# WEATHER INFORMATION MANAGEMENT SYSTEM (WIMS) 7833

(July 2015)

The Weather Information Management System (WIMS) is a comprehensive system that helps the user to manage fire weather information. WIMS serves as the host for the National Fire Danger Rating System (NFDRS). WIMS is the principal software used by CAL FIRE to record weather information allowing the calculation of NFDRS outputs and indices for decision making applications such as Dispatch Levels, Adjective Ratings, etc. All CAL FIRE Units are required to provide daily and seasonal management of the WIMS application.

WIMS allows the user to retrieve weather information by providing:

- Timely access to many weather information sources
- Efficient tools for managing data
- Data manipulation and display functions
- Interactive communications environment

WIMS, a web based application, resides on a suite of servers known as the Fire and Aviation Management Web Applications (FAMWEB). FAMWEB hosts all of the National Fire Applications at the USDA National Information Technology Center (NITC) in Kansas City. WIMS is available on a twenty-four hour basis. CAL FIRE personnel access WIMS through User Accounts and Passwords provided through the National Enterprise Support Service Applications Portal (NAP). See https://nap.nwcg.gov/NAP/#

User assistance is available through the Interagency Help Desk found on the NAP homepage. To obtain additional user support and administration services contact your Unit Fire Environment Point of Contact, Region Fire Environment Point of Contact, or Fire Environment Program Manager.

## WIMS STATION OWNER AND SYSTEM PASSWORD 7833.1

(July 2015)

Each CAL FIRE Remote Automated Weather Station (RAWS) shall have a designated station owner identified in the Weather Information Management System (WIMS). The Unit Fire Environment Point of Contact (FEPOC) shall be designated as the WIMS station owner for all CAL FIRE owned RAWS within their Unit. The Unit FEPOC shall use and update their profile to reflect the proper ownership in the Station Catalog. When there is a change in the Unit FEPOC, station ownership will reflect the change. Management of the WIMS Access Control List(s) is the responsibility of the WIMS station owner. Qualified Unit personnel shall be given access to WIMS by the Unit FEPOC under direction of the Unit's ECC Chief.

## WIMS STATION CATALOGS 7833.2

(July 2015)

Before weather observations can be stored, each RAWS will be assigned a WIMS ID number and have metadata stored in the Station Catalog. Each station requires a station owner assigned to control data access for purposes of adding, editing, and deleting data. All initial inputs or changes to the Station Catalog require notification to the Fire Environment Program Manager. This is necessary because the WIMS system affects many differing geopolitical boundaries. The system works best when there is a collaborative effort between all vested parties. This does not include Green Up, Freezing, or edits to the NFRDS Parameters. For more information about the station catalog please refer to the WIMS User Guide.

## ACCESS CONTROL LIST 7833.3

(July 2015)

An Access Control List (ACL) is a list of User ID's created by a station Owner to grant specific authority to perform any of three Weather Information Management System (WIMS) functions listed below on a station's information or data. An access control list must exist in WIMS before access can be assigned.

- Station Edit (Edit station's information access) Checking this category allows the user to edit station information, change Station ownership and/ or the ACL. Use discretion when allowing others to edit station information.

- Observations Enter (Enter station's observations access) Checking this category allows the user to enter new observations for a manual station.

- Observations Edit (Edit station's observations access) Checking this category allows the user to edit and/ or delete observations

If a station has no assigned ACL, the station Owner is the only user with the authority to:

- Edit station information

- Enter observations

- Edit observations

Station owners automatically have all the above authorities, and therefore do not need to be specified in the ACL. Station Owners cannot edit or delete another owner's ACLs. Once created, ACLs can be referenced in the station catalog.

Each RAWS shall have an ACL that includes the Fire Environment Program Manager and the Region Point of Contact. This ACL will facilitate assistance with troubleshooting potential WIMS problems.

## RECORDING WIMS OBSERVATIONS 7833.4

(July 2015)

(See HB8100p200 – Dispatch Levels)

The process of recording the Daily Observation in WIMS (changing the “R” to an “O”) is required for the RAWS 1300 hour weather observation. The recording of this Daily Observation is required year round. The stations that transmit from 30 to 59 minutes after the hour will use the 1200 Local Standard Time (LST) hourly observation (closest to 1300 hrs). The stations that transmit 00 to 29 minutes after the hour will use the 1300 LST hourly observation. The daily observation is used in NFDRS analysis, Forecasted Indices, Dispatch Levels, and Adjective Class Ratings. The 1300 hour weather observation must be recorded in WIMS prior to 1500 hours. Timely Daily Observation recording is necessary to allow adequate time for the National Weather Service to prepare the following day’s forecasted indices and Adjective Class ratings.

The process of recording Special Observations in WIMS (changing the “R” to a “S”) is required for three additional observations throughout the day. The Unit’s Fire Danger Rating Operating Plan (FDOP) shall dictate the hours of Dispatch Level update. Dispatch levels shall be updated at a minimum of four times per day during transitional staffing, peak staffing or additionally as directed by the Unit’s FDOP. The default Special Observations recorded are 0700, 1000, and 1700 hours. Local policy may dictate additional Special Observations to update Dispatch Levels more frequently. Dispatch level decision thresholds and appropriate indexes used are identified in the Unit’s FDOP. Decision thresholds are defined as the decision point based upon a combination of climatology, fire history, and management input (i.e. the point where dispatch levels change from low to medium, medium to high, etc). Refer to HB 8100p200 – Dispatch Levels.

## WIMS DATA QUALITY CONTROL AND VALIDATION 7833.5

(July 2015)

Data quality control is the key to accurate fire business outputs which in turn impact fire business decisions. RAWS and WIMS data is where quality control begins, at the data entry level. Users are responsible for quality controlled data entry and validation of raw weather data displayed. To ensure success, quality control and validation is best accomplished during daily observation inputs of WIMS data.

## WIMS GREEN UP AND FREEZE 7833.6

(July 2015)

The actions of “Green Up” and “Freeze” are to turn on/off the live fuel moisture (Woody Fuels) calculator in Weather Information Management System (WIMS). The timing of Seasonal Green Up and Freeze is subjective and requires local knowledge of fuel conditions. Units shall be responsible to “manage the models” of their assigned RAWS as described in the WIMS User Guide, which include the actions of annual Green Up and Freeze at the appropriate time. Prior to Green Up it is critical that a complete set of continuous Daily Observations are recorded.

## DEVELOPING WIMS ADJECTIVE CLASSES 7833.7

(July 2015)

(See HB 8100p211 – Fire Weather Adjective Rating)

All agencies in the California Wildfire Coordinating Group (CWCG) have agreed to use five decision classes in the Fire Danger Continuum for the development of the Adjective Class Definitions. The Unit Fire Environment Point of Contact can assign specific actions to each class level as described in the Unit’s Fire Danger Operating Plan (FDOP). Climatological Breakpoints in the 90th and 97th percentile equation will be used in determining Adjective Fire Danger Ratings, which should correlate with the Unit FDOP in addressing staffing / dispatch levels and/or prevention actions. The 90th and 97th percentile levels identify the fire danger level where 10% and 3% of the index values are exceeded respectively.

EXAMPLE: Adjective Fire Danger Rating Decision Classes

| BI | 0 | 90th Percentile value divided by 4 | 90th Percentile value divided by 2 | 90th % Value | 97th % Value | 100 |
|---|---|---|---|---|---|---|
| FM | | | | | | |
| C | 0 | 13 | 26 | 51 | 62 | |
| G | 0 | 21 | 42 | 83 | 100 | |
| F | 0 | 25 | 49 | 98 | 122 | |

| IC | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 0-20 | LOW | LOW | MODERATE | M | H |
| 21-45 | LOW | MODERATE | MODERATE | H | VH |
| 46-65 | LOW | MODERATE | HIGH | VH | VH |
| 66-80 | MODERATE | MODERATE | HIGH | VH | E |
| 81-100 | MODERATE | HIGH | VERY HIGH | E | E |

Staffing Levels

Adjective Ratings

Adjective Fire Danger Rating shall be based upon Climatological Break Points using Ignition Component and Burning Index as described in the Unit's FDOP. Notifications and actions based upon current and projected Adjective Class shall be described in the Unit's FDOP.

The above example shows five (5) Adjective Class break points with directly corresponding staffing levels. However, Units will determine the most **appropriate** number of staffing levels for their areas and associated break points.

The WIMS station owner is responsible to set the NFDRS Parameters for their station to the following parameters;

- 5 Adjective Class Ratings
- Burning Index as the selected index
- The value of the 90th and 97th percentile for all of the fuel models used

(see Next Section)

(see Handbook Table of Contents)

(see Forms and Form Samples)