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# ***Rogue River – Siskiyou National Forest Prescribed Fire Plan Template October 2022 Version***

This template meets the requirements established in the *Interagency Prescribed Fire Planning and Implementation Procedures Guide* (PMS 484, July 2017 edition). With edits made from the *USDA Forest Service National Prescribed Fire Program Review* published September 2022.

General direction from the Procedures Guide is provided within the template. For detailed direction on each element, refer to the Reference Guide.

Within the template, grey boxes identify areas requiring input into the Prescribed Fire Plan. Wording in **red** are instructions or reminders to the preparer for each element. Upon completion of the plan the preparer should delete all items that appear in **red** and **should not be included in the final document**. Items that appear in **green** are suggested text and should be used to assist in the development of the specifics for the prescribed fire plan, then converted to black if utilized in the final burn plan. Text in **black** is to remain as part of the plan.

Previous versions of this template are obsolete and are not to be used for new burn plans.

## PRESCRIBED FIRE PLAN

**RANGER DISTRICT**

**Siskiyou Mountains**

**PRESCRIBED FIRE NAME /  
PRESCRIBED FIRE UNIT**

AFR Units 1c, 1d, 4a, 7c, 14b, 16d



**PREPARED BY: \***

**Name (print)**

Robert Marshall

**Qualification  
/ Currency**

RXB2 (Current)

**Signature**

**Date**

**TECHNICAL REVIEW BY: \***

**Name (print)**

Kristofer Colbenson

**Qualification  
/ Currency**

RXB2 (Current)

**Signature**

**Date**

**FIRE MANAGEMENT OFFICER:**

**Name (print)**

Robert Marshall

**Qualification  
/ Currency**

RXB2 (Current)

**Signature**

**Date**

**DISTRICT / SO SPECIALIST:**

**Name (print)**

Jennifer Sanborn

**Title**

District Ranger

**Signature**

**Date**

**COMPLEXITY RATING**

Moderate

**MINIMUM BURN  
BOSS QUALIFICATION**

RXB2

**APPROVED BY (AGENCY ADMINISTRATOR): \***

**Name (print)**

David Palmer

**Title**

District Ranger

**Signature**

**Date**

\* Denotes required signatures

## TABLE OF CONTENTS

### Page

- |   |   |
|---|---|
| 1 | Element 1: Signature Page   |
| 3 | Element 2A: Agency Administrator Ignition Authorization (PMS 485) |

<b>Prescribed Fire Name:</b> AFR (Group 1)	<b>Ignition Unit Name:</b> 1c, 1d, 4a, 7c, 14b, 16d	<b>District:</b> SMRD
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- 4 Element 2B: Prescribed Fire Go/No-Go Checklist (PMS 486)
- 5 Element 3: Complexity Analysis Summary (PMS 424-1)
- 6 Element 4: Description of Prescribed Fire Area
- 11 Element 5: Objectives
- 12 Element 6: Funding
- 12 Element 7: Prescription
- 15 Element 8: Scheduling
- 16 Element 9: Pre-Burn Considerations and Weather
- 19 Element 10: Briefing
- 20 Element 11: Organization & Equipment
- 23 Element 12: Communication
- 25 Element 13: Public & Personnel Safety, Medical
- 27 Element 14: Test Fire
- 28 Element 15: Ignition Plan
- 29 Element 16: Holding Plan
- 30 Element 17: Contingency Plan
- 31 Element 18: Wildfire Declaration
- 33 Element 19: Smoke Management and Air Quality
- 34 Element 20: Monitoring
- 34 Element 21: Post-Burn Activities
- 35 APPENDICES
  - A. Maps: Vicinity, Project or Ignition Units (or both), Optional: Significant or sensitive features, Fuels or Fuels Model, Smoke Impact Areas
  - B. Technical Reviewer Checklist
  - C. Complexity Analysis
  - D. Job Hazard Analysis (JHA)
  - E. Fire Behavior Modeling Documentation or Empirical Documentation
  - F. Smoke Management Plan & Smoke Modeling Documentation (Optional)
  - G. Project Safety Plan
  - H. Prescribed Fire Post Burn Evaluation
  - I. Weather / Fuels / Fire Behavior / Smoke Observations

## AGENCY ADMINISTRATOR IGNITION AUTHORIZATION (Prescribed Fire Plan, Element 2A)

Instructions: The Agency Administrator Ignition Authorization must be completed before a prescribed fire can be implemented. If ignition of the prescribed fire is not initiated prior to expiration date determined by the agency administrator, a new authorization will be required.

Prior to signature the agency administrator should discuss the following key items with the fire management officer (FMO), duty officer responsible for coordinating contingency and wildfire response, and the burn boss. Attach any additional instructions or discussion documentation (optional) to this document.

DROUGHT AWARENESS: Current drought conditions according to \_\_\_\_\_ is \_\_\_\_\_ and the trend over the last several months is *select one*: Worsening    Improving    Stable

### Key Discussion Items

A.	Has anything changed since the Prescribed Fire Plan was approved or revalidated?  <i>Such as drought or other climate indicators of increased risk, insect activity, new subdivisions/structures, smoke requirements, Complexity Analysis Rating.</i>
B.	Have compliance requirements and pre-burn considerations been completed?  <i>Such as preparation work, NEPA mitigation requirements, cultural, threatened and endangered species, smoke permits, state burn permits/authorizations.</i>
C.	Can all of the elements and conditions specified in Prescribed Fire Plan be met?  <i>Such as weather, scheduling, smoke management conditions, suitable prescription window, correct season, staffing and organization, safety considerations, etc.</i>
D.	Are processes in place to ensure all internal and external notifications and media releases will be completed?
E.	Have key agency staffs been fully briefed about the implementation of this prescribed fire?
F.	Are there circumstances that could affect the successful implementation of the plan?  <i>Such as preparedness level restrictions, resource availability, other prescribed fire or wildfire activity</i>
G.	Have you communicated your expectations to the Burn Boss and FMO regarding if and when you are to be notified that contingency actions are being taken?
H.	Have you communicated your expectations to the Burn Boss and FMO regarding decisions to declare the prescribed fire a wildfire?

<b>Prescribed Fire Name:</b> AFR (Group 1)	<b>Ignition Unit Name:</b> 1c, 1d, 4a, 7c, 14b, 16d	<b>District:</b> SMRD
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Implementation Recommended by:

FMO or Prescribed Fire Burn Boss: Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Implementation Recommended by:

FMO or Unit Duty Officer: Signature: \_\_\_\_\_ Date: \_\_\_\_\_

I am authorizing initial or continued ignition of this prescribed fire for the Operational Period (24 hours) starting \_\_\_\_\_, and a new 2A Authorization will be required for any subsequent or continued ignitions. It is my expectation that the project will be implemented within this time frame and as discussed and documented and attached to this plan. If the conditions we discussed change during this time frame, it is my expectation you will brief me on the circumstances and an updated authorization will be negotiated if necessary.

Additional Instructions or Discussion Documentation attached (Optional): Yes ☐ No ☐

Ignition Authorized by:

Agency Administrator Signature and Title: \_\_\_\_\_ Date: \_\_\_\_\_

Local Unit Line Officer Concurrence (if not the qualified approver above):

Line Officer Signature and Title: \_\_\_\_\_ Date: \_\_\_\_\_

## PRESCRIBED FIRE GO/NO-GO CHECKLIST

### (Prescribed Fire Plan, Element 2B)

Preliminary Questions	Circle YES or NO
A. Have conditions in or adjacent to the ignition unit changed, (for example: drought conditions or fuel loadings), which were not considered in the prescription development? If <b>NO</b> proceed with the Go/NO-GO Checklist below, if <b>YES</b> go to item B.	YES NO
B. Has the prescribed fire plan been reviewed and an amendment been approved; or has it been determined that no amendment is necessary? If <b>YES</b> , go to item C. If <b>NO</b> , <b>STOP: Implementation is not allowed. An amendment is needed.</b>	YES NO
C. Has the experience, qualifications, internal/external pressures, and fatigue levels of the implementation team has been evaluated, and identified concerns have been satisfactorily mitigated? (Note: use USFS Risk Calculator Mobile Application, IRPG Risk Management Process, Tailgate Safety Sheet, or similar tool for assessment.) If <b>YES</b> , proceed with checklist below If <b>NO</b> , <b>STOP: Confer with AA and do not proceed with implementation until concerns are addressed.</b>	YES NO

GO/NO-GO Checklist	Circle YES or NO
Have ALL permits and clearances been obtained?	YES NO
Have ALL the required notifications been made?	YES NO
Have ALL the pre-burn considerations and preparation work identified in the prescribed fire plan been completed or addressed and checked?	YES NO
Have ALL required current and projected fire weather forecast been obtained and are they favorable through ignition, holding and mop-up/control phases of the project?	YES NO
Are ALL prescription parameters met?	YES NO
Are ALL smoke management specifications met?	YES NO
Are ALL planned operations personnel and equipment on-site, available and operational?	YES NO
Has the availability of contingency resources applicable to today's implementation been checked and are they available? If Moderate or High complexity, are those contingency resources required to respond within 30 minutes available and in position to meet that timeframe?	YES NO
Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, escape routes, and safety zones?	YES NO
If all the questions were answered "YES" proceed with a test fire. Document the current conditions, location, and results. If any questions were answered "NO", DO NOT proceed with the test fire: Implementation is not allowed.	
After evaluating the test fire, in your judgement can the prescribed fire be carried out according to the prescribed fire plan and will it mee the planned objectives? <b>Circle: YES or NO</b>	

Burn Boss Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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### Element 3 – Complexity Analysis Summary



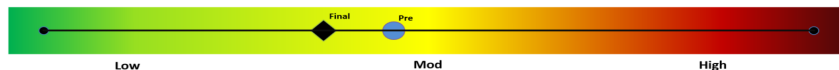
#### NWCG Prescribed Fire Summary and Final Complexity Worksheet, PMS 424-1

This worksheet is supplemental to the *Prescribed Fire Complexity Rating System Guide*, PMS 424. It is designed to enable effective risk management. The *Interagency Prescribed Fire Planning and Implementation Procedures Guide*, PMS 484, provides further explanation. This becomes Element 3 of the Prescribed Fire Plan.

AFR Group 1, Units 1c, 1d, 4a, 7c, 14b, 16d		Quantity	Significance
Values	On-Site	Few	Mod
	Off-Site	Multiple	Mod
	Public/Political Interest	Few	High

Element	Preliminary Risk	Post-Plan Risk	Technical Difficulty	Calculated Rating
Safety	Low	Low	Low	Low
Fire Behavior	Mod	Mod	Mod	Mod
Resistance to Containment	Mod	Mod	Mod	Mod
Ignition Procedures and Methods	Mod	Low	Low	Low
Prescribed Fire Duration	Mod	Mod	Low	Mod
Smoke Management	High	Mod	Mod	Mod
Number and Dependence of Activities	Mod	Mod	Mod	Mod
Management Organization	Mod	Mod	Mod	Mod
Treatment/Resource Objectives	Mod	Mod	Mod	Mod
Constraints	Mod	Mod	Mod	Mod
Project Logistics	Low	Low	Low	Low

#### Calculated Summary Prescribed Fire Plan Complexity



Final Complexity Determination	Final Complexity Determination Rationale
Mod	Public and Political interest in this area is high. Even with good communication and information sharing, a negative event from this project could potentially deteriorate relationships with partners and the public. One event of concern is smoke into the city of Ashland. The final complexity rating for public and political interest, as well as smoke management remains high while other concerns rate out as low or moderate. Therefore, the implementation of this burn plan is rated at a moderate complexity which requires an RXB2.

Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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<b>Signatures</b>	Rx Burn Plan Preparer's Name: _____ X _____ Date: _____ Preparer
	Technical Reviewer's Name: _____ X _____ Date: _____ Technical Reviewer
	Agency Administrator's Name: _____ X _____ Date: _____ Agency Administrator

## Element 4: Description of Prescribed Fire Area

### A. Physical Description

#### 1. Location:

This is a Stewardship project with the U.S. Forest Service, City of Ashland, Lomakatsi Restoration and The Nature Conservancy. The project is located within the boundaries of the Siskiyou Mountains Ranger District of the Rogue River-Siskiyou National Forest and borders the City of Ashland and private property. Project area is just over 7600 acres, located within the Ashland Watershed of Jackson County, Oregon.

Unit	Legal Description	Latitude/Longitude (Degrees Decimal Minutes)	Distance & Direction to DA
1c	T39S, R1E, Sec. 17	N 42° 10.459' W 122° 43.848'	1 mile North
1d	T39S, R1E, Sec. 17	N 42° 10.548' W 122° 43.549'	.5 miles North
4a	T39S, R1E, Sec. 20	N 42° 10.125' W 122° 43.346'	1 mile North
7c	T39S, R1E, Sec. 20	N 42° 9.782' W 122° 43.364'	1.5 miles North
14b	T39S, R1E, Sec. 21	N 42° 10.120' W 122° 42.027'	.5 miles North
16d	T39S, R1E, Sec. 27, 28 and 34	N 42° 9.009' W 122° 41.675'	1.5 miles North

#### 2. Size:

Project area is just over 7600 acres, total unit acreage covered by this plan is 462.

Unit	Acres	Date: Acres Accomplished
1c	32	



<b>Prescribed Fire Name:</b> AFR (Group 1)	<b>Ignition Unit Name:</b> 1c, 1d, 4a, 7c, 14b, 16d	<b>District:</b> SMRD
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1d	84	
4a	52	
7c	80	
14b	47	
16d	167	
<b>Total</b>	<b>462</b>	

### 3. Topography:

Unit	Aspect	Percent Slope (Avg.)	Highest Elevation (feet)	Lowest Elevation (feet)
1c	E-NE	54	4100	3600
1d	E-SE	60	4200	3500
4a	S-SE	55	3700	2800
7c	E	37	3700	2700
14b	NE	23	3400	2800
16d	NE	60	4300	3400

### 4. Project area:

The watershed fire history from the early 1900's to present is well documented with several large wildfires that covered most of the project area. Prior, reconstruction of the historic fire history show a pattern of frequent, low intensity fire on the average of every 7-12 years with a fire every year somewhere in the Ashland Watershed through anthropogenic and lightning sources. The influence of frequent fire has been lost over the past 150 years leading to dense infill, proliferation of shade and fire tolerant species, and homogenization of the landscape pattern of closed and open forests in the Ashland Watershed.

The current project (AFR) has evolved from multiple hazard fuel projects from the 1980's, 1990's and most recently the Ashland Watershed Protection Project (AWPP) between 2003 and 2007. Today current NEPA and Record of Decision (ROD) are signed as the Ashland Forest Resiliency Project.

Recent treatments were primarily density management of merchantable size classes (3/2013) and some non-commercial surface and ladder fuel reduction implemented at the time of piling of helicopter thinning of activity fuels (4/2013). Piles were burned starting in February 2014.

## 5. Ignition units:

The stands are very similar primarily largely even-aged, mostly initiated after the 1901 fire event. Douglas-fir in the 8-20" dbh size class dominates most of the area, with trees of this description comprising about 60% of the total stand basal area. Ponderosa pine in the same relative size and age class, although often somewhat older, are also intermixed, but occurring predominately on lateral ridgelines and on more southerly to westerly aspects. Hardwood stocking, primarily Pacific madrone, is relatively light, occurring mostly as small understory seedlings, saplings and small trees up to 8" dbh. It also increases in abundance in openings and on drier less productive sites in upper half slope positions that grade into manzanita and madrone dominated brush fields. Previous non-commercial thinning and prescribed underburning in the area have resulted in a generally reduced ladder fuel component in these stands, except in small openings created/enhanced in previous prescribed underburns where whiteleaf manzanita is prevalent. Currently, post treatment canopy cover averages 66% but has some variability.

## B. Vegetation/Fuels Description

C.

1. On-Site Fuels Data:			2. Adjacent Fuels Data:	
FBPS Fuel Model(s)		TL 3	FBPS Fuel Model(s)	TL 3
Fuel Loading	1 hour tlf	1.2	General Description of Adjacent Fuels	
	10 hour tlf	2.3	<p>Primarily adjacent fuels are best represented as TL 3 (moderate load conifer litter) based on previous treatments and reduced fuel loading to calculate fire behavior.</p> <p>Fuels surrounding the units are similar and have been recently thinned and treated with prescriptions much like this unit. Each has small to moderate madrone pockets, some brush component dominated by a needle understory. One exception is unit 1d, the north boundary borders land owned by the City of Ashland. Fuels are a mix of small conifer and brush, effects of a fire in 1959. In the spring with high live fuel moistures the expectation is for this area to retard or slow fire growth, during a fall burn this fuel would be available and could create a concern for spot fire growth and fast fire spread.</p> <p>Fire behavior is expected to be comparable in adjacent fuels to the burn unit based on time of year to complete the prescribed burn and similarity.</p> <p>Small pockets of torching may be expected due to fuel clusters, small pockets of ladder fuels and topography.</p>	
	100 hour tlf	1.3		
	1000 hour tlf	8		
	Litter depth	.3"		
	Duff depth	2.0"		
	Live woody	N/A		
	Live herbaceous	N/A		
	Total fuel loading	13.1		
tlf = time lag fuels in tons/acre				
3. Percentage of vegetation type and fuels model(s) and comments:				
On-site fuel loading was determined from on average measurement of 5 plots. The stands are mixed conifer, ponderosa pine, Douglas fir, White oak, chinquapin, Pacific Madrone with scattered brush understory. Although some variability exists TL3 represents all the covered burn units within this plan, fire behavior will be primarily affected by slope and dispersal/size of madrone pockets slowing fire growth.				

## Description of Unique Features, Natural Resources, Values:

There is a large amount of recreation use, primarily hikers/runners and bicycles. Many user created trails pass through the project area that serve as holding points and personnel access points.

There may be "Fisher Blocks" located within the units, areas where fuel reduction activities did not occur. The objective within these blocks is to retain the canopy, fire may creep into them but should not be applied directly.

Avoid actively igniting fire within riparian areas and Landslide Hazard Zones (LHZ).

Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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#### **D. Maps – Attach in Appendix A**

1. Vicinity (Required)
2. Project / Ignition Unit(s) (Required)
3. Values (Optional): ☐ Included ☐ Not Included
4. Significant or Sensitive Features (Optional): ☐ Included ☐ Not Included
5. Fuels or Fuel Model(s)(Optional): ☐ Included ☐ Not Included
6. Smoke Impact Area (Optional): ☐ Included ☐ Not Included

## Element 5: Objectives

### A. Resource Objectives:

Objectives should be measured using first order fire effects, as soon as possible after burn is declared out.

#### Vegetation:

- Reduce understory trees (< 5" dbh) and shrubs by 30 - 80%.
- Limit mortality of intermediate trees (5-12" dbh) to < 40%.
- Retain > 90% dominant/ codominant trees (> 12" dbh).

#### Soils

- Retain a minimum of 60% effective ground cover on all units except Unit 16D. Retain 70% effective ground cover on Unit 16D. Effective ground cover is defined as any material (i.e. rock, litter, vegetation), which is attached to, or lying on the soil surface. The minimum percentage of effective ground cover retained can vary throughout the units based on the gradient—steeper slopes should have more effective ground cover to reduce erosion. The amount of effective ground cover retention should be a minimum of 60% on slopes less than 35% and a minimum of 70% on slopes greater than 35%.

#### Wildlife

- Retain approximately 90% large down logs or snags (>20" diameter).
- Minimize fire intensity in leave areas, avoid active ignition.
- Retain an unburned strip of duff next to perennial streams averaging 25-50 feet wide, as well as retention of coarse woody material within 50 feet.

### B. Prescribed fire objectives:

Objectives should be measured using first order fire effects, as soon as possible after burn is declared out.

- Reduce understory trees (< 5" dbh) and shrubs by 30 - 80%
- Limit mortality of intermediate trees (5-12" dbh) to < 40%
- Retain > 90% dominant/ codominant trees (> 12" dbh)
- Minimize mortality of legacy trees ( large, old (> 150 yrs.) trees with complex form, large branches, open structure, wide bark plates, and providing important habitat features and aesthetic value)
- Reduce litter and light surface fuels (1 to 100 hr.) by 30 - 80%

Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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### Element 6: Funding

<b>A. Cost</b>	Stewardship Burn: Burning is funded through the Ashland Forest Resiliency Stewardship Agreement. Under this agreement, Partners will provide all qualified crewmember personnel and equipment needed to conduct ignition operations. Forest Service funding needs are for the Burn Boss, and overhead to manage the operations. Forest Service engines may also be used for training and support. \$18500 for federal employees (WFHF10)
<b>B. Funding Source</b>	WFHF10 (Federal Employees)

### Element 7: Prescription

#### A. Prescription Narrative:

##### 1. Describe how fire behavior will meet objectives:

The fire prescription describes fuel and weather condition parameters used to model fire behavior that will meet resource objectives. The data above is used as input to produce models in Behave Plus 5.0.5 modeling program. Smoke emission output is modeled with FOFEM.

Once Go-no-Go is approved and test fire is conducted; the Burn Boss may implement the burn if prescription parameters and objectives will be met during ignitions. If prescription parameters and/or objectives are not being met action will be taken to either stop the spread of fire or adjust lighting pattern to moderate fire intensity. Rationale and line officer approval must be documented for continuing ignitions if prescription parameters are exceeded.

#### B. Prescription Parameters:

1. Environmental Prescription	Acceptable Prescription Range			Outside area at critical holding point
	Low Fire Intensity	Desired Fire Intensity	High Fire Intensity	
Temperature (°F)	45-55	56-75	76-86	minimum acceptable moisture
Relative humidity (%)	45-35	34-25	24-20	
Mid-flame wind speed	0-3	4-7	8-12	
Wind direction (azimuth°)	N,W,E	N,W,E	N,W,E	
1-hr fuel moisture (%)	15-13	12-10	9-7	7
10-hr fuel moisture (%)	17-15	14-12	11-9	9
100-hr fuel moisture (%)	19-17	16-14	13-11	11
1000-hr fuel moisture (%)	>20	19-17	15-14	14
Live fuel moisture (%)	N/A	N/A	N/A	N/A
Duff moisture (%)	N/A	N/A	N/A	N/A
Soil moisture (%)	>75%	>75%	>75%	N/A

### Additional Information

The fire prescription describes fuel and weather condition parameters used to model fire behavior that will meet resource objectives. The data above is used as input to produce models in BehavePlus 5.0.5 modeling program. Smoke emission output is modeled with FOFEM.

Once Go-no-Go is approved and test fire is conducted the burn boss may implement the burn to meet objectives. If burn parameters are reached during ignitions the burn boss may continue to light as discretion to complete burn for safety and objectives. If determined not to continue lighting then personnel will manage the burn as needed to completion.

Understory human ignited burning can occur at any time of the year when conditions are acceptable. Often these conditions occur from early fall to late spring and early summer.

Brush fields in drainages have been modified with mechanical treatment to reduce fuel loading. There are existing piles in these areas that can be burned during ignition.

Weather data will be collected on-site and from local weather stations (RAWS) to assist managers in knowing when weather and fuel conditions are within prescription.

Outside area critical holding points are based off a Fuel Model TL 3. Inputs are predicted for worst case/minimum acceptable range that would be detected in spring underburn conditions. Exceeding these parameters are management action points that may allow for activation of contingency resources outlined in the plan under Element 17.

1. Fire Behavior Parameters	Acceptable Fire Behavior Range			Outside area at critical holding points
	Low Fire Intensity	Desired Fire Intensity	High Fire Intensity	
<b>Fuel Model(s):</b> <b>TL3</b>				
<b>Rate of Spread</b> (chains/hour)	<1.5	1.6 – 2.5	2.6 – 3	3
<b>Flame Length</b> (feet)	< 1	1 - 2	2-3	3
<b>Scorch Height</b> (feet)	<1	2-10	11-15	
<b>Probability of Ignition</b> (%)	<15	16-30	31-60	60
<b>Spotting Distance</b> (miles)	<.10	.2	.2	.2
<b>Prescription is defined as the measurable criteria that define a range of conditions during which a prescribed fire may be ignited and held as a prescribed fire. Parameters are quantitative variables expressed as a range that result in acceptable fire behavior and smoke management.</b>				

**Fire Behavior Narrative**

**Fuel Model TL 3:** The primary carrier of fire is dead and down woody fuel. Live fuel, if present, has very little effect on fire behavior. In fuel model TL3 the primary carrier of fire is a moderate load conifer litter, light load of coarse fuels. Spread rate is low, flame length is low.

Scattered pockets of Madrone and brush fields (white leaf manzanita) located within the units are not expected to adversely affect fire behavior due to lack of surface fuels and arrangement. Expect fire rate of spread through the surface fuels comparable to a fuel model 8 with similar flame height. Expect some fire behavior change with aspect, elevation and slope change. Calculations above were derived from the BehavePlus 5.0.5 program. Outputs for fuel model TL 3 (inside and outside units) were calculated using a strip head fire for modeling purposes. Producing a head fire with up-slope wind may increase flame lengths to 3 - 5 feet based on weather parameters. Actual hand ignitions will alter this behavior and produce more of a low intensity, low flame length backing fire to meet objectives.

Expect fire rate of spread through the surface fuels comparable to a fuel model 8 and have similar flame height. Expect some fire behavior change with aspect, elevation and slope change. An average slope of 45% was used to calculate fire behavior, expect an increase in fire spread when slope exceeds this threshold. Critical Holding point behave runs reflect conditions that could challenge meeting objectives, increase ROS, and may trigger the need to activate contingency resources. Runs completed with Behave show a contain status with resources on-site using flanking or rear attack. Additional resources would be on the unit to manage the prescribed burn and a possible emerging incident.

**In many cases, burning under the extremes of all prescriptive parameters would not meet or may possibly exceed the desired prescribed fire behavior characteristics and therefore may be out of prescription.**

**Even though BEHAVE modeling indicates a spotting distance of up to .2 of a mile with the given parameters, any spotting would be expected to be short range adjacent to the burn due to controlled lighting patterns. Spotting from torching trees should be used as an indicator of increasing fire behavior. The boss must determine if objectives are still being met, and that holding resources are adequate to continue ignitions.**

**2. Fire Modeling or empirical documentation:**

**Attached in Appendix E.**



Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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## Element 8: Scheduling

<b>A. Implementation Schedule</b> <b>1. Ignition Time</b> <b>Frames/Season(s):</b>	Day or Night/ Spring or Fall like conditions (anticipated to occur between October – May)
<b>B. Projected Duration:</b>	1-2 days ignitions, 3 days for mop-up, 10 days patrol per each individual unit.
<b>C. Constraints:</b>	
<p>Smoke clearance due to stagnant air and/or unfavorable winds (constraints from wind are all with a southerly component).</p> <p>Fuel conditions not favorable (too dry/too wet)</p> <p>Pre-planned events for the City of Ashland that may impact and/or preclude burning on a given day and create a negative effect towards prescribed fire. Some examples include but are not limited to:</p> <ul style="list-style-type: none"> <li>• Siskiyou Challenge (April, contact rec for actual dates)</li> <li>• Spring Thaw (May, contact rec for actual dates)</li> <li>• Ashland Mountain Challenge (October, contact rec for actual dates)</li> </ul> <p>Fireline intensities designed to maintain adequate effective ground cover may Minimize accomplishment of other objectives, particularly fuel hazard reduction. Existing duff levels are low and post-burn surface erosion can be easily increased, particularly on steeper slopes.</p> <p>Old snags may complicate prescribed underburning and constitute a safety hazard requiring mitigation measures.</p> <p>Protection of older legacy trees, both conifer and hardwood, will require special lighting techniques to minimize bole and crown scorch.</p> <p>All units either share a common boundary or are in close proximity to private lands or City of Ashland owned properties. Extra care should be given to these common boundaries to eliminate fire spread to adjoining land ownerships.</p>	

Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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## Element 9: Pre-burn Considerations and Weather

### A. Considerations:

<b>1. On Site</b>
<ul style="list-style-type: none"> <li>- Monitoring of on-site fuel and weather data 2-3 days before burn at a minimum, portable fire RAWs or Kestrel Wx stations make it possible to monitor long term trends locally throughout burn duration.</li> <li>- Post prescribed fire signs and ensure public is clear of unit at least one day prior to, during and post ignition.</li> <li>- Work with law enforcement on-site to establish a safe area free of public.</li> <li>- Issue temporary closure for trails within and adjacent to burn units.</li> <li>- Consider temporary area closure during the ignition phase.</li> </ul>
<b>2. Off Site</b>
<p>Notifications to media outlets and public by the burn boss and the City of Ashland (Chris Chambers) prior to ignitions.</p> <p>Smoke signs will need to be in place on major road systems adjacent to burn unit prior to ignition, and be visible to the public. Signs should remain in place until the burn boss determines them no longer needed.</p> <p>Notify adjacent land owners (City of Ashland responsibility). See Notification list attached.</p> <p>City of Ashland Fire &amp; Rescue will be contacted and is responsible for City of Ashland public notifications.</p>

Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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## B. Method and Frequency for Obtaining Weather and Smoke Management Forecast(s):

<b>Servicing NWS Office:</b>	Medford			
<b>NWS Office Phone:</b>	541-773-1067			
<b>Proximity to nearest RAWS</b>	13.5 Miles SE Buckhorn Springs (permanent RAWS)			
<b>Need for on-site RAWS</b>		Yes	X	No
<b>Additional Information</b>				
<p><b>Siskiyou Mountains Portable RAWS has been placed within the Ashland Watershed and collecting data since Fall of 2015. This RAWS is located on Windburn Ridge, providing the best data for both forecasters and prescribed fire managers.</b></p> <p>Prior to ignitions approval to burn will be obtained from Oregon Dept. of Forestry, Smoke Management in Salem, OR. Planned unit will be entered into Fastrax by fire mangers.</p> <p>Current weather information and spot weather forecast will be obtained from the National Weather Service in Medford. Weather forecasters are available at: 541-776-4303.</p> <p>A daily incident action plan (IAP) will be prepared to brief personnel.</p> <p>Spot Weather forecasts are required prior to ignition, on all ignition days. The burn boss is required to obtain a spot forecast on any days the fire is actively spreading to determine holding, mop up or patrol staffing needs. A copy of the forecast will be included in the project file.</p> <p>Projected weather beyond the ignition operation and need for additional spot weather forecasts should be taken into account in order to minimize the risk of a later escape. Local weather phenomena and considerations include possible prolonged periods of drying and east wind events in early spring and fall.</p>				

Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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## C. Notifications

Who	When <sup>1</sup>	Phone Number and/or e-mail	Responsibility	Date	Contact Type <sup>2</sup>
–Rogue Valley Interagency Communications Center	Before & Day of	(541) 618-2510	Burn Boss		EM
Dan Quinones RSF Fire Staff	Day of	(541) 618-2100	Burn Boss		EM
Mike McCann RSF Fire Staff	Day of	(541) 618-2101	Burn Boss		EM
District Ranger – Jen Sanborn	Before & Day of	(541) 324-1318	Burn Boss		PC/EM
ODF Smoke Mgt. Forecaster	Before & Day of	(503) 945-7401	Burn Boss		PC
Virginia Gibbons- Forest PIO	Before & Day of	(541) 618-2200	Burn Boss		EM
Star Office Front Desk	Before & Day of	(541) 899-3800	Burn Boss		EM
Brett Brown RSF Deputy Fire Staff- Fuels	Day of	(541) 618-2101	Burn Boss		PC
Ashland City Fire (Chris Chambers)	Before & Day of	(541) 890-8816	Burn Boss		PC/EM/DC
Siskiyou Mountain RD employees	Before & Day of	pdl r6 rrs siskiyoumountains@fs.fed.us	Burn Boss		EM
FS Supervisors Office Front Desk	Before & Day of	(541) 858-2200	Burn Boss		PC
<sup>1</sup> When to Notify	Before ( <b>B</b> ): The day prior to burn day. Day of ( <b>D</b> ): Prior to ignition on burn day. After ( <b>A</b> ): After burn is completed.		<sup>2</sup> Contact Type	Phone Contact (PC) Phone Message (PM) Direct Contact (DC) E-mail (EM)	

## Element 10: Briefing

### A. Briefing Checklist, including, but not limited to: (additional items may be added)

- ☐ Burn Organization and Assignments
- ☐ Prescribed Fire Objectives and Prescription
- ☐ Description of Prescribed Fire Project Area
  - Special considerations and sensitive features
- ☐ Provide Maps
- ☐ Expected Weather and Fire Behavior
  - Review SPOT weather forecast
- ☐ Weather Data Collection Procedures
  - Make Weather Observer Assignment and Set Collection Schedule
- ☐ Review Burn Prescription and Critical Weather that Will Terminate Burn
- ☐ Ignition Plan and Possible Problems
- ☐ Holding Plan and Possible Problems
- ☐ Contingency Plan & Assignments
  - Identify High Value and Areas of Special Concern
  - Identify Mitigation Measures, Procedures, Project Boundary, Etc.
- ☐ Wildfire Declaration
- ☐ Safety and Medical Plan
  - Identify On-Site Personnel with Medical and Helitack Qualifications
- ☐ Job Hazard Analysis (JHA)
- ☐ Review LCES and Identify Lookout Assignments
- ☐ Communication Plan
- ☐ Aerial Ignition Briefing - Project Aviation & Safety Plan (PASP) (if applicable)

### Crew Briefing (Responsibility - Ignition Specialist and Holding Specialist Functions)

- ☐ Make Crew Assignments, Record Names, and Review Chain of Command
- ☐ Make Equipment Assignments and Physically Test Equipment Prior to Ignition
- ☐ Assign Radio Frequencies and Physically Test All Radios Prior to Ignition
- ☐ Review Contingency Plan, Wildfire Declaration, Procedures, and Mitigation
- ☐ Review Everyone's Personal Protective Equipment
- ☐ Discuss Probable Starting and Ending Times
- ☐ Assure Everyone Knows Position, Responsibility, and Procedures
- ☐ Double check that all personnel have reviewed & signed the JHA
- ☐ Review Incident within an Incident Procedures

**SIGNED**

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Prescribed Fire Burn Boss

**DATE**

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### Element 11: Organization and Equipment

#### Minimum Workforce & Equipment Needed to Conduct Burn LOW PRESCRIPTION RANGE

A. Positions					
Position	ICS Code or Unit of Measure	Total Amount Needed	Line Building Rate (Ch/Hr)	Amount Supplied By:	
				Agency	Contractor/ Purchaser
Prescribed Fire Burn Boss	RXB2	1		x	
Ignition Specialist Function	FIRB	1		x	x
Holding Specialist Function	Single Resource	1		x	x
Fire Effects Monitor	FEMO				
Lookout					
Engine Boss, Operator, and Crew	CRWB	1			x
Ignition Crew	FFT2	3	3		x
Holding Crew	FFT2	10	10		x
B. Equipment					
Engine (Type VI)	ENG Type VI	1	12	x	x
Engine (Type)					
Dozer (Type)					
Helicopter					
Helitorch					
C. Supplies					
Drip Troches		6			
Chain Saws		2			
Hand Tools		17			
Fuel		50 gals.			
Portable Water Tanks					
<b>Total Line Production Rate</b>			<b>25</b>		
<p><b>Remarks:</b> The above plan is based on line production/fire suppression ability to contain a fire within 1-hour. The types of resources on-site will meet the minimum total line production rate, based on fire modeling outputs as determined in Behave program. A change to the resource types listed above is not an amendment to the plan. Behave runs indicate having a line production rate of 2 ch. /hr. at the low prescription range in order to contain a spot outside of the unit. Production rates in a fuel model 10 were used. Additional personnel were added beyond modeled outputs for line production due to proximity to homes and private property. The minimum organization requires a low number of resources based on a low predicted rate spread, the line production capability of resources in that fuel type, and ignitions possibly occurring over multiple days. If the burn boss decides to complete ignitions in one burn period additional resources will be required to provide adequate holding and ignition resources. The number of resources needed will ultimately be determined by the burn boss, the number of days ignitions will occur, and the current conditions.</p>					

Minimum Workforce & Equipment Needed to Conduct Burn DESIRED PRESCRIPTION RANGE					
A. Positions					
Position	ICS Code or Unit of Measure	Total Amount Needed	Line Building Rate (Ch/Hr)	Amount Supplied By:	
				Agency	Contractor/ Purchaser
Prescribed Fire Burn Boss	RXB2	1		x	
Ignition Specialist Function	FIRB	1		x	x
Holding Specialist Function	Single Resource	1		x	x
Fire Effects Monitor	FEMO				
Lookout					
Engine Boss, Operator, and Crew	CRWB	1			x
Ignition Crew	FFT2	4	4		x
Holding Crew	FFT2	15	15		x
B. Equipment					
Engine (Type IV)	ENG Type VI	2	24	x	x
Engine (Type)					
Dozer (Type)					
Helicopter					
Helitorch					
C. Supplies					
Drip Troches		8			
Chain Saws		2			
Hand Tools		20			
Fuel		50 Gals			
Portable Water Tanks		1			
<b>Total Line Production Rate</b>			<b>43</b>		
<p><b>Remarks:</b> The above plan is based on line production/fire suppression ability to contain a fire within 1-hour. The types of resources on-site will meet the minimum total line production rate, based on fire modeling outputs as determined in Behave program. A change to the resource types listed above is not an amendment to the plan.</p> <p>Behave runs indicate having a line production rate of 2.5 ch. /hr. at the low prescription range in order to contain a spot outside of the unit. Production rates in a fuel model 10 were used. Additional personnel were added beyond modeled outputs for line production due to proximity to homes and private property.</p> <p>The minimum organization requires a low number of resources based on a low predicted rate spread, the line production capability of resources in that fuel type, and ignitions possibly occurring over multiple days. If the burn boss decides to complete ignitions in one burn period additional resources will be required to provide adequate holding and ignition resources. The number of resources needed will ultimately be determined by the burn boss, the number of days ignitions will occur, and the current conditions.</p>					

Minimum Workforce & Equipment Needed to Conduct Burn HIGH PRESCRIPTION RANGE					
A. Positions					
Position	ICS Code or Unit of Measure	Total Amount Needed	Line Building Rate (Ch/Hr)	Amount Supplied By:	
				Agency	Contractor/ Purchaser
Prescribed Fire Burn Boss	RXB2	1		X	
Ignition Specialist Function	FIRB	1		X	X
Holding Specialist Function	Single Resource	1		X	X
Fire Effects Monitor	FEMO				
Lookout					
Engine Boss, Operator, and Crew	CRWB	1			X
Ignition Crew	FFT2	4	4		X
Holding Crew	FFT2	15	15		X
B. Equipment					
Engine (Type VI)	ENG Type VI	3	26	X	X
Engine (Type)					
Dozer (Type)					
Helicopter					
Helitorch					
C. Supplies					
Drip Troches		8			
Chain Saws		3			
Hand Tools		20			
Fuel		50 gals.			
Portable Water Tanks		2			
<b>Total Line Production Rate</b>			<b>55</b>		
<p><b>Remarks:</b> The above plan is based on line production/fire suppression ability to contain a fire within 1-hour. The types of resources on-site will meet the minimum total line production rate, based on fire modeling outputs as determined in Behave program. A change to the resource types listed above is not an amendment to the plan.</p> <p>Behave runs indicate having a line production rate of 3 ch. /hr. at the low prescription range in order to contain a spot outside of the unit. Production rates in a fuel model 10 were used. Additional personnel were added beyond modeled outputs for line production due to proximity to homes and private property.</p> <p>The minimum organization requires a low number of resources based on a low predicted rate spread, the line production capability of resources in that fuel type, and ignitions possibly occurring over multiple days. If the burn boss decides to complete ignitions in one burn period additional resources will be required to provide adequate holding and ignition resources. The number of resources needed will ultimately be determined by the burn boss, the number of days ignitions will occur, and the current conditions.</p>					



Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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## Element 12: Communication

### A. Radio Frequencies:

Channel	Function	Frequency		Tone	Assignment	Remarks
1. COMMAND frequency(ies):						
3	Mt. Ashland RPTR	TX: RX:	164.9375 169.9750	173.8 67.0		
4	South direct	TX: RX:	169.9750 169.9750	67.0 67.0		
2. TACTICAL frequency(ies):						
	FS TAC 2	TX: RX:	168.2000 168.2000		Primary	
	RSF PRO1	TX: RX:	169.1750 169.1750	67.0 67.0	Secondary	
		TX: RX:				
3. AIR OPERATIONS frequency(ies)						
	A/G 51	TX: RX:	168.3125 168.3125		Primary	
	A/G 62	TX: RX:	169.3625 169.3625		Secondary	
OTHER						
		TX: RX:				
		TX: RX:				
REMARKS						
Rogue Valley Interagency Communications Center will be requested to remain open or a dispatcher identified to be on call, if burning occurs on weekends.						



## Element 13: Public and Personnel Safety, Medical

### A. Safety Hazards:

<b>Firefighter</b>
LCES will be identified prior to ignition and discussed during the briefing.
Known hazards include: snags, steep terrain, bee/yellow jackets, rolling material and smoke.
All personnel who are within the active burn area are required to wear personal protective equipment (PPE).
Refer to the Job Hazard Analysis (JHA) located in Appendix D for specific hazards and mitigation measures.
<b>Public</b>
The unit and roads to the unit will be cleared of public before ignition starts. Major road systems (2060) may be impacted by smoke and will have signs placed to inform the public. Gravel roads with or without gates on them maybe locked or blocked off for public safety. Smoke may cause minor eye and respiratory irritation to individuals that are in direct contact with smoke. Residual smoke maybe a problem for a period of time. Recommend temporary closure of all internal and adjacent trails for public safety.

### B. Mitigation Measures Taken to Reduce the Hazards:

Public notifications will be made prior to ignitions through multiple media outlets. Public scoping, forums and events have been held to discuss smoke in Ashland and its effects. Signs to inform the public will be posted. Personnel will patrol the area prior to ignitions, during ignitions and during the mop-up phase of the burn to keep the public safe. Hazardous snags will be identified and mitigated along trails, high use areas and critical control points. Fire personnel will brief thoroughly utilizing the briefing checklist and Job Hazard Analysis.
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### C. Emergency Medical Procedures:

In the event of serious accidents or injuries, the burn boss shall be notified immediately. Individuals with medical (i.e. First Responder, EMT, Paramedic) and helitack qualifications should be identified at the pre-burn briefing. The burn boss will initiate on-site response (if not already in progress) and coordinate additional response needs.
For this burn, see AFR established medical plan (Appendix G). AFR medical plan is current and used by all personnel operating within the AFR project partnership. AFR Medical plan will be issued in a daily Incident Action Plan and is current for federal and contract employees.

### D. Emergency Evacuation Methods:

For this burn, see AFR established medical plan (Appendix G). AFR medical plan is current and used by all personnel operating within the AFR project partnership.
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Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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### E. Emergency Facilities:

MEDICAL PLAN FOR GOVERNMENT EMPLOYEES								
MEDICAL AID STATIONS / PERSONNEL								
NAME	LOCATION	PARAMEDICS?						
		YES	NO					
TRUAMA AND BURN KIT ON-SITE								
EMERGENCY TRANSPORTATION								
NAME	TELEPHONE	LOCATION	PARAMEDICS?					
			YES	NO				
MERCY FLIGHTS AIR & GROUND	911 or 541-779-6551	MEDFORD, OR.	X					
ASHLAND FIRE RESCUE	911	ASHLAND, OR.	X					
HELISPOT CLOSEST TO PROJECT		LAT. 42 08.44	LONG. 122 43.40					
HOSPITALS								
NAME	ADDRESS	TRAVEL TIME ( MIN)		PHONE	HELIPAD?		BURN CENTER	
		AIR	GROUND		YES	NO	YES	NO
Asante Rogue Regional Medical Center	2825 East Barnett Rd. Medford Oregon	15 Minutes	1 Hour	(541) 608-4900	X			X
Providence Medical Center	1111 Crater Lake Avenue Medford Oregon	15 Minutes	1 Hour	(541) 732-5000	X			X
Ashland Community Hospital	280Maple Ashland Oregon	5 Minutes	30 Minutes	(541) 482-2441		X		X
Legacy Emanuel Hospital	2801 Gantenbein Avenue Portland Oregon	90 Minutes	6 Hours	(541) 413-2200	X		X	

## Element 14: Test Fire

### A. Planned Location:

Provisions for a test fire are required. The test fire should be ignited in a representative location and results must be documented. Burn boss will decide location on unit that best meets conditions for a test fire. The purpose of the test fire is to verify that the prescribed fire behavior characteristics will meet management objectives and to verify predicted smoke dispersion. In many applications, analysis of the initial ignitions may provide adequate test fire results. Each individual unit will need an appropriate test fire with documentation. Ideally, the test fire would be ignited adjacent to top control lines where it can easily be controlled if not meeting objectives and ideally would become part of the anchor. Following a successful test fire, ignition can continue along upper control lines. Once a sufficient blackline is established as an anchor, fire can be taken down the flanks of the unit. This would then be followed with igniting off the flanks. As the flanks become secure, fire should be backed down the interior of the unit.

### B. Test Fire Documentation:

Location:
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Date and Time:
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1. Weather/Fuels Conditions On Site	
Cloud Cover %	
Temperature	
Relative Humidity	
Fine Dead Fuel Moisture	
Wind Speed	
Fuels	

2. Test Fire Results					
Flame Length					
Rate of Spread					
Smoke Dispersion					
Other					
The test fire meets the prescription parameters	<table border="1" style="width: 100%;"> <tr> <td style="width: 25%;">Yes</td> <td style="width: 25%;"></td> <td style="width: 25%;">No</td> <td style="width: 25%;"></td> </tr> </table>	Yes		No	
Yes		No			

**SIGNED**

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**DATE**

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Prescribed Fire Burn Boss

## Element 15: Ignition Plan

### **A. Firing Methods:**

Ignition will start at the top of the unit with a hand ignition head-strip firing pattern with drip torches. Black line will be established along perimeter as progression continues down slope. Width of strips will be adjusted throughout unit to achieve desired results (flame length and scorch height). Strips may be widened in areas of under-story growth to allow thinning by fire. Adjustments will be made based on fire behavior observations. Fire behavior outputs will be influenced by the type of ignition pattern and the rate used. Erratic fire behavior may be experienced at the high end of the prescription. Ignition technique will compensate for fuel moisture conditions. A backing fire may have to be used if burned under the high prescription.

### **1. Ignition Techniques, Sequences and Patterns**

Overall, strip head firing or dot firing will be utilized to bring fire down through the unit. This may need to be in a general backing fashion to minimize impacts to the residual stand. Flame length and intensity will dictate ignition technique and strip width. Protection of older legacy trees (conifer and hardwood) will require special lighting techniques to minimize bole and crown scorch. Likewise, reserve piles should not be intentionally lit, efforts should be taken to leave intact if possible. Ignition pattern can be modified on site should need arise to meet objectives; this should be discussed and agreed to by both the firing boss and burn boss, and relayed to all personnel on the unit.

The Ignition Specialist and Holding Specialist functions are expected to work closely together to ensure that the ignition pattern and sequence do not present concern for control of the burn.

The (wind or slope and aspect) should be the dominant influence for fire behavior and the primary factor in establishing the ignition pattern and sequence for the unit. The ignition pattern and sequence are suggested and can be modified to better suit the current conditions experienced on the day of the burn.

### **B. Firing Devices:**

In most cases standard drip torches will be the preferred method of lighting. A diesel/gasoline mix will be used as the accelerant, mix will be adjusted as needed for fuel and weather conditions. Slash fuel will be transported in an approved tank with spill containment available in fueling areas. Slash fuel may be moved around the unit in 5 gallon fuel containers, these should be appropriately marked to avoid confusion on container content

In some cases alternative lightning sources may be used, examples include but are not limited to fusee or quick fire devices.

### **C. Minimum Ignition Staffing:**

Refer to Element 11 to view the organization to be utilized. Specific instructions and briefings will occur prior to ignition to cover ignition and holding concerns.

The minimum organization requires a low number of resources based on a low predicted rate spread, the line production capability of resources in that fuel type, and ignitions possibly occurring over multiple days. If the burn boss decides to complete ignitions in one burn period additional resources will be required to provide adequate holding and ignition resources. The number of resources needed will ultimately be determined by the burn boss, the number of days ignitions will occur, and the current and expected conditions.

## Element 16: Holding Plan

### **A. General Procedures for Holding:**

Holding crews will be stationed along control lines to monitor for potential spotting. All slop-over and spot fires will be lined as soon as practical. These fires will be mopped up 100% and marked on a map as soon as practical. The Burn Boss will be immediately notified of any fire that occurs outside of the units. When possible take effort to protect reserve piles that provide critical habitat for multiple species of wildlife. Due to seasonal (fall/winter/spring) conditions (shortness of day, elevated moisture levels, persistent shadows) holding problems are expected to be minimal. In most cases holding and contingency resources will be provided by Lomakatsi, exceptions may occur for forest provided resources and special events like learning "TREN".

### **B. Critical Holding Points and Actions:**

- Each unit has a common boundary with either private or City of Ashland property these are critical holding points to prevent fire spread to neighboring properties. Mostly these are in the down slope location, however that is not the case within Units 1c and 1d. Additional holding resources will be utilized in this area to ensure slope overs and spot fire do not occur on private property. Aggressive mop-up will follow ignitions in this area to ensure an escape does not occur.
- Unit 7c is located in close proximity to Reeder Reservoir and water facilities for the City of Ashland. Control lines along the South and East boundaries are critical to keep fire away from these facilities, consider additional resources to prevent fire slope over and spot fires. Aggressive mop-up will follow ignitions in this area to ensure an escape does not occur.
- Avoid actively igniting fire within riparian and Landslide Hazard Zones.

### **C. Minimum Organization or Capabilities Needed:**

Minimum capabilities needed for holding are identified under Element 11 - Organization and Equipment. The Holding Specialist function will be held at the Single Resource (ICS position) level based on complexity of burn and holding operation. Different organizations may be identified for different phases of implementation (i.e. holding vs. mop-up and patrol, different ignition operations, different ignition patterns, different prescriptions). The minimum organization requires a low number of resources based on a low predicted rate spread, the line production capability of resources in that fuel type, and ignitions possibly occurring over multiple days. If the burn boss decides to complete ignitions in one burn period additional resources will be required to provide adequate holding and ignition resources. The number of resources needed will ultimately be determined by the burn boss, the number of days ignitions will occur, and the current conditions.

### **D. Mop-up and Patrol:**

Mop-up will be completed to the extent necessary to secure the burn as directed by the Burn Boss. During and after ignition, frequent and thorough patrols will be implemented at the discretion of the Burn Boss. Frequent patrols will continue post burn until the burn area is declared out by the Burn Boss. If undesirable weather is expected (high temps, high winds, storm fronts, etc.) aggressive mop-up will be considered throughout the entire unit with the perimeter and problem areas being priority.

### **E. Conditions for Leaving Burn Unattended:**

Weather conditions and/or mop-up that reduce probability of escape fire spread and safety concerns to the public must be met prior to leaving a burn unattended.

- Mop-up will be completed to the extent necessary to secure the burn as directed by the Burn Boss.
- A burn will not be declared out until smoke is no longer visible within the unit

## Element 17: Contingency Plan

### A. Management Action Points or Limits: (Optional MAP Table Format)

Management Action Point – Documentation Element	Management Action Point Narrative:
Designator and Description:	
Condition:	
Management Intent:	
Recommended Action(s) to Consider:	
Recommended Resources:	
Time Frame:	
Describe the Consequences of not taking the recommended action(s) (Optional):	
Responsibility:	
Date Each Action is Initiated (Optional):	

### B. Actions Needed

Management action points established for all units are used as aids in assisting managers in determining if the contingency plan needs to be activated due to unexpected events or undesirable results. Management points include:

- Fire outside of project boundaries (AFR project boundary, or fire outside of specific Unit boundary)
- Smoke management concerns to City of Ashland
- Required personnel not available
- Other prescribed fire plan elements not being met.

Management Action Points in the contingency plan do not dictate declaring the prescribed burn to a wildfire or mean the fire has escaped.

If the contingency actions are successful at bringing the project back within the scope of the Prescribed Fire Plan, the project may continue. If contingency actions are not successful by the end of the next burning period, then the prescribed fire will be converted to a wildfire.

In the event management action points are met that put in jeopardy the objectives of the burn, actions may be taken by the burn boss to change or mitigate burning operations. The Burn Boss may use strategies to suppress or maintain the burn based on conditions and results. Fire compromising unit boundaries may trigger suppression actions to stop the spread.

Contingency resources should be ordered by the burn boss through Lomakatsi not RVICC. Keep RVICC informed that the request has been made and when additional resources arrive.

### C. Minimum Contingency Resources and Maximum Response Time(s):

Resource	Agency & Location	Maximum Response Time	Confirmation of Availability*	
			Yes/No	Date
Type VI Engine	TBD	30		
10-person Crew	TBD	30		

\* To be completed within one day of the burn and adjusted during course of extended burning conditions



## Element 18: Wildfire Declaration

### **A. Wildfire Declared By:**

The Prescribed Fire Burn Boss, in conjunction with District/Forest FMO/Agency Administrator, will make the decision when to declare the prescribed fire a wildfire. A prescribed fire, or a portion or segment of a prescribed fire, must be declared a when either or both of the following criteria are met:

- Prescription parameters are exceeded and holding and contingency actions cannot secure the fire by the end of the next burning period, or,
- The fire has spread outside the project area or is likely to do so, and the associated contingency actions have failed or are likely to fail and cannot be contained by the end of the next burning period.

A prescribed fire can be declared a wildfire for reasons other than those identified above, if events cannot be mitigated as determined by the burn boss and agency administrator.

A wildfire will be declared by the Burn Boss without delay if there is an immediate threat to human life or the potential for significant damage to resources, private property, or infrastructure in the near future (structures immediately threatened or on fire, crown fire running toward private property, air tankers are needed to contain the fire, etc.). The intent is to not delay declaring a wildfire if time is of the essence.

However, if there is time, the Burn Boss is to confer with the Agency Administrator and Forest Duty Officer/Fire Staff before declaring a wildfire. This is to allow an opportunity to exhaust all possible funding and containment options before a wildfire declaration is made. The intent is to take a reasonable amount of time to make an informed decision based on the predicted weather, values at risk, chances of containing the fire, availability of additional resources, funding available, and other factors before declaring a wildfire. If a wildfire is declared all resource orders will be placed through RVICC instead of Lomakatsi at that time.

### **B. IC Assignment:**

Should a wildfire be declared, the Burn Boss will become the Incident Commander until relieved or replaced. The IC will organize all on-site resources for a safe and aggressive response. Personnel within the prescribed fire organization will transition into ICS wildfire positions they are qualified to carry out. The IC will order additional suppression resources (through Lomakatsi) identified in the Contingency Plan as well as any other required resources necessary to support the suppression effort. Additional resources will be ordered through RVICC once contingency resources are exhausted.

Upon a wildfire declaration occurring, all overhead personnel will begin to document actions taken on a Unit Log, notebook, or similar format. After the incident is contained, the Prescribed Fire Burn Boss will submit a post fire report documenting weather, resources on site, ignition operations, holding actions, and other pertinent data.

Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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### **C. Notifications:**

The Prescribed Fire Burn Boss/IC will notify the Rogue Valley Interagency Communications Center (RVICC) and the Siskiyou Mountains Fire Management Officer (FMO) of the escape and identify the IC. The FMO will then notify the District Ranger and Forest Fire Staff. MICC will notify contacts listed on the notification plan of the escape and the current situation.

### **D. Extended Attack Actions and Opportunities to Aid in Fire Suppression (Optional):**

The appropriate management response will be used in order to flank the fire with engines or hand crews until the forward rate of spread is stopped. The containment strategy will be to utilize safe anchor points and create direct fire line where feasible and indirect fire line, including burning out, depending upon location of natural barriers and roads. The FMO and/or IC, Resource Advisor, and Agency Administrator may develop a WFDSS which will determine the appropriate management response to the escaped fire. The Wildland Fire Decision Support System (WFDSS) process is required when a wildfire escapes initial attack.

Containment opportunities exist using roads and trails within the Ashland Watershed. Areas of additional fuels treatment can be tied into to slow fire growth.

## Element 19: Smoke Management and Air Quality

<b>A. Compliance:</b>					
Burn units will be registered in the FASTRAXS computer system prior to burn day. Approval to burn will be obtained from the Oregon Department of Forestry's Smoke Management Office. The contact number for ODF Smoke Management is: 503-945-7451.					
<b>B. Permits to be Obtained:</b>					
<b>Smoke Management Number:</b>			Assigned from FASTRAXS		
<b>C. Smoke Sensitive Receptors:</b>					
<b>Identify any non-attainment or Class I airsheds within 15 miles:</b>			Closest class 1 airsheds are the Kalmiopsis and Mountain Lakes wildernesses over 30 miles away.		
Designated Area (DA)		Distance & Direction to DA		Designated Area (DA)	
		Distance	Azimuth		
Rogue Valley SSRA		.5 mi.	N		
<b>D. Potential Impacted Areas:</b>					
Local roads could be impacted by residual smoke if a strong inversion occurs in the evening hours. Ashland watershed may have pooling of smoke that impacts recreation activities. Residences and businesses' in the area may experience pooling of smoke due to smoldering after ignitions.					
<b>E. Mitigation Strategies and Techniques to Reduce Smoke Impacts:</b>					
Ignitions should occur early in the day and cease in early afternoon to mitigate residual/pooling smoke issues.					
Burning less acres each operational shift is another option to mitigate the amount of smoke. Impacts to the local area should be minimal and of short duration by burning with favorable winds and mixing heights. Most desired winds to mitigate smoke impacts will have a northerly component. Residual smoke from large burning material can be suppressed to mitigate smoke issues.					

Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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## Element 20: Monitoring

<b>A. Fuels Information Required and Procedures:</b>
Fuels and stand data have been extensively collected. That data will be collected post treatment to evaluate for treatment effectiveness by cooperators and/or the FS. Observed fire behavior and weather parameters will be documented during the ignition phase and included in the project file.
<b>B. Weather Monitoring (Forecasted and Observed) Required and Procedures:</b>
Weather observations should be measured and recorded on an hourly basis on the Weather / Fuels / Fire Behavior / Smoke Observations form found in Appendix I of this plan or form OF-251, Mobile Fire Weather's Observer's Record found in the belt weather kit. A SPOT weather forecast from the National Weather Service will be obtained before ignitions begin.
<b>C. Fire Behavior Monitoring Required and Procedures:</b>
Fire behavior observations should be measured and recorded on an hourly basis on the Weather / Fuels / Fire Behavior / Smoke Observations form found in Appendix I.
<b>D. Monitoring Required to Ensure Prescribed Fire Plan Objectives are Met:</b>
AFR Stewardship personnel will continue to monitor fuels and stand exams to measure treatment effectiveness and to measure how well objectives were met.
<b>E. Smoke Dispersal Monitoring Required and Procedures:</b>
Managers will monitor weather prior to ignitions within the unit. ODF smoke forecasters will be contacted for approval and permits. Personnel will be assigned to document smoke produced by burning and monitor dispersal and mixing height.

## Element 21: Post-burn Activities

<b>A. Post-Burn Activities that Must be Completed:</b>
<p>Post burn activities include mop-up to meet standards as set by the Burn Boss. Unit will be monitored and mopped as described in Element 16.</p> <p>Monitoring for public safety is important as post burn unit may have extreme hazards to recreationalists. Documenting weather conditions post-ignitions and long term forecasts to aid in predicting weather concerns that may affect the unit.</p> <ul style="list-style-type: none"> <li>- Rescind trail or area closures.</li> <li>- Remove any RX signage that was placed on or near the unit.</li> <li>- Complete necessary fireline and trail repair, ensure that any trail hazards are identified and mitigated.</li> </ul>

Prescribed Fire Name: AFR (Group 1)	Ignition Unit Name: 1c, 1d, 4a, 7c, 14b, 16d	District: SMRD
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## **Prescribed Fire Plan Appendices**

**Appendix A:** Maps: Vicinity, Project or Ignition Units (or both), Optional: Significant or Sensitive Features, Fuels or Fuels Model, Smoke Impact Areas

**Appendix B:** Technical Reviewer Checklist

**Appendix C:** Complexity Analysis

**Appendix D:** Job Hazard Analysis (JHA)

**Appendix E:** Fire Behavior Modeling Documentation or Empirical Documentation

**Appendix F:** Smoke Management Plan and Smoke Modeling Documentation (Optional)

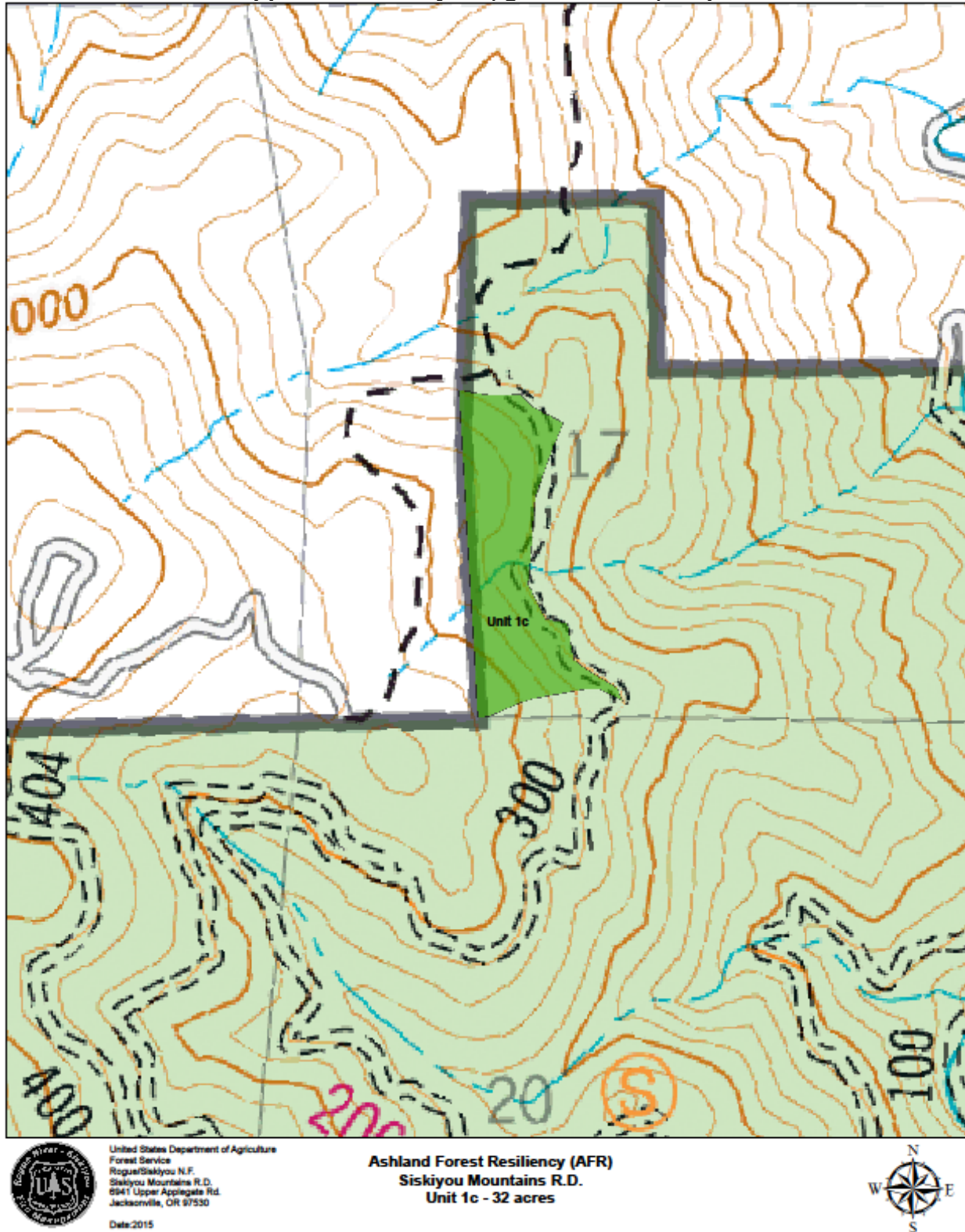
**Appendix G:** Project Safety Plan

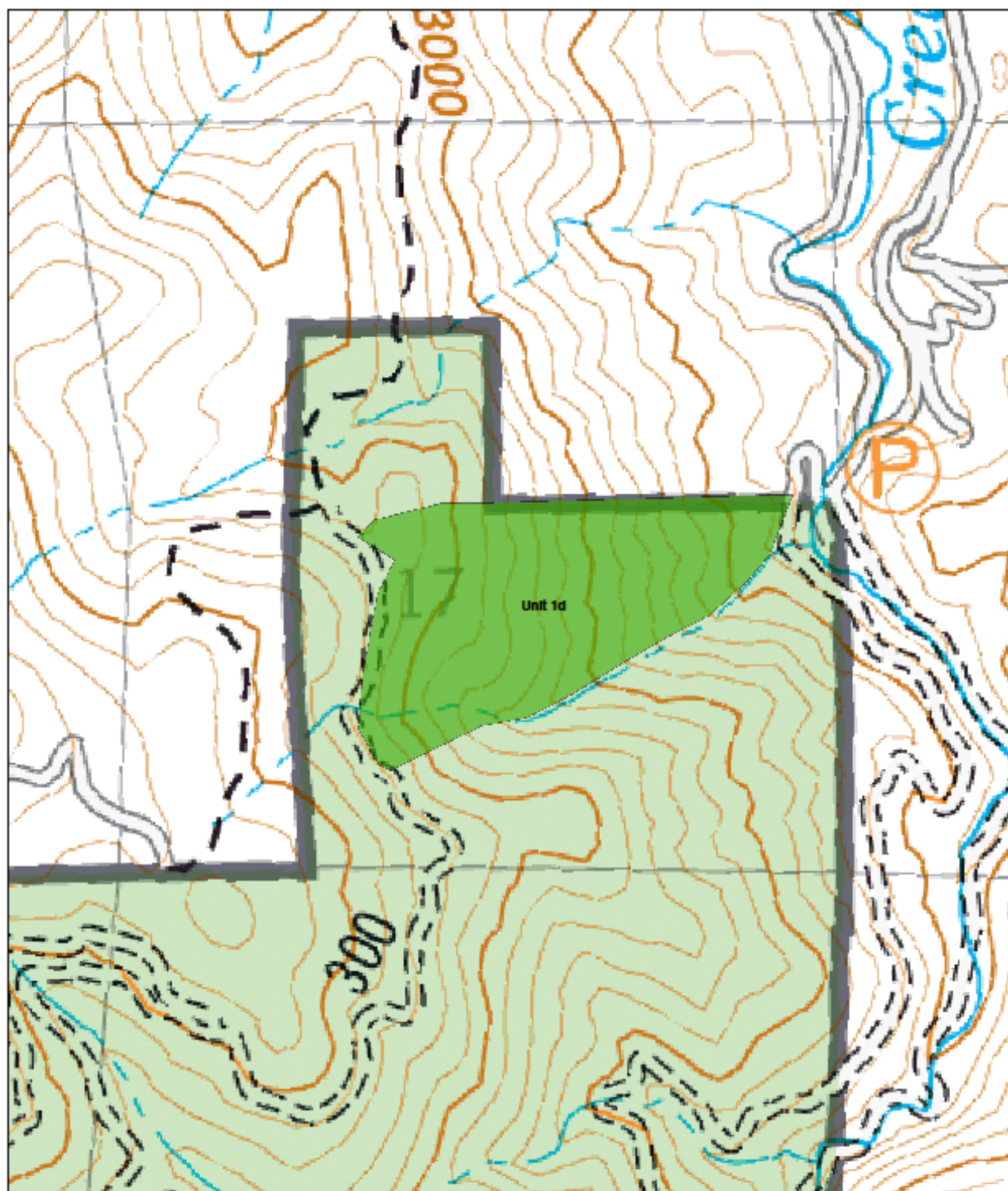
**Appendix H:** Prescribed Fire Post Burn Evaluation

**Appendix I:** Weather / Fuels / Fire Behavior / Smoke Observations





**Appendix A: Project (Ignition Units) Maps**

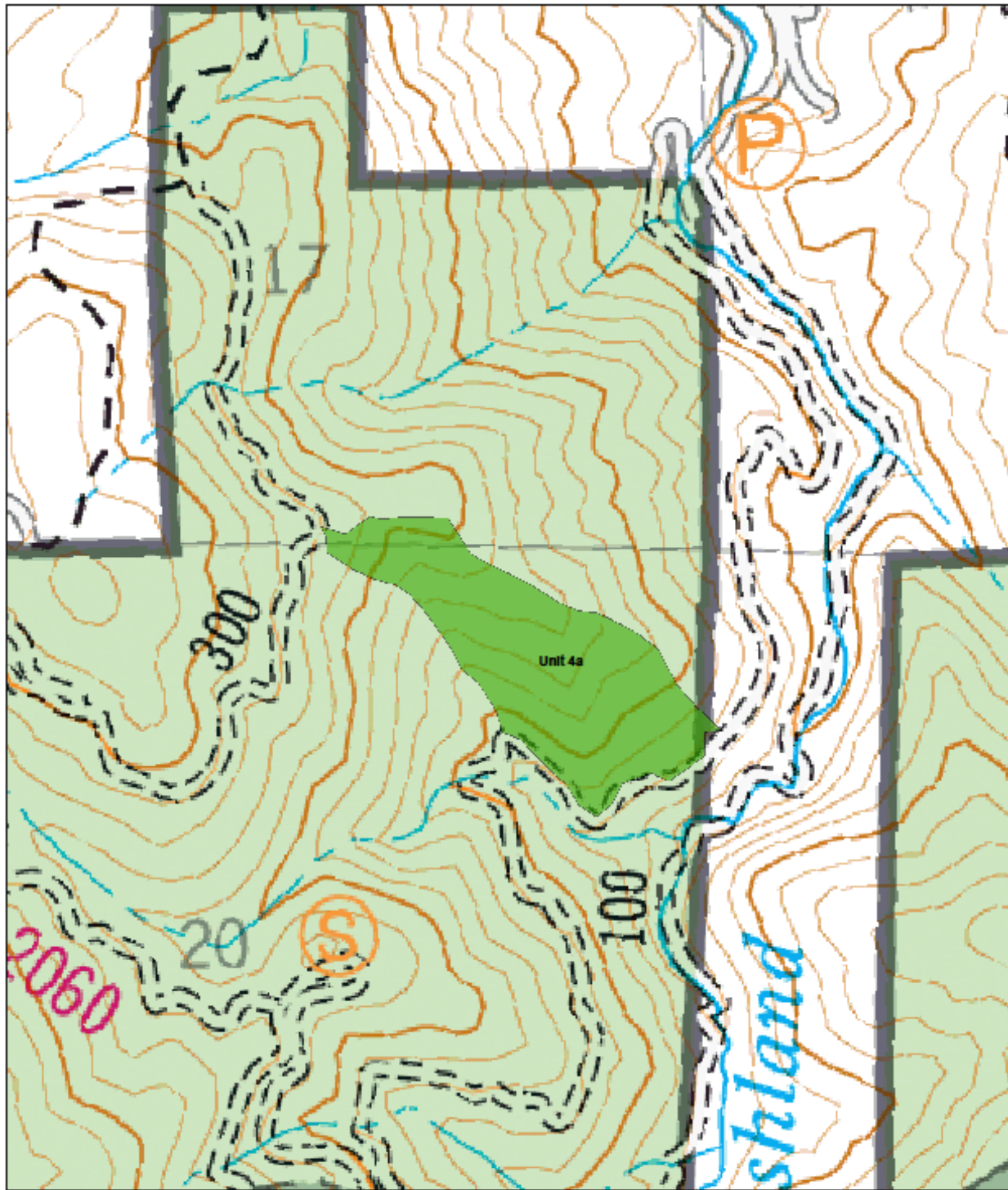


United States Department of Agriculture  
Forest Service  
Rogue/Siskiyou N.F.  
Siskiyou Mountains R.D.  
6941 Upper Applegate Rd.  
Jacksonville, OR 97530  
Date: 2015

**Ashland Forest Resiliency (AFR)**  
**Siskiyou Mountains R.D.**  
**Unit 1d - 84 acres**



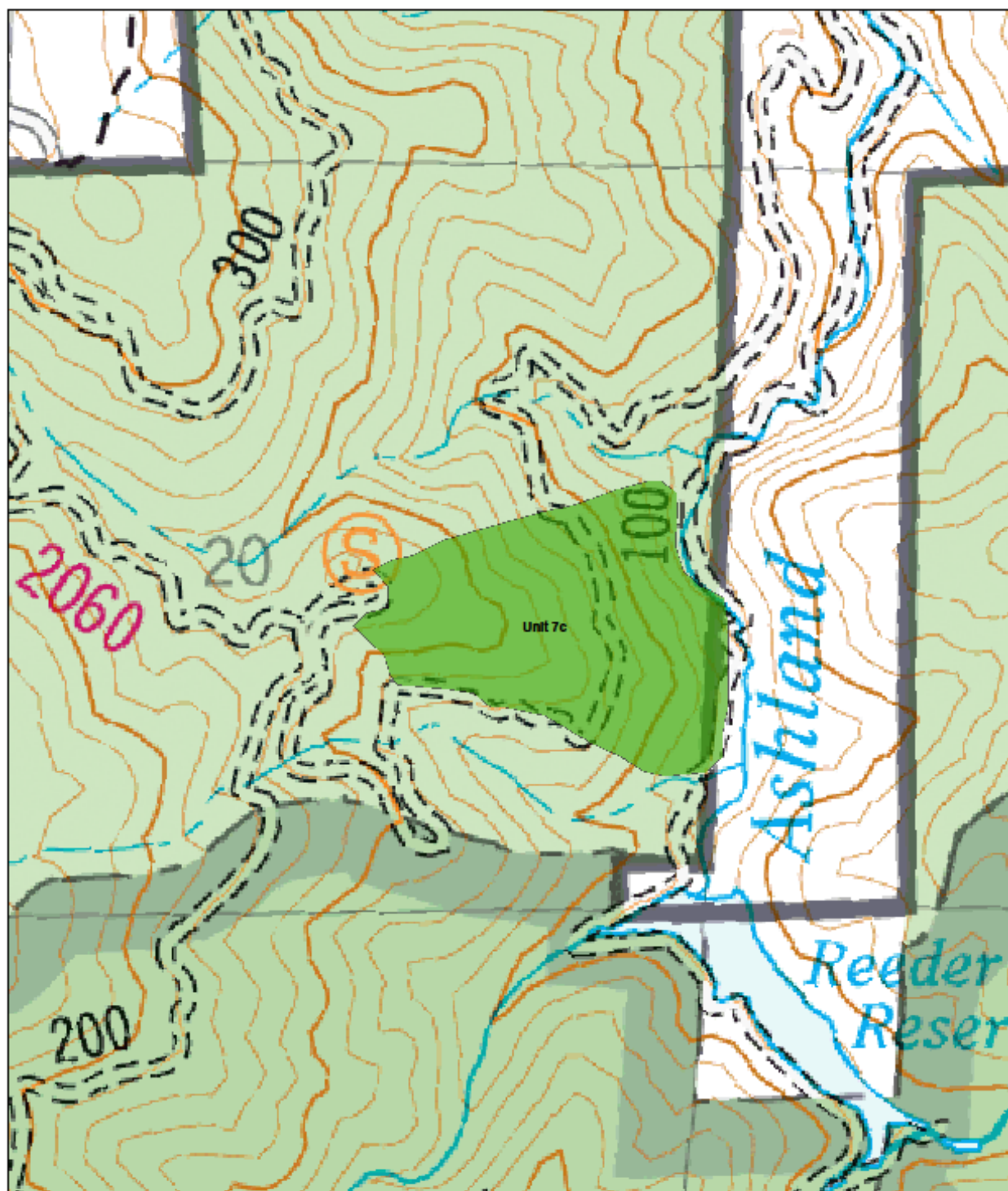




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Date: 2015

**Ashland Forest Resiliency (AFR)**  
**Siskiyou Mountains R.D.**  
**Unit 4a - 52 acres**

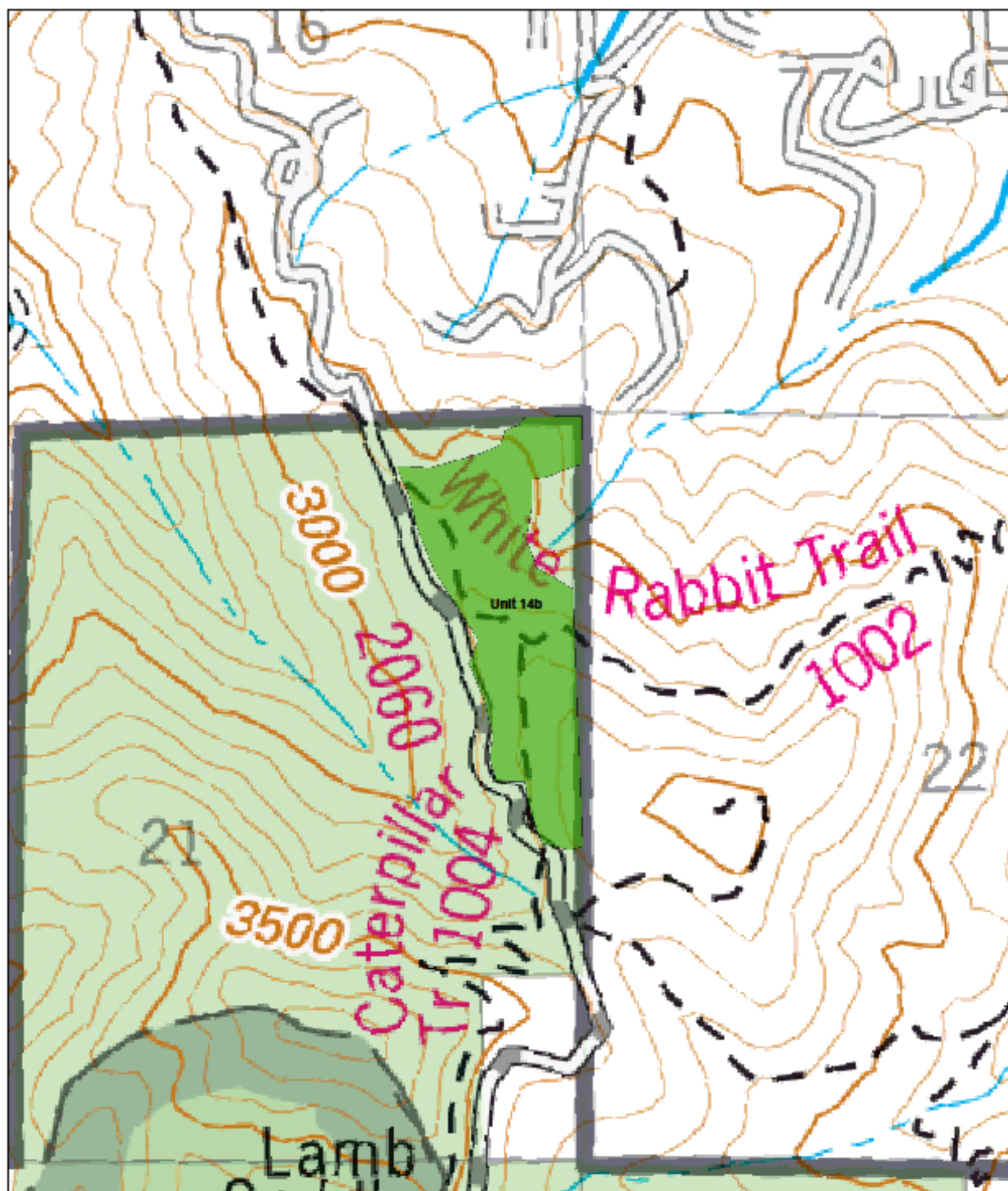




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**Ashland Forest Resiliency (AFR)**  
**Siskiyou Mountains R.D.**  
**Unit 7c - 80 acres**



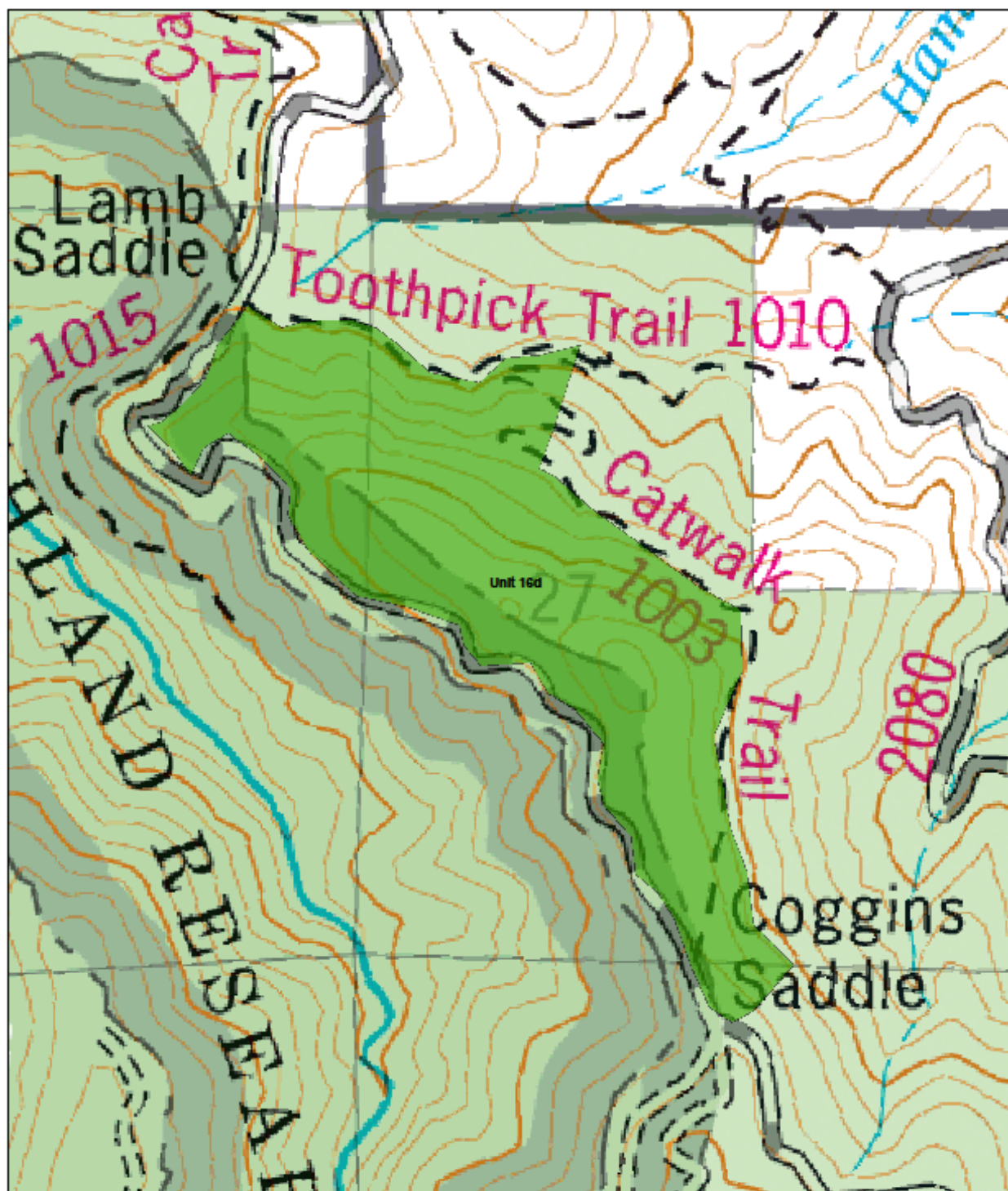


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Ashland Forest Resiliency (AFR)  
Siskiyou Mountains R.D.  
Unit 14b - 47 acres



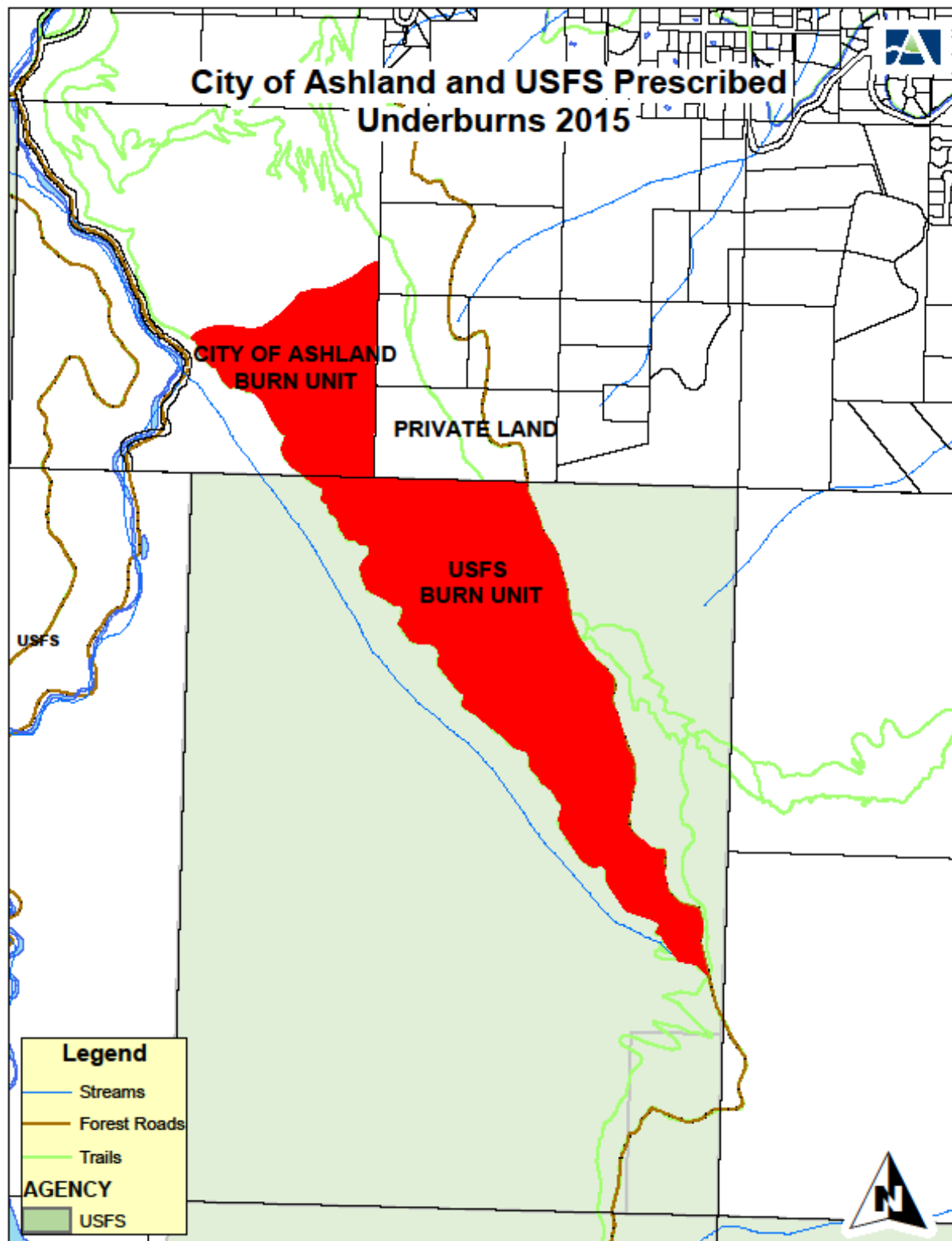




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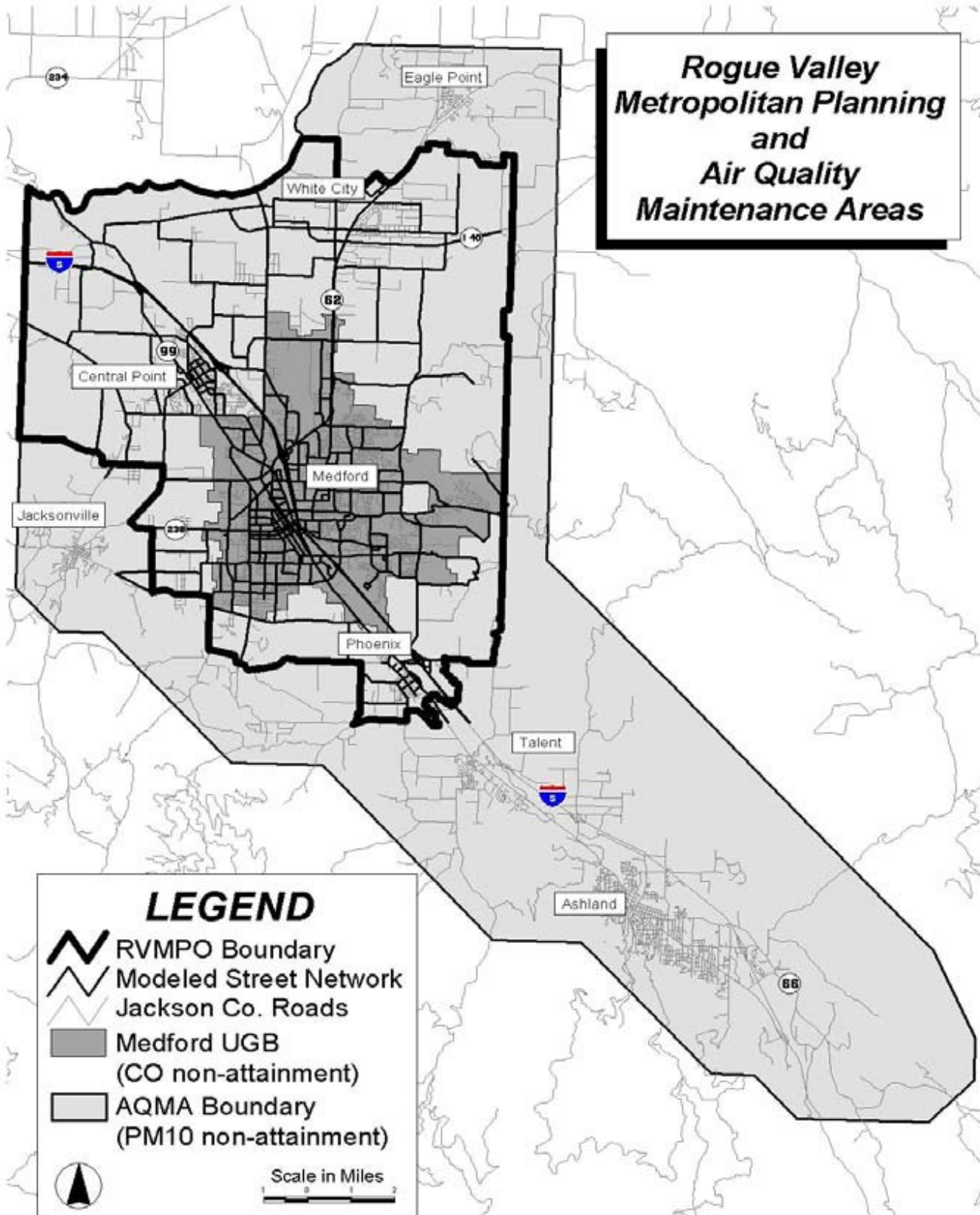
**Ashland Forest Resiliency (AFR)**  
**Siskiyou Mountains R.D.**  
**Unit 16d - 167 acres**









**Appendix A: Smoke Impact Areas: (Optional) Maps**



## Appendix B: Technical Reviewer Checklist

Fill out this checklist based on the guidance provided in the Technical Review section in the *Interagency Prescribed Fire Planning and Implementation Procedures Guide*, PMS 484.

Rate each element in the following table with an “S” for Satisfactory or “U” for Unsatisfactory. Use Comment field as needed to support the element rating.

PREScribed FIRE PLAN ELEMENTS	RATING	COMMENTS
1. Signature page		
2. A. Agency Administrator Ignition Authorization, PMS 485		
2. B. Prescribed Fire GO/NO-GO Checklist, PMS 486		
3. Complexity Analysis Summary		
4. Description of Prescribed Fire Area		
5. Objectives		
6. Funding		
7. Prescription: Prescription Narrative and Prescription		
8. Scheduling		
9. Pre-Burn Considerations and Weather		
10. Briefing		
11. Organization and Equipment		
12. Communication		
13. Public and Personnel Safety, Medical		
14. Test Fire		
15. Ignition Plan		
16. Holding Plan		
17. Contingency Plan		
18. Wildfire Declaration		
19. Smoke Management and Air Quality		
20. Monitoring		
21. Post-Burn Activities		
Appendix A: Maps		
Appendix C: Complexity Analysis		
Appendix D: Agency-Specific Job Hazard Analysis or Risk Assessment		
Appendix E: Fire Behavior Modeling Documentation or Empirical Documentation		
Appendix F: Smoke Management Plan and Smoke Modeling Documentation (Optional)		
Appendix G: Project Aviation Safety Plan (if applicable)		

- ☐ **Approval is recommended** subject to the completion of all requirements listed in the comments section, or on the Prescribed Fire Plan.
- ☐ **Recommendation for approval is not granted.** Prescribed fire plan should be re-submitted for technical review subject to the completion of all requirements listed in the comments section, or on the Prescribed Fire Plan.

Technical Reviewer Signature: \_\_\_\_\_ Qualification and Currency: \_\_\_\_\_

Date Signed: \_\_\_\_\_



## Appendix C – Complexity Analysis

AFR Group 1, Units 1c, 1d, 4a, 7c, 14b, 16d		Quantity	Significance	Values Description: Describe the identified off-site, on-site and political values
Values	On-Site	Few	Mod	Focus fuel reduction treatments on maintaining the largest and healthiest trees. These older mature trees are known as Cohort #1 trees. Prevent soil erosion by maintaining additional effective ground cover in geologically unstable areas (i.e. steeper slopes >35%, in areas such as Landslide Hazard Zones 1 and 2).
	Off-Site	Multiple	Mod	Nearby high value off-site areas include private land and Reeder Reservoir below the project site. Effects to off-site values and private vegetated land could have negative social and political results from an escaped fire. Visitors access may be temporary restricted during project implementation. Location of values from project and topography limits risk. Residential structures in the City of Ashland are one mile north. Timing of burn will be during lower visitor use and minimized fire behavior. Biggest potential impact may be from smoke.
	Public/Political Interest	Few	High	Close to City of Ashland which is within the Smoke Sensitive Receptor Area (SSRA) of the Rogue River Valley. This project is highly visible to the public and has a lot of political and media interest. There is a large amount of recreational use, primarily hikers/runners and bicycles. Biggest potential impact may be from smoke.

Element	Preliminary Risk	Risk Rating Descriptors	Agency Administrator/Preparer Discussion Completed
Safety	Low	<ul style="list-style-type: none"> <li>• Safety issues and hazards are easily identifiable, addressed in briefings, and managed.</li> <li>• Minimal organization produces little exposure of personnel to hazards.</li> <li>• Adverse impacts to public health and safety are unlikely.</li> <li>• Activities are high frequency/low risk.</li> <li>• Fatigue and exposure to hazards are limited.</li> <li>• Standard safety briefings and attention to Lookouts, Communications, Escape Routes, and Safety Zones (LCES) are sufficient.</li> </ul> <p>Most safety issues will be mitigated with briefings, IAP and LCES in place. Public concerns exist that need mitigations before and during implementation. Localized temporary closures may be necessary during implementation. Daily briefings will be performed. Potential exists for an accident or injury to occur to fire personnel due to the nature of the work. The biggest safety concerns to the public are potential smoke impacts and increased traffic from burn resources.</p>	No
Fire Behavior	Mod	<ul style="list-style-type: none"> <li>• Fuels vary within the unit, both in loading and arrangement.</li> <li>• Fire behavior may present control challenges that are easily mitigated.</li> <li>• Medium fuel loadings with some high concentrations are present.</li> <li>• Variable terrain features may significantly affect fire behavior and present moderate ignition and control problems.</li> <li>• Local winds and burning conditions may vary enough to cause shifts in fire behavior that briefly exceed modeled fire behavior and threaten controllability.</li> <li>• Periodic torching can be expected either as isolated points or in limited areas.</li> <li>• Probability of ignition outside of the unit is low and any spotting is expected to be short-range.</li> </ul> <p>Fuels vary moderately within the units; primarily mixed hard wood and conifer. Fire behavior associated with preferred weather conditions is predictable with modeling. Terrain features exists that affect fire behavior. Isolated torching and short range spotting may be expected.</p>	No
Resistance to Containment	Mod	<ul style="list-style-type: none"> <li>• Potential for multiple wildfire mechanisms such as spot fires or slopovers that can propagate at moderate rates of spread but can be held by prompt holding actions.</li> <li>• Some fuel concentrations or ladder fuels exist near critical holding points.</li> <li>• Expected fire intensities in the primary fuel type create little potential to challenge standard fire lines.</li> <li>• The probability of ignition in fuels outside of control lines is low to moderate.</li> <li>• Some dependency on natural fuel breaks to hold the prescribed fire.</li> <li>• Local drought and or fire indices are expected to be moderate to high.</li> </ul> <p>Units mostly have previous fuel treatments and good holding areas. Units will be burned when fire and fuel conditions promote low spread rates and low intensity fire behavior. Closest private lands lies more than ¼ mile from unit boundary. Unit is ridgetop so fire escape would not have slope working to increase fire intensity. Coordination of ignition methods will be needed to meet objectives and provide for personnel safety. Small issues can be corrected.</p>	No
Ignition Procedures and Methods	Mod	<ul style="list-style-type: none"> <li>• Multiple firing sequences patterns and timing must be coordinated to meet project objectives and reduce the risk of an unexpected or adverse event.</li> <li>• Specific fire intensities or ROS are somewhat critical for meeting resource objectives but are readily attained by placing local skill sets in firing boss positions.</li> </ul> <p>Easy lighting techniques with backing fires most likely used per discretion of the burn boss. Units will be ignited from top to bottom with strips of backing fire. Personnel will be briefed and are familiar of procedure. Firing patterns and timing are important in meeting objectives of the project. Project site has many vantage points to see throughout the units. Hand ignition is planned for these burn units.</p>	No
Prescribed Fire	Mod	<ul style="list-style-type: none"> <li>• Active ignition, fire spread, and patrol is expected to occur for several operational periods.</li> <li>• Some residual burning (heavy fuel smoldering, stump holes, etc.) is expected to occur for several days after the primary burn out of the unit.</li> <li>• Mop-up and patrol is typical with minimal resource and equipment needs.</li> <li>• Primary holding phase is expected to be completed within reasonably predictable local weather forecasts.</li> <li>• The prescribed fire depends on accurate forecasts through three days.</li> </ul>	No

Element	Preliminary Risk	Risk Rating Descriptors	Agency Administrator/Preparer Discussion Completed
Duration		Most units will be one day ignition unless conditions change during ignition, discretion left up to the burn boss.	

Element	Preliminary Risk	Risk Rating Descriptors	Agency Administrator/Preparer Discussion Completed
Smoke Management	High	<ul style="list-style-type: none"> <li>Conspicuous smoke will be produced creating significant public concern.</li> <li>The possibility of health and safety issues due to smoke exposure exists.</li> <li>Strong, widespread social/political concern about smoke is common in the affected area.</li> <li>High possibility for a NAAQS exceedance violation.</li> <li>Smoke impacts affect several prescribed fire plan elements.</li> </ul>	No
		Constant monitoring of smoke will be required to insure there is not an intrusion into the SSRA.	
Number and Dependence of Activities	Mod	<ul style="list-style-type: none"> <li>Several activities depend on achievement of previous or concurrent actions.</li> <li>Several activities are interactive.</li> <li>Communication is routine for coordination of activities and project success.</li> <li>The project involves another land management agency, ownership or jurisdiction but project completion is not dependent on coordinated implementation.</li> <li>Adjacent ownership supports the implementation of the prescribed fire.</li> </ul>	No
		Multiple agencies or partners involved as well as holding and ignition teams will be present, coordination through the burn boss and required communications channels will be necessary.	
Management Organization	Mod	<ul style="list-style-type: none"> <li>Two levels of supervision are needed (i.e. Burn Boss, Ignition Specialist, and/or Holding Specialist, plus lighters and holders).</li> <li>Special skills or supervision required for one function (RXB2 is suggested).</li> </ul>	No
		Standard RXB2 organization levels.	
Treatment/ Resource Objectives	Mod	<ul style="list-style-type: none"> <li>Issues are present that hamper or may prevent meeting treatment resource objectives.</li> <li>Failure to meet objectives could have short-term adverse impacts.</li> <li>Associated resources could be damaged if the prescribed fire did not meet resource objectives.</li> <li>Few critical holding points.</li> </ul>	No
		Must ensure the unit does not burn too hot to raise scorch heights too high or raise mortality rates beyond acceptable levels. Risk to older mature tress (also know as Cohort #1 or Legacy Trees) and effective ground cover are a concern. These units should have little if any effect on municipal drinking water. Loss of Cohort 1 trees and exposure of a high percentage of granitic soil may increase potential for erosion.	
Constraints	Mod	<ul style="list-style-type: none"> <li>Constraints exist with some constraints imposing limits on implementing the prescribed fire or achieving objectives.</li> </ul>	No
		Weather and personnel experience may hamper timing and achievement of objectives.	

Element	Preliminary Risk	Risk Rating Descriptors	Agency Administrator/Preparer Discussion Completed
Project Logistics	Low	<ul style="list-style-type: none"><li>Minimal logistical support is needed to safely meet prescribed fire objectives.</li><li>No special equipment, support or communications needs are required.</li></ul>	No
		Routine RXB2 equipment and supplies needed. Units require basic logistical supplies that are locally available. No special needs have been identified.	

Element	Preliminary Risk	Post-Plan Risk	Risk Rating Descriptors	Elements and Actions in the RX Fire Plan that Address Risk Mitigation
Safety	Low	Low	<ul style="list-style-type: none"> <li>• Safety issues and hazards are easily identifiable, addressed in briefings, and managed.</li> <li>• Minimal organization produces little exposure of personnel to hazards.</li> <li>• Adverse impacts to public health and safety are unlikely.</li> <li>• Activities are high frequency/low risk.</li> <li>• Fatigue and exposure to hazards are limited.</li> <li>• Standard safety briefings and attention to Lookouts, Communications, Escape Routes, and Safety Zones (LCES) are sufficient.</li> </ul> <p>Most safety issues will be mitigated with briefings, IAP and LCES in place. Public concerns exist that need mitigations before and during implementation. Localized temporary closures may be necessary during implementation. Daily briefings will be performed. Potential exists for an accident or injury to occur to fire personnel due to the nature of the work. The biggest safety concerns to the public are potential smoke impacts and increased traffic from burn resources.</p>	Elements 8-18
Fire Behavior	Mod	Mod	<ul style="list-style-type: none"> <li>• Fuels vary within the unit, both in loading and arrangement.</li> <li>• Fire behavior may present control challenges that are easily mitigated.</li> <li>• Medium fuel loadings with some high concentrations are present.</li> <li>• Variable terrain features may significantly affect fire behavior and present moderate ignition and control problems.</li> <li>• Local winds and burning conditions may vary enough to cause shifts in fire behavior that briefly exceed modeled fire behavior and threaten controllability.</li> <li>• Periodic torching can be expected either as isolated points or in limited areas.</li> <li>• Probability of ignition outside of the unit is low and any spotting is expected to be short-range.</li> </ul> <p>Fuels vary moderately within the units; primarily mixed hard wood and conifer litter. Fire behavior associated with preferred weather conditions is predictable with modeling. Terrain features exist that affect fire behavior. Isolated torching and short range spotting may be expected. Potential for roll-out on some of the units, local wind influences and transitioning fuel loading will need to be monitored for increase in fire behavior. Many areas adjacent to the units have been treated and would expect similar type fire behavior as the planned units. Fire behavior expected with planned ignition patterns and weather conditions during burn mitigate fire behavior to low risk, however due to proximity to City of Ashland remains moderate.</p>	Elements 4, 5, 7, 20
Resistance to Containment	Mod	Mod	<ul style="list-style-type: none"> <li>• Potential for multiple wildfire mechanisms such as spot fires or slopovers that can propagate at moderate rates of spread but can be held by prompt holding actions.</li> <li>• Some fuel concentrations or ladder fuels exist near critical holding points.</li> <li>• Expected fire intensities in the primary fuel type create little potential to challenge standard fire lines.</li> <li>• The probability of ignition in fuels outside of control lines is low to moderate.</li> <li>• Some dependency on natural fuel breaks to hold the prescribed fire.</li> <li>• Local drought and or fire indices are expected to be moderate to high.</li> </ul> <p>No Change. Risk for escape remains moderate based on vicinity to private land ownership even though reaching it would be unlikely.</p>	
Ignition Procedures and Methods	Mod	Low	<ul style="list-style-type: none"> <li>• An unexpected or adverse event is unlikely and coordination of firing sequence, patterns and timing is not critical to meet project objectives.</li> <li>• Specific fire intensities or rate of spread (ROS) are not critical for meeting resource objectives.</li> </ul> <p>Briefing standard before ignitions including safety and firing plans.</p>	If multiple units or admin piles are being burned simultaneously, efforts will be made communicate ignition and collaborate monitoring post ignitions activities

Element	Preliminary Risk	Post-Plan Risk	Risk Rating Descriptors	Elements and Actions in the RX Fire Plan that Address Risk Mitigation
Prescribed Fire Duration	Mod	Mod	<ul style="list-style-type: none"> <li>Active ignition, fire spread, and patrol is expected to occur for several operational periods.</li> <li>Some residual burning (heavy fuel smoldering, stump holes, etc.) is expected to occur for several days after the primary burn out of the unit.</li> <li>Mop-up and patrol is typical with minimal resource and equipment needs.</li> <li>Primary holding phase is expected to be completed within reasonably predictable local weather forecasts.</li> <li>The prescribed fire depends on accurate forecasts through three days.</li> </ul> <p>Most units will require only one day of ignition and will be determined by the burn boss for the number of days of ignition, holding and monitoring.</p>	Elements 9-17
Smoke Management	High	Mod	<ul style="list-style-type: none"> <li>Noticeable smoke will be produced creating at least some public concern.</li> <li>Short-term health or safety concerns related to smoke exposure may occur if actual weather deviates from forecasted.</li> <li>Nearby communities are highly conscious of smoke from wildland fire.</li> <li>Some possibility for a NAAQS exceedance violation.</li> <li>The prescription or ignition portions of the plan need to consider smoke management.</li> </ul> <p>Partners will make sure to inform public prior to burning as well as smoke monitoring throughout burning event and post burn. Burn units will be registered in the FASTRAXS computer system prior to burn day. Approval to burn will be obtained from the Oregon Department of Forestry's Smoke Management Office. Smoke signs will need to be in place on major road systems adjacent to burn unit prior to ignition and be visible to the public. Avoid burning when a southerly wind component is forecasted. Ignitions should occur early in the day and cease in early afternoon to mitigate residual/pooling smoke issues. Residual smoke from large burning material can be suppressed to mitigate smoke issues.</p>	Element 7, 9, 19
Number and Dependence of Activities	Mod	Mod	<ul style="list-style-type: none"> <li>Several activities depend on achievement of previous or concurrent actions.</li> <li>Several activities are interactive.</li> <li>Communication is routine for coordination of activities and project success.</li> <li>The project involves another land management agency, ownership or jurisdiction but project completion is not dependent on coordinated implementation.</li> <li>Adjacent ownership supports the implementation of the prescribed fire.</li> </ul> <p>Handlines are all in on units to be burned and will be "cleaned up" prior to ignitions. If multiple units or admin piles are being burned simultaneously, efforts will be made communicate ignition and collaborate monitoring post ignitions activities.</p>	Elements 10-17
Management Organization	Mod	Mod	<ul style="list-style-type: none"> <li>Two levels of supervision are needed (i.e. Burn Boss, Ignition Specialist, and/or Holding Specialist, plus lighters and holders).</li> <li>Special skills or supervision required for one function (RXB2 is suggested).</li> </ul> <p>Organization should be run as fully staffed with Burn Boss, FIRB and Holding. FIRB/Holding positions require SRB qualified. Several qualified members are available and all from the local area.</p>	Elements 10-17

Element	Preliminary Risk	Post-Plan Risk	Risk Rating Descriptors	Elements and Actions in the RX Fire Plan that Address Risk Mitigation
Treatment/Resource Objectives	Mod	Mod	<ul style="list-style-type: none"> <li>• Issues are present that hamper or may prevent meeting treatment resource objectives.</li> <li>• Failure to meet objectives could have short-term adverse impacts.</li> <li>• Associated resources could be damaged if the prescribed fire did not meet resource objectives.</li> <li>• Few critical holding points.</li> </ul>	Element 5, 20
			Protection of older legacy trees, both conifer and hardwood, will require special lighting techniques to minimize bole and crown scorch. Effective ground cover retention will have to be monitored throughout the burn. Lighting techniques will need to be adjusted based of fuel, weather and topographical conditions	
Constraints	Mod	Mod	<ul style="list-style-type: none"> <li>• Constraints exist with some constraints imposing limits on implementing the prescribed fire or achieving objectives.</li> </ul>	Elements 3, 4, 13, 21
			Timing of available resources, fuel moistures and acceptable weather conditions could limit chances for ignition or completion of achieving objectives. Support needs can be handled locally by supervisors. Supplies are obtained locally as needed.	
Project Logistics	Low	Low	<ul style="list-style-type: none"> <li>• Minimal logistical support is needed to safely meet prescribed fire objectives.</li> <li>• No special equipment, support or communications needs are required.</li> </ul>	Elements 8-18, 20-21
			Units require basic logistical supplies that are locally available. No special logistical needs have been identified.	



Element	Post-Plan Risk	Technical Difficulty	Rating Descriptors
Safety	Low	Low	<ul style="list-style-type: none"> <li>No special actions are required to mitigate potential minor accidents or injuries identified in the risk assessment/Job Hazard Analysis (JHA).</li> <li>Safety concerns can be easily mitigated through LCES.</li> <li>No preparation work or special project design features are required.</li> </ul> <p>Most safety issues will be mitigated with briefings, IAP and LCES in place. Public concerns exist that need mitigations before and during implementation. Localized temporary closures may be necessary during implementation. Daily briefings will be performed. Potential exists for an accident or injury to occur to fire personnel due to the nature of the work. The biggest safety concerns to the public are potential smoke impacts and increased traffic from burn resources.</p>
Fire Behavior	Mod	Mod	<ul style="list-style-type: none"> <li>Some special provisions for safety are needed to protect personnel.</li> <li>Fire behavior variations are minimal and do not require multiple fuel models to account for the fire behavior.</li> <li>At least one barrier or containment opportunity exists.</li> <li>Fire behavior is such that holding resources may need to use indirect tactics to control some spot fires and slopovers.</li> <li>Occasional on-site fire behavior assessments or calculations may be needed and can be performed as a collateral duty.</li> <li>Emission Reduction Techniques (ERTs) and Smoke Management Techniques (SMTs) require a close adherence to the prescription in the Rx plan.</li> </ul> <p>Fuels vary moderately within the units; primarily mixed hard wood and conifer. Fire behavior associated with preferred weather conditions is predictable with modeling. Terrain features exists that affect fire behavior. Isolated torching and short range spotting may be expected. Fire behavior expected with planned ignition patterns and weather conditions during burn mitigate fire behavior to low risk, however due to proximity to City of Ashland remains moderate. Many areas adjacent to the units have been treated and would expect similar type fire behavior as the planned units.</p>
Resistance to Containment	Mod	Mod	<ul style="list-style-type: none"> <li>Several types of resources are involved in the holding operation.</li> <li>Some portions of the burn unit and project area are not easily accessible to the holding resources.</li> <li>Expected fire behavior outside the unit may require developing indirect attack options.</li> <li>Areas outside of the project area have specific suppression action constraints or are on other jurisdictional lands that may limit containment efforts.</li> <li>Some site prep is required.</li> <li>Expected fire behavior outside of the unit requires moderate contingency planning.</li> </ul> <p>Units mostly have previous fuel treatments and good holding areas. Units will be burned when fire and fuel conditions promote low spread rates and low intensity fire behavior. Closest private lands lies more than ¼ mile from unit boundary. Unit is ridgetop so fire escape would not have slope working to increase fire intensity. Coordination of ignition methods will be needed to meet objectives and provide for personnel safety. Small issues can be corrected.</p>
Ignition Procedures and Methods	Low	Low	<ul style="list-style-type: none"> <li>There is no need for special firing equipment, techniques, or patterns.</li> <li>Firing procedures are simple and ignition team is small.</li> <li>Use of only one type of ignition device is planned.</li> <li>The ignition pattern requires minimal supervision of the lighters to achieve project objectives and manage safety concerns.</li> <li>Communications are easily maintained with a single tactical frequency.</li> <li>The entire project area is readily visible to the Firing/Burn Boss.</li> </ul> <p>Firing patterns and timing are important in meeting objectives of the project. Project site has many vantage points to see throughout the units. Hand ignition is planned for these burn units. Units will be ignited from top to bottom with strips of backing fire. Personnel will be briefed and are familiar of procedure. Coordination of ignition methods will be needed to meet objectives and provide for personnel safety. Small issues can be corrected.</p>
Prescribed Fire Duration	Mod	Low	<ul style="list-style-type: none"> <li>Ignition and mop-up operations are usually completed in 1 to 2 operational periods.</li> <li>Mop-up and patrol is typical with minimal resource and equipment needs.</li> <li>Standard press release is sufficient for public notification.</li> </ul> <p>Each unit should only require 1-2 days of ignitions, 3 days for mop-up and 10 days of patrolling.</p>

Element	Post-Plan Risk	Technical Difficulty	Rating Descriptors
Smoke Management	Mod	Mod	<ul style="list-style-type: none"> <li>ERTs and SMTs require skilled application of the prescribed fire prescription.</li> <li>Some considerations are needed in the prescription or ignition portions of the plan to employ ERTs, and SMTs.</li> <li>Wind parameters are constrained but easy to achieve.</li> <li>Sensitive receptors exist.</li> <li>Burn window/opportunities are reduced by the required weather/dispersion conditions.</li> <li>Normal coordination with air quality officials is required.</li> <li>Some mitigation measures or additional smoke modeling may be needed to address potential concerns with smoke impacts.</li> <li>Specific smoke monitoring may be required to determine smoke plume heights and directions.</li> <li>Rotating project personnel out of dense smoke may be necessary but easy to accomplish.</li> <li>Daily smoke management forecasts are adequate.</li> </ul> <p>Smoke sensitive areas are constraints. Need to check with the City about special events. Project may be in prescription but not meet smoke parameters. Settling of smoke in the valley may have an impact to the public. Will avoid ignitions during periods of low ventilation and a southerly wind component. Smoke constraints may postpone the project later in spring when weather conditions have more favorable winds to burn. This may increase amount of personnel needed to safely implement the burn but not an increase in difficulty.</p>
Number and Dependence of Activities	Mod	Mod	<ul style="list-style-type: none"> <li>Holding and lighting require close coordination and are dependent on each other to prevent spots or slopovers.</li> <li>Continuous communication is necessary for successful project completion.</li> <li>Some pre-burn considerations are required before ignition.</li> </ul> <p>Activities are independent. Units will be ignited following a briefing and approved "Go-No-Go". Holding and ignition teams will be working close together. It is anticipated that only one burn unit would occur at a time. No aerial resources, small ignition teams, good access and visibility. Coordination between holding forces and ignition forces may increase the consequence and or probability of an escape. Independent actions between lighters and holding may have increased safety issues. Minimum technical difficulty in performing activities is expected. Communication and coordination is needed for success. Project will be set up under an ICS structure. Single activities, small holding team, small lighting team and good briefing with LCES established lowers the technical difficulty to low.</p>
Management Organization	Mod	Mod	<ul style="list-style-type: none"> <li>At least one primary team member may need to come from outside of the local unit and may not be familiar with local factors.</li> <li>The numbers of qualified personnel available on the local unit are limited.</li> <li>Special skills or supervision required for one function (RXB2 suggested).</li> <li>Some pre-burn preparation work may require special organizational planning and/or coordination.</li> <li>Protection of resource values requires extra considerations when developing certain elements of the prescribed fire plan.</li> <li>Few resources are required for mop-up and patrol.</li> </ul> <p>Organization should be run as fully staffed with Burn Boss, FIRB and Holding. FIRB/Holding positions require SRB qualified. Several qualified members are available and all from the local area.</p>
Treatment/Resource Objectives	Mod	Mod	<ul style="list-style-type: none"> <li>There are several resource objectives to meet.</li> <li>Measures to achieve the objectives are either 1) easy to complete but there are restrictions on the techniques or 2) moderately difficult to complete and there are few or no restrictions on techniques.</li> <li>Additional monitoring of fire behavior and weather is needed to determine if prescribed fire objectives are being met.</li> <li>Other opportunities to meet objectives are very limited in a given year.</li> </ul> <p>Objectives with the use of fire are predicted to be met. Fire behavior and fuel treatment effectiveness will be monitored. Objectives are attainable with fire based on the discussion in creating the objectives, however, this will be based on good firing techniques and monitoring. Fire treatments to meet objectives are limited to certain weather conditions throughout the year. Objectives are not difficult to meet with use of fire. Adverse conditions may have negative short-term effects on the ecosystem. Meeting objectives requires some special techniques to mitigate smoke. Monitoring of the project continues to assist in understanding fuels and conditions. Data collected by specialized personnel will contribute to meeting treatment objectives.</p>
Constraints	Mod	Mod	<ul style="list-style-type: none"> <li>Some constraints are not easily accommodated and increase the difficulty of completing the project or achieving objectives.</li> <li>Some prescribed fire parameters are dependent upon marginal environmental conditions.</li> <li>The length of time to complete the project and the size of the organization may need to be increased.</li> </ul> <p>Timing of available resources, fuel moistures and acceptable weather conditions could limit chances for ignition or completion of achieving objectives. Support needs can be handled locally by supervisors. Supplies are obtained locally as needed.</p>
			<ul style="list-style-type: none"> <li>No specific logistic function is required and the local unit will handle their own support needs.</li> <li>Project is nearby and easily accessible.</li> <li>Local cache can supply the needs of the prescribed fire.</li> </ul>

Element	Post-Plan Risk	Technical Difficulty	Rating Descriptors
Project Logistics	Low	Low	All equipment is standard and readily available through on-site resources. Units require basic logistical supplies that are locally available. No special needs have been identified.



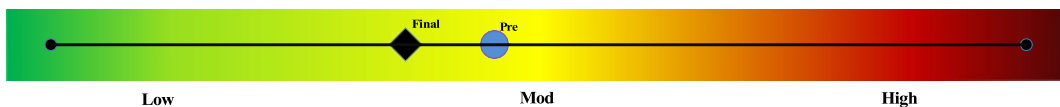
## NWCG Prescribed Fire Summary and Final Complexity Worksheet, PMS 424-1

This worksheet is supplemental to the *Prescribed Fire Complexity Rating System Guide*, PMS 424. It is designed to enable effective risk management. The *Interagency Prescribed Fire Planning and Implementation Procedures Guide*, PMS 484, provides further explanation. This becomes Element 3 of the Prescribed Fire Plan.

AFR Group 1, Units 1c, 1d, 4a, 7c, 14b, 16d		Quantity	Significance
Values	On-Site	Few	Mod
	Off-Site	Multiple	Mod
	Public/Political Interest	Few	High

Element	Preliminary Risk	Post-Plan Risk	Technical Difficulty	Calculated Rating
Safety	Low	Low	Low	Low
Fire Behavior	Mod	Mod	Mod	Mod
Resistance to Containment	Mod	Mod	Mod	Mod
Ignition Procedures and Methods	Mod	Low	Low	Low
Prescribed Fire Duration	Mod	Mod	Low	Mod
Smoke Management	High	Mod	Mod	Mod
Number and Dependence of Activities	Mod	Mod	Mod	Mod
Management Organization	Mod	Mod	Mod	Mod
Treatment/Resource Objectives	Mod	Mod	Mod	Mod
Constraints	Mod	Mod	Mod	Mod
Project Logistics	Low	Low	Low	Low

### Calculated Summary Prescribed Fire Plan



Final Complexity Determination	Final Complexity Determination Rationale
Mod	Public and Political interest in this area is high. Even with good communication and information sharing, a negative event from this project could potentially deteriorate relationships with partners and the public. One event of concern is smoke into the city of Ashland. The final complexity rating for public and political interest, as well as smoke management remains high while other concerns rate out as low or moderate. Therefore, the implementation of this burn plan is rated at a moderate complexity which requires an AFR 1.

<b>Signatures</b>	Rx Burn Plan Preparer's Name: _____ X _____ Date: _____ Preparer
	Technical Reviewer's Name: _____ X _____ Date: _____ Technical Reviewer
	Agency Administrator's Name: _____ X _____ Date: _____ Agency Administrator

## Appendix D: Job Hazard Analysis (JHA)

FS-6700-7 (08/12)

U.S. Department of Agriculture  Forest Service	1. WORK PROJECT/ACTIVITY Prescribed Fire Activities Underburning	2. LOCATION  <b>Rogue River-Siskiyou National Forest</b>	3. UNIT  Siskiyou Mountains Ranger District		
JOB HAZARD ANALYSIS (JHA) References-FSH 6709.11 and -12 (Instructions on Reverse)	4. NAME OF ANALYST  Jim Delatorre	5. JOB TITLE  FEO	6. DATE PREPARED  10-20-2014 Reviewed		
7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE	10. POST ABATEMENT ACTION RISK RATING (from the Severity/Probability Matrix)		
			Severity	Probability	Risk Code
Vehicle  FSH 6709.11 (Ch 10, 12) Interagency Standards for Fire and Aviation Operations 2004 (NFES 2724 – Ch. 06)	Driving	<ol style="list-style-type: none"> <li>Adjust speed to condition.</li> <li>Watchout for changing conditions.</li> <li>Advise others of hazards.</li> <li>Anticipate dust, smoke, and wildlife.</li> </ol>	1	D	2-H
	Road Conditions	<ol style="list-style-type: none"> <li>Always use chock-blocks on slopes.</li> <li>Park in lowest gear in direction of probable roll.</li> <li>Park off roadway, wheels turned to minimize hazards.</li> <li>Windows up, keys in ignition or gas cap.</li> <li>DO NOT BLOCK ROADS.</li> <li>Check surface before leaving traveled surface.</li> <li>Park safe distance from burn area, point away from burn.</li> <li>Use emergency lights and flashers in smoke, on narrow roads.</li> </ol>	1	D	2-H
	Parking	<ol style="list-style-type: none"> <li>Inspect area prior to backing.</li> <li>Always utilize a spotter, when available, when visibility is restricted.</li> <li>Use mirrors.</li> <li>Tap horn to indicate backing motion.</li> <li>Ensure restricted vision vehicles are equipped with warning devices.</li> <li>Face the danger area when backing.</li> <li>Never back on blind corners.</li> <li>Walk around the vehicle and check for hazards and obstructions.</li> </ol>	3	C	3-M

*	<b>Backing</b>	<ol style="list-style-type: none"> <li>1. Secure loads properly.</li> <li>2. Do not overload vehicles.</li> <li>3. Keep tools separated from personnel gear and fuel containers.</li> <li>4. Guard sharp edges.</li> <li>5. Utilize proper lifting techniques.</li> <li>6. Load heavy items on bottom.</li> <li>8. Utilize approved non-leaking fuel containers</li> </ol>	<b>3</b>	<b>C</b>	<b>3-M</b>
*	<b>Cargo Transport</b>	<ol style="list-style-type: none"> <li>1. Line Officers shall ensure that all personnel involved in the storage, use, transportation and disposal of hazardous materials shall be trained at a minimum in general awareness.</li> <li>2. Read and understand the Material Safety Data Sheets (MSDS)</li> <li>3. Provide and use funnels and spouts.</li> <li>4. Wear gloves, pour slowly.</li> <li>5. Provide absorbant materials.</li> <li>6. Clean-up/neutralize/isolate spills.</li> <li>7. Carry spill kit and or absorbant material.</li> <li>8. Proper PPE for handling fuel consists of Nomex shirt and pants, leather gloves, leather non-skid boots.</li> <li>9. Avoid inhalation of fumes, and direct contact with skin/clothes.</li> <li>7.</li> </ol>	<b>3</b>	<b>E</b>	<b>4-L</b>
<b>Handling Flammable Liquids</b>  FSH 6709.11 (Ch 10, 60) Interagency Standards for Fire and Aviation Operations 2004 (NFES 2724 – Ch. 06)	<b>Fuel Splash</b>	<ol style="list-style-type: none"> <li>1. Identify and isolate leaking containers.</li> <li>2. If containers are found to be damaged or leaking, immediately dispose of the container.</li> <li>3. Secure containers when transporting.</li> <li>4. Provide gasquet materials, check cap/lid function.</li> <li>5. Allow for vapor expansion in container, do not overfill.</li> <li>6. Label every container with the identity of its contents.</li> <li>7. Label information shall include: type of fuel (slash, pump,saw), proportion of mix (4:1, 24:1, etc.), date mixed, and name of person who did the mixing.</li> <li>8. Limit the volume of volatile or flammable material the minimum needed for short operation periods.</li> </ol> Provied means of containing the material if equipment or containers should break or spill their contents.	<b>3</b>	<b>D</b>	<b>4-L</b>
	<b>Containers</b>	<ol style="list-style-type: none"> <li>1. Isolate fuel storage and transfer area away from vehicles and fire area.</li> <li>2. No smoking within 50 feet of fuel storage area.</li> <li>3. Do not transfer fuel from containers that are in the bed of vehicles (especially plastic-lined pick-ups).</li> <li>9. Provide fire extinguishers suitable for flammable liquids being transported.</li> </ol>	<b>4</b>	<b>E</b>	<b>4-L</b>
		<ol style="list-style-type: none"> <li>1. Use only approved mixtures for burning: <u>4</u> or <u>3</u> parts diesel to <u>1</u> part gasoline.</li> </ol>	<b>4</b>	<b>D</b>	<b>4-L</b>

	<b>Flames/Sparks</b>	<ol style="list-style-type: none"> <li>2. Provide appropriate labels for all fuel containers.</li> <li>3. Label information shall include: type of fuel (slash, pump,saw), proportion of mix (4:1, 24:1, etc.), date mixed, and name of person who did the mixing.</li> <li>4. Isolate differing mixtures from each other (saw, pump, slash).</li> <li>5. Bulk mix when possible, rather than individual containers.</li> <li>6. Un-marked containers shall be considered suspect and the contents will be isolated.</li> <li>4. Use only safety- approved containers for petroleum products. Return unused fuel to proper container(s) and storage area.</li> </ol>			
<b>Handling Flammable Liquids</b> FSH 6709.11 (Ch 10, 25) Interagency Standards for Fire and Aviation Operations 2004 (NFES 2724 – Ch. 15)	<b>Fuel Mixtures</b>	<ol style="list-style-type: none"> <li>1. Use appropriate ignition device (drip torch, propane torch, terra-torch, ATV-mounted torch, fusee's).</li> <li>2. Inspect device prior to use.</li> <li>3. Remove defective devices from service (label).</li> <li>4. Provide training to in-experienced operators.</li> <li>5. Transport in boxes or containers that hold them upright and secure</li> <li>7. Transport in a manner that will eliminate spillage (ie. Drip torch empied, wick inside container, breather tube shut)</li> </ol>	<b>3</b>	<b>E</b>	<b>4-L</b>
<b>Ignition (of Vegetative materials)</b> FSH 6709.11 (Ch 10, 25) Interagency Standards for Fire and Aviation Operations 2004 (NFES 2724 – Ch. 15)	<b>Ignition Devices</b>	<ol style="list-style-type: none"> <li>1. Personnel shall be trained and certified to render First Aid and CPR.</li> <li>2. Required PPE for ignition includes leather gloves, Nomex Pants and long-sleeved shirt, hardhat, leather lace-type boots with skid-resistant soles.</li> <li>3. Direct ignition device away from self/others.</li> <li>4. Select ignition site allowing for direction of flames to be away from people.</li> <li>5. Avoid contact with flammable liquids, if clothing becomes saturated change immediately.</li> <li>6. Maintain availability of adequate first aid materials for on-site intervention.</li> </ol>	<b>3</b>	<b>D</b>	<b>4-L</b>
	<b>Burn</b>	<ol style="list-style-type: none"> <li>1. Maintain proper spacing.</li> <li>2. Wear eight inch top, lace up, non slip sole leather boots.</li> <li>3. Carry tools on downhill side.</li> <li>4. Use caution on steep and slasy areas.</li> <li>5. Avoid walking on or over buck skin logs</li> <li>6. Wear caulk boots to maintain secure footing in wet / slippery environments</li> <li>7. While traversing work area, visually identify areas to avoid.</li> <li>8. Identify vegetation and terrain conditions that pose a hazard.</li> <li>6. Avoid running, sliding, jumping, elevated log traverse.</li> </ol>	<b>2</b>	<b>D</b>	<b>3-M</b>
	<b>Footing</b>	<ol style="list-style-type: none"> <li>1. Rotate arduous tasks among capable personnel.</li> <li>2. Utilize ONLY those personnel that have passed an agency approved fitness test.</li> <li>3. Ensure breaks are taken in smoke free shaded areas.</li> <li>4. Encourage intake of ample water, and nutritious snacks.</li> <li>5. Limit shift length to 14-hours.</li> </ol>	<b>3</b>	<b>D</b>	<b>3-M</b>



		6. Pace work activities, maintain energy reserve. 9. Observe co-workers for fatigue symptoms.			
	<b>Fatigue</b>	1. All personnel will be trained and know the Ten (10) Standard Firefighting Orders. 2. All personnel will be trained and know the Eighteen Watch Out Situations. 3. All personnel will be trained and know the meaning of LCES. 4. All personnel will be issued and trained with the proper Personal Protective Equipment (PPE) necessary for a safe assignment. 5. PPE will consist of but not limited to: Hard hat w/chinstrap, leather non skid boots w/ at least an eight (8) inch top and lace up front, fire resistant shirt and pants (Nomex), leather gloves, eye protection, ear protection, fire shelter. 6. All personnel will receive a briefing prior to each burn assignment. 7. Briefings will include: tactics, safety, hazards, communications, escape routes, safety zones, weather, and fire behavior. 8. All personnel will be aware of the chain of command. 9. All personnel will meet the National Firefighter Qualification System training for their position. 10. All personnel will have passed the physical requirements for their position and have in their possession an IQCS card /"Red Card" indicating so. 11. All personnel will have received the appropriate training for their position.	<b>3</b>	<b>D</b>	<b>4-L</b>
<b>Ignition of Vegetative materials</b> Ch. FSH 6709.11 (Ch 20,60) Interagency Standards for Fire and Aviation Operations 2004 (NFES 2724 – 06)	<b>Inexperienced Personnel</b>	1. Actively observe fire behavior - note changes in wind speed and direction, flame length, rate of spread. 2. Remove personnel from immediate area when fire behavior becomes unpredictable or potentially dangerous. 3. Ensure expected fire behavior is understood. 4. Identify unacceptable fire behavior characteristics. 5. Utilize trained and qualified (RXCM) personnel for ignition, holding, and mop-up operations. 6. <b>Fire shelters are required for all personnel</b> on underburn projects due to the potential of changing fire behavior conditions, and general application of fire on the landscape.	<b>3</b>	<b>C</b>	<b>3-M</b>
<b>Environmental Hazards</b> (FSH 6709.11 Ch. 20) Interagency Standards for Fire and Aviation Operations 2004 (NFES 2724 – 18)	<b>Erratic Fire Behavior</b>	1. Identify and communicate the presence of falling/rolling materials potential on the operation. 2. Post lookouts and/or avoid areas of known hazard. 3. Maintain positive verbal and radio communication with personnel working in identified areas. 4. Minimize exposure to unavoidable hazards.	<b>2</b>	<b>D</b>	<b>3-M</b>

*	<b>Snags/Debris</b>	<ol style="list-style-type: none"> <li>1. Tools to be guarded prior to and after use.</li> <li>2. Maintain proper spacing (10') when working.</li> <li>3. Watchout for overhead obstacles.</li> <li>4. Select proper tools.</li> <li>5. Inspect tools before use.</li> <li>6. Provide training and supervision.</li> <li>7. Store tools in safe location when not in use (off fireline, away from resting people, edge protected, not leaning against tree or vehicle).</li> <li>8. Watch footing.</li> <li>9. No overhead chopping.</li> <li>10. Separate tools from other gear when transporting.</li> </ol>	<b>1</b>	<b>D</b>	<b>2-H</b>
<b>Environmental Hazards (cont.)</b>  (FSH 6709.11 Ch. 20) Interagency Standards for Fire and Aviation Operations 2004 (NFES 2724 – 18)	<b>Handtool Use</b>	<ol style="list-style-type: none"> <li>1. Avoid working in smoke concentrations.</li> <li>2. Increase spacing due to limited visibility.</li> <li>3. Be aware of fire activity, and location.</li> <li>4. Advise supervisor of potential vehicle traffic problems; exercise caution on/near roadways.</li> <li>5. Vehicles shall use flashers and headlights.</li> <li>6. Park off-roadway,</li> <li>7. Post signs to notify the public</li> <li>8. Avoid smoke when possible.</li> <li>9. Protect lungs and airway at all times.</li> <li>10. If necessary to be in the smoke avoid long durations.</li> <li>11. Monitor for sign of excessive carbon monoxide levels.</li> <li>12. Rotate crew out of smokey areas if possible</li> <li>13. Drink plenty of water.</li> <li>14. Take Frequent breaks.</li> <li>15. Moderate work and pace yourself.</li> </ol>	<b>3</b>	<b>D</b>	<b>4-L</b>

	<b>Smoke</b>	1. Post signs on the road (PRESCRIBE BURN, SMOKE AHEAD) on both ends of the unit to inform public.  2. Notify all contacts as per burn plan (NOTIFICATION PLAN) section of prescribe burn before and when ignition has started.  If necessary as determined, by burn boss guards will be posted to restrict usage of roads and trails until danger has passed.	<b>4</b>	<b>C</b>	<b>4-L</b>
<b>Burning</b>	<b>Danger to public and Public distraction to burn boss and crew</b>	<b>3. 13. DATE</b>	<b>3</b>	<b>D</b>	<b>4-L</b>
<b>11. LINE OFFICER SIGNATURE</b>		<b>12. TITLE</b>			

**JHA Instructions (References-FSH 6709.11 and .12)**

The JHA shall identify the location of the work project or activity, the name of employee(s) involved in the process, the date(s) of acknowledgment, and the name of the appropriate line officer approving the JHA. The line officer acknowledges that employees have read and understand the contents, have received the required training, and are qualified to perform the work project or activity.

Blocks 1, 2, 3, 4, 5, and 6: Self-explanatory.

Block 7: Identify all tasks and procedures associated with the work project or activity that have potential to cause injury or illness to personnel and damage to property or material. Include emergency evacuation procedures (EEP).

Block 8: Identify all known or suspect hazards associated with each respective task/procedure listed in block 7. For example:

- a. Research past accidents/incidents.
- b. Research the Health and Safety Code, FSH 6709.11 or other appropriate literature.
- c. Discuss the work project/activity with participants.
- d. Observe the work project/activity.
- e. A combination of the above.

Block 9: Identify appropriate actions to reduce or eliminate the hazards identified in block 8. Abatement measures listed below are in the order of the preferred abatement method:

- a. Engineering Controls (the most desirable method of abatement).  
For example, ergonomically designed tools, equipment, and furniture.
- b. Substitution. For example, switching to high flash point, non-toxic solvents.
- c. Administrative Controls. For example, limiting exposure by reducing the work schedule; establishing appropriate procedures and practices.
- d. PPE (least desirable method of abatement). For example, using hearing protection when working with or close to portable machines (chain saws, rock drills, and portable water pumps).
- e. A combination of the above.

Block 10: The values for Severity, Probability, and the overall Risk Assessment Code (RAC) will correspond to the Risk Management Matrix (attached).

Block 11: The JHA must be reviewed and approved by the appropriate manager / supervisor, as identified in the Risk Decision Authority Matrix.

Block 12 and 13: Self-explanatory.

**Emergency Evacuation Instructions (Reference FSH 6709.11)**

Work supervisors and crew members are responsible for developing and discussing field emergency evacuation procedures (EEP) and alternatives in the event a person(s) becomes seriously ill or injured at the worksite.

Be prepared to provide the following information:

- a. Nature of the accident or injury (avoid using victim's name).
- b. Type of assistance needed, if any (ground, air, or water evacuation).
- c. Location of accident or injury, best access route into the worksite (road name/number), identifiable ground/air landmarks.
- d. Radio frequencies.
- e. Contact person.
- f. Local hazards to ground vehicles or aviation.
- g. Weather conditions (wind speed & direction, visibility, temperature).
- h. Topography.
- i. Number of individuals to be transported.
- j. Estimated weight of individuals for air/water evacuation.

The items listed above serve only as guidelines for the development of emergency evacuation procedures.

**JHA and Emergency Evacuation Procedures Acknowledgment**

We, the undersigned work leader and crew members, acknowledge participation in the development of this JHA (as applicable) and accompanying emergency evacuation procedures. We have thoroughly discussed and understand the provisions of each of these documents:

**SIGNATURE****DATE****SIGNATURE****DATE**


Safety Risk Assessment Codes								
HAZARD PROBABILITY								
			Frequent	Likely	Occasional	Seldom	Unlikely	
			A	B	C	D	E	
SEVERITY	Catastrophic	I	Extremely High (RAC 1)		High (RAC 2)		Medium (RAC 3)	
	Critical	II	Extremely High (RAC 1)	High (RAC 2)			Medium (RAC 3)	Low (RAC 4)
	Marginal	III	High (RAC 2)	Medium (RAC 3)			Low (RAC 4)	
	Negligible	IV	Low (RAC 4)					

Severity		Effect
Catastrophic	I	Death or permanent disability, system loss, major property damage
Critical	II	Permanent partial disability, temporary total disability in excess of three months, major system damage, significant property damage
Marginal	III	Minor injury, lost workday mishap, compensable injury/illness, minor system damage, minor property damage
Negligible	IV	First aid or minor medical treatment, minor system impairment

Probability	
A. Frequent	The event occurs often, frequently, or with regularity in one's career or the life cycle of equipment items
B. Likely	The event occurs periodically with some regularity but not frequently enough to be predictable
C. Occasional	The event occurs sporadically but not with consistent regularity or predictability in ones career of the life cycle of equipment
D. Remote	Possible to occur but the chances of the event occurring are remote
E. Unlikely	In this case, it is unlikely the event will ever occur

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## Appendix E: Fire Behavior Modeling Documentation or Empirical Documentation



BehavePlus 5.0.5

Wed, Feb 18, 2015 at 07:58:33

Page 1

### Inputs: SURFACE, CONTAIN, SPOT, SCORCH, MORTALITY

Description

#### Fuel/Vegetation, Surface/Understory

First Fuel Model		t13
Second Fuel Model		sh2
First Fuel Model Coverage	%	90

#### Fuel/Vegetation, Overstory

Downwind Canopy Height	ft	100
Torching Tree Height	ft	100
Mortality Tree Species		PSEMEN
Spot Tree Species		PINPON
D.B.H.	in	18

#### Fuel Moisture

1-h Moisture	%	6, 8, 10, 12, 14, 16
10-h Moisture	%	8
100-h Moisture	%	10
Live Herbaceous Moisture	%	
Live Woody Moisture	%	250

#### Weather

20-ft Wind Speed (upslope)	mi/h	15
Wind Adjustment Factor		.3
Air Temperature	oF	85

#### Terrain

Slope Steepness	%	45
Ridge-to-Valley Elevation Difference	ft	500
Ridge-to-Valley Horizontal Distance	mi	.5
Spotting Source Location		RT

#### Fire

Number of Torchng Trees		1
Fire Size at Report	ac	.1

#### Suppression

Suppression Tactic		Rear
Line Construction Offset	ch	0
Resource Line Production Rate	ch/h	15
Resource Arrival Time	h	0
Resource Duration	h	20

(continued on next page)

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## Input Worksheet (continued)

## Run Option Notes

Two fuel model weighting method: two-dimensional spread [SURFACE].

Maximum reliable effective wind speed limit IS imposed [SURFACE].

Calculations are only for the direction of maximum spread [SURFACE].

Fireline intensity, flame length, and spread distance are always  
for the direction of the spread calculations [SURFACE].

Wind is blowing upslope [SURFACE].

Suppression input is for a single resource [CONTAIN];  
multiple values can be entered for any input variable.

## Output Variables

Surface Rate of Spread (maximum) (ch/h) [SURFACE]

Flame Length (ft) [SURFACE]

Contain Status [CONTAIN]

Time from Report (h) [CONTAIN]

Contained Area (ac) [CONTAIN]

Fireline Constructed (ch) [CONTAIN]

Spot Dist from Torching Trees (mi) [SPOT]

Scorch Height (ft) [SCORCH]

Bark Thickness (in) [MORTALITY]

## Notes





1-h Moisture %	ROS (max) ch/h	Flame Length ft	Contain Status	Time from Report h	Contain Area ac	>
6	2.1	1.2	Contained	0.4	0.2	
8	1.9	1.1	Contained	0.4	0.2	
10	1.8	1.1	Contained	0.4	0.2	
12	1.6	1.0	Contained	0.4	0.2	
14	1.5	0.9	Contained	0.3	0.1	
16	1.3	0.8	Contained	0.3	0.1	



<	1-h	Fireline	Torch Tree	Scorch	Bark
<	Moisture	Constructed	Spot Dist	Height	Thickness
<	%	ch	mi	ft	in
	6	5.7	0.2	1	1.2
	8	5.5	0.2	1	1.2
	10	5.4	0.2	1	1.2
	12	5.3	0.2	1	1.2
	14	5.1	0.2	1	1.2
	16	5.0	0.2	1	1.2



## Discrete Variable Codes Used

### First Fuel Model

t13	Moderate load conifer litter (S) (183)
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### Second Fuel Model

sh2	Moderate load, dry climate shrub (S) (142)
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### Mortality Tree Species

PSEMEN	Pseudotsuga menziesii (Douglas-fir)
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### Spot Tree Species

PINPON	Pinus ponderosa (Ponderosa pine)
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### Spotting Source Location

RT	Ridge Top
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### Suppression Tactic

Rear	Rear Attack
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## Appendix F: Smoke Management Plan and Smoke Modeling Documentation

TITLE: Results of FOFEM model execution on date: 2/3/2015

### FUEL CONSUMPTION CALCULATIONS

Region: PacificWest  
 Cover Type: SAF 244 - Pacific Ponderosa Pine - Douglas-fir  
 Fuel Type: Natural  
 Fuel Reference: FOFEM 081

FUEL CONSUMPTION TABLE						
Fuel Component Name	Preburn Load (t/acre)	Consumed Load (t/acre)	Postburn Load (t/acre)	Percent Reduced (%)	Equation Reference Number	Moist. (%)
Litter	1.50	1.50	0.00	100.0	999	
Wood (0-1/4 inch)	0.25	0.25	0.00	100.0	999	
Wood (1/4-1 inch)	0.75	0.75	0.00	100.0	999	16.0
Wood (1-3 inch)	1.50	1.50	0.00	100.0	999	
Wood (3+ inch) Sound	4.00	2.29	1.71	57.3	999	30.0
3->6	1.00	0.98	0.02	97.9		
6->9	1.00	0.69	0.31	68.8		
9->20	1.00	0.43	0.57	42.6		
20->	1.00	0.20	0.80	20.0		
Wood (3+ inch) Rotten	16.00	11.31	4.69	70.7	999	30.0
3->6	4.00	4.00	0.00	100.0		
6->9	4.00	3.62	0.38	90.6		
9->20	4.00	2.47	1.53	61.7		
20->	4.00	1.22	2.78	30.6		
Duff	40.00	20.70	19.30	51.8	2	75.0
Herbaceous	0.20	0.20	0.00	100.0	22	
Shrubs	0.40	0.24	0.16	60.0	23	
Crown foliage	6.00	4.50	1.50	75.0	37	
Crown branchwood	3.00	1.13	1.88	37.5	38	
Total Fuels	73.60	44.37	29.23	60.3		

### FIRE EFFECTS ON FOREST FLOOR COMPONENTS

Duff Depth Consumed (in) 0.6 Equation: 6  
 Mineral Soil Exposed (%) 31.0 Equation: 10

### Ground and Surface Fuel Carbon Loading

Fuel Component Name	Preburn Carbon (t/acre)	Postburn Carbon (t/acre)
Litter	0.56	0.00
Wood	11.25	3.20
Duff	14.80	7.14
Herbaceous	0.10	0.00
Shrub	0.20	0.08
Foliage Branch	4.50	1.89
Total	31.41	12.11

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TITLE: Results of FOFEM model execution on date: 2/3/2015

FUEL EMISSIONS CALCULATIONS

Region: PacificWest  
Cover Type: SAF 244 - Pacific Ponderosa Pine - Douglas-fir  
Fuel Type: Natural  
Fuel Reference: FOFEM 081

	Emissions flaming	-- lbs/acre smoldering	total
PM 10	47	1967	2014
PM 2.5	39	1667	1706
CH 4	12	1013	1025
CO	99	22212	22311
CO 2	26931	90411	117342
NOX	48	0	48
SO2	15	74	89

	Consumption tons/acre	Duration hour:min:sec
Flaming:	7.57	00:01:00
Smoldering:	36.80	02:26:30
Total:	44.37	
Unit Average Combustion Efficiency:	0.72	

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## Appendix G: Project Safety Plan

### Ashland Forest Resiliency Emergency Medical and Evacuation Plan

#### I. EMERGENCY EVACUATION INSTRUCTIONS:

Work supervisors and crew members are responsible for being familiar with these emergency medical and evacuation procedures. To the extent possible – know this information in advance of an incident.

To manage an emergency which requires first aid and/or evacuation the following information needs to be available to the dispatcher.

- Nature of the accident or injury (avoid using victim's name).
- Type of assistance needed, if any (ground ambulance or air)
- Location of accident or injury – if GPS give Lat/Long, if not T/R/S/.
- Give best access route into the worksite (road name/number), identifiable ground/air landmarks.
- Radio frequency(s).
- Contact person (should be close to patient for status updates)
- Local hazards to ground vehicles or aviation.
- Weather conditions (wind speed & direction, visibility, temp).
- Topography.
- Number of person(s) to be transported
- Estimated weight of passengers for air evacuation.

#### II. COMMUNICATIONS PLAN:

For Emergency Response call 911 on cell phone. If unable to make contact - radio Medford dispatch on Mt. Ashland repeater. Recommended communication with Medford dispatch is as follows: **“Medford Dispatch, AFR crew on Mt. Ashland with emergency traffic.”** After their response (**“Go ahead AFR crew”**) relay your evacuation information above.

**If after hours for MICC – contact Central on radio**

SYSTEM	CHANNEL	FUNCTION	FREQUENCY		ASSIGNMENT
FS, LRP, COA	Mt. Ashland Repeater	Forest channel for Medford dispatch	TX RX	164.9373 tone 107.2 169.9750 tone 103.5	<u>Communication with Medford Dispatch (MICC)</u>
FS, LRP, COA	Robinson Butte Repeater	Forest channel for Medford Dispatch	TX RX	164.1500 tone 146.2 169.1750 tone 103.5	<u>MICC if not hitting Mt. Ashland</u>
FS, LRP	Project 1	Secondary tactical	TX RX	170.5000 no tone 170.5000 no tone	Partner communication
FS, LRP	Project 2	Primary tactical	TX RX	168.3500 no tone 168.3500 no tone	Partner communication

Appendix H – Prescribed Fire Post Burn Evaluation				
Burn Unit	Date(s) Burned		Acres Burned	Ignition Start Time
Weather and Fuel Conditions				
	Time of Ignition	Low	High	
Temperature				
Relative Humidity				
1-hr Fuel Moisture				
10-hr Fuel Moisture	100-hr Fuel Moisture	1000-hr Fuel Moisture	Days Since Significant Precipitation	
Wind Direction (Average)	Wind Speed (Average)	Percent of Fuel Consumed	Ignition Duration (min.)	
Accomplishment of Fuels Treatment Objectives				
Overall Objectives Achieved:		Yes		No
Short Term Results (include changes in fuel profile and fire regime condition class)				
Cost Evaluation				
Burn Plan Preparation	Site Preparation	Burn Operation	Total Burn Costs	Cost/Acre
\$	\$	\$	\$	\$
Narrative – Prescribed Fire Burn Boss Comments				
i.e. operations, safety, fire behavior, personnel & equipment performance, logistics, smoke management				
Prescribed Fire Burn Boss			Date	

Appendix I – Weather / Fuels / Fire Behavior / Smoke Observations									
Weather and Fuels									
OBSERVATION TIME (24 HR)									
SLOPE (%)									
ASPECT									
ELEVATION (FEET)									
FUEL MODEL (1-13)									
SHADING (<50% or >50%)									
DRY BULB TEMPERATURE (°F)									
WET BULB TEMPERATURE (°F)									
RELATIVE HUMIDITY (%)									
EYE LEVEL WIND SPEED (MPH)									
WIND DIRECTION									
CLOUD COVER (%)									
1-HR FUEL MOISTURE (%)									
Fire Behavior									
FIRE (HEAD, FLANK, BACKING)									
AVERAGE FLAME LENGTH (FT)									
MAX. FLAME LENGTH (FT)									
RATE OF SPREAD (CH/HR)									
TORCHING/CROWNING (Y or N)									
FIRE WHIRLS (Y or N)									
SPOTTING (Y or N)									
SMOKE DIRECTION									
SMOKE RISE									
Notes									
OBSERVER NAME:						DATE			