenance, and logistical services to sustain operational systems supporting the WRSP.
  - b. Provide real-time operational support and maintenance for nationally-delivered water resources applications.
- 3.6 The Office of Chief Learning Officer will:
- a. Provide professional and technical training to enable NWS employees to reach optimum performance in present assignments and future responsibilities.
  - b. Work with NWS Headquarters, Regional Headquarters and National Centers to set training policies, procedures, and priorities to ensure training requirements for the WRSP are met.
- 3.7 The Office of Chief Operating Officer will:
- a. Manage the day-to-day mission execution units responsible for delivering NWS water-related products, services, and information.
  - b. Provide the foundation for NWS water resources service improvement activities by measuring, analyzing, and reporting operational performance and assessing customer satisfaction with service delivery.

- c. Organize and maintain two-way communications between senior leadership and the field by the NWS Operations Center (NWSOC) coordinating with NWS Regional Operations Centers (ROCs), NWS National Centers, and NOAA Homeland Security Program Office (HSPO).
- 3.8 The Office of Dissemination will:
- a. Provide portfolio management to support the NCEP Central Operations (NCO) operation and maintenance of NWS dissemination systems, infrastructure and services supporting the WRSP including the NWS Web and Information Technology infrastructure and the OneNWSnet Network.
  - b. Ensure, through program planning, that policy, procedures and backup systems are in place to sustain dissemination systems operational capability to support the WRSP.
  - c. Manage development of the national web presence of the WRSP using output of software applications delivered by the OWP.
- 3.9 The Office of Observations will:
- a. Oversee the collection of observational data owned or leveraged by NWS.
  - b. Plan and coordinate with the WRSP on service requirements to determine system requirements and technical solutions.
- 3.10 The Office of Science and Technology Integration (OSTI) will:
- a. Provide funding and coordination for developmental activities for selected applications, maintaining overall responsibility for plans, programs, and development in NWS science and technology activities.
  - b. Plan and develop selected applications providing observed and forecast information used in water resources operations.
- 3.11 The Office of Water Prediction (OWP) will:
- a. Plan, develop, demonstrate, and integrate scientific techniques and software capabilities for the WRSP.
  - b. Formulate and maintain a research and development plan in response to requirements of the WRSP.
  - c. Manage the development and maintenance of software applications needed for the national web presence of the WRSP.
  - d. Develop and implement advanced water resources modeling capabilities.
  - e. Initiate and lead research and development activities to develop operational water resource prediction and related decision support services for total water prediction.
  - f. Manage the National Water Center (NWC) operational functions. The NWC will:
    - 1. Facilitate the transition of water resources research into operations.
    - 2. Deliver analyses, forecasts, and inundation information and guidance for all water resources events in the United States, including flash flooding, riverine flooding, and water resources outlooks.
    - 3. Provide remotely-sensed and modeled water resources products and information for the Nation.

1. Coordinate with the NOAA Public Affairs Office to develop and manage national and multi-regional media communications strategies for water resources events. Coordination includes issues relating to spokesperson preparations, talking points, news releases, supporting press materials, press briefings, and booking and facilitating national media interviews.
2. Deliver a set of collaborated water resource-related decision support services for national partners and users that facilitate decision making associated with water supply planning and events ranging from flash floods to floods to drought.

3.12 RFCs will:

- a. Conduct water resources modeling and forecast operations for rivers, reservoirs, and lakes in large, multi-state areas of responsibility.
- b. Produce the forecast and guidance information used in NWS water resources products and services.
- c. Provide products and services describing observed, current, and future water resources conditions over their areas of responsibility such as discussions, significant river flood outlooks, quantitative precipitation estimates, and water supply forecasts.
- d. Provide internal and external outreach to other agencies, partners, and users supporting water management and resources in river basins to promote water resources services and awareness.
- e. Evaluate performance and effectiveness of water resources services within their service area.
- f. Deliver a set of water resource-related decision support services for regional, state, and local partners and users that facilitate decision making associated with events ranging from flash floods to drought, including water supply/water availability forecasts.

3.13 WFOs will:

- a. Provide water resources forecasts, watches, warnings, statements, and related products and information for local service areas. These products and services cover events ranging from short-fused flash floods to regional droughts and floods on rivers and lakes.
- b. Collect and quality control data in support of water resources services.
- c. Manage and oversee the data network.
- d. Provide outreach to state and local partners and other users to promote and enhance water resources services.
- e. Evaluate performance and effectiveness of water resources services within their service area.
- f. Deliver a set of water resource-related decision support services for state and local partners and users that facilitate decision making associated with events ranging from flash floods to drought.

4. Performance measures include:

- a. Stage forecast accuracy.

- b. Warning products probability of detection, false alarm ratio, lead time and absolute timing error.
- c. Periodic Customer Satisfaction Index (CSI) score using the American Customer Satisfaction Index (ACSI) methodology and qualitative and/or quantitative feedback from other Office of Management and Budget (OMB) approved user surveys regarding the performance and effectiveness of NWS Water Resources Services.

5. Procedural directives will be issued to implement this policy as needed and determined by the Director, AFSO. This policy directive is currently supported by the references listed in Appendix A.

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Louis W. Uccellini  
Assistant Administrator for Weather Services

Date

**Attachment 1**

**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION**

***Procedural Directives***

<a href="#"><u>Instruction 10-901</u></a>	<i>Water Resources Services Program Management</i>
<a href="#"><u>Instruction 10-903</u></a>	<i>Geographic Areas of Responsibility</i>
<a href="#"><u>Instruction 10-911</u></a>	<i>River Forecast Center Operations</i>
<a href="#"><u>Instruction 10-912</u></a>	<i>River Forecast Center Products Specification</i>
<a href="#"><u>Instruction 10-913</u></a>	<i>River Forecast Center Product Examples</i>
<a href="#"><u>Instruction 10-914</u></a>	<i>River Forecast Center Reporting</i>
<a href="#"><u>Instruction 10-921</u></a>	<i>Weather Forecast Office Hydrologic Operations</i>
<a href="#"><u>Instruction 10-922</u></a>	<i>Weather Forecast Office Hydrologic Products Specification</i>
<a href="#"><u>Instruction 10-923</u></a>	<i>Weather Forecast Office Hydrologic Product Examples</i>
<a href="#"><u>Instruction 10-924</u></a>	<i>Weather Forecast Office Hydrologic Reporting</i>
<a href="#"><u>Instruction 10-925</u></a>	<i>Guidelines for Weather Forecast Office Hydrologic Service Manuals</i>
<a href="#"><u>Instruction 10-930</u></a>	<i>National Hydrologic Products Specification</i>
<a href="#"><u>Instruction 10-932</u></a>	<i>National Hydrologic Web Products Specification</i>
<a href="#"><u>Instruction 10-940</u></a>	<i>Hydrologic Data Network Services</i>
<a href="#"><u>Instruction 10-941</u></a>	<i>Flood Warning Systems</i>
<a href="#"><u>Instruction 10-943</u></a>	<i>Reporting Formats for Real-Time Data</i>
<a href="#"><u>Instruction 10-950</u></a>	<i>Definitions and General Terminology</i>