SIERRA FRONT

FIRE DANGER RATING PLAN & PREPAREDNESS GUIDE

Revision 4
2011

Fire Danger Rating Plan
&
Preparedness Guide

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2011

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I. Introduction

Each agency supported by SFIDC is required to have a Fire Preparedness Plan that reflects the Interagency Standards for Fire and Aviation Operations (Red Book). This plan is counted to be the plan for each and all SFIDC agencies. The Sierra Front has incorporated the Fire Preparedness Plans of all participating agencies into the Sierra Front Interagency Fire Danger Operating Plan.

The participating agencies include:

CCD	Bureau of Land Management, Carson City District Office
HTF	US Forest Service, Carson and Bridgeport Ranger Districts, Humboldt-Toiyabe National Forest
NDF	Nevada Division of Forestry- Western Region

Due to the various titles given by each agency to officers who are responsible for enacting the various parts of this plan, agency personnel are defined as:

Agency Officers		
Generic Position Title	Agency	Agency Position Title
Agency Administrator	NDF	NDF State Forester
	USFS	District Rangers
	BLM	District Manager
Fire Management Officer	NDF	Division Chief
	USFS	Fire Management Officer (FMO)
	BLM	Fire Management Officer (FMO)
Assistant Fire Management Officer	NDF	Battalion Chief
	USFS	Assistant Fire Management Officer (AFMO)
	BLM	Assistant Fire Management Officer (AFMO)
Mitigation Officer	NDF	Fire Protection Officer
	USFS	Fire Prevention Officer
	BLM	Mitigation and Education Specialist

The Fire Danger Operating Plan established the setup and implementation of the NFDRS fire program for the Sierra Front in compliance with Chapter 10 of the “Red Book”. The purpose of the SFIDC Fire Danger Operating Plan is to document the establishment and management and use of NFDRS in relation of management decisions relating to fire danger.

The scope of this plan is to provide the baseline for fire danger threshold values, provide a guide for fire preparedness actions, and to document the decision rationale for dispatch response, fire danger ratings, and fire safety and management using the National Fire Danger Rating System.

II. Objectives

The objectives of the Sierra Front Fire Danger Rating Plan and Preparedness Guide is to:

1. Provide a tool for agency administrators, fire managers, dispatchers, agency cooperators, and firefighters to correlate fire danger ratings with appropriate fire business decisions within the Sierra Front zone of influence.

2. Establish fire danger rating areas (FDRA's) within the Sierra Front zone of influence with similar climate, fuels, topography, and fire suppression requirements.

3. Establish a fire weather-monitoring network made up of Remote Automated Weather Stations (RAWS).

4. Determine fire business and adjective fire danger rating breakpoints using the Weather Information Management Systems (WIMS), the National Fire Danger Rating System (NFDRS), Fire Family Plus (FF+) software, and by analyzing historical climatologically date fire history.

5. Define roles and responsibilities to make fire preparedness decisions, manage weather information, and disseminate potential fire danger to fire managers and field personnel.

6. Ensure that agency administrators, fire managers and cooperating agencies are notified of fire danger and preparedness levels.

7. Ensure that private industry and the public are notified of adjective fire danger rating levels.

8. Make recommendation to personnel outlining specific daily actions to take at each planning level.

9. Ensure fire danger pocket cards are available to all personnel involved with fire suppression activities.

10. Identify program needs and suggest improvements for the Fire Danger Rating Plan and Preparedness Guide.

III. Inventory and Analysis

In order to apply a system which will assist managers with fire management decisions, the problem must be inventoried and analyzed to determine the most appropriate system which will adequately address the issues.

A. Involved Parties:

The involved parties of the Sierra Front Fire Danger Operating Plan are the wildland fire management employees of the federal and State and the Fire Weather forecaster of the National Weather Service (NOAA).

B. Agency Public and Industry Interaction

Fire Danger Ratings are available to all federal, state, and local agencies and private industry in the management and mitigation of fire danger relative to natural resource harvesting, construction, and fire use applications.

C. Fire History

The Sierra Front area, including the Sierra escarpment and higher elevations of the Carson-Walker River Basins, has a significant history of large fires. Fine fuels are prevalent and act as carriers if a firebrand exists. The fires are generally wind-driven, and the result of the daily convections that occur along the Sierra Escarpment and the high elevation Ranges. The valley floors receive direct heating, starting in the morning, and by afternoon, the valley floor air rises as the colder air from the high elevations sink to the valley floors. The result is winds typical of 10-20 miles per hour each late afternoon. The general southwest flow, which is typical during the summer months super-charge the diurnal winds, increasing the speed to 30-50 miles per hour, depending on the strength of the southwest gradients. Fires on the eastern slopes are pushed by these winds, predominately to the northeast until the air temperature stabilizes. As the temperature stabilizes, gusty winds also occur, creating significant fire runs in erratic patterns. Other slopes cause gusty and erratic winds as downslope winds clash with the predominant flow winds.

Downhill fire runs often impacts sub-divisions in the rural-urban interfaces. Large fires are a very real threat to the population at large. Fire evacuations of sub-divisions are common during large fires and wind-driven conditions all along the Sierra escarpment.

Within the Sierra Front zone of influence, dry lightning is associated with the monsoonal flows that come up through the southwest. This occurs routinely from the middle of July through the first of September. Multiple fire starts are common, ranging from 35 to over 100 fires per storm within the first burning period. Scattered thunderstorms can produce significant amounts of rainfall in a matter of hours. Some areas receiving torrential rain and a lot of moisture, while the surrounding area receives no moisture at all. Lightning storms track predictably, starting in the southern Bridgeport area, working north along the Sierra escarpment and Sweetwater Range. Lightning continues north into the Markleeville area, working into the Minden-Gardnerville valleys, confined predominately between the Pinenut Range and the Sierra Slope. The pattern continues northward through Carson City, Virginia City, and Virginia Foothills into the Reno area. The storms broaden out north of Reno, continuing along the Sierra escarpment on the west and covering the entire Basin and Range valleys to the east side of Pyramid Lake. Usually by midnight, the most significant storms have passed out of the Sierra Front area.

Many fires remain small as they are confined to ridge tops and rocky terrain that exhibit natural barriers. The lightning fires that occur in the valleys have a great potential to spread rapidly and turn into project fires. Heavy flashy fuels in the lower elevations carry the fires to escape initial attack in a matter of minutes. Response to the fires in the lower elevations is rapid and aggressive due to the volatile nature of these fires and the value at risk.

A secondary storm track starts east of Bridgeport and works northward across the Carson-Walker River Basins into the Clan-Alpine, Stillwater, and Desatoya Ranges before leaving the Sierra Front zone of influence. These storms produce a few fires at the higher elevations. Some of these fires have the potential to grow into project fires. Most of the fires that occur are confined to high elevations with natural barriers. Lightning in the valleys does not produce many fires, as the overall fuel potential is not conducive to support firebrands. Outwash plains and Valley floors contain playa lakes with little to no vegetation. The higher areas of the valley floors support a more continuous fuel bed, but the fuels are predominately 0-12 inches high with a one to three-foot spacing between the plants. Only when sagebrush and perennial grass become the primary fuel type do the valley floors exhibit a tendency to burn.

D. Fire Danger Rating Areas

The Sierra Front zone of influence is divided into six Fire Danger Rating Areas (FDRA's) or zones. These are based on similar fuel types and response priority. The six following Fire Danger Rating Areas (FDRA's) have been established within the Sierra Front zone of influence:

1. Dog Valley

a. *Location:* The Dog Valley FDRA incorporates Long Valley, Dog Valley, and the I-80/Truckee Corridor. This area is managed primarily by the Carson Ranger District of the US Forest Service. The zone is mostly in California and its western border is the crest of the Sierra escarpment. The jurisdictional border is the boundary between the Humboldt-Toiyabe and Tahoe National Forests. The Northern border is at the northern end of Long Valley and it runs south to the Lake Tahoe Basin Management Unit boundary. The eastern side of this FDRA takes in all of the remote unpopulated area of the Peavine Mountain-Truckee Corridor, and roughly follows the crest of the Carson Range south to Lake Tahoe.

b. *Fuels*: The fuels of the Dog Valley FDRA consist primarily of open stands Ponderosa Pine and Jeffery Pine, Manzanita, Mountain Mahogany, Bitter Brush, and high elevation Sagebrush. Brush is the primary fire carrier. The NDFRS Fuel Model that best represents this area is Fuel Model F.

c. *Weather:* The primary weather features of the Dog Valley FDRA include typical monsoonal spotty afternoon summer thunderstorms in addition to late spring and early fall snowstorms. There is limited significant rainfall during the summer months. High temperatures range into the mid to upper 80's (Fahrenheit) with low relative humidity generally 10-16 percent. Wind events seldom significantly affect this area.

d. *Topography:* The topography is mountainous terrain with steep slopes, water cut canyons and ravines, primarily in the Truckee Corridor. Dog Valley and Long Valley feature broad valleys and with steep side slopes. The Carson Range consists of high elevations with steep, rugged terrain and slopes are virtually inaccessible with ground resources. Part of the Mt. Rose Wilderness lies within this area. Lower elevations roll into the rural-urban interface of the greater Reno city limits from the slopes of the Sierra escarpment.

e. Fire Occurrence: This FDRA has a history of multi-ignition fire starts during lightning activity. Large fire history includes fires that have crested the Verdi mountain range from the west, pushed by southwest wind flows typical for the area.

2. Front Valleys

a. *Location:* The Front Valley FDRA takes in the valley area along the Sierra Front from Doyle CA south to Minden, NV and along the valley floor into Woodfords CA The western boundary is along the Sierra Crest (excluding the Dog Valley FDRA). The eastern Boundary includes all of the Washoe/Churchill county line from Pyramid Lake to Silver Springs, NV The southern boundary follows Hwy 50 from Silver Springs to Carson City, and follows the valley floor through Eagle Valley and Carson Valley to Minden, NV Washoe Valley, Eagle Valley, and Carson Valley are located in this FDRA. All SFIDC agencies are represented in this FDRA.

b. *Fuels:* The primary fuels in this area consist of Manzanita, Mountain Mahogany, Bitter Brush, and Sagebrush. Piñon-Juniper, along with open stands of Ponderosa and Jeffrey Pine also dominate areas of this FDRA. Cheatgrass is common in the areas of large fires from past years. The NDFRS Fuel Model that best represents this area is Fuel Model F.

c. *Weather:* The primary weather features of the Front Valleys FDRA include significant wind events. Strong wind events from the southwest are common. Daily afternoon downslope winds are strong enough to push any significant wildland fire toward sub-divisions that dominate all of the western valleys. Rapid moving fires in light brush, pushed by strong winds are the primary cause of structure loss in the FDRA. Numerous wind events combine with the daily afternoon downslope winds, creating erratic and unpredictable fire behavior. Summer thunderstorms are common, creating rapid, strong, and unpredictable outwash winds in this FDRA as they combine with the daily downslope wind conditions. This FDRA receives limited, spotty rainfall with dry conditions predominating the fire season in this FDRA. Maximum temperatures range in the upper 90's to low 100's (Fahrenheit), with low relative humidity often in the single digits.

d. *Topography:* The Front Valleys FDRA is dominated by large, wide valleys with the Sierra Escarpment on the west side. The Truckee and Carson Rivers drain the valleys to the east, with massive mountainous upblocks between the river drainages and valley areas. This FDRA contains the most significant rural-urban interface issue of the Sierra Front; Reno, Sparks, Carson City, Dayton, Virginia City, and outlying areas are dominated by sub-divisions, bedroom communities, and minimal acreage horse properties.

e. Fire Occurrence: The most significant fires in this FDRA are human-caused due to the proximity of the populated areas. Ignitions grow into large fires quickly with the combination of flashy fuels and predominate southwest winds coming off the Sierra escarpment. Fires in this area routinely threaten entire sub-divisions and industrial parks in the outlying areas of the City of Reno.

3. Pinenuts

a. *Location:* Pinenut FDRA takes in the Hwy-395 Corridor area along the Sierra Front from Minden, NV to south of Bridgeport, CA (Conway Summit) It includes only the lower elevation valleys along the Sierra escarpment as the western boundary. The FDRA includes Brunswick Canyon, Mt. Como, Ft. Churchill, and the entire Pinenut Range, and continues south through Smith Valley. The eastern boundary is Hwy. Alt-95a. This FDRA is managed by the Carson City District Office BLM, Carson Ranger District USFS, and Bridgeport Ranger District USFS.

b. *Fuels:* The primary fuels in this area consist of Piñon-Juniper, along with both desert and high elevation sagebrush. Perennial grass is also part of the fuel component. The NDFRS Fuel Model that best represents this area is Fuel Model T.

c. Weather: The primary weather features include daily afternoon downslope winds on the west side, along with predominant southwest winds across the valleys and eastern slopes. Rainfall is deficient, with numerous dry thunderstorms occurring often. Lightning is common at mid and high elevations. High temperatures range in the low to upper 90s (Fahrenheit). Minimum relative humidity is generally in the single digits.

d. Topography: Pinenuts FDRA is dominated by mountainous upblocks that separate the valleys. The Sierra crest lies to the west of the FDRA. The valleys are generally broad and open, and are used for agriculture and are irrigated regularly. The mountain valleys are steep, rugged and remote and primarily inaccessible with ground forces.

e. Fire Occurrence: The rural-urban fire threat is moderate that occurs within the broad irrigated valleys. The significant rural-urban interface occurs mostly on the west escarpment valleys along the Hwy-395 corridor. Communities within this FDRA include Wellington, Walker, Coleville, Topaz, and Topaz Ranch Estates. Several large unincorporated communities are located on the western slope of the escarpment and poses a significant structural fire threat in this FDRA. Topaz Resort is located within this FDRA along the 395 corridor. The High Altitude Winter Warfare Training Center (USMC) is located at Pickel Meadows, at the base of Sonora Pass, which falls into this FDRA. Structures and high value warfare training apparatus are at this facility.

4. South Sierra

a. *Location:* The western boundary of the South Sierra follows the Sierra Crest from Hwy 88 to Conway Summit. It follows east across Conway Summit and takes in the entire Excelsior Range. The eastern boundary follows roughly follows Hwy-95 from Hawthorne, NV to Shurz, NV taking in the Wassuk Range, Mt. Grant, and the Pine Grove Mountains. The northern boundary is roughly Desert Creek and Hwy-208. The Pinenut FDRA splits the two portions of the South Sierra FDRA. The South Sierra FDRA takes in the high elevations while the Pinenut FDRA takes in the non-forested area along the Hwy-395 corridor. This FDRA is primarily managed by the Carson and Bridgeport Ranger Districts of the USFS. The Carson City District Office BLM has a significant portion of land on the west side of Mt. Grant, near Hawthorne.

b. *Fuels:* The South Sierra FDRA is dominated by Ponderosa Pine, Lodgepole Pine, and Piñon-Juniper. Some sagebrush and mountain brush occurs within this zone, but the primary fire carrier is forest litter. Bug-killed over-mature timber and old growth continuous forests of Piñon-Juniper are common in this FDRA. Fuel Model F (brush) reflects the daily variability of weather and wind events and is more responsive than G (timber). The NDFRS Fuel Model that best represents this area is Fuel Model F.

c. Weather: The primary weather feature for this FDRA is summertime thunderstorms. Moisture is deficient during the summer season except near the Sierra Crest. Maximum temperatures range in the low to mid 80s with minimum relative humidity around 10-12 percent. Significant gusty and erratic outwash winds from thunderstorms are common.

d. Topography: The South Sierra FDRA consists mostly of high mountainous terrain, wilderness areas, steep slopes with numerous ledge rock outcrops, and deep water-cut canyons and ravines. Most of the area is remote with limited ground access. Unstable rockslide and avalanche areas are common. The eastern mountain ranges are pocketed with old mine shafts and by-gone era mining operations and debris where accessible.

e. Fire Occurrence: Fires in this area are usually lightning-caused and usually remain less than 50 acres. There is potential for large fires in this area due to wind events pushing fire through continuous PJ stands and bug-killed timber. The potential fire size is limited to local terrain features. The largest human-cause threat is within the wilderness area boundaries and dispersed recreation areas. However, high elevation wilderness areas have fire restrictions in place year round to environmental impact. Seasonal fire restrictions are usually in place for the more accessible country during the summer months.

5. Lahontan Basin

a. *Location:* The Lahontan Basin FDRA takes in all of the low land and valleys of the Carson-Walker River Basins. The Northern Boundary, Eastern Boundary, and Southern Boundary are the same as the Carson City District Office Boundary. The Western Boundary is roughly Hwy 447 through Empire, NV south to I-80 at Wadsworth, NV The western boundary continues south from Wadsworth, following Hwy 95A Shurz, NV, and continuing south along Hwy. 95 from Shurz, NV to south of Coledale Jcn, until it intersects the southern district boundary. The Stillwater, Clan-Alpine and Desatoya Ranges are excluded from this FDRA. The Lahontan Basin FDRA is managed exclusively by the Carson City District Office BLM.

b. Fuels: The Lahontan Basin FDRA is dominated by perennial grasses and desert brush that stands less than one foot high. The plants are extremely short and do not grow close enough together to touch each other. Perennial grasses die back after seasonal early summer rain and normally do not pose a significant fire threat after early summer. Rolling hills feature some sagebrush and Piñon-juniper stands, but are isolated and do not pose a significant fire threat. Swamplands occur around the termination points of rivers. Perennial swamp grasses and willows are found along stagnant water pockets that are fed from the streams. This FDRA features a true desert climate. Moisture is deficient year round and native plants are drought resistant. The NDFRS Fuel Model that best represents this area is Fuel Model L.

c. Weather: The primary weather feature for this FDRA is long dry spells with absolutely no moisture from summer thunderstorms. Maximum temperatures range in the triple digits and minimum relative humidity is generally in the single digits. Wind events and outwash winds from dry thunderstorms are common.

d. Topography: Many of the interior valley floors are playa lakes, with little to no vegetation of any kind. The Carson Sinks and Truckee Sinks are located in this FDRA. Large, broad valleys with rolling hills mark the predominant landscape. Large and small Up-block mountain ranges located within this FDRA break up the broad valley floors.

e. Fire Occurrence: Fires in this area are limited, both in number and size due to the lack of fuels to carry an existing fire. Grassland savannahs and vegetation choked stream channels pose the greatest threat, with the primary fire danger existing in the early summer.

6. Eastern Ranges

a. *Location:* The Eastern Ranges FDRA is comprised of the Stillwater, Clan-Alpine, and Desatoya Ranges within the Carson City District boundary. The lower elevation boundaries start at the base of the alluvial fans where the sagebrush gives way to marsh and salt grasses. This FDRA is managed exclusively by the Carson City District Office BLM.

b. *Fuels:* The Eastern Ranges FDRA is dominated by sagebrush on the alluvial fans and lower slopes, giving way to continuous Piñon-Juniper stands. Pockets of pine and fir are found at the highest elevations in protected canyons. Old fire scars consist of perennial grasses and sagebrush with Piñon-Juniper encroaching into the sagebrush areas. The NDFRS Fuel Model that best represents this area is Fuel Model T.

c. Weather: The primary weather feature for this FDRA is the predominately dry southwesterly winds. A combination of dry and wet thunderstorms commonly occurs due to uplifting. Uplift thunderstorms combined with predominately southwest winds create significant wind events during the hot part of the summer, extending through August and the first part of September. Maximum temperatures range in the upper 90s (Fahrenheit) and minimum relative humidity is generally 10-15 percent.

d. Topography: The Eastern Ranges FDRA consists of massive mountainous up-blocks that steeply rise out of the valley floors of the Lahontan Basin and rise up to above 10,000 feet. Steep and rocky water-cut canyons dominate the drainage from the high peaks to the valley floor. Hanging waterfalls are common in the bottoms of the canyons and ravines. Most of the landscape is steep and inaccessible by ground resources. The alluvial fans that spread out from the canyon bottoms are cut by a network of outwash drainage and intermittent stream channels, making vehicle access limited.

e. Fire Occurrence: Fires in this area occur mostly in the mid to late fire season. Most are lightning caused, and during wind events, progress to massive size. Value at risk is low to moderate with the exception of critical winter range and cattle grazing.

E. Weather Stations

Currently the Sierra Front inputs daily weather observations for nine Remote Automatic Weather Stations (RAWS) weather stations. Six of the nine stations are utilized for rating daily fire danger. Each zone has a primary weather station assigned which best represents the fire danger. If more than one weather station is located within a zone and/or is representative of the zone's fire conditions, that station is used as a back-up to the primary station. The other stations are used for administrative management information and can be used for fire danger ratings if a primary station is not functioning, provided the station is in the appropriate zone. The following chart displays the stations and where they are used to rate the fire danger.

SFIDC Weather Stations				
Agency	**Station #**	**Station Name**	**Status**	**Fire Danger Rating Area (Zone)**
USFS	041302	Dog Valley	Primary	Dog Valley
USFS	260108	Galena	Primary	Front Valleys
BLM	261204	Fish Springs	Secondary	Front Valleys
USFS	043707	Walker	Primary	Pinenuts
BLM	261204	Fish Springs	Secondary	Pinenuts
USFS	042802	Markleeville	Primary	South Sierra
USFS	043702	Bridgeport	Secondary	South Sierra
BLM	260701	Dead Camel	Primary	Lahontan Basin
BLM	260701	Dead Camel	Primary	Eastern Ranges
BLM	040724	Doyle	Secondary	N/A
BLM	260114	Desert Springs	Secondary	N/A

The Bureau of Land Management out of Boise, Id. Manages and maintains the BLM stations and the Humboldt-Toiyabe National Forest manages and maintains the USFS stations. See the Weather Station map in Appendix F for location and elevation.

F. NDFRS Breakpoint Determinations

The Sierra Front utilizes the NFDRS parameters of Fuel Model, Slope Class, Climate Class, and Staffing Parameters as follows:

Sierra Front NFDRS Fuel Models	
F	California Mixed Chaparral, Bitter Brush, Desert Peach, Mountain Mahogany, and Sagebrush.
C, G, H	**C**---Healthy stands of Ponderosa Pine, Jeffrey Pine and some PJ open canopy stands; **G**---Over mature, damaged, insect infested, and diseased stands of dense conifer stands; **H**---Healthy stands of short-needled Cedar, Spruce and Fir, and closed canopy PJ).
T	Sagebrush/grass with open PJ where sagebrush and grass are the primary fire carriers
L	Western grassland vegetated by *perennial* grasses).
F	California Mixed Chaparral, Bitter Brush, Desert Peach, Mountain Mahogany, Manzanita, and Sagebrush.

Sierra Front NFDRS Slope Classes	
1 0-20% slope	Although the Sierra Front has many areas greater than 20% slope, slope-class 1 topography is where most of the initial attack is commonly made. The effect of fire danger rating doubles with each slope class. Increasing the slope class would double the wind-factor values (IC, SC and BI) but would not have the desired effect of increasing the accuracy of fire danger, in that wind is the constant factor for the Sierra Front, regardless.

Sierra Front NFDRS Climate Classes		
1 Desert/Steppe	Lahontan Basin	Drought has minimal impact vegetation.
2 Brush/open conifer	Dog Valley Front Valleys Pinenuts South Sierra Pinenuts	Drought conditions increase the sensitivity of vegetation to fire danger.

Sierra Front NFDRS Grass Type	
Perennial	The perennial grasses and shrubs are chosen for the Sierra Front zone of influence. Although annual grasses cover burned-over areas for a season or two, they naturally give way to the brush and perennial grasses.

Sierra Front NFDRS Staffing Class Parameters	
IC Ignition Component	Secondary uses
SC Spread Component	Secondary uses
ERC Energy Release Component	Seasonal trend indicator for all FDRA's
BI Burning Index	Primary Staffing Class Parameter for all FDRA's
ADJ Adjective Rating	Smokey Bear and Public Fire Danger

The Sierra Front actually does not have a period of time declared as fire season, as significant fires can occur year-round. The best indicator of when significant fires occur is when the weather station's ERC's that represent the designated FDRA's reach and hold at 70 for a period of three to five days. This usually occurs around the first of April, and drops back down to that range around the first of November. The actual breakpoint values for the current fire season are based on the historical fire history from the last 10 years, and are limited to the historical fire season of May 1 through October 31.

The Sierra Front utilizes the standard BLM 80/95 percentiles for the Burning Index (BI) Staffing Index due to the light fuels represented in the FDRA's and sensitivity to wind events. The standard USFS 90/95 percentiles are utilized for the Energy Release Component (ERC) and applied to the seasonal trend.

Daily Staffing Decision Point Chart					
Fire Danger Zone	**Weather Stations**	**Daily Staffing Fuel Model**	**Staffing Index Parameter**	**Break Point Values**	**Percentile Range**
Dog Valley	Dog Valley	7F1P2	BI	**77 / 91**	80/95
Front Valleys	Galena	7F1P2	BI	**115 / 149**	80/95
Pinenuts	Walker	7T1P2	BI	**89 / 117**	80/95
South Sierra	Markleeville	7F1P2	BI	**103 / 127**	80/95
Lahontan Basin	Dead Camel	7L1P1	BI	**50 / 67**	80/95
Eastern Ranges	Dead Camel	7T1P1	BI	**64 / 88**	80/95

SEASONAL TRENDS Decision Point Chart					
Fire Danger Zone	**Weather Stations**	**Seasonal Trend Fuel Model**	**Index**	**Break Point Values**	**Percentile Range**
Dog Valley	Dog Valley	7G1P2	ERC	**89 / 92**	90/97
Front Valleys	Galena	7G1P2	ERC	**100 / 104**	90/97
Pinenuts	Walker	7G1P2	ERC	**103 / 106**	90/97
South Sierra	Markleeville	7G1P2	ERC	**93 / 96**	90/97
Lahontan Basin	Dead Camel	7G1P2	ERC	**100 / 106**	80/95
Eastern Ranges	Dead Camel	7G1P2	ERC	**100 / 106**	80/95

IV. Applications

The National Fire Danger Rating System (NFDRS) utilizes the WIIMS processor to manipulate weather data and forecasts stored in the KCIBM database to produce fire danger ratings within a predetermined Fire Danger Rating Area (FDRA). The system is designed to calculate average worst-case scenario fire danger. However, there are occasions when a fire will burn more intensely than the fire danger indexes indicate due to local topographic conditions, weather conditions, steepness of slope, different fuel models carrying the fire, etc. All fire suppression personnel must be aware that the NFDR system is a "model", not an absolute. The NFDR System is utilized along the Sierra Front to determine the SFIDC Fire Preparedness Levels, determine the Response Settings for the SFIDC Preplanned Dispatch Plan, and set the Fire Danger Adjectives.

Although fire danger ratings do not prevent human caused fires, a concerted effort is made to communicate the fire danger throughout the Sierra Front as it fluctuates. The social, political, and financial impacts of wildfires on agency, public, and industrial entities can be devastating. Loss of life, property, aesthetics, and financial resources can occur with any wildfire. These actions not only focus on fire suppression, but also fire prevention. The NFDR System is integral to the operation and planning of all fire prevention, suppression, prescribed burning, and management activity along the Sierra Front.

The FIREFAMILY PLUS program was used to develop decision points for staffing classes, adjective ratings, preplanned dispatch levels, preparedness level inputs, prevention activities, industrial fire precaution levels and other restrictions and detection. Correlations of fire activity and suppression resources were used to determine weightings for groups of weather stations.

A. Preparedness Levels

As specified in Chapter 10 of the Interagency Standards for Fire and Fire Aviation Operations, Chapter 10, preparedness is the result of activities that are planned and implemented prior to wildland fire ignitions. Preparedness is a continuous process that includes developing and maintaining unit, state/regional, and national level firefighting infrastructure, predicting fire activity, hiring, and training, equipping, and deploying firefighters, evaluating performance, correcting deficiencies and improving overall operations. The preparedness process includes routine pre-season actions as well as incremental in-season actions conducted in response to increasing fire danger.

Preparedness actions are based on operational plans such as fire danger operating plans, which use information from decision support tools such as the NDFRS and other fire danger indicators for fire risk analysis.

Preparedness plans provide management direction given identified levels of burning conditions, fire activity, and resource commitment, and are required at the local level. Preparedness Levels (1-5) are determined by incremental measures of burning conditions, fire activity and resource commitment. Fire danger rating is a critical measure of burning conditions.

Each agency as well as the SFIDC dispatch office of the Sierra Front zone of influence have created and implemented Fire Preparedness Plans on the standard 5-Level system outlined in Chapter 10 of the Red Book and Mobilization guides. These are included in Appendix E of this plan.

B. Dispatch Level Breakpoints (Preplanned Dispatch)

The Sierra Front has pre-determined the mobilization responses into all locations of the zone of influence through the utilization of the Wildcad Dispatch program. The program is responsive to the various fire danger conditions through the Dispatch Response (DR) settings. The Dispatch Responses are set each day based on the staffing index and primary fuel model that best represents each of the FDRA's. SFIDC agency Fire Management Officers can change the dispatch response for a given FDRA at any time. In the FDRA's where more than one agency FMO has jurisdiction, all of the FMOs are to agree on the Dispatch Level change before it is changed in the Wildcad program. The Dispatch Level breakpoints are rated low, moderate, and high based on the criteria on the chart below:

WILDCAD DISPATCH RESPONSE CHART	
DISPATCH RESPONSE	**CRITERIA**
LOW	Assigned at night during fire season, and outside of fire season, or when anticipated need for resources exceeds the resources available.
MODERATE	Assigned during fire season when the staffing level for a specific fire danger zone is *below* the "high" staffing level breakpoint value.
HIGH	Assigned during fire season, when the staffing level for a specific fire danger zone *reaches* the "high" staffing level breakpoint value.

The Staffing Index for each FDRA is set up on six classes, ranging from low to extreme. The "High" level is broken into two sub-classes, called 3-low and 3-high and designated as 3- and 3+.

Staffing Index Breakpoint Classes	
Low	1
Moderate	2
High	3-
High	3+
Very High	4
Extreme	5

The purpose of using the seven classes is to determine where in the high range the value is actually at. Two of the six FDRA's use the 3+ level as the breakpoint between the moderate and high Dispatch Response levels. The NFDRS program automatically determines and displays the daily staffing level using the seven classes. The SFIDC dispatch office disseminates the information through the afternoon fire weather broadcast and internet for the next day's rating.

DISPATCH RESPONSE BREAKPOINT CHART					
FDRA	**Station**	**Primary Fuel Model**	**Staffing Index (SI)**	**Staffing Index Breakpoint Values**	**Dispatch Response Breakpoint**
Dog Valley	Dog Valley	F	BI	1-4 5	Moderate High
Front Valleys	Galena	F	BI	1 to 3- 3+ to 5	Moderate High
Pinenuts	Walker	T	BI	1 to 3- 3+ to 5	Moderate High
South Sierra	Markleeville	F	ERC	1-4 5	Moderate High
Lahontan Basin	Dead Camel	L	BI	1-4 5	Moderate High
Eastern Ranges	Dead Camel	T	BI	1-4 5	Moderate High

C. Adjective Fire Danger Rating Breakpoints

The Sierra Front Adjective Ratings are used to determine the public fire danger. The public fire danger is rated low, moderate, high, very high, and extreme based on the ignition component and burning index for the primary fuel model. Because the Adjective Rating is a combination of the Staffing Index and Ignition Component, the exact value that determines the breakpoint is not at a set number, but rather a range of combinations of the two inputs. The NFDR program generates the values automatically and the dispatch office disseminates the information through the afternoon fire weather broadcast and internet for the next day's rating. Field units post the information through the Smokey the Bear signing and public contacts.

Adjective Rating Analysis			
FDRA	Primary Fuel Model	Staffing Index + Ignition Component	Staffing Level Breakpoints
Dog Valley	F	BI	80/95
Front Valleys	F	BI	80/95
Pinenuts	T	BI	80/95
South Sierra	F	BI	80/95
Lahontan Basin	L	BI	80/95
Eastern Ranges	T	BI	80/95

D. Seasonal Risk Analysis

Seasonal Risk Analysis is a comparison of the historic weather and fuels records with current and forecasted seasonal weather and fuels information. Seasonal risk analysis is an on-going responsibility for fire program managers.

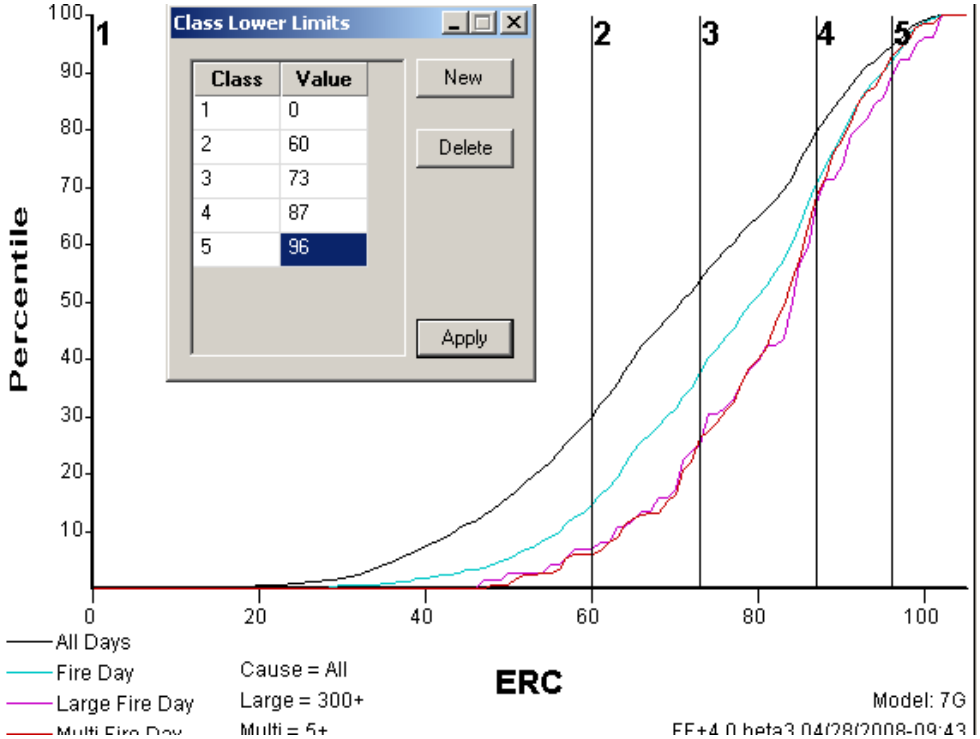
1. Season Beginning and Ending Determination:

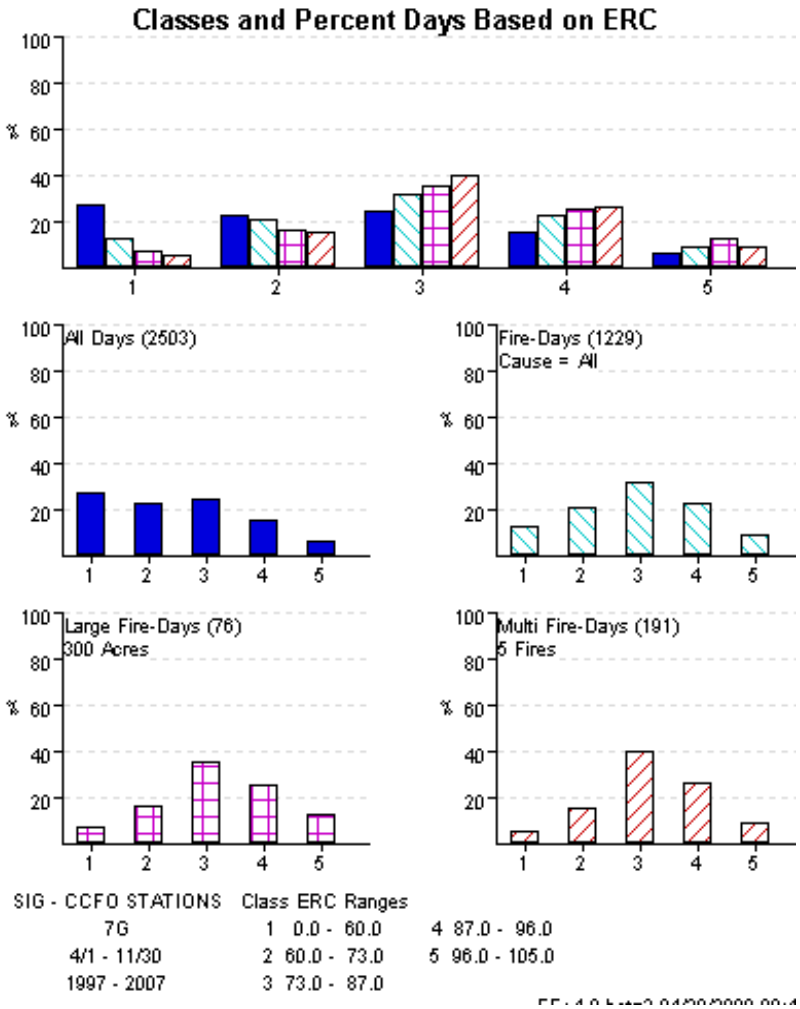
Fires are suppressed on the Sierra Front year round. Historically Large acreage fires have occurred outside of what would be called 'fire season". They occur in the valley regions, usually close to, or within the urban areas. All of these are human caused.

Historically, the Sierra Front "fire season" occurs when the ERC rises and stabilizes at 70. This occurs seasonably in late March through the beginning of April for the lower elevations for all Sierra Front agencies. The ERC drops below 70, seasonably near November 1. The actual fire season varies somewhat from year to year, but follows closely to the ERC and month. Therefore, for management purposes, the Sierra Front Fire season is declared from April 1 through November 1, dependant upon the ERC value being set to 70.

For management purposes and budget constraints, the BLM starts staffing engines five days per week in April, with a full staffing and 7-day coverage the first of May. The Forest Service comes into full staffing the first of June. Fire weather broadcasts begin close to May 15 and runs through November 1, or until the ERC stabilizes below 70.

The parameters for the Sierra Front fire season were determined at fires reaching 300+ acres with multiple fire days of 5 fires, which follows closely with the charts below.





E. Thresholds (Extreme Fire Danger)

The Sierra Front zone of influence extreme fire danger is a combination of extreme fuel volatility and a high potential for large fire growth or multiple ignitions. Wind events, dry thunderstorms, extreme temperatures and low relative humidity, and red-flag conditions are among the indicators that critical fire activity is about to occur. Other indicators include critical fire danger ratings, initial attack capability, and current fire activity and behavior.

1. Fire Activity: The occurrence of large and/or multiple fires is the best indicator of severity conditions and the potential for extreme fire danger.

2. Initial Attack Capability: The depletion of air and ground resources available for initial attack is a critical indicator of the need for extended and additional staffing of fire suppression apparatus, mobilization and moving of suppression resources, and turning down requests for outside pre-position mobilization.

3. NFDRS Thresholds: Very High and Extreme fire danger ratings indicate the seasonal fuel volatility of both the flashy and heavy fuels. Both flashy and heavy fuels range at or near the moisture of extinction levels during the hot summer months and cover vast areas of the Sierra Front zone of influence.

4. Weather Thresholds: The observable weather factors that contribute to large fires and the potential for extreme fire behavior include, but are not limited to wind events, dry and wet thunderstorms, fire weather watches and warnings, red flag warnings, triple-digit temperatures, and prolonged single-digit relative humidity.

F. Fire Danger Pocket Cards

The Fire Danger Pocket Card is a tool, which can aid fire suppression personnel to interpret NFDRS outputs and understand local fire danger thresholds for a local area. Pocket cards can relate current NFDRS outputs with the historical average and worst-case values in a specific geographic location. Visiting resources can use the pocket care to familiarize themselves with local fire danger conditions.

The agency Fire Management Officers will collectively develop, update, and maintain pocket cards. The Pocket Cards will be distributed to all local and incoming fire suppression personnel by each agency Fire Management Officer as appropriate. Each agency Fire Management Officer is responsible to ensure that all local and incoming fire personnel are properly briefed in their use and fire danger analysis. The Intelligence function at SFIDC is responsible for the distribution of the daily fire danger rating indexes, based on the requests by each agency Fire Management Officer.

The pocket cards will also be able to be accessed through the SFIDC website.

Directions: Open up the Sierra Front website

http://www.sierrafront.net

Using the navigation tabs on the top, select SAFETY
When the Safety screen opens up, select POCKET CARDS
The web should open up to the Pocket Card screen.
Navigate to the Pocket Card you want.

Or, go directly to the Pocket Card screen using the following address:

http://fam.nwcg.gov/fam-web/pocketcards/default.htm

Navigate to the Pocket Card you want.

Or, go to the NWCG FAMWEB website

http://fam.nwcg.gov

Find the left-hand navigation menu
Find and Click on “POCKET CARDS”
The web should open up to the Pocket Card screen.
Navigate to the Pocket Card you want.

G. Fire Restriction Plan

The Sierra Front Fire Restriction Plan is in place to reduce the risk of human-caused fires during unusually high fire danger. The plan defines the benchmarks for determining very high fire danger, increased human-caused high risk days, and accounts for large fire activity to draw-down of available resources. Refer to the Sierra Front Fire Restriction Plan for specific restriction criteria and implementation.

H. Roles and Responsibilities

1. Fire Danger Plan and Fire Preparedness Guide: The Fire Danger Operating Plan and Fire Preparedness Guide provides a method to calculate, analyze and establish the dispatch response levels, fire Danger potential, and Fire Danger Operating preparedness levels for the Sierra Front. This Plan does not provide information regarding extenuating factors influencing fire management decisions.

   The Agency Fire Management Officers (NDF, BLM, and USFS) are responsible for ensuring that the necessary amendments and updates to this plan are posted and performed. Annual updates to this plan will be approved by the agency line officers; interim updates and changes can be approved by the appropriate agency Fire Management Officers. Agency Fire Management officers are responsible to notify their line officers of any significant changes or updates that may impact firefighter safety.

   The Agency Fire Management Officers are responsible for disseminating copies of the Fire Danger Operating Plan, Fire Preparedness Guide, Pocket Cards, and/or any components of these documents to agency and cooperator fire personnel as appropriate.

   The SFIDC Fire Center Manager is responsible for ensuring that the dispatch responsibilities of Fire Danger Operating Plan and Preparedness Guide are properly implemented.

   The SFIDC Intelligence Coordinator is responsible for preparing, updating, and maintaining the SFIDC Operating Plan and Fire Preparedness Guide. The Operating Plan and Fire Preparedness will be updated annually by April1 and is the responsibility of the SFIDC Intelligence Coordinator to ensure that this occurs.

   The SFIDC Intelligence Coordinator is responsible for implementing the systems and routines that pertain to the dispatching portions of this plan. Products to be disseminated to agencies, cooperators, and fire personnel include, but are not limited to:
   weather forecasts,
   fire danger rating index's,
   fire preparedness levels,
   FIREFAMILY-Plus charts and graphs.

   The SFIDC Intelligence Coordinator is responsible for ensuring the products are proper, accurate, efficient, and appropriate for districts, agencies, cooperators, and fire personnel.

   The SFIDC Dispatchers are responsible for executing, updating, and utilizing the Fire Danger Rating values and index's, weather forecasts, preparedness levels, and FIREFAMILY-Plus charts and graphs in their daily dispatching assignments as appropriate.

Fire Suppression Personnel, Cooperators, and Agency Personnel are responsible for their implementation, use, interpretation, and further dissemination of the products available through the Fire Danger Operating Plan and Fire Preparedness Plan.

2. Suppression Resources: Each agency Fire Management Officer is responsible for determining and maintaining fire suppression resources for their district. Fire Management Officers will coordinate with other agency and district Fire Management Officers and cooperators to ensure there are adequate resources for fire suppression. If additional resources are needed, requests will be placed through appropriate logistical channels.

   The SFIDC Center Manager has the authority to request additional dispatchers and support personnel to ensure proper staffing for the Center. The SFIDC Fire Preparedness Plan will be followed as a guide for determining dispatch and fire suppression needs.

3. Duty Officers: The Sierra Front has a duty officer assigned for each agency and district at all times. It is incumbent upon the duty officer to interpret and modify, if necessary, the daily fire dispatch response levels for their suppression areas. Whenever a dispatch response level covers more than one area of jurisdiction, the duty officer who determines the need to make the change is responsible to ensure that all appropriate duty officers concur with the change. The duty officer will then contact the SFIDC Coordinator on Duty (COD) and request the change. The duty officer must also verify that all other jurisdictional duty officers concur with the change. SFIDC dispatchers will respond resources based on the dispatch response level dictated by the jurisdictional duty officers. If the duty officer makes no change, the dispatcher will set the dispatch response levels from the pre-established fire danger index breakpoints dictated in this plan.

4. Fire Weather Forecasts: All fire weather forecasts for SFIDC are generated by the RENO Fire Weather Office of the National Weather Service. The forecasts can be accessed through the Internet and/or through the WIIMS application.

   General Weather Forecasts: The Weather Service generates General Fire Weather Forecasts year round. SFIDC dispatchers read the summer weather twice daily at 1100 and 1645 and post a paper copy of the weather at SFIDC. The Reno Weather Service produces weather forecasts year-round which can be accessed via the Internet:

   http://www.wrh.noaa.gov/firewx/?wfo=rev

   Spot Weather Forecasts: Spot Weather Forecasts are available from the National Weather Service throughout the year. Field Units can request a Spot Weather Forecast through SFIDC or they can contact the Reno Weather Office direct. Whenever SFIDC is requested to process the Spot Weather Forecast, SFIDC will pass the observed weather information through the Internet to the Reno Weather Office. For all fires 10 acres and larger, SFIDC will contact the IC and ask if a Spot Weather Forecast is needed. SFIDC will advise the IC if there is a RAWS station that can be used or do the observations need to be generated on site. This is an IC determination.

   http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=rev

The Fire Weather Forecaster then generates a forecast specific to the project. SFIDC retrieves the information and passes it back to the field unit via the radio, telephone, Internet, and/or fax. It is the policy of the Sierra Front Interagency Dispatch Center that dispatchers taking the observed weather information from the field units complete the NWS Spot weather Forecast Request" form for documentation purposes.

Red Flag Warnings: Red Flag Warnings are issued by the Reno Weather Office. It is the policy of the Sierra Front Interagency Dispatch Center that dispatchers, in addition to announcing Red Flag Warnings during general Fire Weather Forecasts, issue a radio broadcast whenever a Red Flag Warning is issued. This broadcast is executed in a timely manner on all of the appropriate radio frequencies.

5. Outputs and Index's: All SFIDC agencies will utilize the National Fire Danger Rating System to analyze fire danger throughout the area. The NFDR System, being a complex mixture of science, technology and local experience, requires active participation in the management maintenance, execution, information retrieval and dissemination, utilization and understanding of the program.

Fire Management Officers: Each agency's Fire Management Officer is responsible for the NFDRS management throughout their zone of influence. This includes, but is not limited to:

Determination of appropriate relationships and representations of fuels, weather, topography and suppression resources upon which the NFDR system operates.

Orient and train suppression personnel in the utilization of the NFDRS parameters and outputs.

Maintaining a high level of interaction with the SFIDC Intelligence Coordinator to ensure the NFDRS program is providing the appropriate and accurate outputs to ensure field personnel safety.

Make decisions concerning the management of the NFDRS program.

SFIDC Intelligence Coordinator: The SFIDC Intelligence Coordinator is responsible for the implementation and daily management of the NFDRS program throughout the Sierra Front, including, but not limited to:

Maintain an accurate and appropriate NFDRS Station Catalog for each of the Fire Weather Stations.

Ensuring the NFDR System accurately provides the outputs and indexes for fire dispatch responses.

Ensuring the NFDR System outputs and indexes are processed posted and are available to field personnel in a timely and efficient manner. Develop and maintain protocols for accurately and efficiently processing NFDR information.

Maintain a high level of interaction with each Fire Management Officer to ensure that inconsistencies and discrepancies of the NFDR system are noted, analyzed, and properly managed.

Provide accurate documentation of the NFDR system and how it is used on the Sierra Front, to ensure the program is properly used, analyzed, and maintained.

Implement the NFDR system decisions made by the Fire Management Officers that are to be executed by or through the Dispatch Intelligence function.

SFIDC Dispatchers: The SFIDC dispatchers are responsible to follow the NFDRS protocols to ensure that the dispatch responses are appropriate for fire potential, and to ensure that the field personnel are receiving NFDR outputs and indexes in a timely manner.

6. Risk Analysis Information: Each agency Fire Management Officer will assemble, or will designate appropriate personnel to obtain seasonal risk information such as live fuel moisture, 1000 hour fuel moistures, fuel loading, NFDRS index trends, and other pertinent data. The FMO or his/her designee will ensure that proper dissemination of this information will be executed in a timely manner to the appropriate destination points.

7. Weather Station Maintenance: All of the fires Weather Stations under the jurisdiction of SFIDC agencies are Remote Automatic Weather Station (RAWS). The Fuels Management Specialists on the Bridgeport and Carson Ranger Districts are responsible for the maintenance and calibration of the USFS and NDF weather stations currently utilized in the NFDR system. The National Interagency Fire Center (NIFC) maintains and calibrates the BLM weather stations.

8. WIIMS Access and Station Catalog Editing: It is the responsibility of the SFIDC Intelligence Coordinator to maintain the WIIMS program, determine the protocols for entering fire weather data, obtaining NFDR Index's, and determining the most efficient method(s) of dissemination to appropriate field personnel.

   The SFIDC Intelligence Coordinator duties in this area include, but are not limited to:

   Updating and maintaining the NFDR Station Catalog in an accurate and timely manner, per the instructions of the agency Fire Management Officers that have jurisdiction in the representative area of the Station Catalog.

   Updating and maintaining the WIIMS Access Control List.

   Determine, train, and oversee SFIDC personnel who will enter and extract data utilizing the WIIMS program.

   Determine the protocols for processing fire weather observations, obtaining NDFR Fire Danger Index's, and dissemination, documentation, and maintenance of these products.

   Determine the protocols for extracting and disseminating FIREFAMILY-Plus and other fire weather/fire danger products from SFIDC.

   The Agency Fire Management Officer duties include, but are not limited to, determining the parameters that are to be entered into the Station Catalog. In areas where more than one Fire Management Officer has jurisdiction, all of the jurisdictional FMO's will jointly determine the parameters for the Station Catalog, and agree to all parameter changes that may be necessary in the Station Catalog.

9. SFIDC Fire Preparedness Guide Implementation: The SFIDC Fire Preparedness Level is announced as part of the Morning Fire Information Report. The Preparedness Level is determined by the parameters in the SFIDC Fire Preparedness Guide.

   The SFIDC Board of Directors is responsible for reviewing and updating the Guide on an annual basis.

   The Intelligence Dispatcher is responsible for briefing the Center Manager on the fire weather and fire danger index's, and providing input to the appropriate Preparedness Level. This is accomplished daily by 9:30 am.

   The Coordinator The On-Duty (COD) is responsible for briefing the Center Manager on fire staffing, fire activity and fire potential.

   The Center Manager is responsible for determining the SFIDC Fire Preparedness Level, and advising the Intelligence Function in a timely manner. The Center Manager is responsible for activating the Fire Preparedness Guide parameters.

   Fire Management Officers are responsible for establishing, obtaining, and maintaining their district fire staffing.

10. Public and Industrial Awareness: Awareness and Fire Prevention Programs will be implemented by each agency Fire Management Officer. Each agency FMO is responsible to determine the protocols for using the Fire Danger Rating Index's and Preparedness Level Guidelines in regards to the public and industrial activities throughout the Sierra Front. Smokey Bear signs will reflect the adjective ratings for the appropriate fire danger zones. The Sierra Front Fire Operations Group will determine the fire closures, fire restrictions, and are responsible for notifying SFIDC and forwarding a copy of the fire restrictions to SFIDC. Answers to questions from the public that is not specifically contained addressed in the restriction order will be referred to the appropriate agency by SFIDC dispatchers.

11. NFDRS and Adjective Fire Danger Breakpoints: Weather and fire data will be analyzed on an annual basis by each agency Fire Management Officer for the fire danger areas he or she is responsible for. Whenever a fire danger area covers more than one jurisdiction, all Fire Management Officers involved will agree on and determine the breakpoints. Fire Danger Area boundaries may be changed and updated, based on the needs and objectives of the agency Fire Management Officers. SFIDC dispatchers will develop the protocols to implement the daily posting and dissemination for the fire danger rating zones.

12. Fire Danger Pocket Cards: Each agency Fire Management Officer will develop, update, and maintain their own pocket cards. The Pocket Cards will be distributed to all local and incoming fire suppression personnel by each agency Fire Management Officer as appropriate. The pocket cards will also be able to be accessed through the SFIDC website. Each agency Fire Management Officer is responsible to ensure that all local and incoming fire personnel are properly briefed in their use and fire danger analysis. The Intelligence function at SFIDC is responsible for the distribution of the daily fire danger rating indexes, based on the requests by each agency Fire Management Officer.

13. Action Items: Each agency Fire Management Officer and the SFIDC is responsible for identifying problems with the current implementation, management, and updating of the Fire Danger Operations Plan and Fire Preparedness Guide. As items are identified, appropriate action must be taken in a timely manner to mitigate the impact of the problems. All agency Fire Management Officers, SFIDC Center Manager and Intelligence Function, and fire personnel are responsible for identifying problems, and providing ideas and solutions for the problems as they

arise. Problems will be taken to the level of management that has the authority and that can best correct the situation.

V. Implementation

The SFIDC Fire Danger Operating Plan and Fire Preparedness Guide will be implemented by the various agency Fire Management Officers, Dispatchers, and Field Fire Prevention and Suppression personnel as outlined in this plan. Each entity is accountable for managing their portion of the plan within their agency standards and guidelines and as directed by their supervisors.

Appendix A – Team Members

Fire Danger Operating and Preparedness Plan

Fire Management Officer	Bureau of Land Management 5665 Morgan Mill Road Carson City, Nv, 89701
Mitigation and Education Specialist	Bureau of Land Management 5665 Morgan Mill Road Carson City, NV 89701
GIS Specialist	Bureau of Land Management 5665 Morgan Mill Road Carson City, Nv, 89701
Fire Management Officer	US Forest Service Carson Ranger District 1536 South Carson St. Carson City, NV 89701
Fire Management Officer	US Forest Service Bridgeport Ranger District HCR 1 Box 1000 Bridgeport, CA 93517
Fire Management Officer	Nevada Division of Forestry 885 East Lake Blvd. Carson City, NV 89704
Intelligence Dispatcher	Sierra Front Interagency Dispatch Center 2311 Firebrand Circle Minden, NV 89423

Appendix B -

Primary Distribution List

Fire Management Officer	Bureau of Land Management 5665 Morgan Mill Road Carson City, Nv, 89701
Fire Management Officer	Nevada Division of Forestry 885 East Lake Blvd. Carson City, NV 89704
Fire Management Officer	US Forest Service Bridgeport Ranger District HCR 1 Box 1000 Bridgeport, CA 93517
Fire Management Officer	US Forest Service Carson Ranger District 1536 South Carson St. Carson City, NV 89701

A copy of this plan is posted on the Sierra Front website: sierrafront.net

Appendix C –

Terminology

CCD	Bureau of Land Management, Carson City District Office
HTF	US Forest Service, Carson and Bridgeport Ranger Districts, Humboldt-Toiyabe National Forest
NDF	Nevada Division of Forestry- Western Region

Agency Officers		
Generic Position Title	Agency	Agency Position Title
Agency Administrator	NDF	NDF State Forester
	USFS	District Rangers
	BLM	District Manager
Fire Management Officer	NDF	Division Chief
	USFS	Fire Management Officer (FMO)
	BLM	Fire Management Officer (FMO)
Assistant Fire Management Officer	NDF	Battalion Chief
	USFS	Assistant Fire Management Officer (AFMO)
	BLM	Assistant Fire Management Officer (AFMO)
Mitigation Officer	NDF	Fire Protection Officer
	USFS	Fire Prevention Officer
	BLM	Mitigation and Education Specialist

(NFDRS) Fire Danger Rating Components		
IC	Ignition Component	Percentage chance of a fire starting 1-100%
SC	Spread Component	Rate of spread in feet per minute
ERC	Energy Release Component	BTUs a fuel is able to generate once ignited
BI	Burning Index	Flame Length (times 10) at the head of a fire
ADJ	Adjective Rating	Public Fire Danger (Low Moderate High Very-High Extreme)
SL	Staffing Level	Level of Staffing based on fire danger (1,2,3-, 3+ 4, 5)
SI or	Staffing Index	NFDRS Index to base Staffing on (IC, SC, ERC, BI)
SLOPE CLASS		Percentage of Slope (1=0-25%; 2=26-40; 3=41-55)
CLIMATE CLASS		NFDRS Climate (1=Arid; 2=Sub-humid, rainfall deficient 3= Sub-Humid, rainfall sufficient)
80-95%tile		20%/5% of the time,
	Historical Fire Danger parameters (Breakpoints)	Fire Danger will be equal to or higher than values at this level
90-97%		10%/3% of the time Fire Danger will be equal to or higher than values at this level

ACL	Access Control List
ADJ	Adjective Rating
AFMO	Assistant Fire Management Officer
BI	Burning Index
BIA	Bureau of Indian Affairs
BLM	Bureau Of Land Management
CCD	BLM-Carson City District Office
DR	Dispatch Response
ERC	Energy Release Component
FAMWEB	Fire-Family-Plus Website
FDRA	Fire Danger Rating Area
FMO	Fire Management Officer
HTF	Humboldt-Toiyabe National Forest
IC	Ignition Component
NDF	Nevada Division of Forestry
NFDRS	National Fire Danger Rating System
NIFC	National Interagency Fire Center
NOAA	National Oceanic and Atmospheric Agency
NWCG	National Wildlife Coordinating Group
NWS	National Weather Service
NWS	NDF-Western Region
RAWS	Remote Automatic Weather Station
SC	Spread Component
SFIDC	Sierra Front Interagency Dispatch Center
SI	Staffing Index
SL	Staffing Level
USFS	US Forest Service
WGBCC	Western Great Basin Coordination Center
WIMS	Weather Incident Management System

Appendix D –

Document Location List

Sierra Zone of Influence Fire Weather Forecast

http://www.wrh.noaa.gov/firewx/?wfo=rev

Reno Fire Weather Office Spot Weather Forecasts

http://spot.nws.noaa.gov/cgi-bin/spot/spotmon?site=rev

Pocket Cards

Through SFIDC Website

http://www.sierrafront.net

Through the Famweb Website to the Pocket Card Screen

http://fam.nwcg.gov

Famweb Pocket Card Screen

http://fam.nwcg.gov/fam-web/pocketcards/default.htm

Red Book

http://www.nifc.gov/policies/red_book.htm

Weather Station Catalogs

http://fam.nwcg.gov/fam-web/wims/jsp/default.htm

A paper copy also exists at SFIDC in the Intelligence Office

The Intelligence Dispatcher is responsible for the Station Catalogs.

Seasonal Graphs

http://www.sierrafront.net (Intelligence Tab)

Appendix E –
Preparedness Plans

The following Preparedness Level actions are guidelines for agency personnel. They are discretionary in nature and usually will require a consensus between agency personnel prior to implementation.

PREPARDNESS LEVEL	SIERRA FRONT **FIRE PREPAREDNESS GUIDE**
PL-1	➢ **PRIMARY (Galena/Walker)** Weather Stations *Adjective Ratings* are LOW or MODERATE ➢ Occasional Fires Occurring. No fires escape initial attack phase ➢ Little to Moderate Commitment other than Local Resources ➢ **Pre/Post Fire Season**
PL-2	➢ **PRIMARY (Galena/Walker)** Weather Stations Adjective Ratings are MODERATE or HIGH; ➢ **Early and Late Fire Season with moderate weather** **Or**: ➢ Multiple Fires and/or Multiple Local Agency Resources Committed. ➢ No Fires >50 acres ➢ **Holding Actions Requiring No Additional resources** ➢ No **Severe** Weather *Predicted for Next 24 hours.* **Or:** ➢ **Prescribed Fires Burn Moderately.** **Holding Actions of Prescribed Fires Requiring No Additional Resources**
PL-3	➢ **PRIMARY (Galena/Walker)** Weather Stations *Adjective Ratings* are HIGH, VERY HIGH or EXTREME; ➢ **Severe Weather* Predicted for Next 24 hours;** ***Or*:** ➢ One or More Fires Escaping I.A. and are >50 Acres. ➢ **1 Type 3 Fire** ➢ Other Wildland Fires are Burning Actively. ➢ Holding Actions Requiring Additional Resources. **Or:** ➢ Prescribed Fires Burn Actively. ➢ Holding Actions of Prescribed Fires Requiring Additional Resources
PL-4	➢ **PRIMARY (Galena/Walker)** *Adjective Ratings* are HIGH, VERY HIGH or EXTREME; ➢ No Break in **Severe** Weather* for 48 Hours **and/or** Red Flag Warning in Effect ***Or*** ➢ **1 Type 1 or 2 Fire** ➢ ***Or*** ➢ Local Resources are at the maximum drawdown Level (9 Engines between all SFIDC agencies)
PL-5	➢ **PRIMARY (Galena/Walker)** *Adjective Ratings* are VH to EXTREME ➢ Large number of ignitions taking place, and/or a fire complex. ➢ **2 or more ICT-1 or ICT-2 activated** ➢ Unusual hazards as identified by the SFIC Mini-Mac Group ➢ Majority of Support is Coming from the Outside Area

*Severe Weather: National Weather Service (NOAA)) issuance of a Fire Weather Watch, Warning, or Red Flag Warning.

Responsible Party: Agency Administrator

SUGGESTED ACTION	PL-1 Adjective: Low	PL-2 Adjective: Moderate	PL-3 Adjective: High	PL-4 Adjective: Very High	PL-5 Adjective: Extreme	Affected Agency
Evaluate work/rest needs of fire staff.		•	•	•	•	Agency
Ensure supervisors approve fire availability of staff and notify Duty Officer.			•	•	•	Agency
Ensure resource advisors are designated and available for fire assignments.			•	•	•	Agency
Review and ensure the agency administrator duty schedule is accurate and updated.			•	•	•	Agency
Provide appropriate political support to fire staff regarding the implementation of preparedness level actions.			•	•	•	Agency Public Industry
Review and transmit severity requests to the appropriate level.			•	•	•	Agency
Notify appropriate military personnel of high-extreme fire danger.			•	•	•	Military
Issue guidance to respective agency staff indicating severity of the season and increased need and availability for fire support personnel.			•	•	•	Agency
(BLM) Review and ensure the Agency Administrator support Team schedule is accurate and updated.			•	•	•	BLM

Responsible Party: Duty Officers

SUGGESTED ACTION	PL-1 Adjective: Low	PL-2 Adjective: Moderate	PL-3 Adjective: High	PL-4 Adjective: Very High	PL-5 Adjective: Extreme	Affected Agency
If Preparedness level is decreasing, consider releasing pre-positioned and detailed resources.	•	•	•			Agency
Confirm (or adjust) the preparedness and dispatch levels with the SFIDC Center Manager.	•	•	•	•	•	Agency
Evaluate work/rest needs of IA crews, dispatchers, and aviation bases.			•	•	•	Agency
Consider aerial detection flight.			•	•	•	Agency
Evaluate need to change or shift duty hours of IA resources.			•	•	•	Agency
Evaluate draw-down levels for suppression, command, and oversight positions.			•	•	•	Agency
Consider extending staffing beyond normal shift length.			•	•	•	Agency
Consider pre-positioning and/or detailing of additional IA resources.			•	•	•	Agency
Consider bringing in local IA resources from scheduled days off.			•	•	•	Agency
Consider patrols and pre-positioning of local IA resources in high risk areas.			•	•	•	Agency
Evaluate fire staff work/rest requirements.			•	•	•	Agency
Consider need for fire restrictions or closures. (Refer to the Nevada Fire Restriction Plan).			•	•	•	Public Industry
Evaluate season severity data. (BI and ERC trends, fuel loading, live FM, drought indexes, long term forecasts.			•	•	•	Agency

Responsible Party: Fire Management Officers

SUGGESTED ACTION	PL-1 Adjective: Low	PL-2 Adjective: Moderate	PL-3 Adjective: High	PL-4 Adjective: Very High	PL-5 Adjective: Extreme	Affected Agency
Evaluate fire staff work/rest requirements.	•	•	•			Agency
Consider need for fire restrictions or closures. *(Refer to the Nevada Fire Restriction Plan).*			•	•	•	Public Industry
Evaluate season severity data (*BI and ERC trends for season, fuel loadings, live FM, drought indexes, and long-term forecasts).*			•	•	•	Agency
Brief agency administrator on burning conditions and fire activity.			•	•	•	Agency
Review geographical and national preparedness levels and evaluate need to suspend local prescribed fire activities.			•	•	•	Agency
Ensure Education/Mitigation personnel have initiated media contacts and public notification.			•	•	•	Public Industry
Request that the Agency Administrator issue guidance to respective agency staff regarding the need for increased fire availability in support positions.			•	•	•	
Ensure agency staff is briefed on increasing fire activity.			•	•	•	Agency
Brief next higher level of fire management on increasing/decreasing fire activity.			•	•	•	Agency
Consider fire severity request and pre-positioning of resources including: Suppression resources, aerial support, aerial supervision, command positions, dispatch, logistical support, and prevention.			•	•	•	Agency
Coordinate with inter-agency partners the need for fire restrictions for closures.			•	•	•	Public Industry
Consider Pre-position a Type-3 organization or Type-2 Team.					•	Agency

Responsible Party: Battalion Chiefs and Assistant FMOs

SUGGESTED ACTION	PL-1 Adjective: Low	PL-2 Adjective: Moderate	PL-3 Adjective: High	PL-4 Adjective: Very High	PL-5 Adjective: Extreme	Affected Agency
Ensure that roadside fire danger signs reflect the current Adjective Ratings.	•	•	•	•	•	Public
Ensure IA crews are briefed on local preparedness levels, burning conditions, and availability of IA resources and air support.			•	•	•	Agency
Ensure incoming pre-position or detailed personnel are briefed on local conditions.			•	•	•	Agency
Evaluate work/rest needs of crews.			•	•	•	Agency
Increase patrols in camping an recreation areas.			•	•	•	Public
Provide duty officer with feedback regarding unique and/or unexpected fire behavior and severity conditions and the need to increase IA capabilities.			•	•	•	Agency
Consider suspension of project work away from stations.			•	•	•	Agency

Responsible Party: SFIDC Center Manager

SUGGESTED ACTION	PL-1 Adjective: Low	PL-2 Adjective: Moderate	PL-3 Adjective: High	PL-4 Adjective: Very High	PL-5 Adjective: Extreme	Affected Agency
If preparedness level is decreasing, consider release of pre-positioned or detailed dispatchers and logistical support personnel.	•	•	•			Agency
Determine and broadcast the daily morning and afternoon fire weather forecasts, resource availability, fire danger indexes and preparedness levels to agency field personnel. (Normal Fire Season: May 15 through Nov1—To be adjusted as seasonal fire conditions dictate)	•	•	•	•	•	Agency
Evaluate work/rest needs of Center staff.			•	•	•	Agency
Consult with appropriate agency Duty Officers concerning potential for extended staffing beyond normal shift length.			•	•	•	Agency
Consider pre-positioning or detail of off-unit IA dispatchers and logistical support personnel.			•	•	•	Agency
Consider discussing activation of local area MAC group.			•	•	•	Agency
Consult with duty officer and FMO regarding potential need for severity request.			•	•	•	Agency
Consider increasing staffing with work-force dispatch personnel through canceling scheduled days off.			•	•	•	Agency
Consult with Western Great Basin Coordination Center (WGBCC) regarding availability of resources at the geographical and national levels.			•	•	•	Agency

Responsible Party: Fire Education, Mitigation, and Prevention Officers

SUGGESTED ACTION	PL-1 Adjective: Low	PL-2 Adjective: Moderate	PL-3 Adjective: High	PL-4 Adjective: Very High	PL-5 Adjective: Extreme	Affected Agency
Ensure that roadside fire danger signs reflect the current adjective fire danger rating.	•	•	•	•	•	Public
Initiate press releases and inform the public and industry of the potential fire danger.			•	•	•	Public Industry
Ensure the public and industrial entities are aware of the policy regarding fire trespass investigations for human-caused fires and cost recovery for suppression action.			•	•	•	Public Industry
Consider the need for increased prevention patrols.			•	•	•	Public Industry

Responsible Party: BLM Aviation Manager

SUGGESTED ACTION	PL-1 Adjective: Low	PL-2 Adjective: Moderate	PL-3 Adjective: High	PL-4 Adjective: Very High	PL-5 Adjective: Extreme	Affected Agency
Staff air attack bases with personnel based on fire activity and air attack base activity.			•	•	•	BLM

Appendix F –

MAPS

SFIDC Fire Danger Operating Plan Area

Fire Weather Zones with Weather Station Information

Fire Danger Rating Areas

- Fire Danger Rating Area Overlay
- Dog Valley FDRA
- Front Valleys FDRA
- Pinenuts FDRA
- South Sierra FDRA
- Lahontan Basin FDRA
- Eastern Ranges FDRA

Fuels Distribution (Grouped from the 13 Fire Behavior Fuel Models)

Elevation and Shaded Relief

Slope-Aspect (Down-slope Direction)

Slope Class (Percent)

Average Annual Precipitation

Fire Occurrence (By Cause)

Large Fire Perimeters