



# US National Fire Danger Rating System (NFDRS2016)

## Update to the NFDRS2016 Rollout Plan

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## PURPOSE

This document is an update to the initial plan (issued December 2017) for the phased rollout of the NFDRS2016 model and applications. This plan seeks to accomplish two goals: 1) updating users on the new science and 2) improve the use of National Fire Danger Rating System (NFDRS) through standardized, interagency applications of the system. This plan includes updates to the essential processors (FireFamilyPlus and the Weather Information Management System). This rollout incorporates improvements in the application of the system based on policy and the use of best practices to implement interagency, fire danger-based decisions. This rollout also seeks to implement science into preparedness decision such as quantitative fire risk assessments. The actions previously identified in the December 2017 NFDRS Rollout Plan have been incorporated. This update incorporates a significant amount of experience, knowledge, and feedback assimilated from end-users during the first 18 months of implementation.

A core value for the wildland fire community is for all jurisdictions to participate in making and implementing safe, effective, efficient risk-based wildfire management decisions. The NFDRS provides a consistent framework, in a complex, interagency environment for situational awareness, wildfire response, fire restriction and fire prevention decisions.

This rollout plan includes testing, calibration, evaluation criteria and incorporation of input from testers. The intent is to provide a stable NFDRS2016 system along with updates to FireFamilyPlus (FFPlus) and the Weather Information Management System (WIMS) where users can become familiar with the new model outputs and applications.

The NFDRS has offered a standardized decision-support framework since its inception in 1972. The system was first updated in 1978; and again in 1988. Although the original developers intended for periodic improvements to be incorporated as science and technology improved, the system has remained fundamentally untouched the past 40 years. Yet, there is a much greater need for state-of-the-art tools to assist administrators, managers, resource and operational specialists – any decision-maker – sort through the daunting complexities and conflicting priorities which influence fire-related decisions. These decisions have the potential to result in costly, long-term impacts to the environment; more importantly, the safety and welfare of our employees and the public could be compromised.

## BACKGROUND

### AGENCY GUIDANCE AND DIRECTION

In September 2014, the National Wildfire Coordinating Group (NWCG) Executive Board issued Memorandum 14-018, approving a revision to the US National Fire Danger Rating System.

In December 2017, three documents were issued by the USDA Forest Service (FS). First, the Forest Service Director for Fire and Aviation issued guidance and direction to Regional Fire Directors regarding the NFDRS2016 Rollout Plan, emphasizing that the NFDRS is the agency's standard for fire danger-based decisions (Forest Service Manual 5120). Furthermore, the NFDRS2016 Rollout Plan is intended to educate users regarding the new science and improve the use of NFDRS through standard interagency applications of the system. Second, the Forest Service issued a Briefing Paper summarizing the rollout plan's key points and recommending that the Forest Service lead the overall effort, "collaborating closely with interagency partners." Third, the NFDRS2016 Initial Rollout Plan provided a detailed plan for the phased rollout of the NFDRS2016 model and associated applications.

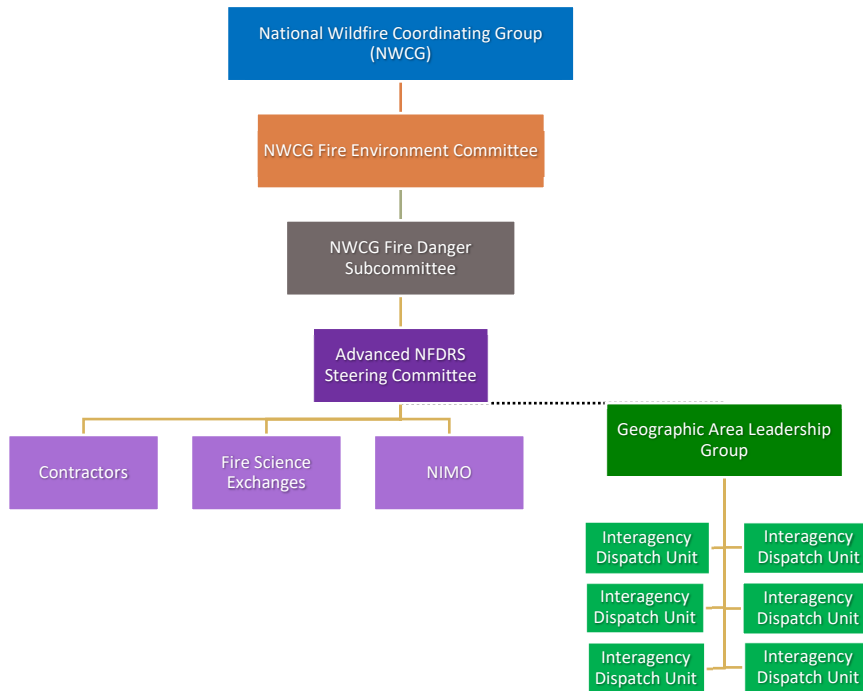
Furthermore, the plan outlined roles for the Fire Danger Subcommittee, Geographic Area Leadership Groups, and general users by identifying objectives and critical needs to achieve expected outcomes.

The NWCG Executive Board issued Memorandum 18-001 in February 2018 to announce that the NFDRS2016 will replace the existing 1978 and 1988 NFDRS models by May 2020 and provide further information regarding the transition to the new system.

**In July 2019, the NWCG Executive Board approved an amendment to the initial NFDRS2016 Rollout Plan. Key dates include:**

- **Geographic Area rollout workshops will be completed prior to March 2020**
- **Evaluation of thresholds and decisions between March 2020 and December 2020.**
- **Full transition over to NFDRS2016 by January 2021.**

## ORGANIZATION STRUCTURE & GOVERNANCE



## CRITICAL DATES

The following table outlines the critical dates and associated tasks. It is essential to the overall success of the NFDRS2016 rollout objectives that the tasks from the initial rollout plan have been accomplished.

## CRITICAL DATES

START DATE	FINISH DATE	TASK
January 2018	April 2018	Formation of GA leadership groups
April 2018	December 2018	The National Rollout Workshop was held at NAFRI (Tucson, AZ), April 1 – May 4, 2018.
		S-491 has been updated with information about NFDRS2016 and new experienced based learning.
October 2018	October 2018	The Geographic Area Leadership Group attended an Evaluation & Curriculum Meeting at NAFRI (Tucson, AZ) in preparation for Geographic Area Workshops.
February 2018	January 2019	Curriculum development for GA Rollout Workshops.
January 2019	March 2020	Geographic Area Leadership Groups will conduct NFDRS2016 workshops for local units.
March 2020	December 2020	Local units will evaluate NFDRS2016 outputs and finalize new fire management decision thresholds based on NFDRS2016 .
<i>January 2021</i>	<i>All units will be fully transitioned to NFDRS2016</i>	
<i>January 2022</i>	<i>NFDRS 78/88 versions will be decommissioned.</i>	

## GEOGRAPHIC AREA ROLLOUT WORKSHOPS

The NFDRS rollout workshop format is based upon the Fire Danger Operating Plan (FDOP) process taught at the Advanced NFDRS course. This process has been successfully implemented since 2011 to develop and implement interagency fire danger-based decisions at the local level. The information below is based on the development of best practices established by implementing past workshops and synthesis of input from local units.

### WHAT DOES A SUCCESSFUL WORKSHOP LOOK LIKE?

#### THE DESIRED END-STATE

- ◆ The desired end-state for each workshop is a working **Fire Danger Operating Plan (FDOP)** draft to be developed at every 3<sup>rd</sup> tier interagency dispatch level. An interagency work group should be developed from within the dispatch zone to create and/or update their respective FDOP. The working draft FDOP will be comprised, at a minimum, of the

completed tasks as outlined in the workshop curriculum. Minimally, each group will determine the following fire danger levels:

- Preparedness Levels (5 levels)
- Staffing Levels (5 levels)
- Response Levels (3-5 levels)
- Adjective Fire Danger Rating Levels (5 levels)
- **Appendices** – Minimally, the following plans will be incorporated as action plans tiered from the FDOP:
  - Interagency Preparedness Plan
  - Interagency Staffing Plan
  - Interagency Response Plan
  - Interagency Adjective Fire Danger Rating Levels used in a plan (often found in the unit Prevention Plan); include (at a minimum) those sections that pertain to fire danger-based decisions affecting the public, such as changing fire danger signs.

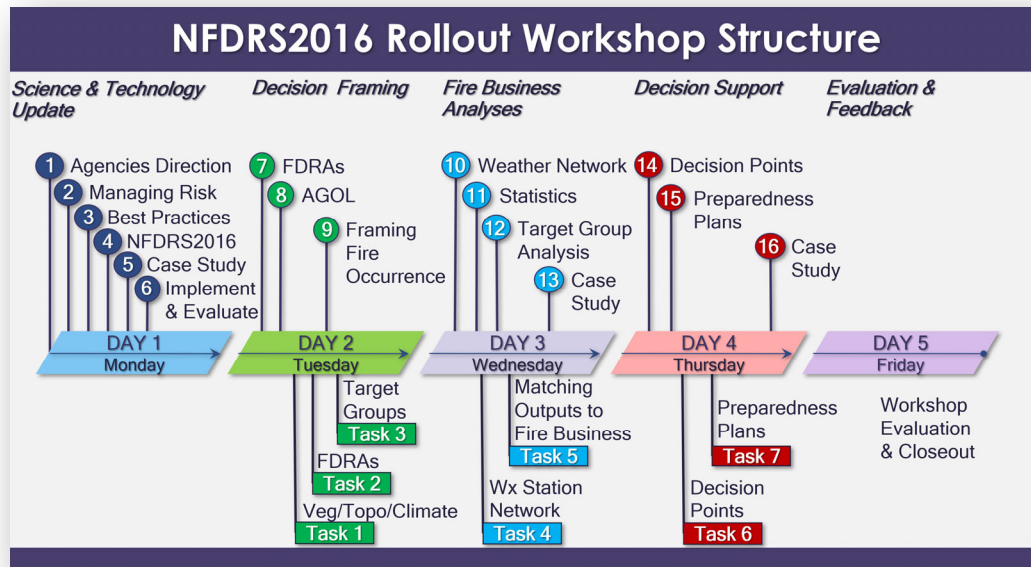
#### **KEYS TO A SUCCESSFUL WORKSHOP:**

Attaining the desired end-state will require several elements which have proven to be successful in past workshops.

- ◆ **Interagency 3<sup>rd</sup> tier dispatch work group (generally, 6-8 participants minimum)**
  - Key interagency partners
    - Federal agencies, state forest agencies, key local agencies
    - Participants should have decision-making authority regarding preparedness procedures (response, staffing, prevention) and associated fire management documents.
    - Each work group should have the following important skill sets. Note: these skills may be provided by any cooperating agency within the interagency working group; a single agency is not expected to provide all of these recommended skills:
      - › FireFamilyPlus
      - › WIMS
      - › Operations
      - › Fuels (strategic fire response)
      - › Prevention/Mitigation
      - › Line officer representation
      - › Others...
  - Expectations
    - Participants should come to the workshop with clear expectations.
    - Expectations should be communicated in a message from each agency's leadership promoting the workshop and encouraging participation.
    - Participants should expect to participate and be fully engaged as a team member within their respective group
    - Participants should address questions, comments, and concerns with their assigned coach(es)
    - Keep an open mind; be receptive to new concepts and procedures
    - Participants should be respectful of other participants, instructors, and coaches.

- Participants should not plan to work on their laptop computers or mobile devices while a facilitator is making a presentation, or during group breakout sessions.
- ◆ **Instructors:**
  - Each Geographic Area workshop should draw from faculty with experience at Advanced NFDRS (ANFDRS) course
  - The ANFDRS Steering Committee can assist by providing qualified instructors. Contact the ANFDRS Steering Committee chair to coordinate assistance (as needed).
- ◆ **Coaches:**
  - Each interagency work group should be assigned a coach.
  - Preferably, coaches should be assigned 4-6 months in advance of the GA workshop to be a liaison and mentor throughout the pre- and post- workshop experience.
  - Coaches requirements:
    - Coaches should have experience as a faculty member or graduate from the ANFDRS course.
    - It is recommended that each coach be assigned to a group that is not associated with the coach's home unit.
- ◆ **FireFamilyPlus Database (Webinar Topic)**
  - It is essential that each 3<sup>rd</sup> tier fire dispatch unit have an interagency FireFamilyPlus database prior to the workshop. The database should include:
    - Weather data (hourly weather, solar radiation, snow flags)
    - Instructions for developing weather database can be found on the NFDRS FireNet site in the webinar section.
- ◆ **Response Zones (Webinar Topic)**
  - Pre-planned (also known as initial response) response zones are delineated geographic areas within the overall planning area/dispatch zone.
  - Pre-planned zones are developed to support local-level Initial Pre-planned Response Plans, also referred to as "Run Cards".
  - A pre-planned response specifies the fire management response (e.g., number and type of suppression assets to dispatch) within the defined geographic area to an unplanned ignition, based on fire weather, fuel conditions, fire management objectives, and resource availability.
- ◆ **Workshop Content and Structure**
  - Supporting material is located on the NFDRS2016 web site (<https://sites.google.com/firenet.gov/nfdrs/home>).
  - Advanced NFDRS Steering Committee, supported by contractors, will provide:
    - Pre-workshop webinar material:
      - Rollout Workshop Orientation & Preparation
      - Developing Response Zones
      - Obtaining & Importing Fire and Weather Data
      - Logging into the NIFC AGOL
      - Evaluating NFDRS2016
    - Workshop structure

- Agenda
- Lessons plans
- PowerPoint Presentations (with notes on slides)
- Tasks (exercises)
- Tech Tips



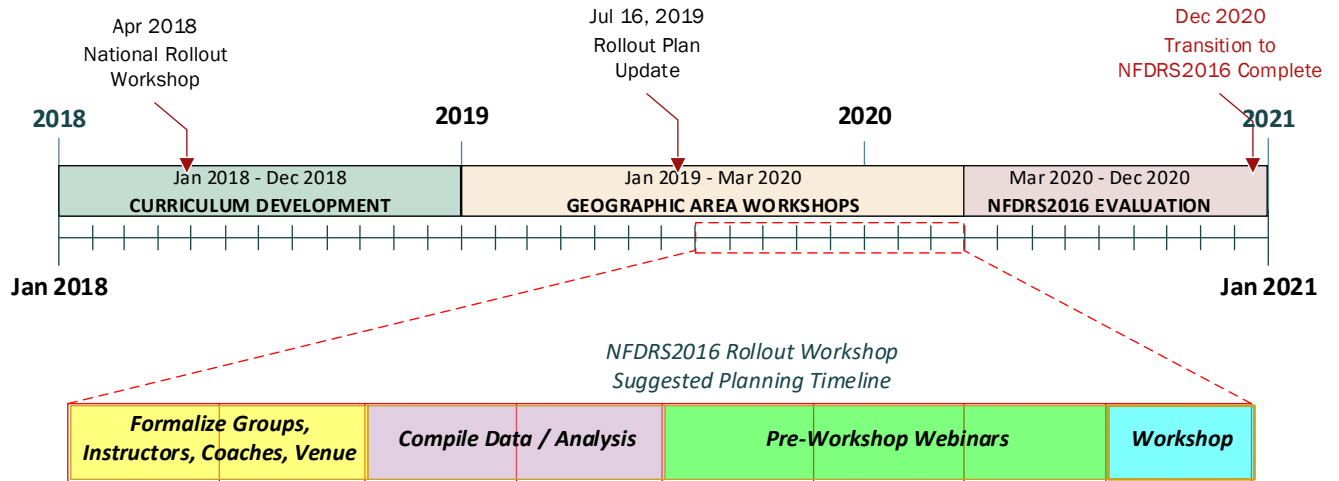
## WORKSHOP PREPARATION

- ◆ **4 - 6 months out** – GA Leadership Group will:
  - Establish a point-of-contact for each local interagency unit (3rd tier dispatch unit)
  - Determine dates/location of workshop(s)
    - Rollout plan indicates one workshop per geographic area)
    - GAs may desire to have multiple workshops, but will need to coordinate with national effort in order to ensure support can be provided.
  - Logistical needs:
    - Workshop location should have one large room to accommodate all participants
    - The number and size of breakout rooms to accommodate each 3<sup>rd</sup> tier dispatch, interagency work group
    - Breakout rooms will be utilized while each group is working on tasks associated with the curriculum.
    - Internet connectivity for all agencies and power for laptops
  - Determine capacity of Geographic Area to support faculty requirements including lesson presenters, coaching and data support (including GIS)
  - Begin developing participant list by 3<sup>rd</sup> tier dispatch boundary based on the recommended skill set list
  - Formalize interagency work groups participation
  - In coordination with the ANFDRS Steering Committee, finalize instructors for GA workshop
  - Finalize participant list for Interagency work groups for the 3<sup>rd</sup> tier dispatch boundary
  - Lead points of contact for each interagency work group at the 3<sup>rd</sup> tier dispatch boundary area formalize interagency work groups participation

- The Geographic Area group leads, in coordination with the ANFDRS Steering committee will finalize instructors for GA workshop
- ◆ **2-4 months out** – Local interagency units, with the assistance of GA Leadership Groups, will:
  - Compile data and analysis tools to include:
    - Fire data from each agency associated with the 3<sup>rd</sup> tier dispatch unit
    - Weather data which includes hourly weather, solar radiation, and snow flags fields
  - Obtain access to NIFC AGOL (ArcGIS Online) NFDRS2016 project developed by WFM RD&A. Refer to the Webinar material regarding this topic = <https://sites.google.com/firenet.gov/nfdrs/rollout-workshops/curriculum/nifc-arcgis-online-agol-set-up>
  - Determine WIMS roles and responsibilities.
    - Station Owners - The RAWs Station Owner is the entity who is responsible as a RAWs point of contact in the weather section of Wildland Fire Information Management (WFMI) and to ensure maintenance is documented as per policy.
    - Model Manager - WIMS has added a new user role called Model Manager. Those assigned to this role will have additional privileges to actively manage the live and dead fuel moisture models.
- ◆ **1-3 months out** – Local interagency units, with the assistance of GA Leadership Groups, will:
  - Conduct pre-workshop webinars to prepare participants for the GA Rollout Workshop.
    - The Advanced NFDRS Steering Committee has prepared webinar material for the following topics:
      - Rollout Workshop Orientation & Preparation
      - Developing Response Zones
      - Obtaining & Importing Fire and Weather Data
      - Logging into the NIFC AGOL
      - Evaluating NFDRS2016
    - GA leadership groups can choose to use these National webinar packages, create their own regional webinars, or a combination of both.



## ROLLOUT TIMELINE



## NFDRS EVALUATION

After the NFDRS2016 rollout workshop is completed, local units will have a working draft of a Fire Danger Operating Plan. It is expected that local units will evaluate their updated fire danger-based decisions to gain familiarization with the new NFDRS2016 model components, outputs and implementing the best practices for interagency, fire danger based decisions. In order to gain a better understanding of the effects of the new model, local units are encouraged to evaluate several common elements which will be posted with the webinar material on the NFDRS2016 rollout website (<https://sites.google.com/firenet.gov/nfdrs/rollout-workshops/curriculum>).