

ANNEX A

FIRE ENTRAPMENT INVESTIGATION & REVIEW GUIDELINES

DEFINITIONS:

Agency Administrator--That lead employee having responsibility for management of land and/or resources on an organizational unit, and having accountability for overall results of management actions.

Entrapment--A situation where personnel are unexpectedly caught in a fire behavior-related, life-threatening position where planned escape routes or safety zones are absent, inadequate, or have been compromised. An entrapment may or may not include deployment of a fire shelter for its intended purpose. These situations may or may not result in injury. They include "near misses".

ENTRAPMENT INVESTIGATION ELEMENTS:

The following elements most commonly contribute to entrapment situations. As a minimum, each of these elements should be addressed in an entrapment investigation and subsequent report, even if the investigation indicates that the element did not contribute to the entrapment. Exhibit I, "Entrapment Investigation Element Matrix", may be utilized to expedite the process.

- | | |
|--|---|
| I. FIRE BEHAVIOR <ul style="list-style-type: none">FuelsWeatherTopographyPredicted vs. Observed | IV. CONTROL MECHANISMS <ul style="list-style-type: none">Span of ControlCommunicationsOngoing Evaluations"10 Standard Fire Orders/18 Watchout Situations" |
| II. ENVIRONMENTAL FACTORS <ul style="list-style-type: none">SmokeTemperatureVisibilitySlopeOther | V. INVOLVED PERSONNEL PROFILES <ul style="list-style-type: none">Training/QualificationsOperational Period Length/FatigueAttitudesLeadershipExperience Levels |
| III. INCIDENT MANAGEMENT <ul style="list-style-type: none">Incident ObjectivesStrategyTacticsSafety Briefings/Major Concerns AddressedInstructions Given | VI. EQUIPMENT <ul style="list-style-type: none">AvailabilityPerformance/Non-performanceClothing and Equipment Used for Intended Purpose?Etc. |

- d. Wildfire Operations, with expertise at the peer level of the person(s) directly involved.
 - e. Agency Representative of involved person(s).
 - f. Employee representation (union, peer at operations level).
 - g. Fire weather meteorology.
 - h. Personal protective equipment specialist, from a lab such as the USDA Forest Service's Missoula Technology and Development Center.
2. Instruct the EIT to arrive on scene within 24 hours.
 3. Advise the Incident Management Team of the EIT's time of arrival and team composition.
 4. As required by the Occupational Safety and Health Act of 1970, advise the nearest office of the Occupational Safety and Health Administration (federal or state as applicable) if the entrapment involves a fatality or the hospitalization of 5 or more personnel. Advise OSHA office that a formal investigation is being conducted by a designated Entrapment Investigation Team.
 5. Arrange for a critical incident stress debriefing team for the personnel involved in the entrapment.
 6. Notify the home unit agency administrator of all individuals involved in the entrapment/deployment.
 7. Submit a copy of the EIT's final report to the NWCG Safety and Health Working Team within 60 days of receipt from the EIT.

Entrapment Investigation Team Responsibilities

1. The EIT will conduct the investigation, identify causal factors and list findings for the entrapment situation. Recommendations for corrective actions should be included in the letter of transmittal.
2. The EIT will brief the Agency Administrator and the Incident Commander of their preliminary findings prior to leaving the incident.
3. Within 30 days of the EIT's dispatch, the EIT's final report and recommendations for corrective actions will be submitted to the Agency Administrator.

III. INCIDENT MANAGEMENT

	Did Not Contribute	*Influenced	*Significant Contribution
Incident Objectives			
Strategy			
Tactics			
Safety Briefings/Major Concerns Addressed			
Instructions Given			

**Element items must be supported with written documentation.*

IV. CONTROL MECHANISMS

	Did Not Contribute	*Influenced	*Significant Contribution
Span of Control			
Communications			
Ongoing Evaluations			
“10 Standard Fire Orders/18 Watchout Situations”.			

V. INVOLVED PERSONNEL PROFILES

	Did Not Contribute	*Influenced	*Significant Contribution
Training/Qualifications			
Operational Period Length/Fatigue			
Attitudes			
Leadership			
Experience Levels			

**Element items must be supported with written documentation.*

ANNEX B

LINE OFFICER'S BRIEFING

LINE OFFICER'S BRIEFING

*A format for preparing and conducting the line officer's briefing
to the incident management team.*

7. Establish how news media, public information, and important local and political contacts will be handled on the incident.
8. Establish resource ordering procedures.
9. Identify the IMT's responsibility for initial attack and support of other Forest incidents.
10. Establish the disposition of Forest suppression resources and local participation on the incident.
11. Establish understanding for the use of trainees on the incident.
12. Establish Forest and incident policy on compensable meal breaks, work/rest, rest and recuperation, and open vs. closed camps.
13. Establish standards for return of the incident to local management, including mop-up and fire suppression rehabilitation expectations.
14. Identify special safety awareness concerns and expectations.

C. CONDUCTING THE LINE OFFICER'S BRIEFING

The briefing should be planned for a comfortable setting away from most distractions, where the incoming incident management team and all required representatives of the host agency can assemble. It should take place as soon as the incoming team is assembled. It is essential that the line officer ensure notification of the briefing time and location to the incident commander, usually through the dispatch network.

The briefing should be led by the responsible line officer and follow an organized format to ensure information exchange and minimize the time required of the team prior to them mobilizing to the incident location. All agency participants must be prepared for their part in this procedure and all pertinent information and documentation must be printed in sufficient quantities for required distribution.

The agenda for the line officer's briefing should include:

- | | | |
|----|---|---|
| 1. | Welcome and Introductions | Line Officer / IC |
| 2. | Incident History | Unit Fire Supervisor/Area Fire Program Mgr. |
| 3. | Background of Other Activity or Issues on the Land Office or That May Influence This Incident | Line Officer/Area Fire Program Mgr. |

E. LINE OFFICER'S BRIEFING FORMAT

The following is a format for organizing the line officer's briefing package.

LINE OFFICER'S BRIEFING
to
THE INCIDENT MANAGEMENT TEAM

_____ WILDLAND FIRE INCIDENT

_____ AGENCY

_____ ADMINISTRATIVE UNIT

KEY PERSONNEL AND CONTACTS FOR THE (name of wildland fire) INCIDENT

For the _____ Land Office:

For Other Agency Cooperators:

For _____ County:

Local Landowners, Residents, Permittees, Parties with Interest:

4. Technical Specialists Assigned to Incident:

5. Land Mgmt. Plan / Fire Mgmt. Plan direction:

6. Priority for This Incident (Local, Area, State):

7. Values to be Protected:

8. Political Considerations:

9. Social/Economic Considerations:

10. Health and Welfare Considerations:

11. Human Resources Management Considerations:

12. Desired Local Participation in Fire Team Organization:

24. Capability of Unit to Support Team:

25. Training Opportunities/Policy on Use of Trainees:

26. Team will assume command: Date _____ Time _____
27. Transition and Close-out Plan:

C. SAFETY CONSIDERATIONS

1. Accidents/Near Misses on Incident to Date:

2. Status of Accident Investigations/Reports:

3. Areas with Known or Potential Hazards:

4. Firefighter Safety Considerations:

5. Public Safety Considerations:

6. Critical Incident Stress Management Procedures:

9. Air Base Location:
Telephone:

10. Helicopters Assigned:

11. Helibase location:
Telephone:

12. Crash/Rescue at Helibase:

13. Temporary Flight Restriction assigned:

14. Flight Hazard Map Available/Known Hazards in Area:

15. Smoke Conditions Affecting Air Operations:

16. Air Operations Technical Specialist Assigned or Ordered:

E. PLANNING CONSIDERATIONS

1. Unusual Fire Behavior and Fire History in Area of Fire:

2. Legal Considerations (Investigations in Process):

3. Pre-attack Plans Available: Yes _____ No _____
4. Availability of Aerial Photos and Maps:

3. Incident Transportation Plan:

4. Incident Support Organization:

5. Ordering System To Be Used:

6. Procurement Unit/Buying Team in Place or Ordered:

7. Security Considerations/Local Law Enforcement Assistance:

8. Communications System(s) in Use/Ordered:

9. Resources Ordered:

10. Catering Services/Feeding Procedures:

11. Medical/Burn Facilities:

ANNEX C

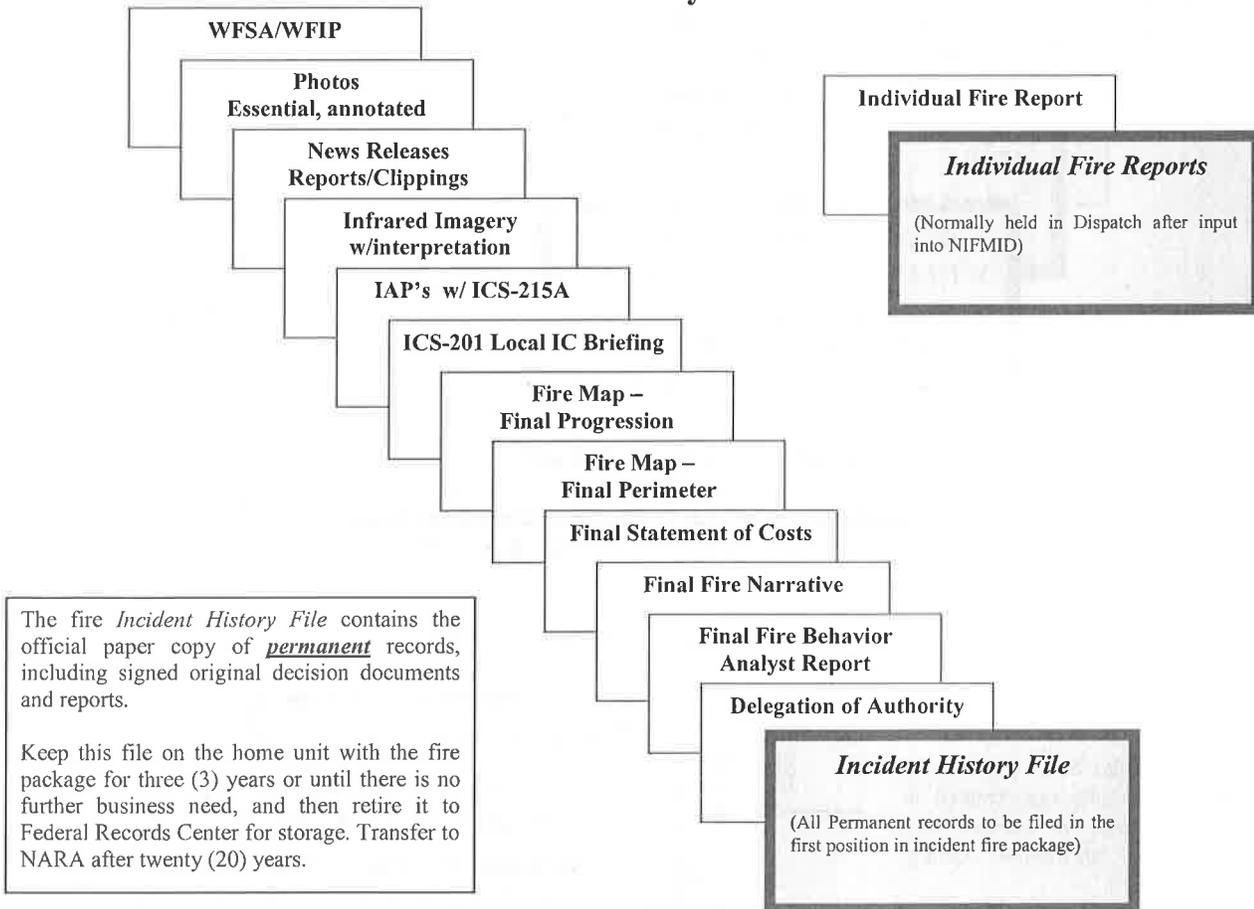
DOCUMENTATION PACKAGE FOR LARGE FIRE INCIDENTS

A quality fire package standard should be conveyed to IMTs at in-briefings and be included in Delegations of Authority. Establish transfer requirements for fire package contents from IMT to IMT on long duration incidents. This is especially important when fires are transferred from one complex to another. All line officer training should teach a standard level of documentation. Incidents of long duration should have one individual assigned to documentation by the hosting agency(ies) who will stay for the duration of the incident. Line Officers should review fire packages well before closeout meetings to ensure the packages meet their quality and documentation expectations. If the package is deficient, keep the team assigned until it meets expectations of a quality fire package.

Incident Records Management information can be found at: <http://www.nifc.gov/records>.

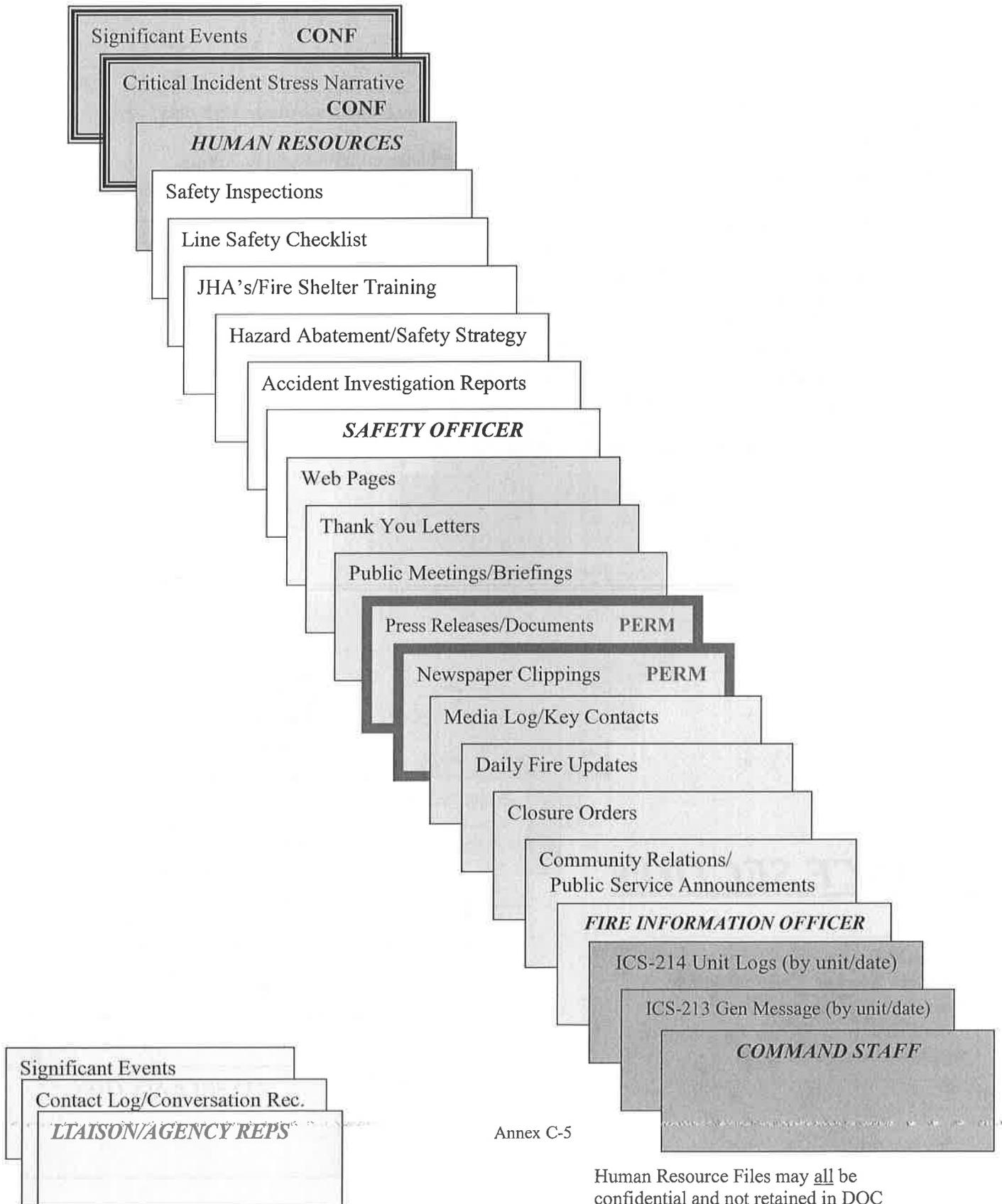
Following is an outline of documentation that could be included in a large fire incident fire package.

Wildland Fire Incident Records **Incident History File Contents**



Wildland Fire Incident Records

Paper Document Files



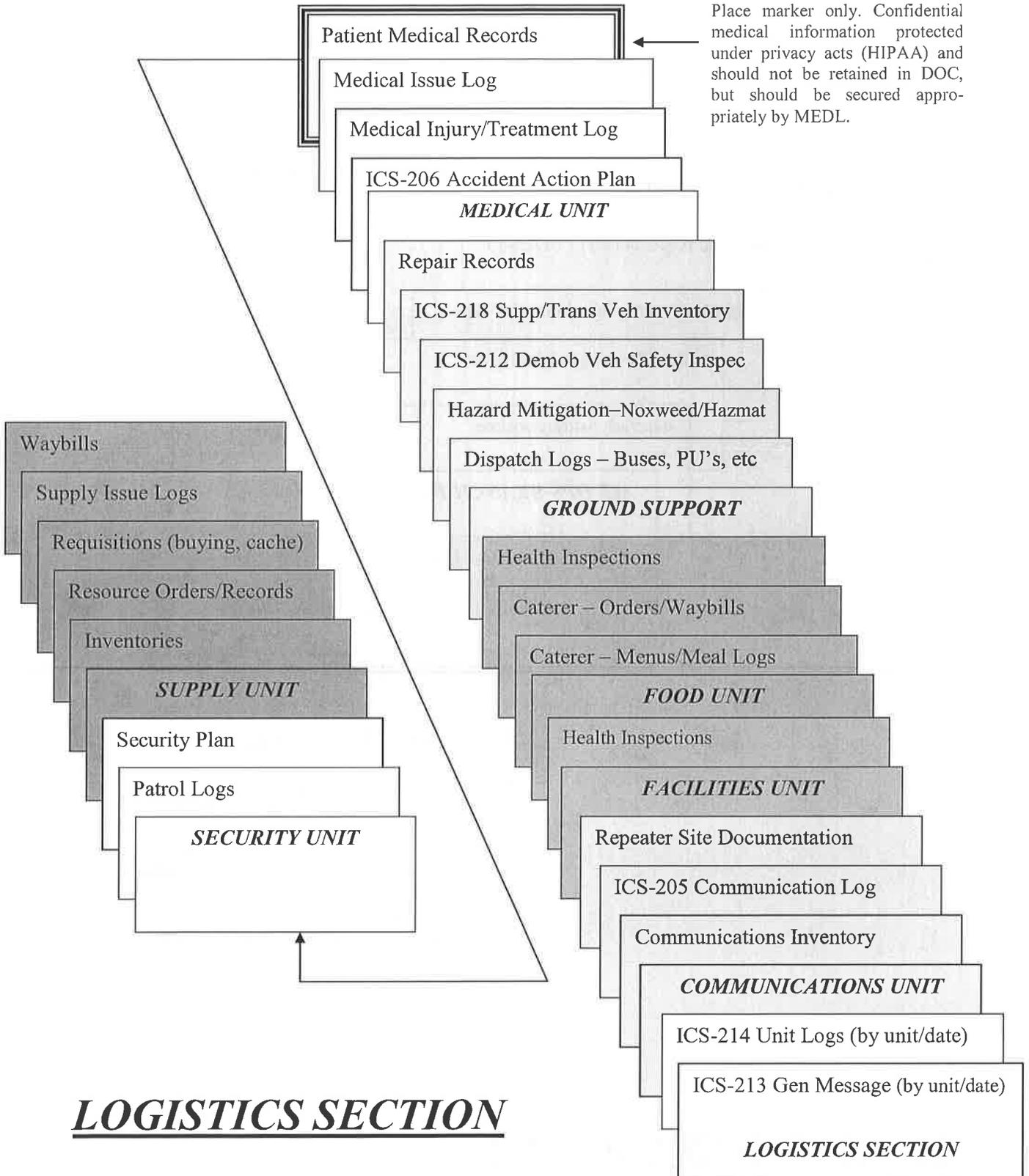
Annex C-5

Human Resource Files may all be confidential and not retained in DOC

Wildland Fire Incident Records

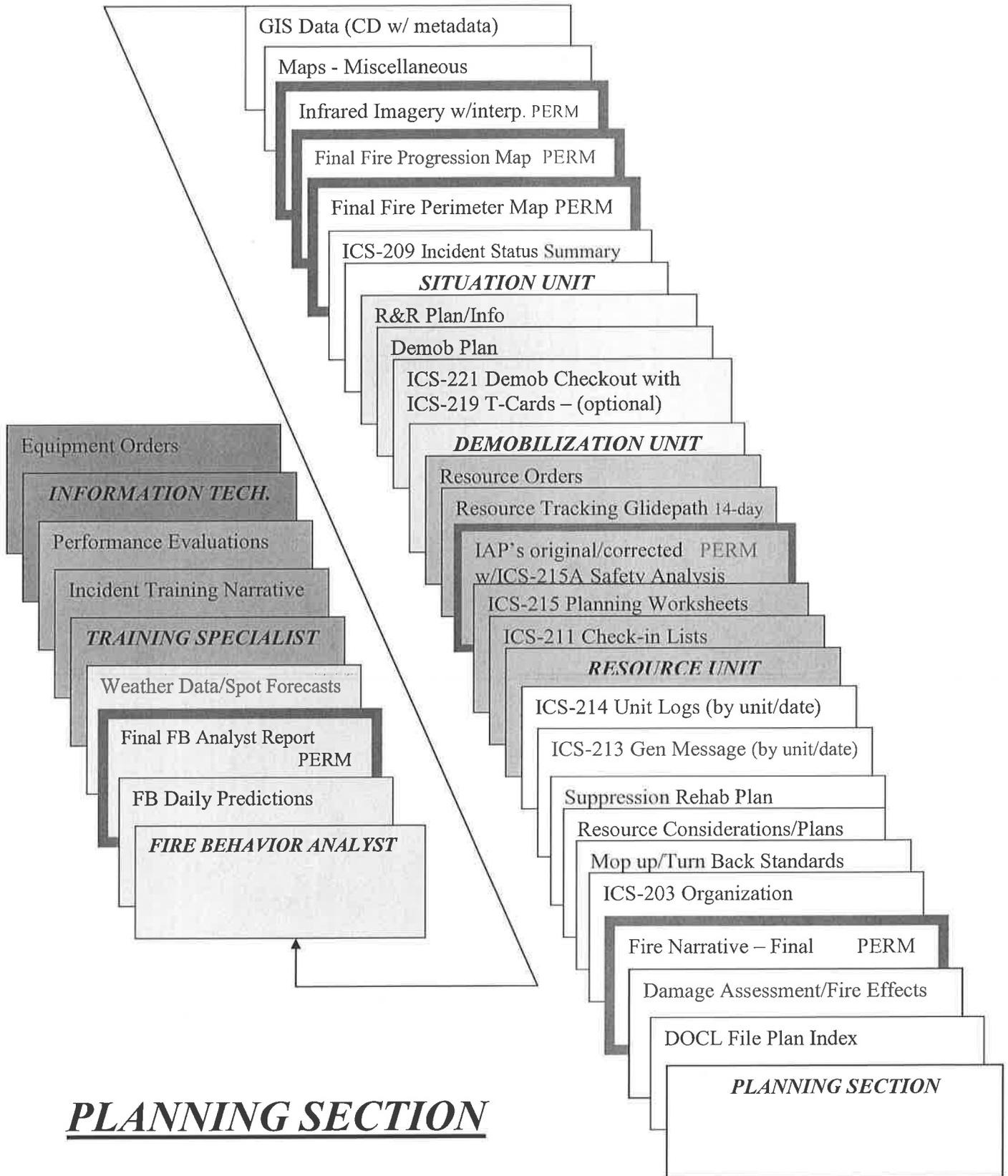
Paper Document Files

Place marker only. Confidential medical information protected under privacy acts (HIPAA) and should not be retained in DOC, but should be secured appropriately by MEDL.



Wildland Fire Incident Records

Paper Document Files



ANNEX D

DOCUMENTATION OF LENGTH OF ASSIGNMENT EXTENSION REQUIREMENTS

Documentation of any type of assignment extension should include the following:

- I. **Name and Position/Type of Resource**
- II. **Length of Extension**
- III. **Rationale for Extension (Mark All That Apply)**
 - A. Life and property threatened.
 - B. Suppression objectives are close to being met.
 - C. Replacement resources are not available (unable to fill).
 - D. Military assignment.
 - E. Other:

IV. A. **Single Resource Recommendation**

Resource Name, Title and Signature: _____

Section Chief Name, Title and Signature: _____

OR

B. **Incident Management Team/Area Command Recommendation**

Operations Section Chief: _____

Planning Section Chief: _____

Finance Section Chief: _____

Logistics Section Chief: _____

V. **APPROVAL**

Incident/Area Commander Signature

Date

ANNEX E

INDUSTRIAL HEAD PROTECTION USER INFORMATION GUIDE

Hard Hats: Maintenance, Inspection, and Precautions

The hard hat is one of the most important pieces of equipment worn in the industrial workplace. Many workers have been saved from serious injury or even death because they were wearing a hard hat. To assist in your organization's head protection program, E.D. Bullard Company would like to share some observations on proper maintenance and inspection of industrial hard hats, as well as a few precautions. These comments apply to hard hats made by all manufacturers, not just Bullard.

A conventional hard hat consists of two components--the shell and the suspension--which work together as a system. Both components require periodic inspection and maintenance. It is recommended that employers conduct a regular head protection inspection, maintenance, and replacement program. Each program will vary according to the work environment at each job site location.

Hard Hat Shell

Thermoplastics (polyethylene, polycarbonate, and polyphthalate carbonate [P.P.C.][Lexan]) and thermoset materials (fiberglass and phenoli-impregnated textiles) are commonly used to mold the shells of industrial hard hats. These materials have proven to be durable, reliable, lightweight, and provide effective protection. Given proper care and normal workplace conditions, a hard hat will have a reasonable service life.

The shell should be inspected routinely for dents, cracks, nicks, gouges, and any damage due to impact, penetration, abrasions, rough treatment, or wear that might reduce the degree of protection originally provided. Any hard hat that shows signs of worn or damaged parts should be removed from service immediately and replaced.

Although Bullard adds an ultraviolet inhibitor to hard hat shells, all hard hats are susceptible to damage from ultraviolet light, temperature extremes, and chemical degradation. Thus, users who work in environments with high degrees of exposure to sunlight, heat, cold, or chemicals should replace their hard hats more frequently than workers in other environments.

Degradation of thermoplastic material may be apparent when the shell becomes stiff, brittle, faded, dull in color, or exhibits a chalky appearance. With further degradation the shell surface may craze, flake, or delaminate. A hard hat should be replaced immediately at the first sign of any of these conditions.

The following is a simple field test that can be performed by an employee or supervisor to determine possible degradation of polyethylene shells:

Compress the shell inward from the sides about 1" with both hands and then release the pressure without dropping the shell. The shell should quickly return to its original shape, exhibiting a degree of elasticity. Compare the elasticity of the sample with that of a new

WARNING: In addition to an inspection and maintenance program, employers should review with their employees some precautions concerning hard hat use and treatment. The following are some warnings that should be discussed:

- X If the hard hat has been struck by a forcible blow of any magnitude, both the hard hat shell and suspension should be replaced immediately, even if no damage is visible.
- X A conventional hard hat provides limited protection by reducing the force of falling objects striking the top of the shell. Protection from side impact and penetration is limited.
- X The hard hat shell or suspension should never be altered or modified. Drilling holes in the shell for ventilation purposes must be prohibited at all times.
- X Avoid contact of the hard hat with electrical wires.
- X Hard hats should not be carried on the rear window shelf of an automobile or stored in direct sunlight. Exposure to extreme sunlight over time may cause degradation which can affect the degree of protection originally provided.
- X Because hard hats can be damaged, they should not be abused. They should be kept free of abrasions, scrapes, and nicks and should not be dropped, thrown, or used as supports. Do not sit on a hard hat.
- X Wearers should never carry or wear anything inside their hard hat. A clearance must be maintained between the shell and head for the protection system to work properly.
- X Do not paint a hard hat prior to consultation with the manufacturer. Some paints and solvents may attack and damage the shell and reduce the degree of protection originally provided.
- X As a general guideline, all new employees should be provided with a new, unused, and unexposed hard hat. The practice of reissuing cleaned hard hats must be avoided. The cost of a hard hat is negligible when the potential for injury, lost time, health care cost, and liability are considered.

**AMERICAN NATIONAL STANDARD FOR PERSONNEL PROTECTION
PROTECTIVE HEADWEAR FOR INDUSTRIAL WORKERS--REQUIREMENTS
ANSI Z89.1**

Recommendations and Precautions Concerning Helmet Use, Maintenance, and Testing

B1. Laces

Laces, if any, should always be tied securely with a square knot.

B2. Cleaning

Industrial protective helmets should not be stored or carried on the rear-window shelf of an automobile, since sunlight and extreme heat may cause degradation that will adversely affect the degree of protection they provide. Also, in the case of an emergency stop or accident, the helmet might become a hazardous missile.

The addition of accessories to the helmet may adversely affect the original degree of protection. When precautions or limitations are indicated by the manufacturer, they should be transmitted to the wearer and care taken to see that such precautions and limitations are strictly observed.

B8. Safe Condition

Neither the impact resistance requirements (see 7.2) nor the electrical insulation requirement (see 7.1) should be construed to indicate the safe impact level or safe voltage to which the industrial worker may be subjected. The maximum voltage against which insulating safety headgear will protect the wearer depends on a number of variable factors, such as the characteristics of the electrical circuit and the equipment involved, the care exercised in maintenance of equipment, and weather conditions. Therefore, the safe and proper local use of insulating safety headgear is beyond the scope of ANSI Z89.1.

ANNEX F

Suppression Considerations in Meeting Operational Objectives

Table

While meeting DNRC suppression objectives for fires escaping initial attack, firefighters should be Mindful of the following during all operational activities.

“When opportunities are present during suppression operations give consideration to the following”.

Resource or Activity	CONSIDER	ATTEMPT TO AVOID
Strategy / Planning	At in-briefing, meet with Line Officer and clearly identify fire progression points at which you will get back together and review goals and objectives.	Keeping original control goals and objectives long after the fire behavior and size has changed.
Base and spike camps	Asking the local Unit/Area Office or their assigned representative if weed free base and spike camp locations have been identified, or need to be identified.	Set up of base and spike camps without asking the local Unit/Area Office on weed status for the site you are considering.
Line Construction	Building only line you feel confident you can hold and safely patrol.	Contingency line construction without specific approval of the Line Officer.
	Mapping all line by location (including ones not used) and type as you build it – report and provide line map at end of every shift to Plans unit.	Building line without mapping it or assume someone else will find and repair it.
	Selecting the appropriate equipment for the job. Use in the following priority: <ol style="list-style-type: none"> 1. Natural barriers 2. Handline or FLE 3. Excavator 4. Skidgens 5. Feller Bunchers/Clippers 6. Dozers 7. Logging is last choice 	Determination of line construction type solely on excess equipment that might have been ordered or is available.
	Building fireline out of riparian areas and at least 50 feet from stream channels. Consult Agency Rep as needed.	Avoid building mechanical fireline down a stream bed, defined draw or in a riparian area.
	Minimizing disturbance to riparian vegetation, large woody debris and riparian filters.	<ol style="list-style-type: none"> 1. Cutting riparian vegetation unless it is scouted and perpendicular to the stream channel. 2. Clean-out of Large Woody Debris from streams or cut riparian logs into short rounds.

Resource or Activity	CONSIDER	ATTEMPT TO AVOID
	Having spill kits, extra containment pads and tarps with all pumps.	The use of pumps or storage of fuel next to a creek without containment pads.
	Storing fuel and oils on containment pads away from the water's edge.	Refueling pumps right next to or over live water.
	Recording locations of aerial water dip sites used.	
Retardant	Maintain a buffer when flying retardant parallel to a drainage way, avoid when possible.	Dropping retardant over water or riparian areas.
	Mixing and loading retardant at least 300ft. from streams and riparian areas.	Mixing or loading retardant within 300ft. of streams and riparian areas.
Potential Low Impact Practices	Building only the necessary line needed, and consider how you will rehab the line to pre-fire condition as you build it.	Building fire line thinking it will be someone else's job to repair it.
	Packing out all your litter and any other litter you find at all times.	Dropping litter, leaving litter you find, or assuming someone else will pick it up later.
	Using cold-trail, wet line or a combination when appropriate.	Building line when the fire is out.
	Minimizing the fireline standard where firelines connect with roads especially on Private ground.	Building high standard line into roads because they may develop into non-system roads or ATV trails after the fire.
	Minimizing bucking and cutting of trees and the number of cut surfaces and resulting "rounds" or logs.	Cutting down or felled logs into lots of short sections.
Helispots	Checking potential helibases and helispots for noxious weeds BEFORE using the site – if possible use only weed free sites or mitigate prior to use.	Use of weed infested sites for helibases, helispots, staging, parking, landing, cargo loading or loafing areas.
	Asking the local Unit/Area Office if weed free helibases and helispots have been identified.	Set up of a helibase or helispots without asking the local Unit/Area Office the weed status on the site you are considering.
	Minimizing weed spread at helibases by incorporating weed prevention and containment practices such as mowing, flagging or fencing weed patches, designating weed-free travel routes.	Establishing or use of a weed-infested area for a helibase, helispot or landing zone.

Resource or Activity	GIVE CONSIDERATION TO	ATTEMPT TO AVOID
Snags	Minimizing snag felling.	Felling snags that are not a safety hazard or will have no benefit to suppression efforts
	Leaving snags standing that are a potential hazard <i>but not</i> close to the line or posing a safety risk	Felling snags that are well beyond designated mop-up distances
	Avoiding snagging in riparian areas but if you have to, directionally fall snags towards the channel with no more than 50% of the tree length within the active channel.	Cutting felled snags into small rounds when in riparian areas.
Revegetation	Using DNRC/Local direction for Seed Mixes and current seeding guidelines, this will be included in the Suppression Repair Plan.	Using species substitutions without consulting the Agency Rep.
	Consider using only Blue Tag/weed free seed only.	Use of any seed of unknown origin and is not certified and tagged weed seed free.
	Using only certified weed-free or weed-seed-free straw used for erosion control.	Using straw of unknown origin or that is weed infested.
	Using mechanical/aerial seeding of dozer line and mechanically cleared areas when appropriate.	The assumption that later rehabilitation efforts will do revegetation of suppression activities.
	Retaining enough crews or the proper equipment to accomplish revegetation needs.	Under estimating the revegetation needs under suppression rehab.

ANNEX G

EXAMPLE

FIRE SUPPRESSION REPAIR PLAN TEMPLATE

Montana Department of Natural Resources and Conservation

This template is designed to give a general outline of what is required to be prepared for a visiting IMT and/or documentation purposes of local repair efforts. Use what is necessary within this template to prepare your fire suppression repair plan.

PREPARED BY:

(Name)
(Agency)

Date
(Title)

Fire Suppression Repair Team Members Contributing to this plan include: (if more than one)

APPROVED BY:

(Incident Commander)

Date

(Name)
(Unit Manager/Area Manager)

Date

3. **Water Quality and Watershed Values** – Minimize sediment delivery into streams and/or drainages to maintain water quality.
4. **Cultural Resources** – Protect any cultural resource sites that were impacted and repair areas where fire suppression activities destabilized slopes near sites.
5. **Travel Management** – Restrict unintended/undesired motorized vehicle access that may have been created by the construction of dozer lines. Provide for reestablishment of pre-incident road closures and reestablish administratively desired roadway widths/conditions to pre-disturbance widths/conditions.
6. **Cleanup** – Remove suppression related equipment, (debris, trash, signing, flagging) at facilities used by suppression personnel.
7. **Facilities** – Restore access roads, camps, equipment staging areas, helibases, helispots, retardant plants, and other sites to original pre-fire condition.
8. **Resource Recovery** – Stage (deck) commercial materials generated during fireline construction for salvage by respective land owners.
9. **Private Land Values** – Provide consistent fire suppression repair treatments that are responsive to various land owner needs.
10. **Cost Containment** – Ensure that treatments are feasible and costs are considered while developing and implementing fire suppression repair treatments.

GUIDELINES:

Specific sites in need of repair will be categorized by geographic area and identified by geographic area and/or Branch or Division where applicable. A **Repair Operations Guide** may be developed and coordinated with the Incident Management Team (IMT) to ensure timely repair. The Resource Advisor or designee will provide the IMT with recommended amendments to this plan for Incident Action Plan preparation. The following general guidelines will be followed during all repair activities:

1. Agency Resource Advisor(s) will be available to work with fireline personnel during implementation of suppression repair.
2. Assessments will be ongoing, based on operations and events as they occur within the _____ fire perimeter. Additional sites that are discovered in the field should be subsequently mapped and repaired.
3. Motorized equipment used for repair will be thoroughly cleaned of any plant materials that could potentially contain noxious weed seeds prior to entering planned repair work areas. In addition, all vehicles involved in the fire incident will be re-cleaned prior to demobilization from the incident to reduce the risk of transporting noxious weed seed to other areas. Vehicle washing logs will be completed to document compliance if so requested.

- Block off motorized access. Where available, use boulders and large woody debris.
- Remove all trash, equipment, and flagging.

Hand Lines:

- Reposition litter and organics, top soil, and large woody debris onto disturbed areas. Scatter additional unused material to eliminate berms and debris piles along the fireline. Eliminate evidence of the line as much as practical.
- Construct water bars (insert specifications below).
- Block off motorized access. Where available, use boulders and large woody debris.
- Remove all trash, equipment, and flagging.

Pumping and Drafting Sites:

- Restore all water sources that were used to supply hose lays, tenders, and engines during the suppression efforts to their pre-fire condition.
- Restore natural contour.
- Seed disturbed areas with Seed Mix (insert specifications below)
- Remove any dams or other devices used to pool water and all litter, trash, and flagging.
- Remove hazardous material containment pads, if used, and dispose of properly.

Open Roads used as Firelines or Contingency Lines:

- Remove vegetation debris (cut limbs and brush) from road cuts and ditches and culvert catch basins and scatter on road fills outside of the travel way. Where excessive amounts of materials prevent scattering, pile or windrow material along the road fill outside of the travel way.
- Restore all existing drainage features, i.e. culverts, rolling dips, cross-drains, belted drains, and ditches damaged during fireline construction.
- Remove debris from culverts that have been blocked or made ineffective due to suppression efforts.
- Grade road surface to reestablish original road widths and ensure a smooth driving surface free of rocks and obstructions.
- Clean ditches and culvert lead-ins during grading activities to remove debris and allow for free flow.
- If dry conditions exist, water roads as necessary during grading activities to ensure missing road surfacing materials and to eliminate generation of additional surface fines.

Restricted (gated or bermed) Roads used as Firelines or Contingency Lines:

- Remove vegetation debris (cut limbs and brush) from road cut5s and ditches and culvert catch basins and scatter on road fills outside of the travel way. Where excessive amounts of materials prevent scattering, pile or windrow material along the road fill outside of the travel way
- Restore all existing drainage features, i.e. culverts, rolling dips, cross-drains, belted drains, and ditches damaged during fireline construction.

- Refer to rental agreements with specific landowners for other requirements.

Vehicle (Weed) Washing Station (if applicable):

- Collect and dispose of all organics, debris, and washing waste in approved landfill.
- Grade road surface to remove ruts and surface imperfections.
- All litter, trash, equipment, and signs will be removed.
- Monitor annually for 2 years. Apply herbicides as necessary to remove weed germinates.

SPECIFICATIONS:

Water Bars:

- Cut water bars diagonal to fire line.
- Ensure that each water bar has a direct outlet and drains into a vegetation or rock filter.
- Utilize Excavators (preferred over dozers if possible) for repair of dozer lines and along roadways that have been cleared for firelines. Dozers may only be used to perform final construction of water bars on dozer lines. Excavators should be used to pull berms and redistribute side cast fills and woody debris (eastside open prairie utilization of Road Graders may be preferred). Dozers may also be utilized on larger safety zones, especially those near roads.
- Water bars for dozer lines should be 12” deep and 18-24” high for the berm. If soil is loose, augment water bar with woody debris and/or rocks if available.
- Hand line water bars should be 8” deep and 12-18” high for the berm. If soil is loose, augment water bar with woody debris and/or rocks.

Fire Line Slope	Suggested Spacing (feet)
10-20%	100
20-30%	75
30-40%	50
40-50%	25
50%+	20

Seeding:

Seed Certification (if applicable)

- Certified, blue-tagged seed shall be used where a name variety or cultivar is specified. Blue tags, that are removed to mix or spread the seed will be saved and provided to the host agencies Resource Advisor.
- All seed purchased will be certified free of seeds from weeds listed on the current “All States Noxious Weeds List”.
- The origin of wildland native seeds is verified by a certification of the “Source Identified Class” with an attached yellow tag.

ADMINISTRATIVE RULES OF MONTANA (ARM)

18.10.111 DYED SPECIAL FUEL ALLOWANCE

(1) The department will allow the state of Montana, cities, counties, school districts, and federal and tribal governments to use dyed, low sulphur special fuel on the public roads if the following criteria are met:

(a) The vehicles are owned by a governmental entity (state of Montana, city, county, school district, federal or tribal government) ; or

(b) The vehicles are leased by the governmental entities (state of Montana, city, county, school district, federal or tribal government) and the lease terms meet the criteria for a "long term lease" as defined in ARM 18.10.302.

History: 15-70-104 and 15-70-330, MCA; IMP, 15-70-301 and 15-70-330, MCA; NEW, 1999 MAR. p. 645, Eff. 4/9/99; TRANS, from ARM 18.9.323, 2001 MAR p. 2143, Eff. 10/26/01.

STATE OF MONTANA
DEPARTMENT OF JUSTICE
MONTANA HIGHWAY PATROL DIVISION

Steve Bullock
Attorney General



2550 Prospect
PO Box 201419
Helena, MT 59620-1419

May 10, 2012

Department of Natural Resource and Conservation
Bruce Suenram, Deputy Chief
2705 Spurgin Road
Missoula, MT 59804

Dear Deputy Chief Suenram:

The Montana Highway Patrol (MHP) recognizes the need for fire program vehicles owned and operated by the Department of Natural Resources and Conservation (DNRC). We agree that these vehicles are imperative to the protection of our wild lands and they are used to respond to fires in an emergency capacity. Therefore, MHP endorses the use of the fire program fleet and authorizes their emergency vehicle status.

Thank you for contacting the MHP office with your request for authorization. If you have any questions or concerns, you can reach our Headquarters office at 406-444-3780.

Sincerely,

A handwritten signature in black ink that reads "Michael Tooley".

Colonel Michael Tooley
Chief Administrator

mtt/kln

Telephone (406) 444-3780 Fax (406) 444-4169

RECEIVED

MAY 14 2012

Forestry Division
Missoula





Montana Department of
Natural Resources and
Conservation

Remote Automated Weather Station Operating Plan

Roles and Responsibilities

Fire Bureau RAWS Program Administrator

A member of the Fire & Aviation Management Bureau staff will function as the program administrator for the Montana DNRC RAWS program. The RAWS Program Administrator will deal primarily with four key facets of the Montana DNRC RAWS program.

1. RAWS Site Determination and Interagency Coordination

The Montana DNRC RAWS program is a contributing member of the national RAWS system, and interagency cooperation is integral to continued program success. The Montana DNRC RAWS Program Administrator is responsible for maintaining and enhancing this partnership. In addition to serving as the single point of contact for interagency RAWS concerns, the program administrator will work with RAWS program partners to ensure that Montana DNRC RAWS data and stations meet NFDRS standards and that new stations are located in sites that will provide benefit to both the DNRC and the RAWS system as a whole.

2. Financing and procurement

Funding for new RAWS is typically provided by the FAMB. The RAWS program administrator will assist in obtaining authorization for new RAWS purchases as well as facilitate procurement of RAWS.

3. Maintenance Contract

Currently, Montana DNRC maintains a contract with the BLM RAWS depot for standard maintenance and sensor replacement. The RAWS program administrator will coordinate this contract or other maintenance scenario on a statewide basis. Coordinating maintenance on a statewide basis will eliminate redundancy, increase efficiency and streamline the maintenance process.

4. Quality Assurances

Provide oversight to ensure annual maintenance is preformed and that stations meet NFDRS standards.

Recommended Training:

- Advanced National Fire Danger Rating Systems,
- S-491 Intermediate National Fire Danger Rating Systems
- Basic WIMS

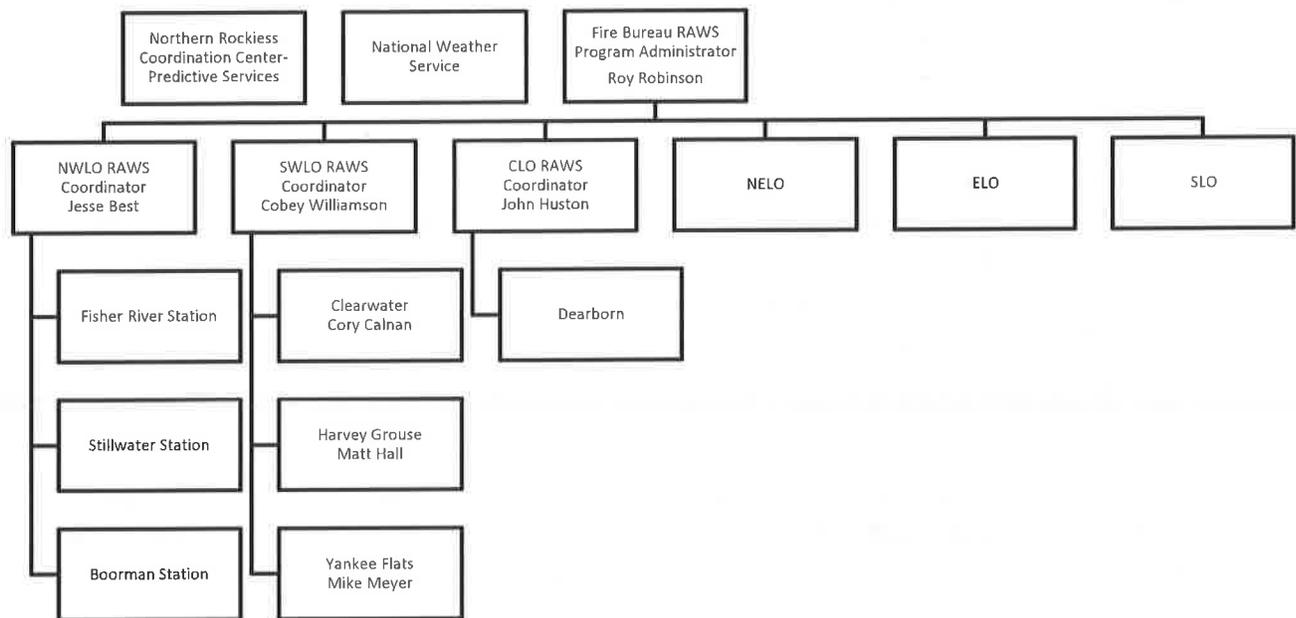
Land Office RAWS Coordinator

Each Land Office will identify a single Land Office RAWS Coordinator to act as the single point of contact on their land office and facilitate communications between the individual Units and the RAWS program administrator. Land Office RAWS Coordinators will coordinate and facilitate RAWS usage across their respective areas. Primarily, this will consist of:

1. RAWS Site Determination, Procurement, and Installation

Each land office administrator will be responsible for assisting their Units in establishing RAWS sites based on NFDRS Plans, procuring RAWS, providing cost estimate and providing technical support during

Montana DNRC RAWS Organization



Wildland Fire Weather Station Standards & Guidelines (PMS 426-3)". The FAMB will maintain an annual maintenance contract with the Boise RAWS Depot for all DNRC owned RAWS stations.

To maintain NFDRS compliance requirements, each DNRC owned RAWS station will receive at a minimum, one site visit per year. A site visit is usually accomplished when the Unit/Land Office is completing sensor change out early each summer prior to the sensors calibration expiration. The Land Office RAWS Administrator will coordinate these visits and ensure that the site visit is logged in WFMI.

For all DNRC owned RAWS stations, local users will reset the annual precipitation on the station Data Logger as close to October 1st as feasibly possible.

Efforts shall be made to train Unit/Land Office staff in the proper maintenance of RAWS stations through local and regional training opportunities.

Operation

The optimal operating period for all weather stations used for NFDRS calculations is year round. However the minimum operational period for all DNRC owned RAWS stations shall be as follows:

A minimum 30 day start up period prior to the need for NFDRS indices and the regular spring green-up period through a season ending event in the fall, usually determined by snowfall or significant rainfall.

Units/Land Offices should work with their local interagency intelligence dispatcher to provide data publishing year round.

NFDRS and FDOP Plans

Land Offices and Units shall prepare or participate in local NFDRS and Fire Danger Operating Plans. These plans are used to identify the decision-making process for agency administrators, fire managers, dispatchers, agency cooperators, and firefighters by establishing planning and response levels using the best available scientific methods and historical weather/fire data. In addition, these plans outline procedures for developing seasonal risk analysis and define fire severity trigger points.

At a minimum, the NFDRS/FDOP should contain the following information:

- Area Roles and Responsibilities
- Historical Fire & Weather information
- Fire Danger Rating Inventory
- Operational Procedures
- Climatic Breakpoints and Fire Business Thresholds
- Staffing Levels
- NFDRS Indices to be used (Burning Index, Energy Release Component, Spread Component, or Ignition Component)