

NATIONAL WEATHER SERVICE INSTRUCTION 10-2402

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Operations and Services

Impact-Based Decision Support Services, NWSPD 10-24

IMPACT-BASED DECISION SUPPORT OPERATIONS

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SUMMARY OF REVISIONS: This is a new directive. The purpose of this procedural directive is to define a common framework of terminology and methodologies for a minimum baseline of consistent IDSS management and delivery already practiced today. This instruction documents consistent planning and operational procedures observed and collected across the field for IDSS operations.

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Impact-Based Decision Support Operations

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1 Introduction

Impact-based Decision Support Services (IDSS) is defined in NWSPD 10-24 as the provision of relevant information and interpretative services to enable Core Partners’, defined in the NWSI 10-2401, decisions when weather, water, or climate has a direct impact on the protection of lives and livelihoods.

This instruction applies to all operational NWS offices and NOAA/NWS liaison positions embedded with other Federal agencies. For a full listing of authorities and responsibilities, please see NWSPD 10-24.

This instruction is specific to IDSS and will not cover the entire forecast process nor daily local, regional or national forecast operations. This Instruction will address the tiered approach to IDSS planning and delivery by the NWS. Details of specific IDSS-related products and services that make up the different levels are provided in the Impact-Based Decision Support Products and Services Specifications Instruction NWSI 10-2403.

IDSS interpretive services encompass the clear, consistent, and plain language translation of NWS-generated weather and hydrologic forecasts information through the additional service element of two-way communication. IDSS may be characterized as being either **episodic** or **routine** in nature:

- **Episodic IDSS** - Event-driven IDSS provided to core partners, either related to a hazardous environmental event or a scheduled event where weather and water related variables are critical to the planning and execution of the event from a public safety standpoint. Examples include: supporting Core Partner decisions related to an impending hurricane or winter storm, as well as providing support to a Core Partner for a scheduled event such as a festival or fair.
- **Routine IDSS** - Ongoing IDSS provided to a subset of core partners through the year to improve partner mitigation, preparation, response, and recovery efforts related to environmental hazards or to support routine, high-value decisions. Examples include joint training, Integrated Warning Team interactions, pre-event/scenario planning, water use/contingency forecasts and planning, table-top exercises used to plan actions and procedures addressing these events or incidents, after-action reviews, and daily coordination regarding routine high-value decisions such as aviation operations or reservoir releases.

The type of information and services provided will be further refined based on the needs of Core Partners throughout the lifecycle of an episodic or routine IDSS event. The timeframes of the lifecycle will vary depending on the nature and scope of the episodic or routine IDSS required but can be characterized as the following Event Life Cycle Phases:

- **Sub-seasonal to Seasonal** - Includes long lead seasonal climate outlook timescales down to 8- to 14-day outlooks. IDSS can inform a partner on potential issues on the horizon to begin long term planning and potential mitigation efforts.
- **Pre-Event¹ Outlook Preparation** - Can include the 2 to 7 day forecast range, which will vary depending on the type of event and needs of an office's Core Partner needs. IDSS is focused on providing a heads-up of an event and its potential impacts in a general sense.
- **Pre-Event Peak Critical Decision** - Generally will include the 1 to 5 day forecast range, which will vary depending on the type of event and Core Partner needs. IDSS is focused on providing more detailed information to address key Core Partner decisions.
- **Event Response** - Includes from the event onset through the duration of events. Event duration can range from short fuse (hours) to long fuse (day(s)). IDSS would focus on supporting Tactical Decisions of Critical Core Partners in dealing with the situation at hand.

¹ “Event” refers to actual hazardous weather events of impact to the public (e.g. hurricane), incidents that are impacted in some way by weather conditions (e.g. environmental hazards such as chemical release), and large gatherings of people at a venue where public safety is often impacted by hazardous weather conditions.

- **Post Event Recovery** - Includes timeframe after an event that requires ongoing IDSS in support of Core Partner recovery efforts. IDSS will similarly be focused on supporting tactical decisions of critical Core Partner recovery activities.

This Instruction will detail how NWS engages with Core Partners, through development and delivery of the entire range of IDSS and IDSS related activities through a cyclic approach that is nationally consistent, yet flexible in approach.

2 Continuum of Impact-based Messaging Products Services

There are a variety of products and services disseminated to the general public that contain content that either supports or comprises the provision of IDSS to Core Partners. In order to ensure a consistent message, IDSS must be based on and consistent with the full suite of information that the NWS publicly provides, including forecasts and warnings, model output, and observations. Core Partner baseline understanding of a weather, water, or climate related event begins with that information. In addition to routine products and services, focusing products and messaging on Core Partner public safety needs continues to be necessary.

In order to meet the IDSS mission of the NWS, the entire Continuum of Impact-based Messaging must be addressed. Products and services can be categorized within a tiered approach, beginning with publicly available products and services through increasing levels of targeting of information and dedicated support. The Continuum of Impact-based Messaging and Core Partner IDSS delivery defines this concept and will be utilized throughout this Instruction and others as a point of reference.

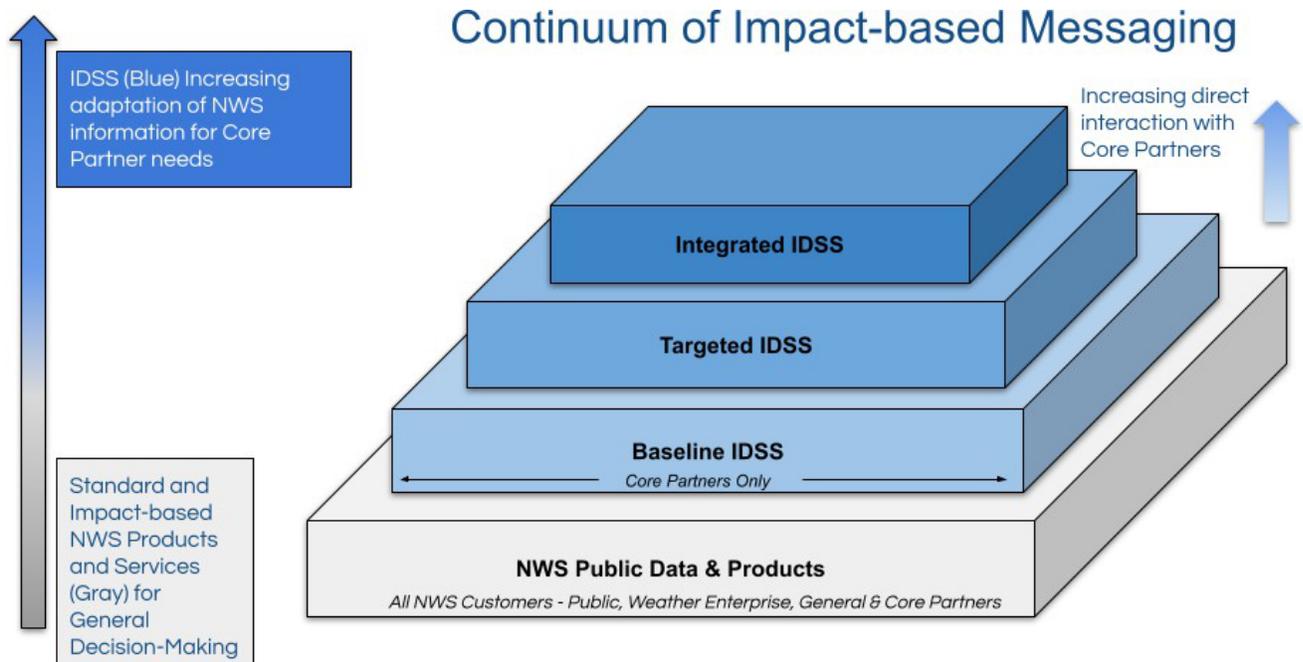


Figure 1: The Continuum of Impact-based Messaging

2.1 NWS Public Data and Products

This information provides the foundation of publicly available products and services to support user decision-making needs. There is a broad range of information included:

- **Foundational Data** - data such as observations, model output, and official NWS forecasts.
- **Standard NWS Products and Services** - communicate information about weather, water and climate-related conditions, including the potential for related threats and impacts and safety messaging when appropriate.
- **Public Impact-based Messaging** - Specific communication of impact information to the public, building off of information contained in our routine forecasts, watches, warnings and advisories to convey an amplified message. Examples include graphics posted to NWS social media and webpages that contain key messages about threats and impacts.

NWS Public data and products serve as the starting point of IDSS, providing a coordinated, accurate and consistent message meeting needs among Core Partners, the Weather/Water/Climate Enterprise partners, and the public. Public Impact-based messaging is intended to summarize the entire range of potential weather, water, or climate related threats, focusing on potential impacts and including safety related messaging when appropriate.

2.1.1 Baseline IDSS

The Baseline level of IDSS includes products and services that are common or universal to all Core Partners. IDSS that is universally delivered directly to Core Partners includes information that potentially impacts all Core Partners and is not specific to individual Core Partner thresholds. The majority of content in the provision of Baseline IDSS is built off the foundation of Public Data/Products Supporting Decision-Making, which serves as a starting point for Baseline IDSS messaging and ensures consistency between public messaging and messaging to Core Partners.

2.1.2 Targeted IDSS

The Targeted level of IDSS "targets" information to meet the specific need of a group of Core Partners or Core Partner organizations that have similar operational concerns and specific but common decision thresholds that should be addressed. Meteorologic and hydrologic information is extended beyond routine Public Impact-based Messaging but is not as individually specialized as information provided in Integrated IDSS. Targeted IDSS may include outside agency liaisons embedded within your operations. Alternatively, these Core Partners could be supporting a non-weather-related event that has very specific vulnerabilities in which weather could impact adversely.

2.1.3 Integrated IDSS

Integrated IDSS is the provision of specialized one-on-one information sharing that requires dedicated support to an individual Core Partner or groups of Core Partners. Integrated IDSS encompasses three types of deployments:

- **Virtual Deployment:** IDSS provided from the office or other remote location not coincident with the location of the Core Partner
- **Onsite Deployment:** IDSS provided onsite at the location coincident with the Core Partner in response to an event or incident

- **Embedded Operations:** IDSS provided permanently on location with the Core Partner (e.g. CWSU).

Products and services delivered within these Integrated IDSS deployments provide information specific to Core Partner needs and decision thresholds.

Details on Integrated IDSS may be found in The Integrated IDSS & Deployment Management Instruction NWSI 10-2404.

2.2 Determining the Level of IDSS Delivery

IDSS Delivery is based on the needs of the Core Partner for a particular event/incident and the staffing and technical resources available to a NWS office to provide IDSS. In many cases, Baseline IDSS is a sufficient and efficient means of providing support when Core Partner needs are similar and/or there is a common message to be delivered from the NWS. In situations where multiple Core Partners, but not all, have common needs, a more Targeted approach can be applied to provide a more nuanced message to a subset of Core Partners. In cases where direct one-on-one IDSS is required based on the specific needs of a Core Partner, an Integrated approach should be followed if NWS office resources allow. The Core Partner Profile (defined in the IDSS Core Partner Identification and Management Instruction 10-2401) and IDSS Planning Guide explained in this instruction should provide the baseline guidance on the level of IDSS to be provided to a given Core Partner and should be developed in coordination with the Core Partner to help manage expectations for support.

Any Core Partner may receive any level of IDSS (Baseline, Targeted, Integrated) as the situation and local NWS office resources allow. However, the NWS office official-in-charge will prioritize provision of Targeted or Integrated IDSS based on the following prioritization criteria accounting for Core Partners roles and responsibilities:

- 1) There is a legal mandate to support the Core Partner (e.g., Executive Order, statute) or support is a matter of national security
- 2) The Core Partner exercises a large degree of authority or influence relative to other Core Partners, on public safety or management of the nation's water resources for the public good
- 3) The Core Partner serves a population or entity particularly vulnerable to impacts of weather, water, or climate hazards
- 4) The Core Partner acts as a force multiplier to help amplify NWS messages to other partners

Prioritization and determination of service level will also take into consideration any existing support provided to the Core Partner by Enterprise Partners. All designated Core Partners should receive Baseline IDSS when their constituencies and operations are impacted or expected to be impacted.

2.3 Capacity to Provide Support

NWS aims to provide an equitable level of support to all Core Partners within each service level described above. However, the NWS office official-in-charge will continue to have the discretion to determine how to most effectively support multiple requests for IDSS, especially during large scale events with wide-spread impacts. This statement does not reflect a change in current levels of support provided to Core Partners. In the event of wide-spread impacts, NWS regional and national management will support decisions on investing resources to best meet the needs of NWS Core Partners. Local offices should document any service requests that were not able to be met.

3 IDSS Operating Cycle

Providing IDSS to Core Partners requires a holistic strategy that ensures strong partnerships based on trust, continuous engagement with users, promotes collaborative preparedness and planning efforts for an effective response, and outlines a productive partner feedback process including how to apply that feedback to improve NWS operations.

Providing IDSS follows an integrated process, an IDSS Operating Cycle, that addresses four primary phases of IDSS readiness and delivery including:

1. **IDSS Relationship Building Phase:** Relationship building and connecting with Core Partners in building Core Partner Profiles and supporting awareness and long term mitigation efforts
2. **IDSS Readiness Phase:** NWS office planning activities that leverage Core Partner Profiles to assess Core Partner IDSS needs and the local unit's capacity to respond within an IDSS Planning Guide. This phase informs operational strategies and also includes ensuring staff readiness through training and exercises
3. **IDSS Delivery Phase:** Activities associated with the tactical delivery of IDSS based on planning during the IDSS Readiness Phase and Core Partner needs, including responding to Core Partner needs before, during, and after an event
4. **IDSS Evaluation Phase:** Assessment of IDSS delivery to gather internal and Core Partner feedback in order to evaluate, identify gaps, and update our service(s) to better serve the Core Partner future needs

IDSS Operating Cycle



Figure 2: IDSS Operating Cycle activity examples

3.1 IDSS Relationship Building Phase

Building trusted relationships with our Core Partners is the foundation of effective IDSS and begins well in advance of an actual event through routine interactions with Core Partners. In the Relationship Building phase, NWS should aim to cultivate familiarity between the NWS and our Core Partners via our shared fundamental operational principles.

NWS offices can use a number of activities and strategies in the Relationship Building of the IDSS Operating Cycle. **While all the activities and strategies below are encouraged, engagement with Core Partners will vary** depending on if you are at a National Center, ROC, CWSU, RFC, WSO, DCO or WFO. In addition, there will be a variety of interactions from partner to partner, and the following strategies are not meant to be applied to all Core Partners. Interactions will be dependent on individual partner needs, environmental related impacts, local office resources, and partner response roles for specific environmental incidents.

3.2 IDSS Readiness Phase

The IDSS Readiness Phase involves activities required to prepare and ensure office readiness to effectively and appropriately respond to the unique needs of their Core Partners and the public that they serve together. These activities include planning how an office will provide Public Impact-based Messaging and IDSS within available resources and managing office training and drills to ensure staff are proficient in the skills needed to meet the demand.

IDSS Readiness planning includes developing IDSS delivery strategies based on a variety of anticipated situations including but not limited to unscheduled weather/incident-driven events, routine high impact events, and/or scheduled event support. The strategies developed should consider Core Partner needs and available resources to meet those demands. This involves each NWS office creating a local IDSS Planning Guide that will be customized to use as a guide for the planning and delivery of IDSS products.

As part of the IDSS Readiness Phase, each NWS office should develop an IDSS Planning Guide. The guide will function as a planning tool to document recommendations on IDSS products to issue and when to issue them. While the IDSS Planning Guide can be used as a reference at the time IDSS is needed, the guide will also be useful for staff reviews, training, and exercises prior to events and incidents. The IDSS Planning Guide also serves as a useful tool to periodically review with Core Partners to ensure their IDSS needs are being met within our available resources, and to understand what would likely be beyond our capability to routinely support.

An office should strive to always do their best to find a way to meet the needs of their Core Partners, utilizing at least Baseline IDSS and some degree of Targeted IDSS Products and Services. However, given that Targeted and Integrated IDSS can require a significant amount of office resources, services will not be available to all Core Partners in all situations. The office should make decisions based on a needs/resource analysis in deciding what levels of support to routinely plan to provide to their Core Partners. This should be done in close coordination with the Core Partner. If it is determined that an office's provided services will not fully meet the demand, it should be clearly communicated to that Core Partner. In those circumstances, it is appropriate for the NWS to direct a Core Partner to the Weather/Water/Climate Enterprise as an option for meeting their demand. See Section 4 in Core Partner

Identification and Management Instruction 10-2401XX for more details on the Weather/Water/Climate Enterprise role in IDSS.

IDSS for Scheduled Event-driven Targeted and Integrated IDSS is for a specific planned special event in which a Core Partner takes an active role in supporting public safety within a time frame that enables thorough pre-collaboration among all relevant parties, if possible. Examples of Scheduled Events include outdoor venue events where NWS Core Partners hold the primary responsibility for public safety. Additional information can be found in [NWSI 10-1806, NWS Support for Special Events](#).

3.2.1 IDSS Planning Guide

The IDSS Planning Guide will not prescribe a checklist of “must do” items for each and every event of that type, but will serve as general guidelines for what products and services an office will provide in the Delivery Phase of IDSS. The IDSS Planning Guide developed by each NWS office will document required and/or suggested Core Partner IDSS as well as Public Impact-based Messaging. NWS offices may tailor their IDSS Planning Guide to best address local Core Partner needs and related operations. Please reference the [IDSS Readiness Phase page on the IDSS Portal](#) to access IDSS Planning Guide templates and examples.

The IDSS Planning Guide can be broken down by different types of hazard impact potentials that could affect Core Partner operations and decisions in support of protecting life and property. There are two key components to consider when developing an objective approach to planning for both Public Impact-based Messaging Services and IDSS delivery:

- 1) Weather Event Impact Potential
- 2) Hazardous Weather or Water Event Life Cycle Phases and Messaging Content (charts below)

From a planning perspective, it is useful to consider at least two levels of severity of impacts for a potential event: High to Extreme Impacts and Low to Moderate Impacts. Descriptions of the Impacts of those types of events are provided below. Offices are free to break down and document the different event magnitude types with additional categories if desired.

Weather Event Impact Potential	
Event Impact Magnitude	Weather Event Impact Description
High to Extreme Impacts	These types of events will result in the most significant societal impacts and put the highest strain on Core Partner resources. What makes an event rise to this level is dependent on local variables, such as an office/region's capabilities to respond, and infrastructure vulnerability. It could be a rare or infrequent occurrence with a significant Core Partner response.

Low to Moderate Impacts	<p>There are a wide range of potential impacts in this category, and Core Partners will activate some of their resources to respond. IDSS products and services offered would be expected to be routine in addition to ad hoc engagement. Potential event types include:</p> <ul style="list-style-type: none"> ● Moderate event with impacts across the entire areas of responsibility (AoR) or a portion of the AoR ● Marginal event w/ Limited Impact, Generally short lived ● Low Probability Event with Potential High Impacts
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Table 1: Weather Event Impact Potential

Hazardous Weather or Water Event Life Cycle Phases and Messaging Content	
Event Phase	Messaging Content Considerations
Sub-seasonal to Seasonal Awareness	Messaging focused on long-lead, proactive notification of potential for events of concern on the climate scale horizon. Messaging focused on long lead time preparedness and safety considerations, such as creating disaster response plans and kits or implementing potential remediation activities, such as water conservation related to droughts.
Pre-Event Outlook Preparation	Messaging focused on near-term event preparation and safety reminder messaging. Ramped up messaging would take place at earlier time frames for potential events that have greater potential impacts, regardless of confidence level. IDSS for Core Partner planning would focus on providing more general information of an impending threat and its impacts (Baseline IDSS Focus).
Pre-Event Critical Decision	Messaging focused on providing greater detail of potential threats in a way that supports specific decisions for both the public and Core Partners. General safety information would be expanded to specific public calls to action. The time frame for when critical decisions are being made would vary depending on the hazard type (starting sooner for events like hurricanes, winter storms, fire weather, and river flooding, and later for more short fused events like severe thunderstorms, tornadoes, and flash flooding) and partner needs. IDSS for Core Partners would focus on addressing key societal impacts in greater detail and specifically addressing Core Partner Decision Thresholds (greater frequency and higher level of Baseline IDSS and Targeted and Integrated IDSS based on Core Partner needs).
Event Response	From the event onset through the duration of the event, messaging would shift focus to near-term and short-term updates that focus on how the event is unfolding, specifically noting the potential for the most imminent highest threats and impacts with public calls to action. IDSS would focus on supporting Tactical Decisions of Critical Core Partners in dealing with the situation at hand.

<p>Post Event Recovery</p>	<p>If a high impact event with significant impact on society occurs, messaging shifts to relevant safety information related to recovery and notice of lower level impending weather or water threats that may result in a greater impact due to losses to infrastructure and other essential support functions of society. IDSS will similarly be focused on supporting tactical decisions of critical Core Partner recovery activities.</p>
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Table 2: Hazardous Weather or Water Event Life Cycle Phases and Messaging Content

By organizing anticipated service delivery by these two components, an office can develop a strong planning framework that can then be further customized and implemented tactically for a specific event.



Figure 3: IDSS Planning Guide Key Elements

The resulting IDSS Planning Guide can exist as a standalone document or be integrated into existing Operational Guides/Playbooks/Station Duty Manual that an office has created, but it should retain the format prescribed in this Instruction.

3.2.2 IDSS Planning Guide Process

These steps should be followed in developing the local NWS IDSS Planning Guide:

1. Review Core Partner information, including anticipated services collected in the Core Partner Profile during the IDSS Relationship Building Phase.
2. Review additional Core Partner needs that are identified or requested, or follow lessons learned in the IDSS Evaluation Phase.
3. Identify the most common and or critical events requiring IDSS and Public Impact-based Messaging (e.g., winter, severe, fire, etc.) that will be included in the local IDSS Planning guide.
4. Consider the magnitude of event impacts and the delivery phase of IDSS and Public Impact-based Messaging document, suggested and required Public Impact-based messaging, Baseline IDSS, Targeted IDSS, and Integrated IDSS within a given event type. Tables 3 and 4 below may be used as a starting point to identify and document product and service needs.
5. Consider the prioritization of Targeted and Integrated IDSS based on Core Partner roles and responsibilities including:
 - a. There is a legal mandate to support the Core Partner (e.g., Executive Order, statute) or support is a matter of national security
 - b. The Core Partner exercises a large degree of authority or influence relative to other Core Partners on public safety or management of the nation’s water resources for the

- public good
- c. The Core Partner serves a population or entity particularly vulnerable to impacts of weather, water, or climate hazards
- d. The Core Partner acts as a force multiplier to help amplify NWS messages to other partners
- 6. Consider office resources, including staffing. An office must evaluate workload and office resources to meet Core Partner needs.
- 7. Consider whether a Core Partner is receiving hydrometeorological support services from in-house or contracted providers.
- 8. Consider the known vulnerabilities (e.g., flood prone) within the Core Partner’s AoR and known underserved populations in the Core Partner’s AoR.
- 9. Consider contingencies in the event that your local office cannot meet IDSS needs. If a local office determines there is a lack of resources to meet a critical Core Partner need, they should work with the Region to explore the development of a plan to provide supplemental staffing to allow the provision of that service. This may include invoking Mutual Aid from surrounding offices.
- 10. Once product and service guidance has been identified within the IDSS Planning Guide, document it as part of your planning activities. See Tables 3 and 4 for documentation examples.

The IDSS Planning Guide should follow the template provided in Appendix B with a number of required and optional sections. Depending on an NWS office’s needs, the Planning Guide could focus on an overarching single set of Service Level instructions or be organized with different guidance for differing types of events (e.g. Tropical, Winter, Severe, Scheduled Event Support, etc.).

Impact-based Messaging Delivery Guide for: High to Extreme Impacts EXAMPLE		
IDSS and Public Delivery Phase	Impact-based Message Continuum	
	Public Impact-based Messaging	Baseline IDSS
Sub-seasonal to Seasonal Awareness IDSS	<ul style="list-style-type: none"> • When applicable, a social media post focusing on long range potential for hazardous or impactful weather, water, or climate event and relevant preparedness information 	<ul style="list-style-type: none"> • Occasional heads-up informational emails to partners regarding long range potential for hazardous or impactful weather, water, or climate event

<p>Pre-Event Outlook IDSS (Prior to Critical Core Partner Decision Making Points)</p>	<ul style="list-style-type: none"> ● Routine Weather Story/Outlook ● Hazardous Weather Story/Outlook ● Daily Social Media Outlook Posts focused on preparedness activities 	<ul style="list-style-type: none"> ● Daily Heads -up informational emails to Partners ● IDSS Slide Deck (Can be added to the partner email)
<p>Peak IDSS (Critical Core Partner Decisions Being Made)</p>	<ul style="list-style-type: none"> ● Hazardous Weather Summary ● Hazardous Weather Slides ● Recorded Hazardous Weather Briefing 	<ul style="list-style-type: none"> ● IDSS Slide Deck ● Daily Office-led IDSS Webinar/Conference Call
<p>Event IDSS (IDSS Focused on Supporting Tactical Decisions of Critical Core Partners Related to Response Efforts)</p>	<ul style="list-style-type: none"> ● Hazardous Weather Summary - ● Frequent Social Media Posts on unfolding event conditions, storm reports, and relevant safety information ● Hazardous Weather Slides 	<ul style="list-style-type: none"> ● Heavy focus on Communications through NWSChat to convey updates, and gather and share storm reports ● IDSS Slide Deck
<p>Post Event Recovery IDSS (IDSS Focused on Supporting Tactical Decisions Related to Recovery Efforts)</p>	<ul style="list-style-type: none"> ● Routine Weather Story/Outlook 	<ul style="list-style-type: none"> ● IDSS Slide Deck ● At least one daily Office-led IDSS Webinar/Conference Call

Table 3: Impact-based Messaging Delivery Guide - High to Extreme Impacts EXAMPLE

<p>Impact-based Messaging Delivery Guide for: Low to Moderate Impacts EXAMPLE</p>		
<p>IDSS and Public Delivery Phase</p>	<p>Impact-based Message Continuum</p>	
<p style="text-align: center;"></p>	<p>Public Impact-based Messaging</p>	<p>Baseline IDSS</p>
<p>Outlook IDSS</p>	<ul style="list-style-type: none"> ● Routine Weather Story/Outlook ● Daily Social Media Outlook Posts focused on preparedness activities 	<ul style="list-style-type: none"> ● Daily Heads-up informational emails to Partners

(Prior to Critical Core Partner Decision Making Points)		
Peak IDSS (Critical Core Partner Decisions Being Made)	<ul style="list-style-type: none"> • Hazardous Weather Summary • Hazardous Weather Slides 	<ul style="list-style-type: none"> • IDSS Slide Deck, daily Office-led IDSS Webinar/Conference Call
Event Onset IDSS (IDSS Focused on Supporting Tactical Decisions of Critical Core Partners Related to Response Efforts)	<ul style="list-style-type: none"> • Hazardous Weather Summary • Frequent Social Media Posts on unfolding event conditions, storm reports, and relevant safety information • Hazardous Weather Slides 	<ul style="list-style-type: none"> • Heavy focus on Communications through NWSChat to convey updates, and gather and share storm reports • IDSS Slide Deck
Recovery IDSS (IDSS Focused on Supporting Tactical Decisions Related to Recovery Efforts)	<ul style="list-style-type: none"> • Routine Weather Story/Outlook 	<ul style="list-style-type: none"> • IDSS Slide Deck, daily Office-led IDSS Webinar/Conference Call as needed.

Table 4: Continuum of Impact-based Messaging Delivery Guide - Low to Moderate Impacts

Note: Offices can expand the chart to include Targeted and Integrated IDSS planning elements. Examples for various scenarios will be included in IDSS Operational Model training, to be developed.

3.2.3 Planning for Weather/Water/Climate Enterprise Involvement in IDSS

NWS recognizes the growing capacity of the Weather/Water/Climate Enterprise in providing targeted support for an increasing range of customers, including many NWS Core Partners, who obtain support in a variety of ways. Some maintain in-house expertise (e.g., a state government which employs a State Meteorologist), some contract for ongoing support for specialized services provided by private sector Weather/Water/Climate Enterprise partners, and some rely wholly on services provided by NWS. In addition, there may be businesses or other government agencies (e.g., private and public sector infrastructure providers) simultaneously supporting NWS Core Partners who are receiving weather support services either in-house or from Weather/Water/Climate Enterprise partners.

While recognizing “whole community” participation is critical for effective preparedness and response activities, NWS IDSS is largely focused on providing services to government Core Partners, especially those in emergency management and water resources management who engage in decision-making which impacts protection of life and property. It is critical that all elements of the broader community have the weather, water and climate preparedness information they need, using support provided by the entire Weather/Water/Climate Enterprise to support successfully building a Weather-Ready Nation.

When multiple providers are present in supporting an NWS Core Partner, NWS will be flexible in how it provides IDSS, keeping in mind that they may also be receiving support from others in the Weather/Water/Climate Enterprise. Requests for IDSS from Core Partners are a priority and should be fulfilled as resources allow. IDSS requests can be often straightforward, usually quick to fulfill with minimal resources. During the planning phase, NWS staff should coordinate with Core Partners by seeking input as to what support is needed and what level of coordination is required, based on all resources at their disposal.

A best practice for planning IDSS, whether remote or deployed, is to request to engage as soon as possible with the other support providers (e.g., state meteorologists). This will confirm roles are defined and understood by all parties involved, as well as determine the best methods of communication, to ensure a consistent message to Core Partners. In the case of providing IDSS to Core Partners in support of events (e.g. Super Bowl), it is imperative that the NWS plan operational procedures within the confines of supporting Core Partners, such as the emergency management community vs event organizers and venue operators (see NWSI 10-1806).

When analyzing resources available to provide IDSS, if NWS Core Partners are requesting services that are beyond the scope of NWS mission responsibilities, or if NWS resources will likely not be available to provide the level of support needed, NWS should refer Core Partners to the community of Weather/Water/Climate Enterprise partners who may be able to provide the additional level of support. The NWS webpage [weather.gov/enterprise](https://www.weather.gov/enterprise) provides a convenient resource to allow partners to review and access information about available resources from our partners in the Weather/Water/Climate Enterprise.

As an example, NWS has long recognized the various levels of weather support arrangements used by our Core Partners at state/local Departments of Transportation (DOT), including in-house meteorologists, NWS support, and support from Weather/Water/Climate Enterprise partners. In many cases, a DOT is part of state-level Emergency Management Support. [NWSI 10-2405 Applied IDSS - Surface Transportation](#) describes the focus of NWS support as providing our expertise on the evolution, timing, and communication of hazardous weather and water events to help ensure public safety. Weather/Water/Climate Enterprise partners provide the necessary expertise in helping to guide DOT operations in areas related to recommendations for chemical applications and predicted road/pavement conditions (in addition to routine forecasts).

NWS recognizes the value of coordination during an event to ensure consistent weather messaging to all involved in the support effort and to the general public. Upon request of Core Partner authorities in charge of the response activities, NWS will work with Core Partners to identify other NWS resources or Weather/Water/Climate Enterprise support providers involved. NWS may work with any in-house or contracted provider of weather services to Core Partners or other entities involved in the response effort. In addition, NWS may provide an opportunity for coordination to ensure consistency of messaging and that weather-related roles in the support effort are well understood. For example, NWS may activate a private NWSChat channel or similar capability for weather service providers supporting the event. NWS encourages this coordination; however, Core Partners, in conjunction with their weather support providers, will determine the appropriate level of and procedures for coordination and interaction between NWS and those providers. Actual capacity to provide coordination will inherently depend upon the scope and nature of the event, available resources, as well as the willingness and ability of the parties to participate in any coordination activities.

3.3 IDSS Training Considerations for NWS Staff Readiness

The NWS trains all operational personnel to develop the skills needed to effectively communicate consistent, timely, and accurate NWS IDSS information to Core Partners. All operational field staff are expected to complete the first three units of the IDSS Professional Development Series at a minimum, which will enable them to provide IDSS from their offices by addressing external inquiries for NWS information from Core Partners.

In addition, NWS offices should be proactive in providing routine local training to develop and maintain proficiency in delivering IDSS and Public Impact-based Messaging based on local Partner needs and the unit's IDSS Planning Guide. Training can take the form of local exercises, drills and workshops. These local training activities can be conducted with Core Partners (an encouraged practice). NWS offices are encouraged to consider the following recommendations:

- Conduct annual IDSS drills, exercises, and seminars
- Incorporate IDSS into existing annual office drills
- Incorporate IDSS into WES training activities

Non-operational staff (e.g. Administrative Support Assistants, Information Technology Officers, Electronic Systems Analysts, and Electronics Technicians) may, with approval of the office official-in-charge, develop proficiency to assist with virtual IDSS during high impact events. It is recommended that non-operational staff take the IDSS Foundational Training, IDSS PDS PCUs 1-3, if interested. In addition to the direct provision of IDSS, administrative support behind these operations is critical for timely and efficient service delivery for our Core Partners.

Training Drills and Exercises (partner or NWS led)

To ensure IDSS readiness, NWS offices are encouraged to routinely participate in collaborative activities with Core Partners to promote stronger operational relationships and understanding. Workshops, drills, and exercises with Core Partners can serve to facilitate deeper relationships, cultivate an understanding of roles and responsibilities, familiarize Core Partners with NWS IDSS products and services that can be provided, and inform NWS offices on how to best support their Core Partners. Activities that support readiness can take a variety of forms including:

- **Workshop** - A type of discussion-based exercise focused on increased participant interaction and focusing on achieving or building a product (e.g., plans, policies). A workshop is typically used to test new ideas, processes, or procedures, train groups in coordinated activities, and obtain consensus. Workshops often use breakout sessions to explore parts of an issue with smaller groups.
- **Seminar** - A discussion-based exercise designed to orient participants to new or updated plans, policies, or procedures through informal discussions.
- **Tabletop** - A discussion-based exercise intended to stimulate discussion of various issues regarding a hypothetical situation. A tabletop exercise (TTX) can be used to assess plans, policies, and procedures or to assess types of systems needed to guide the prevention of, response to, or recovery from a defined incident. TTXs are typically aimed at facilitating understanding of concepts, identifying strengths and shortfalls, and/or achieving a change in attitude. Participants are encouraged to discuss issues in depth and develop decisions through

slow-paced problem-solving rather than the rapid, spontaneous decision-making that occurs under actual or simulated emergency conditions. TTXs can be breakout (i.e., groups split into functional areas) or plenary (i.e., one large group).

- **Drills** - A type of operations-based exercise that is a coordinated, supervised activity, usually employed to test a single specific operation or function in a single agency. Drills are commonly used to provide training on new equipment, develop or test new policies or procedures, or practice and maintain current skills.
- **Functional Exercise** - A single or multi-agency operations-based exercise designed to evaluate capabilities and multiple functions using a simulated response. Characteristics of a functional exercise include simulated deployment of resources and personnel, rapid problem solving, and a highly stressful environment.
- **Full Scale Exercise** - Validation of plans, policies and procedures, and/or cooperative agreements developed in previous exercises through their actual implementation and execution during a simulated scenario, including actual mobilization of resources, conduct of operations, and integrated elements of functional exercise play (e.g., EOCs, incident command posts). A multi-agency, multi-jurisdictional operations-based exercise involving actual deployment of resources in a coordinated response as if a real incident had occurred. A full-scale exercise tests many components of one or more capabilities within emergency response and recovery, and is typically used to assess plans and procedures under crisis conditions and assess coordinated response under crisis conditions. Characteristics of an FSE include mobilized units, personnel, and equipment, a stressful, realistic environment, and scripted exercise scenario.

More information on Core Partner collaborative activities can be found in the IDSS Comprehensive Training Plan.

3.4 IDSS Delivery Phase

The Delivery Phase of the IDSS Operations Cycle is where IDSS is delivered to Core Partners for a specific environmental/incident driven event and/or scheduled special event. Tactical implementation of the IDSS Planning Guide should be done in the Delivery Phase. This is aided through the development and execution of an Action Plan and accurate assessment of needed and available resources. Action Plans will focus on operational plans for weather, water, or climate driven events, not specific scheduled events. However, planning documentation for specific supported events should be linked in the Action Plan. (Note: Reference NWS Directive 10-1806 regarding scheduled events.)

3.4.1 Event Resource Preparation

The evaluation and planning of anticipated IDSS and subsequent resource needs is crucial prior to an event. Resource preparation includes assessment of NWS office resources including staffing needed to effectively address Core Partner needs. Effective planning is optimally accomplished prior to events within the Pre-Event Outlook Phase or Sub-seasonal phase of the IDSS Cycle.

3.4.2 Event Contingency Preparation

The anticipated scope or complexity of a weather event and/or Core Partner IDSS need may necessitate the need for Mutual Aid. Mutual Aid provides for load sharing arrangements between offices, allowing a local office to focus on IDSS while another office supports routine forecast and service delivery needs.

When an office has exceeded available resources and Mutual Aid is needed, requests should be made through the Regional Operations Center (ROC - or appropriate regional representative) to assess availability of available resources to provide integrated IDSS, as appropriate.

NWS offices are encouraged to discuss potential arrangements with appropriate offices in conjunction with regional guidance (ROCs). Before denying a local Core Partners' request for integrated IDSS, local offices should coordinate that decision with their ROC after all local resources have been exhausted.

3.4.3 Event Action Preparation

The Event Action Plan should be developed by the beginning of the operational period/shift and describes the event or incident situation, staffing assignments, special services/IDSS to be provided, and additional considerations of uncertainties. The Event Action Plan should be a more detailed tactical plan based on the event's associated IDSS Planning Guide section as established in the Readiness Phase. While Event Action Plans are not required, they should be created and implemented for events of moderate to major societal impact and/or when Targeted and Integrated IDSS is required.

Key Components for executing a NWS office Event Action Plans include:

- Ensuring Core Partner IDSS needs are met based on expectations described in the IDSS Planning Guide for the given type of event.
- Managing and ensuring available office resources are appropriately applied for the current operational period and higher-tempo operational periods in the future.
- Engaging Mutual Aid staffing support from/for other NWS Operational Units as needed
- Determining and implementing product/service delivery archives. Define what deliverables/activities should be saved/recorded.

Remaining nimble and responsive to the prevailing environmental hazards and Core Partner needs is critical to successful IDSS delivery. Considerations to make when developing and updating Event Action Plans include, but are not limited to:

- Evolving severity and impact of an event and correlating service delivery requirements
- Stage and timing of an event whether well in advance, during or following the event
- Evolving Core Partner IDSS needs based on number and magnitude of IDSS request (deployment requests, conference calls...etc.)

3.5 Evaluation Phase

The routine evaluation of IDSS provision is strongly encouraged to gather Core Partner (and Weather/Water/Climate Enterprise partner, as appropriate) feedback and refine NWS IDSS delivery. Refining our services, including communication techniques based on Core Partner feedback, is essential to maintaining effective IDSS. The depth of the evaluation can be defined by the local office's IDSS Planning Guide and/or as directed by the NWS National or Regional Headquarters. Table 5 below provides suggested evaluation approaches.

Evaluation findings should be leveraged to guide discussions with Core Partners including at meetings or Integrated Warning Team (IWT) workshops. Feedback from evaluations can further be discussed with Core Partners in these forums to mutually identify solutions and improve IDSS. The goal of the

Evaluation Phase is to ensure Core Partner needs are identified or requested and incorporate them into future Planning Phase activities.

Event Characteristics	Suggested Evaluation Activity
For Moderate to High Impact Events - All Core Partners	<ul style="list-style-type: none"> ● Reviewing written products (graphics, emails, briefings, shift log, etc.) ● Actively participating in post-event hot wash led by partners ● Conducting internal hot wash, including neighboring NWS units if appropriate ● Review any recorded feedback/input from Weather/Water/Climate Enterprise partners impacted by NWS IDSS or involved in the response effort ● After Action Report* (AAR) ● Nationally Approved Core Partner Survey/Feedback Form(s) suggested ● Participation in a National or Regional Service Assessment if one is executed.
For low to moderate impact events - Any Core Partner receiving Targeted/Integrated IDSS	<ul style="list-style-type: none"> ● Archiving written products (graphics, emails, briefings, shift log, etc.) ● Actively participating in post-event hotwash led by partners ● Review any recorded feedback/input from Weather/Water/Climate Enterprise partners impacted by NWS IDSS or involved in the support effort ● Nationally Approved Core Partner Survey/Feedback Form(s) optional
Scheduled Event Support (if W/W/C event occurred)	<ul style="list-style-type: none"> ● Actively participating in post event hotwash led by partners ● After Action Report ● Review any recorded feedback/input from Weather/Water/Climate Enterprise partners impacted by NWS IDSS or involved in the support effort
Events that garner significant criticism of NWS Performance	<ul style="list-style-type: none"> ● After Action report* (AAR) ● Nationally Approved Core Partner Survey/Feedback Form(s) suggested ● Participation in a National or Regional Service Assessment if one is executed.
All Core Partners Annually	<ul style="list-style-type: none"> ● Nationally Approved Core Partner Annual Survey

Table 5: Evaluation of IDSS

NOTE: For formal After Action Report (AAR) Instructions, please reference: [NWS Directive 10-1606 Section 4.3](#)

*IDSS Program recommends a formal AAR following the provision of Integrated IDSS to a Core Partner

for a high impact/high visibility event, whether scheduled or situational, weather, hydrological, or incident driven. In addition, IDSS provided during a significant Weather/Water/Climate event or for a significant impact related to IDSS provided for a special event should have an AAR when external concerns are expressed regarding actions of NWS field offices.

In cases where high-impact events arrive in quick succession (e.g. active hurricane season, ice jams followed by spring flooding, multiple convective days hindering transcontinental aviation routes), performing one AAR to capture IDSS throughout the group of events may be more beneficial than trying to capture individual event feedback. Information collected during the AAR process shall be used to assess local IDSS and may be used in determination of initiating a regional or national service assessment.

APPENDIX A - IDSS Relationship Building Activities and Strategies

IDSS requires effective and sustained engagement activities with Core Partners to build trusted relationships and better understand their needs. It is recognized that these activities are critical, require a large amount of dedicated time and resources, and serve as a foundation to planning and delivering IDSS effectively.

Core Partners should be met at least bi-annually for optimal relationship building and for reviewing their Core Partner profile. To help mitigate the operational impact, an encouraged practice when conducting relationship-building engagement activities is to involve as many NWS Offices as appropriate and/or available, especially if an involved Core Partner organization is supported by multiple NWS offices on a routine basis. Partner engagement is an excellent opportunity to discuss Core Partner needs that span multiple NWS offices' areas and expertise.

- **Note:** NWS Offices will be involved in a number of routine and periodic activities to build and maintain strong relationships with Core Partners and their Enterprise support as appropriate. [NWS Instruction 10-1801 Warning Coordination and Hazard Awareness](#) and [NWS Instruction 10-803 Support to Air Traffic Control Facilities](#) address NWS' role in partnering with others on hazard preparedness.

Relationship Building Engagement Activities and Meetings with Core Partners

NWS offices are encouraged to conduct meetings and workshops with Core Partners in order to better understand each other's roles and needs in response to hazardous events, and how to best work together to protect the lives and properties of their communities. These meetings may include a single or multiple Core Partner organizations (i.e. media workshop). Such meetings can vary in form and occurrence to address a particular theme or challenge (i.e. seasonal flood meeting). The information gathered through these engagements should be used to inform and update the Core Partners' Profile.

It is critical that an office dedicates time to engage with their Core Partners in a focused and dedicated manner to discuss needs associated with IDSS and to better understand how their operations work and will be influenced by the services the NWS provides. These meetings are an essential component of building relationships with mutual trust and understanding and should be carried out at least once with each Core Partner for onboarding purposes. If Targeted or Integrated IDSS is provided to a Core Partner on a recurring basis, or if an office deems it necessary for various additional circumstances, it is recommended that offices meet with these Core Partners at least annually.

Note: If a Core Partner receives additional support from a contracted private provider that is part of the Weather/Water/Climate Enterprise and/or in-house meteorological or hydrological support, NWS offices should encourage that they be included in relationship-building meetings. There should be a discussion and understanding of the role each will play with the Core Partner, per direction of the Core Partner, and an attempt made to ensure support is coordinated and information shared as appropriate when providing support.

Core Partner Dedicated Relationship Building Meetings may be categorized into several types:

- **Initial Meet & Greet (Core Partner Onboarding as defined in Core Partner Identification and Management Instruction 10-2401):** Introductory meetings with Core Partners are an

essential first step in cultivating strong working relationships. Onboarding a new Core Partner involves a deep dive into their operational IDSS needs and thresholds. The Core Partner Onboarding Form (provided in the [IDSS Toolkit](#)) should be followed to help guide the discussion and ensure appropriate information is documented including contact information, thresholds, service needs, etc.

- **Recurring Relationship Building Meetings:** These meetings should focus on continued relationship building, discussing past IDSS performance, and focusing on ways to improve service delivery. Focus should also be on identifying new Core Partner operational challenges and updating Core Partner decision thresholds. **Integrated Warning Teams (IWT):** A key meeting to be emphasized by NWS offices IWT. A local or state level team consisting of Core Partners including emergency management, private sector Weather/Water/Climate Enterprise partners (typically the broadcast media), and the NWS, that shares the common goal and responsibility of improving the warning system and reducing fatalities, injuries, and property damage due to natural hazards. Sometimes known by other name variations, these NWS-led meetings and workshops can be conducted with Core Partners and other NWS offices on a periodic basis or following significant weather events to collaborate on challenges, ideas, and best practices from which to improve IDSS.

IWTs serve as a flexible model which can be adapted and tweaked to meet the diverse needs of local offices. These can range from bringing together partners at a state level for collaboration, partnering with other offices to integrate beyond one Area of Responsibility (AoR), hosting smaller events located throughout a National Weather Service office's AoR, or focusing on an event, theme, or specific challenge.

- To learn more about IWTs, please see the [IWT Resource Page](#)
- IWTs can be leveraged to conduct deeper dives into action items identified in the Evaluation Phase

NWS Staff Attendance at Core Partner-Led Meetings

Beyond dedicated relationship building meetings initiated by the NWS, an office representative should prioritize routine attendance at relevant Core Partner-led meetings, when invited. These meetings provide critical additional face-time with Core Partners and NWS staff to foster improved relationships and trust. Priority should be placed on attending meetings where a known large group of Core Partners will be gathering together. As NWS staff attend these meetings, they should be documenting new IDSS needs that are identified, as well as other future meetings and activities to participate in, such as upcoming drills and exercises, relevant training opportunities, and topically focused meetings.

Some examples of Core Partner led meetings include but are not limited to:

- Organized Emergency Management Meetings (State, Regional, County, or Local)
- Emergency Response Consortiums
- Military-Civilian Task Force for Emergency Response Meetings
- Local Emergency Planning Committee (LEPC) Meetings
- US Coast Guard Area Committee or Port Security Meetings
- Core Partner Conferences (IAEM, State EM Association Conferences, Water Resources Conferences, DOT Conferences, etc.)

APPENDIX B - Acronym Definitions

- ARTCC- Air Route Traffic Control Center
- AWC NAM- Aviation Weather Center National Aviation Meteorologist
- AWWU- Alaska Aviation Weather Unit
- BLM- Bureau of Land Management
- CDC- Centers for Disease Control and Prevention
- DHS- Department of Homeland Security
- DoD- Department of Defense
- EPA- Environmental Protection Agency
- FAA- Federal Aviation Administration
- FEMA- Federal Emergency Management Agency
- FEMA HQ LNO- FEMA HQ Liaison
- HHS- United States Department of Health and Human Services
- IMET- Incident Meteorologist
- N-IMAT- FEMA National Incident Management Assistance Team
- NOAA HSPO- National Oceanic and Atmospheric Administration Homeland Security Program Office
- NRCC- FEMA National Response Coordination Center
- NWSOC- NWS Operations Center
- ROC- Regional Operations Center
- TRACON- Terminal Radar Approach Control Facilities
- USACE- US Army Corps of Engineers
- USCG- US Coast Guard
- USDA- US Department of Agriculture