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# ***Rogue River – Siskiyou National Forest Prescribed Fire Plan Template September 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  
PREScribed FIRE NAME /  
PREScribed FIRE UNIT

Siskiyou Mountains RD

AFR Group 2  
1a, 2c, 5c, 2d



PREPARED BY: \*

Name (print)

Signature

Qualification  
/ Currency

RXB2

Date

ADDITIONAL PREPARER:

Name (print)

Signature

Qualification  
/ Currency

Date

TECHNICAL REVIEW BY: \*

Name (print)

Signature

Qualification  
/ Currency

Date

FIRE MANAGEMENT OFFICER:

Name (print)

Signature

Qualification  
/ Currency

Date

DISTRICT / SO SPECIALIST:

Name (print)

Signature

Title

Date

DISTRICT / SO SPECIALIST:

Name (print)

Signature

Title

Date

FINAL  
COMPLEXITY RATING

Moderate

MINIMUM BURN  
BOSS QUALIFICATION

RXB2

APPROVED BY (AGENCY ADMINISTRATOR): \*

Name (print)  
& Qualification

Signature

Title

Date

\* Denotes required signatures

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## 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?

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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: \_\_\_\_\_

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## 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: \_\_\_\_\_

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## Element 3 – Complexity Analysis Summary and Final Complexity



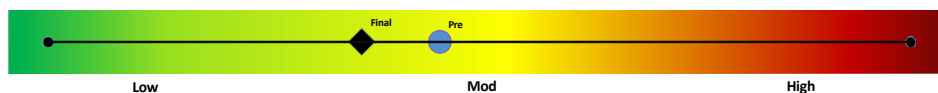
### NWCG Prescribed Fire Summary and Final Complexity Worksheet, PMS 424-1

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.

Type the Prescribed Fire Plan name here	Quantity	Significance
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 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, however all other concerns rate out as low or moderate which concludes this burn plan to be of moderate complexity (RxB II rating).

Signatures	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



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## Element 4: Description of Prescribed Fire Area

### A. Physical Description

#### 1. Location:

Unit	Legal Description	Latitude/Longitude (Degrees Decimal Minutes)	Dist. & Dir. to Designated Area (Rogue Valley)	County, State
1a	T39S, R1E, Sec. 17	Lat N 42 10.777" Long W -122 43.723"	1 mile East	Jackson, OR
2c	T39S, R1E, Sec. 20	Lat N 42 10.163" Long W -122 43.830"	2 miles Northeast	Jackson, OR
5c	T39S, R1E, Sec. 20	Lat N 42 10.012" Long W -122 43.645"	2 miles Northeast	Jackson, OR
2d	T39S, R1E, Sec. 16, 17, 20	Lat N 42 10.387" Long W -122 43.123"	1 mile Northeast	Jackson, OR

The project area includes the areas within the Ashland Watershed, including the headwaters of Ashland Creek and the Ashland Research Natural Area. The project area is dissected into 3 major ridge lines running mostly North-South by the East and West Forks of Ashland Creek. Topography is steep and rugged, however has a decent road/trail system throughout. Units 1a, 2c, 5c, and 2d all lie on the west slope between Panther Peak and Ashland Creek downstream from Reeder Reservoir. Units have good road access or share common boundary with other underburn units and will require minimal fireline construction. Units have been commercial thinned, hand-piled and burned, having a low-moderate fuel loading. Units 1a and 2c share a common border with private land. Unit 2d shares a boundary with City of Ashland property on the east side. Units have numerous legacy trees scattered throughout their boundaries. Active trail systems run through each of the units.

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## 2. Size:

Project Acres	7600	Primary Unit Acres	338
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Unit	Acres	Date: Acres Accomplished
1a	45	
2c	59	
5c	95	
2d	139	

## 3. Topography:

Unit	Aspect	Percent Slope (Avg.)	Highest Elevation (feet)	Lowest Elevation (feet)
1a	East	35	3700	3000
2c	South	24	4200	3650
5c	South	48	3900	3000
2d	East	43	3700	2300
Topography on the 4 units range from a SE aspect to N aspect.				

## 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 or lightning sources. The influence of frequent fire has been lost over the past 150 years leading to dense infill, proliferation of shade as well as fire tolerant species, leading to a 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, underburning within the AFR footprint began in 5/2015.

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## 5. Ignition Units:

The stands are very similar, primarily 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.

These stands have numerous legacy Ponderosa Pines scattered throughout the unit with a size class of 24-36" dbh not being uncommon. Hardwood stocking, primarily Pacific Madrone, is relatively light, occurring mostly as small understory seedlings, saplings and small trees up to 8-12" dbh. It also increases in abundance in openings and on drier, less productive sites. Previous thinning and prescribed handpile burning in the area have resulted in a generally reduced ladder fuel component in these stands.

Primary shrub layer is fairly sparse, mainly madrone sprouting and Oregon grape. Wet draws that had no treatments done tend to be thicker and will act to slow or impede fire spread. Currently, post treatment canopy cover averages 66-70% but has some variability.

## B. Vegetation/Fuels Description

1. On-Site Fuels Data:				2. Adjacent Fuels Data:		
FBPS Fuel Model(s)		TL3 (tons/acre)		FBPS Fuel Model(s)	TL3	
Fuel Loading	1 hour tlf	1		General Description of Adjacent Fuels		
	10 hour tlf	3		<p>Primarily adjacent fuels are best represented as TL 3 (moderate load conifer litter) based on previous treatments and reduced fuel loading.</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. The majority of these units have had surface/ladder fuel treatments with pile burns. Fire behavior is expected to be comparable or slightly reduced 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	5				
	1000 hour tlf	8				
	Litter depth	.3				
	Duff depth	.5				
	Live woody	NA				
	Live herbaceous	NA				
	Total fuel loading	17				

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### 3. Percentage of vegetation type and fuels model(s) and comments:

The stands are mixed conifer, Ponderosa Pine, Douglas Fir, and 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, aspect/sun exposure and distribution/size of madrone pockets slowing fire growth. Fuel loading was estimated using photo series pnw-52, page 18, 19 and 22.

### C. 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 are "Fisher Blocks" located within the units. Fuel reduction activities did not occur in these reserve areas. The objective within these blocks is to retain the canopy and protect any trees containing cavities, fire may creep into the area but should not be applied directly.

**Additionally the Forest/District Wildlife Biologist must be consulted yearly to ensure nesting sites of Fisher or owls are not impacted**, this could include a buffer or delay to burning in critical areas.

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

The northern most portion of Unit 2c and all but the southern boundary of Unit 1a share a common boundary with private property, extra scrutiny should be provided in firing and securing that portion of the unit to avoid fire on private land. Actions should take care to not damage fence line along the boundary.

### 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

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## 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 70% effective ground cover on all units except Unit 16D. Retain 85% effective ground cover on Unit 16D.

#### 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)

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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/holding operations. Forest Service funding needs are for the Burn Boss, and overhead to manage the operations section of the prescribed fire. Forest Service engines may also be used for training and support. \$15000 for federal employees (NFHF10)
<b>B. Funding Source</b>	NFHF10 (Federal Employees)
<b>C. Tracking Costs</b>	Burn Boss will be responsible to track resources used and work with partners to document costs. Contract and partner costs will be tracked by Lomakatsi and shared with Burn Boss. Burn Boss will be responsible to track Federal cost and any additional costs not tracked by partners.

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## 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 below is used as input to produce models in Behave Plus 5.0.5 modeling program. Smoke emission output is modeled with FOFEM.

With this data, it is shown that the desired fire behavior characteristics would be a slow or backing rate of spread, with a flame lengths of 1-2 feet. It could be expected that pockets of fuel would modify intensity but that should be fairly short in duration. This should provide a clean-up of forest fuels without creating an abundance of scorch and tree mortality. The Burn Boss has the authority to change the firing pattern at any time in order to better meet the objectives desired in this plan during the burn.

### 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	6	12	
Wind direction (azimuth°)	N/A	N/A	N/A	
1-hr fuel moisture (%)	13-15	12-8	7-4	<4
10-hr fuel moisture (%)	>15	14-9	9	<9
100-hr fuel moisture (%)	>17	16-12	11	<11
1000-hr fuel moisture (%)	>20	19-15	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 (%)	N/A	N/A	N/A	N/A

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### 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 6.0.0 modeling program.

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.

Prescribed fire 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 will try to be left during ignitions. 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 fall underburn conditions. Exceeding these parameters are management action points that may allow for activation of contingency resources outlined in the plan under Element 17.



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2. 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> TL3				
<b>Rate of Spread</b> (chains/hour)	<1.1	1.1	3	3
<b>Flame Length</b> (in feet)	< 1	<1	1.5	1.5
<b>Scorch Height</b> (in feet)	< 1	1	1	
<b>Probability of Ignition</b> (%)	<16	20-38	49-74	74
<b>Spotting Distance</b> (in miles)	< .2	.4	.5	.5
<p><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></p>				
<b>Fire Behavior Narrative</b>				
<p><b>Fuel Model TL 3:</b> 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 TL 3 the primary carrier of fire is a moderate load conifer litter, light load of coarse fuels. Spread rate is low, flame length is low.</p> <p>Scattered pockets of Madrone 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.</p> <p>Outputs for fuel model TL 3 (inside and outside units) were calculated using a strip head fire for modeling purposes (most intense conditions). 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.</p> <p>Expect some fire behavior change with aspect, elevation and slope change. An average slope of 40% 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.</p>				

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**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 .5 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 Burn Boss must determine if objectives are still being meet, and that holding resources are adequate to continue ignitions.**

### **3. Fire Modeling or empirical documentation (or both):**

**Attached in Appendix E.**

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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, 7 days patrol per each individual subunit.
<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 27, 2019 verify dates yearly)</li> <li>• Spring Thaw (TBD, Third Week of May 2019)</li> <li>• Ashland Mountain Challenge (October 2019)</li> </ul> <p>Fireline intensities designed to maintain adequate effective ground cover may minimize accomplishments 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, may require special lighting techniques or handline around legacy as needed to minimize bole and crown scorch. If possible quick mop up around legacy trees can be employed to help survival rate.</p> <p>Units 1a, 2d, and 2c share a boundary with private land. Extra care should be given to these common boundaries to eliminate fire spread to adjoining land ownerships.</p>	

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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## Element 9: Pre-burn Considerations and Weather

### A. Considerations:

#### 1. On Site

Monitoring of on-site fuel and weather data 1-2 days before burn at a minimum, portable fire RAWs makes it possible to monitor long term trends locally throughout burn duration.

Post prescribed fire signs and ensure public is clear of unit at least prior to, during and post ignition.

Work with law enforcement (if necessary) on-site to establish a safe area free of public.

Issue temporary closure for trails (if necessary) within and adjacent to burn units.

Consider temporary area closure during the ignition and mop up phase.

#### 2. Off Site

Notifications to media outlets and public by the burn boss and the City of Ashland (Chris Chambers, Sarah Jones) prior to ignitions.

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 they are no longer needed.

Notify adjacent land owners (City of Ashland responsibility). See Notification list attached.

City of Ashland Fire & Rescue will be contacted prior to ignition and is responsible for City of Ashland public notifications.

Notifications to Forest personnel per Section C of this element.

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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## B. Method and Frequency for Obtaining Weather and Smoke Management Forecast(s):

<b>Servicing NWS Office:</b>	Medford, OR			
<b>NWS Office Phone:</b>	541-773-1067			
<b>Proximity to nearest RAWs</b>	13.5 Miles SE Buckhorn Springs			
<b>Need for on-site RAWs</b>		Yes	X	No
<b>Additional Information</b>				
<p>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, this RAWs can provide the data for both forecasters and prescribed fire managers/burn bosses. Occasional down time can be expected as RAWs are shipped back for maintenance.</p> <p>Prior to ignitions, approval to burn will be obtained from Oregon Department of Forestry, Smoke Management in Salem, OR. Planned unit will be entered into Fastrax by fire managers.</p> <p>Current weather information including a spot weather forecast for the unit will be obtained from the National Weather Service. Weather forecasters are available at: 541-776-4303. A copy of the spot 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> <p>A daily incident action plan (IAP) may be prepared to brief personnel.</p> <p><b>Note: A project-specific spot weather forecast must be obtained prior to ignition; for each day that ignition continues; on any day that fire is actively spreading; or when conditions adversely affecting the prescribed fire are predicted in the general forecast. Exemption criteria and procedures for the spot weather forecast requirement may be found in FSM 5142.3.</b></p>				

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	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	B & D	(541) 618-2510	Burn Boss		EM
Dan Quinones RSF Fire Staff	D	(541) 618-2100	Burn Boss		PC
District Ranger – Jen Sanborn	B & D	(541) 324-1318	Burn Boss		PC/EM
ODF Smoke Mgt. Forecaster	B	(503) 945-7401	Burn Boss		PC
Virginia Gibbons – Public Affairs	B	(541) 618-2113	Burn Boss		EM
Star Office Front Desk	B & D	(541) 899-3800	Burn Boss		EM
Bret Brown RSF Deputy Fire Staff- Fuels	D	(541) 618-2102	Burn Boss		PC
Ashland City Fire (Chris Chambers)	B & D	(541) 890-8816	Burn Boss		PC/EM/DC
Siskiyou Mountain RD employees	D	pdl r6 rrs siskiyoumountains@fs.fed.us	Burn Boss		EM
FS Supervisors Office Front Desk	B & D	(541) 858-2200	Burn Boss		PC
Jackson County Board of Comm.	D	<u>BOC-CAO ADMIN@jacksoncounty.org</u>	Burn Boss		EM
<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)	

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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## 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**

Prescribed Fire Burn Boss

**DATE**

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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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	RXBX	1		X	
Ignition Specialist Function	FIRB	1		X	X
Holding Specialist Function	Single Resource Boss	1		X	X
Fire Effects Monitor	FEMO				
Lookout	Specify Qual.				
Engine Boss, Operator, and Crew	ENGB/ENOP	1		X	X
Ignition Crew	FFT2	3	3	X	X
Holding Crew	FFT2	10	10	X	X

##### B. Equipment

Engine (Type )	Type 3	1	12	X	X
Engine (Type )	Type 6	0			
Dozer (Type)					
Helicopter					
Helitorch					

##### C. Supplies

Drip Troches		6			
Chain Saws		3			
Hand Tools		13			
Drip Torch Mix		50 gals.			
Portable Water Tanks		0			

##### Total Line Production Rate

**25**

**Remarks:** 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 3 ch. /hr. at the low prescription range in order to contain a spot outside of the unit. Production rates in a fuel model t13 were used. 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 may be required to provide adequate holding and ignition resources. The number of resources needed, the number of days ignitions will occur will ultimately be determined by the burn boss based on current and expected conditions.



Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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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 Boss	1		X	X
Fire Effects Monitor	FEMO				
Lookout	Specify Qual.				
Engine Boss, Operator, and Crew	ENGB/ENOP	1		X	X
Ignition Crew	FFT2	3	3	X	X
Holding Crew	FFT2	10	10	X	X
B. Equipment					
Engine (Type)	T3	1	12	X	X
Engine (Type)	T6	1	12	X	X
Dozer (Type)					
Helicopter					
Helitorch					
C. Supplies					
Drip Troches		6			
Chain Saws		3			
Hand Tools		13			
Fuel		50 gals.			
Portable Water Tanks		0			
<b>Total Line Production Rate</b>			<b>37</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 5 ch. /hr. at the desired prescription range in order to contain a spot outside of the unit. Production rates in a fuel model tl3 were used.</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 may be required to provide adequate holding and ignition resources. The number of resources needed, the number of days ignitions will occur will ultimately be determined by the burn boss based on current and expected conditions.</p>					

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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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	Singe Resource Boss	1		X	X
Fire Effects Monitor	FEMO				
Lookout	Specify Qual.				
Engine Boss, Operator, and Crew	ENGB/ENOP	1		X	X
Ignition Crew	FFT2	3	3	X	X
Holding Crew	FFT2	10	10	X	X
B. Equipment					
Engine (Type)	T3	2	24		
Engine (Type)	T6	1	12		
Dozer (Type)					
Helicopter					
Helitorch					
C. Supplies					
Drip Troches		6			
Chain Saws		3			
Hand Tools		13			
Fuel		50 gals.			
Portable Water Tanks		0			
<b>Total Line Production Rate</b>			<b>57</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 6 ch. /hr. at the high prescription range in order to contain a spot outside of the unit. Production rates in a fuel model t13 were used. 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 may be required to provide adequate holding and ignition resources. The number of resources needed, the number of days ignitions will occur will ultimately be determined by the burn boss based on current and expected conditions.</p>					

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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## Element 12: Communication

### A. Radio Frequencies:

Channel	Function	Frequency		Tone	Assignment	Remarks
1. COMMAND frequencies:						
2	Table Mtn.	TX: RX:	166.3500 172.4500	123.0 N/A		
3	Mt. Ashland RPTR	TX: RX:	164.9375 169.9750	79.7 67.0		
4	South direct	TX: RX:	169.9750 169.9750	67.0 67.0		
2. TACTICAL frequencies:						
5	RFS TAC	TX: RX:	167.4250 168.4250	67.0 67.0	Primary	
6	FS Project 1	TX: RX:	169.1750 169.1750	67.0 67.0	Secondary	
3. AIR OPERATIONS frequencies:						
16	A/G 51	TX: RX:	168.3125 168.3125	N/A	Primary	
15	A/G 62	TX: RX:	169.3625 169.3625	N/A	Secondary	
OTHER						
Hand Program	Grayback 2	TX: RX:	153.3950 153.3950	123.0 123.0	Alternate	
		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.						

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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## B. Telephone Numbers:

Contact Name	Title	Primary Phone	Alternate Phone
Jen Sanborn	District Ranger	541-899-3800	541-324-1318
Robert Marshall	FMO	541-899-3865	541-580-5915
Todd Zumhofe	AFMO	541-899-3884	541-291-2910
Chris Chambers	Ashland F&R	541-552-2066	541-890-8816
Marko Bey	Lomakatsi		541-941-6874
Aaron Nauth	Lomakatsi		541-821-3995
Bryan Wheelock	Grayback		406-531-9967
Grayback Forestry		541-830-3100	
Dan Quinones	Fire Staff	541-618-2100	541-480-3568
Brett Brown	Asst. Fire Staff	541-618-2102	541-255-6364
Kit Colbenson	BC-12 Fuels	541-218-3175	541-899-3876

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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### C. Key Communication Points:

At a minimum, the burn boss will relay the following information either directly or through dispatch to inform unit fire management and agency administrators on project status:

1. Element 2B Go/No-Go is complete and intent to proceed with test fire or take other actions.
2. Results of the test fire and intent to proceed with ignitions or take other course of action.
3. **Any time Contingency Resources are mobilized or engaged in contingency actions.**
4. **Any time Element 18: Wildfire Declaration procedures are proposed or being taken as described in the plan.**
5. Ignition operations completed for the project or shift.
6. Release or extension of assigned resources, project status at the end of shift (Uncontained, Contained, Controlled, Out), and outlook for next operational period.
7. Update on mop-up or patrol activities including project status (Contained, Controlled, Out) and name of the assigned burn boss, IC, or duty officer responsible for the day's actions.

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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### 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, insects, rolling material, smoke and poison oak.
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. The major road system (FS2060) 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 short 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 prescribed fire 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 will 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. This will be initiated through RVICC using the 8-line. See Appendix G.
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Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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#### **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.

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	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	



Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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## 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 condition of 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. 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 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 ignition off the flanks. As the flanks become secure, fire should be backed down the interior of the unit. The burn boss will have ultimate discretion on the firing plan of the unit.

### B. Test Fire Documentation:

Location:

Date and Time:

#### 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	Yes		No		

SIGNED

Prescribed Fire Burn Boss

DATE

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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## Element 15: Ignition Plan

### A. Firing Methods:

Ignition will start at the top of the unit/subunit 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. Ignition technique will compensate for fuel moisture conditions. A backing fire may have to be used if burning under a higher end of the 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. 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 contents. In some cases alternative lightning sources may be used, examples include but are not limited to fusee or quick fire devices. These alternative firing devices/techniques will be at the discretion of the burn boss.

### 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.

If the burn boss decides to complete ignitions in one burn period additional resources may be required to provide adequate holding and ignition resources. The number of resources needed will ultimately be determined by the burn boss along with the number of days ignitions will occur based on current/expected conditions.

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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## Element 16: Holding Plan

<p><b>A. General Procedures for Holding:</b></p> <p>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 "TREX".</p>
<p><b>B. Critical Holding Points and Actions:</b></p> <ul style="list-style-type: none"> <li>Units 1a, 2d, and 2c all share a common boundary with forest and private land. Additional holding resources may be utilized in these areas 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.</li> <li>Avoid actively igniting fire within riparian and Landslide Hazard Zones.</li> </ul>
<p><b>C. Minimum Organization or Capabilities Needed:</b></p> <p>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).</p> <p>The minimum organization requires a low number of resources based on a low predicted rate of 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 may 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/expected conditions.</p>
<p><b>D. Mop-up and Patrol:</b></p> <p>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/Holding 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 perimeter and problem areas being priority.</p>
<p><b>E. Conditions for Leaving Burn Unattended:</b></p> <p>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.</p> <ul style="list-style-type: none"> <li>Mop-up will be completed to the extent necessary to secure the burn as directed by the Burn Boss.</li> <li>A burn will not be declared out until smoke is no longer visible within the unit</li> </ul>

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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## 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:	Fire outside containment lines of the unit
Condition:	High-end of the prescription
Management Intent:	Contain all slop-overs and spots outside of unit boundaries.
Recommended Action(s) to Consider:	Utilize direct attack where feasible as well as natural features, roads and trails where necessary to contain fire outside the unit boundaries.
Recommended Resources:	1 T2 handcrew, 1 T6 engine
Time Frame:	24 hrs.
Describe the Consequences of not taking the recommended action(s) (Optional):	Loss of prescribed fire and conversation to wildland fire
Responsibility:	RXB II Burn Boss
Date Each Action is Initiated (Optional):	

### B. Actions Needed

Management action points are established to be 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 the 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 the objectives of the burn in jeopardy, 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	60		
10-Person Crew	TBD	60		

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

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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## 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/segment of a prescribed fire, must be declared a wildfire 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, airtankers 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, FMO 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 resources through RVICC once contingency resources are exhausted from Lomakatsi.

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:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	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. RVICC 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 or helicopter(s) or air tankers 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.

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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### Element 19: Smoke Management and Air Quality

<b>A. Compliance:</b>					
Burn units will be registered in the FASTRAX computer system prior to or on the burn day. Smoke clearance and recommendations 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 FASTRAX		
<b>C. Smoke Sensitive Receptors:</b>					
<b>Identify any non-attainment or Class I airsheds within 15 miles:</b>			Closest Class I airsheds are the Kalmiopsis and Mountain Lakes wildernesses over 30 miles away.		
Designated Area (DA)	Distance & Direction to DA		Designated Area (DA)	Distance & Direction to DA	
	Distance	Azimuth		Distance	Azimuth
Rogue Valley SSRA	2.25 mi.	N-NE			
<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 as early as possible in the 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. Large material can be suppressed to mitigate residual smoke issues.					

Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	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 line and trail rehab, ensure that any trail hazards are identified and mitigated.</li> </ul>



Prescribed Fire Name:	Ashland Forest Resiliency Group 2	Ignition Unit Name:	1a, 2c, 5c, 2d	District:	SMRD
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## Prescribed Fire Plan Appendices

**Appendix A:** Maps: Vicinity, Project or Ignition Units (or both), Values  
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

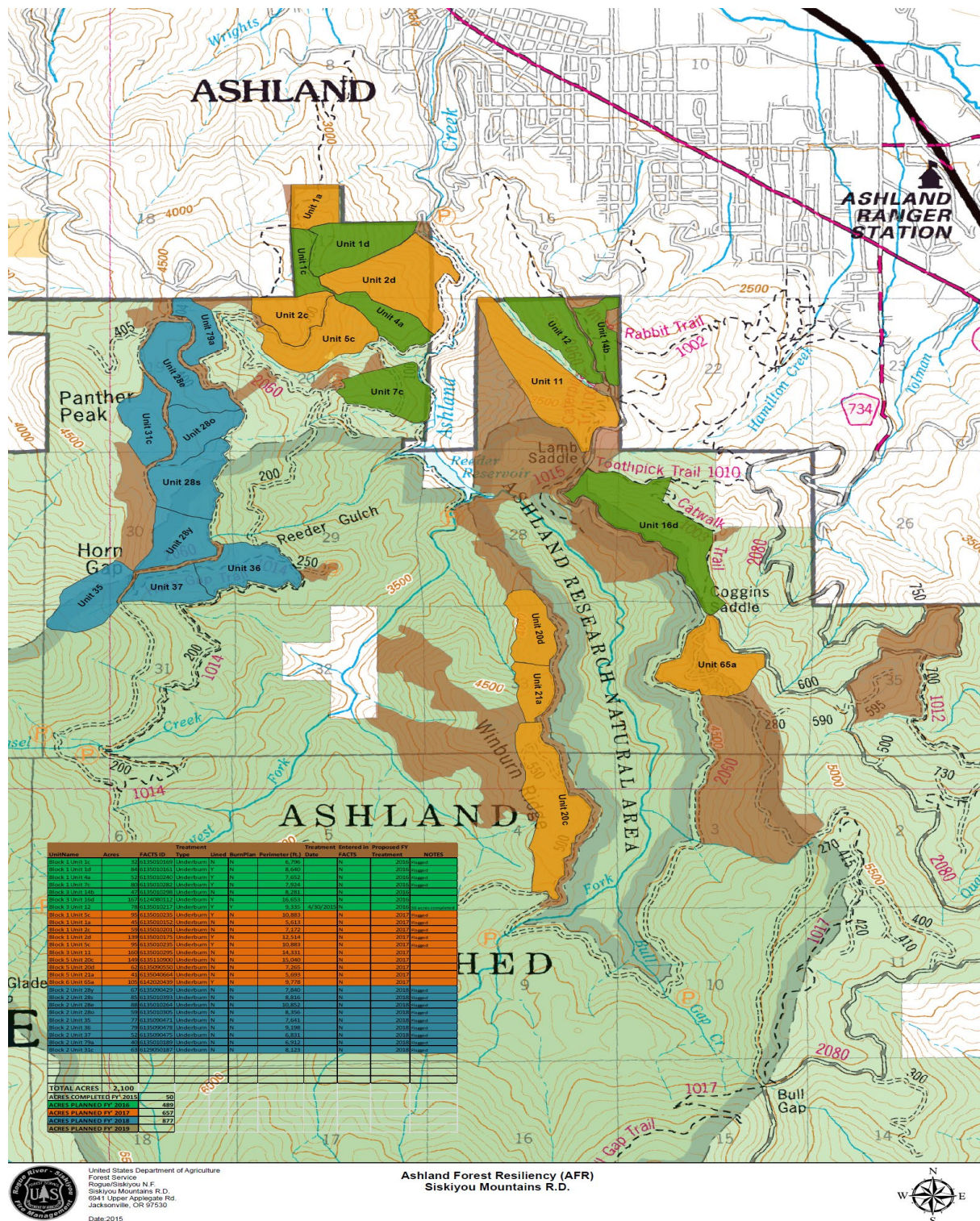
**Appendix F:** Smoke Management Plan and Smoke Modeling Documentation (Optional)

**Appendix G:** Project Aviation & Safety Plan (PASP) (if applicable)

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

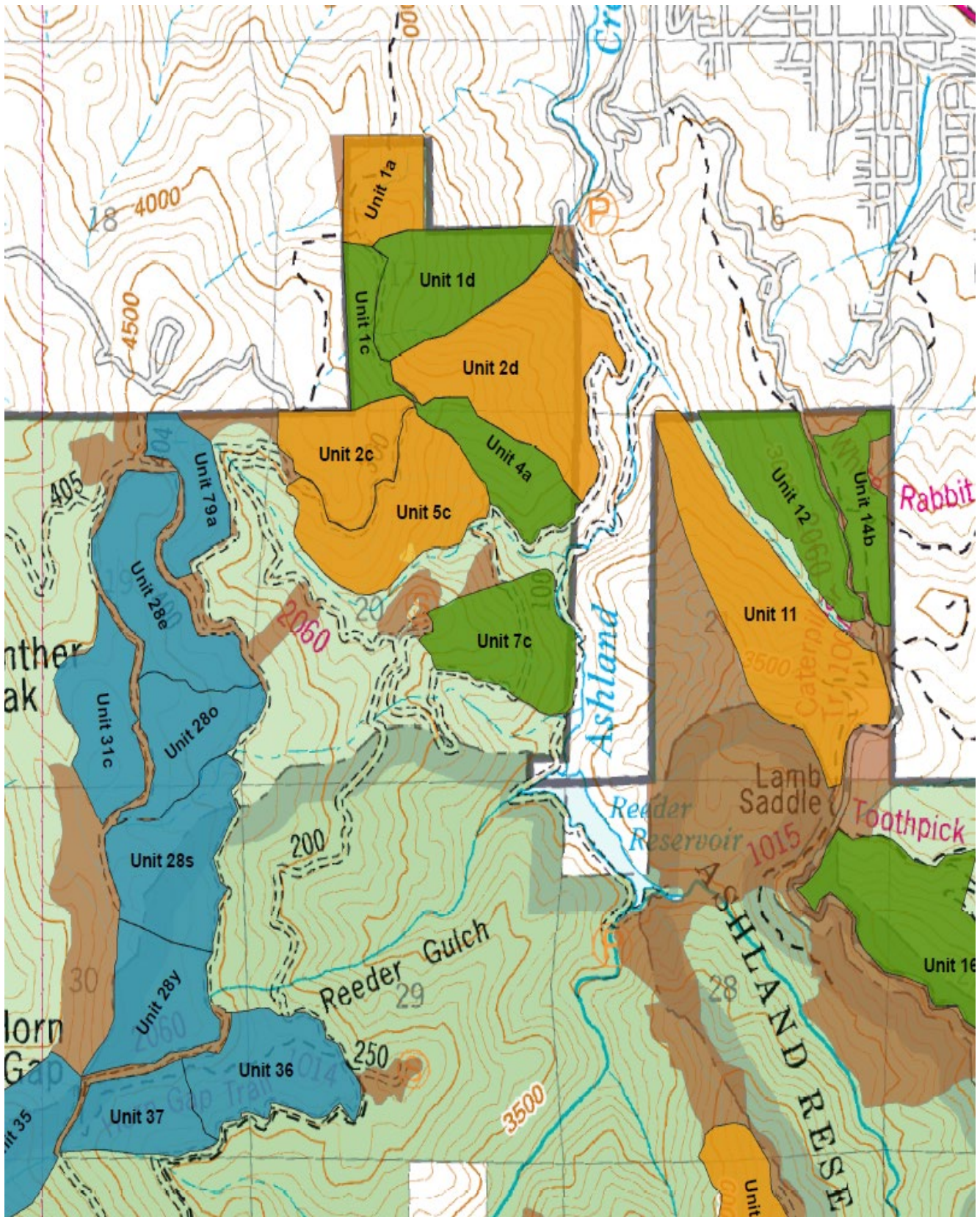
**Appendix I:** Weather / Fuels / Fire Behavior / Smoke Observations

## Appendix A: Vicinity Map

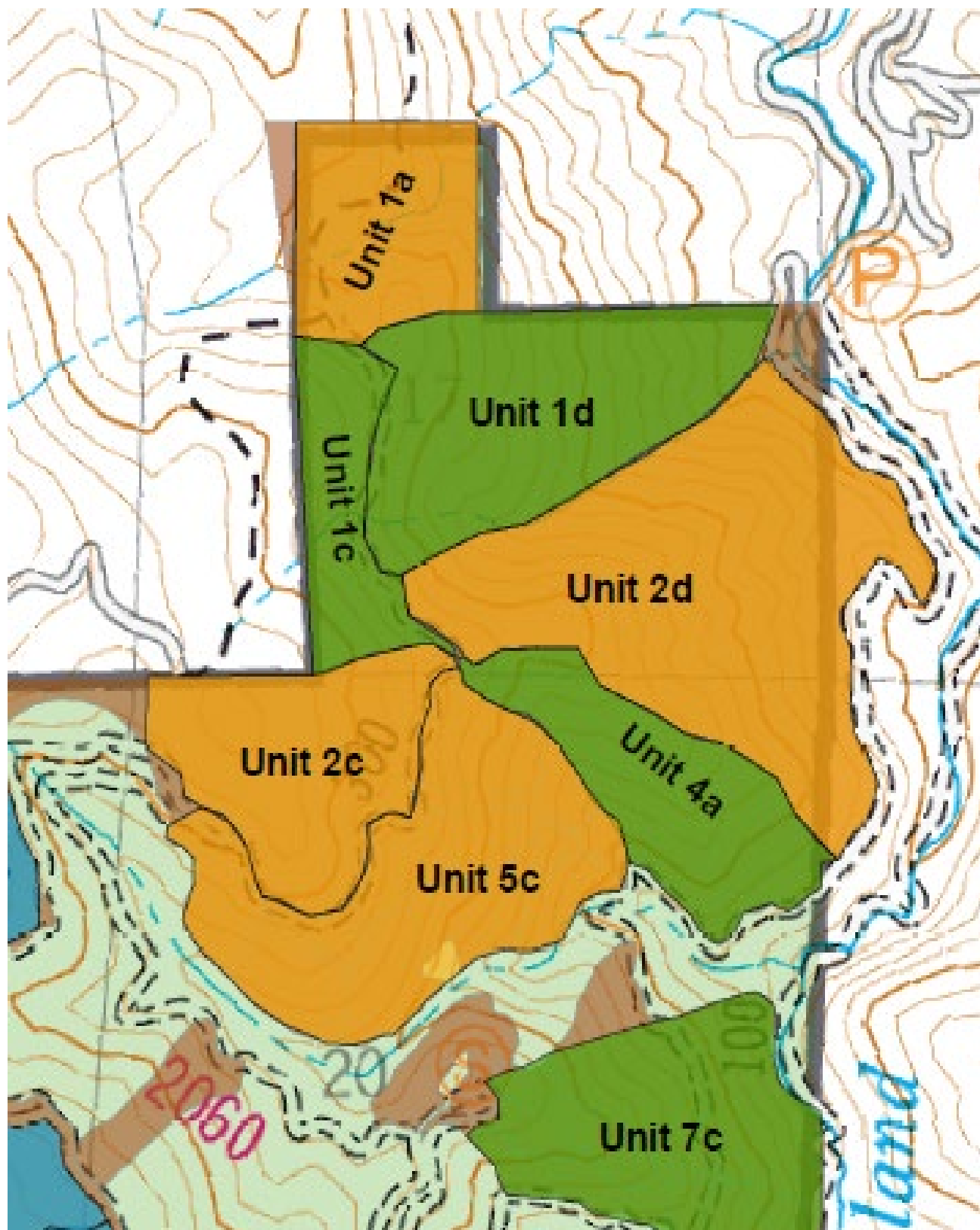


## Appendix A: Project (Ignition Units) Maps



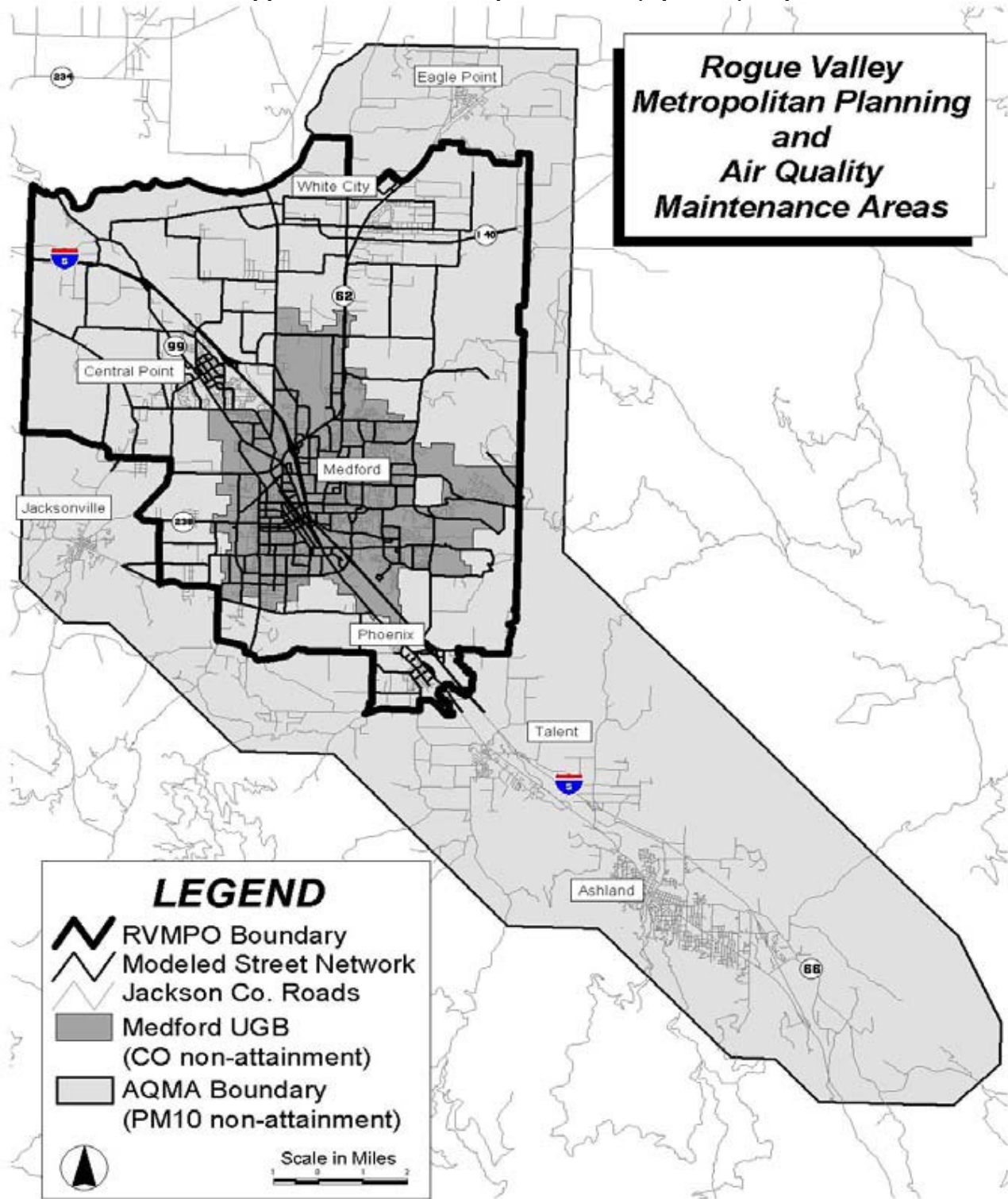


Appendix A: Values, Significant or Sensitive Features: (Optional) Maps



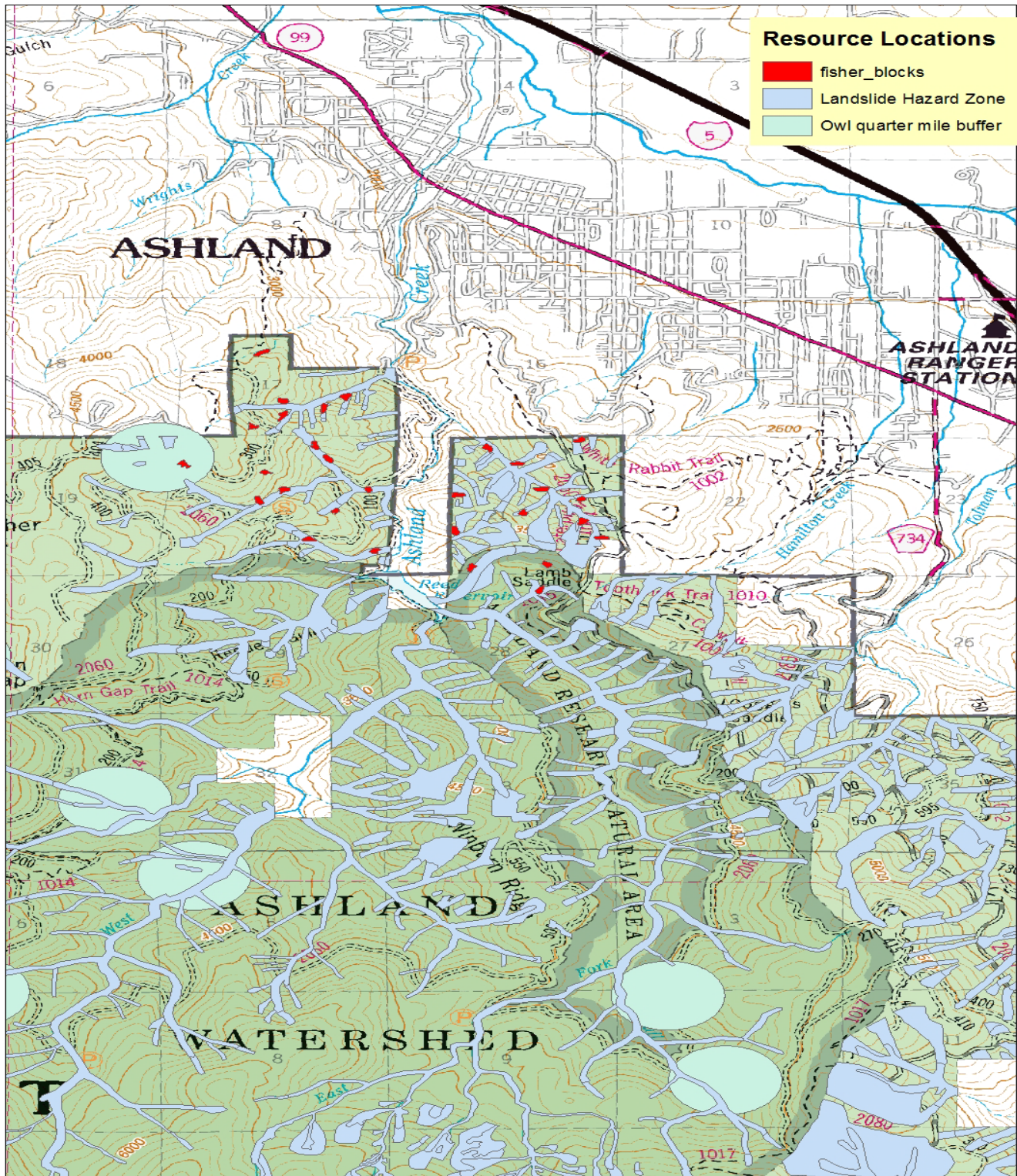


## Appendix A: Smoke Impact Areas: (Optional) Map



S

## Appendix A: Values, Significant or Sensitive Features:







## 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 Parameters		
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> <p>Constant monitoring of smoke will be required to insure there is not an intrusion into the SSRA.</p>	No
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> <p>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.</p>	No
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> <p>Standard RXB2 organization levels.</p>	No
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> <p>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.</p>	No
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> <p>Weather and personnel experience may hamper timing and achievement of objectives.</p>	No

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.

## Appendix D: Job Hazard Analysis (JHA)

FS-6700-7 (08/12)

U.S. Department of Agriculture Forest Service	1. WORK PROJECT/ACTIVITY Prescribed Fire Activites 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  <b>Jim Delatorre</b>	5. JOB TITLE  <b>FEO</b>	6. DATE PREPARED  <b>04-20-2018 Reviewed</b>		
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
<b>Vehicle</b>  FSH 6709.11 (Ch 10, 12) Interagency Standards for Fire and Aviation Operations 2004 (NFES 2724 – Ch. 06)	<b>Driving</b>	1. Adjust speed to condition. 2. Watchout for changing conditions. 3. Advise others of hazards. 4. Anticipate dust, smoke, and wildlife.	1	D	2-H
	<b>Road Conditions</b>	1. Always use chock-blocks on slopes. 2. Park in lowest gear in direction of probable roll. 3. Park off roadway, wheels turned to minimize hazards. 4. Windows up, keys in ignition or gas cap. 5. DO NOT BLOCK ROADS. 6. Check surface before leaving traveled surface. 7. Park safe distance from burn area, point away from burn. 8. Use emergency lights and flashers in smoke, on narrow roads.	1	D	2-H
	<b>Parking</b>	1. Inspect area prior to backing. 2. Always utilize a spotter, when available, when visibility is restricted. 3. Use mirrors.	3	C	3-M

		<ol style="list-style-type: none"> <li>4. Tap horn to indicate backing motion.</li> <li>5. Ensure restricted vision vehicles are equipped with warning devices.</li> <li>6. Face the danger area when backing.</li> <li>7. Never back on blind corners.</li> <li>8. Walk around the vehicle and check for hazards and obstructions.</li> </ol>			
*	<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>

	<b>Flames/Sparks</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> <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>4</b>	<b>D</b>	<b>4-L</b>
<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 slashy 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> </ol>	<b>2</b>	<b>D</b>	<b>3-M</b>

		<ul style="list-style-type: none"> <li>8. Identify vegetation and terrain conditions that pose a hazard.</li> <li>6. Avoid running, sliding, jumping, elevated log traverse.</li> </ul>			
	<b>Footing</b>	<ul 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> <li>6. Pace work activities, maintain energy reserve.</li> <li>9. Observe co-workers for fatigue symptoms.</li> </ul>	<b>3</b>	<b>D</b>	<b>3-M</b>
	<b>Fatigue</b>	<ul style="list-style-type: none"> <li>1. All personnel will be trained and know the Ten (10) Standard Firefighting Orders.</li> <li>2. All personnel will be trained and know the Eighteen Watch Out Situations.</li> <li>3. All personnel will be trained and know the meaning of LCES.</li> <li>4. All personnel will be issued and trained with the proper Personal Protective Equipment (PPE) necessary for a safe assignment.</li> <li>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.</li> <li>6. All personnel will receive a briefing prior to each burn assignment.</li> <li>7. Briefings will include: tactics, safety, hazards, communications, escape routes, safety zones, weather, and fire behavior.</li> <li>8. All personnel will be aware of the chain of command.</li> <li>9. All personnel will meet the National Firefighter Qualification System training for their position.</li> <li>10. All personnel will have passed the physical requirements for their position and have in their possession an IQCS card /"Red Card" indicating so.</li> <li>11. All personnel will have received the appropriate training for their position.</li> <li>7.</li> </ul>	<b>3</b>	<b>D</b>	<b>4-L</b>
<p><b>Ignition of Vegetative materials</b>            Ch. FSH 6709.11 (Ch 20,60)            Interagency Standards for Fire and Aviation Operations 2004 (NFES 2724 – 06)</p>	<b>Inexperienced Personnel</b>	<ul style="list-style-type: none"> <li>1. Actively observe fire behavior - note changes in wind speed and direction, flame length, rate of spread.</li> <li>2. Remove personnel from immediate area when fire behavior becomes unpredictable or potentially dangerous.</li> <li>3. Ensure expected fire behavior is understood.</li> <li>4. Identify unacceptable fire behavior characteristics.</li> <li>5. Utilize trained and qualified (RXCM) personnel for ignition, holding, and mop-up operations.</li> <li>6. <b><u>Fire shelters are required for all personnel</u></b> on underburn projects due to the potential of changing fire behavior conditions, and general application of fire on the landscape.</li> </ul>	<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>	<ol style="list-style-type: none"> <li>1. Identify and communicate the presence of falling/rolling materials potential on the operation.</li> <li>2. Post lookouts and/or avoid areas of known hazard.</li> <li>3. Maintain positive verbal and radio communication with personnel working in identified areas.</li> <li>4. Minimize exposure to unavoidable hazards.</li> </ol>	<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>	<p>1. Post signs on the road (PRESCRIBE BURN, SMOKE AHEAD) on both ends of the unit to inform public.</p> <p>2. Notify all contacts as per burn plan (NOTIFICATION PLAN) section of prescribe burn before and when ignition has started.</p> <p>If necessary as determined, by burn boss guards will be posted to restrict usage of roads and trails until danger has passed.</p>	<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>			
		<b>District Ranger</b>			

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

BehavePlus 6.0.0 (Build 626 Beta 3)

high fire behavior and spotting

Head Fire

Thu, Nov 08, 2018 at 10:02:05

### Input Worksheet

**Inputs: SURFACE, SPOT, SCORCH, IGNITE**

Input Variables	Units	Input Value(s)
<b>Fuel/Vegetation, Surface/Understory</b>		
Fuel Model		tl3
<b>Fuel/Vegetation, Overstory</b>		
Downwind Canopy Height	ft	30
Downwind Canopy Cover		closed
Torching Tree Height	ft	30
Spot Tree Species		PSME
D.B.H.	in	5
<b>Fuel Moisture</b>		
1-h Fuel Moisture	%	4, 5, 6, 7
10-h Fuel Moisture	%	8
100-h Fuel Moisture	%	11
Live Herbaceous Fuel Moisture	%	50
Live Woody Fuel Moisture	%	50
<b>Weather</b>		
20-ft Wind Speed (upslope)	mi/h	20, 21, 22, 23, 24, 25
Wind Adjustment Factor		0.3
Air Temperature	oF	86
Fuel Shading from the Sun	%	50
<b>Terrain</b>		
Slope Steepness	%	40
Ridge-to-Valley Elevation Difference	ft	1000

C:\Users\gernst\Desktop\Rogue River\_Siskiyou NF\Rogue River\_KX

POST-PLAN

Ridge-to-Valley Horizontal Distance

mi .3

Spotting Source Location

MW

Fire

Number of Torching Trees

3

Notes

Run Option Notes

- Maximum effective wind speed limit IS imposed [SURFACE].
- Fire spread is in the HEADING direction only [SURFACE].
- Wind is blowing upslope [SURFACE].
- Wind and spread directions are degrees clockwise from upslope [SURFACE].
- Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Head Fire

Results for: Surface Fire Rate of Spread (ch/h)

1-h Fuel	20-ft Wind Speed (upslope)					
Moisture	mi/h					
%	20	21	22	23	24	25
4	3.0	3.1	3.3	3.4	3.6	3.7
5	2.8	2.9	3.0	3.2	3.3	3.3
6	2.6	2.7	2.9	3.0	3.0	3.0
7	2.5	2.6	2.7	2.8	2.8	2.8
8	2.4	2.5	2.6	2.7	2.7	2.7
9	2.3	2.4	2.5	2.6	2.6	2.6
10	2.2	2.3	2.4	2.5	2.5	2.5
11	2.1	2.2	2.3	2.4	2.4	2.4
12	2.0	2.1	2.2	2.3	2.3	2.3
13	1.9	2.0	2.1	2.2	2.2	2.2
14	1.8	1.9	2.0	2.1	2.1	2.1
15	1.7	1.8	1.9	2.0	2.0	2.0
16	1.6	1.7	1.8	1.9	1.9	1.9
17	1.5	1.6	1.7	1.8	1.8	1.8
18	1.4	1.5	1.6	1.7	1.7	1.7
19	1.3	1.4	1.5	1.6	1.6	1.6
20	1.2	1.3	1.4	1.5	1.5	1.5
21	1.1	1.2	1.3	1.4	1.4	1.4
22	1.0	1.1	1.2	1.3	1.3	1.3
23	0.9	1.0	1.1	1.2	1.2	1.2
24	0.8	0.9	1.0	1.1	1.1	1.1
25	0.7	0.8	0.9	1.0	1.0	1.0

ES SISKIYOU NF, ROGUE RIVER, KX

2024 RELEASE UNDER E.O. 14176

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Head Fire

Results for: Surface Fire Flame Length (ft)

1-h Fuel	20-ft Wind Speed (upslope)					
Moisture	mi/h					
%	20	21	22	23	24	25
4	1.4	1.4	1.4	1.5	1.5	1.5
5	1.3	1.3	1.4	1.4	1.4	1.4
6	1.3	1.3	1.3	1.3	1.3	1.3
7	1.2	1.2	1.3	1.3	1.3	1.3

Head Fire

Results for: Spot Dist from Torching Trees (mi)

1-h Fuel	20-ft Wind Speed (upslope)					
Moisture	mi/h					
%	20	21	22	23	24	25
4	0.4	0.4	0.4	0.4	0.5	0.5
5	0.4	0.4	0.4	0.4	0.5	0.5
6	0.4	0.4	0.4	0.4	0.5	0.5
7	0.4	0.4	0.4	0.4	0.5	0.5

Head Fire

Results for: Scorch Height (ft)

1-h Fuel	20-ft Wind Speed (upslope)
Moisture	mi/h

## POST-FIRE

%	20	21	22	23	24	25
4	1	1	1	1	1	1
5	1	1	1	1	1	1
6	1	1	1	1	1	1
7	1	1	1	1	1	1

## Head Fire

### Results for: Probability of Ignition from a Firebrand (%)

1-h Fuel	20-ft Wind Speed (upslope)					
Moisture	mi/h					
%	20	21	22	23	24	25
4	74	74	74	74	74	74
5	65	65	65	65	65	65
6	56	56	56	56	56	56
7	49	49	49	49	49	49

BehavePlus 6.0.0 (Build 626 Beta 3)

**high contain**

Head Fire

Thu, Nov 08, 2018 at 10:01:16

## Input Worksheet

### Inputs: SURFACE, CONTAIN

Input Variables	Units	Input Value(s)
<b>Fuel/Vegetation, Surface/Understory</b>		
Fuel Model		tl3
<b>Fuel Moisture</b>		
1-h Fuel Moisture	%	7
10-h Fuel Moisture	%	8
100-h Fuel Moisture	%	11
Live Herbaceous Fuel Moisture	%	50
Live Woody Fuel Moisture	%	50

Weather

20-ft Wind Speed (upslope)	mi/h	20, 21, 22, 23, 24, 25
Wind Adjustment Factor		0.3

Terrain

Slope Steepness	%	40
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Fire

Fire Size at Report	ac	.1
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Suppression

Suppression Tactic		Head
Line Construction Offset	ch	0
Resource Line Production Rate	ch/h	1, 5, 9, 13, 17
Resource Arrival Time	h	0
Resource Duration	h	10

Notes

Run Option Notes

- Maximum effective wind speed limit IS imposed [SURFACE].
- Fire spread is in the HEADING direction only [SURFACE].
- Wind is blowing upslope [SURFACE].
- Wind and spread directions are degrees clockwise from upslope [SURFACE].
- Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].
- Suppression input is for a single resource [CONTAIN]; multiple values can be entered for any input variable.

Head Fire

Results for: Surface Fire Rate of Spread (ch/h)

20-ft	Resource Line Production Rate
Wind Speed	ch/h

POST-PLAN

mi/h	1	5	9	13	17
20	2.5	2.5	2.5	2.5	2.5
21	2.6	2.6	2.6	2.6	2.6
22	2.7	2.7	2.7	2.7	2.7
23	2.8	2.8	2.8	2.8	2.8
24	2.8	2.8	2.8	2.8	2.8
25	2.8	2.8	2.8	2.8	2.8

Head Fire

Results for: Surface Fire Flame Length (ft)

20-ft	Resource Line Production Rate				
Wind Speed	ch/h				
mi/h	1	5	9	13	17
20	1.2	1.2	1.2	1.2	1.2
21	1.2	1.2	1.2	1.2	1.2
22	1.3	1.3	1.3	1.3	1.3
23	1.3	1.3	1.3	1.3	1.3
24	1.3	1.3	1.3	1.3	1.3
25	1.3	1.3	1.3	1.3	1.3

CS

on NFV Rogue River KX

Phase 2 - 2023

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Head Fire

Results for: Contain Status

20-ft	Resource Line Production Rate				
Wind Speed	ch/h				
mi/h	1	5	9	13	17
20	Withdrawn	Contained	Contained	Contained	Contained
21	Withdrawn	Withdrawn	Contained	Contained	Contained
22	Withdrawn	Withdrawn	Contained	Contained	Contained
23	Withdrawn	Withdrawn	Contained	Contained	Contained
24	Withdrawn	Withdrawn	Contained	Contained	Contained
25	Withdrawn	Withdrawn	Contained	Contained	Contained

Head Fire

Results for: Time from Report (h)

20-ft	Resource Line Production Rate
Wind Speed	ch/h



POST-PLAN

mi/h	1	5	9	13	17
20	10.0	1.1	0.5	0.3	0.3
21	10.0	10.0	0.5	0.4	0.3
22	10.0	10.0	0.5	0.4	0.3
23	10.0	10.0	0.5	0.4	0.3
24	10.0	10.0	0.5	0.4	0.3
25	10.0	10.0	0.5	0.4	0.3

Head Fire

Results for: Contained Area (ac)

20-ft	Resource Line Production Rate				
Wind Speed	ch/h				
mi/h	1	5	9	13	17
20	-1.0	0.2	0.1	0.1	0.1
21	-1.0	-1.0	0.1	0.1	0.1
22	-1.0	-1.0	0.1	0.1	0.1
23	-1.0	-1.0	0.1	0.1	0.1
24	-1.0	-1.0	0.1	0.1	0.1
25	-1.0	-1.0	0.1	0.1	0.1

ES

on NF Rogue River KX

Plaza B&B Company

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Head Fire

Results for: Fireline Constructed (ch)

20-ft	Resource Line Production Rate				
Wind Speed	ch/h				
mi/h	1	5	9	13	17
20	49.5	5.6	4.7	4.5	4.4
21	52.0	52.0	4.7	4.6	4.5
22	54.5	54.5	4.8	4.6	4.5
23	55.6	55.6	4.8	4.6	4.5
24	55.6	55.6	4.8	4.6	4.5
25	55.6	55.6	4.8	4.6	4.5

Input Worksheet

Inputs: SURFACE, SPOT, SCORCH, IGNITE

Input Variables	Units	Input Value(s)
-----------------	-------	----------------

Fuel/Vegetation, Surface/Understory

Fuel Model	tl3
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Fuel/Vegetation, Overstory

Downwind Canopy Height	ft	30
Downwind Canopy Cover		closed
Torching Tree Height	ft	30
Spot Tree Species		PSME
D.B.H.	in	5

Fuel Moisture

1-h Fuel Moisture	%	8, 9, 10, 11, 12
10-h Fuel Moisture	%	10
100-h Fuel Moisture	%	12
Live Herbaceous Fuel Moisture	%	50
Live Woody Fuel Moisture	%	50

Weather

20-ft Wind Speed (upslope)	mi/h	14, 15, 16, 17,
Wind Adjustment Factor		0.3
Air Temperature	oF	62
Fuel Shading from the Sun	%	50

Terrain

Slope Steepness	%	40
Ridge-to-Valley Elevation Difference	ft	1000
Ridge-to-Valley Horizontal Distance	mi	.3
Spotting Source Location		MW

C:\Users\jcm\Desktop\Kogue River\_Siskiyou NF\_Kogue River\_KX

Fire

Number of Torching Trees	3
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Notes

Run Option Notes

- Maximum effective wind speed limit IS imposed [SURFACE].
- Fire spread is in the HEADING direction only [SURFACE].
- Wind is blowing upslope [SURFACE].
- Wind and spread directions are degrees clockwise from upslope [SURFACE].
- Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Head Fire

Results for: Surface Fire Rate of Spread (ch/h)

1-h Fuel	20-ft Wind Speed (upslope)				
Moisture	mi/h				
%	14	15	16	17	18
8	1.7	1.8	1.9	2.0	2.1
9	1.6	1.7	1.8	1.9	2.0
10	1.6	1.7	1.8	1.9	2.0
11	1.5	1.6	1.7	1.8	1.9
12	1.4	1.5	1.6	1.7	1.8

Head Fire

Results for: Surface Fire Flame Length (ft)

1-h Fuel	20-ft Wind Speed (upslope)				
Moisture	mi/h				
%	14	15	16	17	18
8	1.0	1.0	1.1	1.1	1.1
9	1.0	1.0	1.0	1.1	1.1
10	1.0	1.0	1.0	1.0	1.1
11	0.9	1.0	1.0	1.0	1.0
12	0.9	0.9	1.0	1.0	1.0

Head Fire

Results for: Spot Dist from Torching Trees (mi)

1-h Fuel	20-ft Wind Speed (upslope)				
Moisture	mi/h				
%	14	15	16	17	18
8	0.3	0.3	0.3	0.3	0.4
9	0.3	0.3	0.3	0.3	0.4
10	0.3	0.3	0.3	0.3	0.4
11	0.3	0.3	0.3	0.3	0.4
12	0.3	0.3	0.3	0.3	0.4

Head Fire

Results for: Scorch Height (ft)

1-h Fuel	20-ft Wind Speed (upslope)				
Moisture	mi/h				
%	14	15	16	17	18
8	1	1	1	1	1
9	1	1	1	1	1
10	1	1	1	1	1
11	1	1	1	1	1
12	1	1	1	1	1

Head Fire

Results for: Probability of Ignition from a Firebrand (%)

1-h Fuel	20-ft Wind Speed (upslope)				
Moisture	mi/h				
%	14	15	16	17	18

## POST-Plan

8	38	38	38	38	38
9	33	33	33	33	33
10	28	28	28	28	28
11	24	24	24	24	24
12	20	20	20	20	20

BehavePlus 6.0.0 (Build 626 Beta 3)

**mid containment**

Head Fire

Thu, Nov 08, 2018 at 10:03:35

## Input Worksheet

**Inputs: SURFACE, CONTAIN**

Input Variables	Units	Input Value(s)
<b>Fuel/Vegetation, Surface/Understory</b>		
Fuel Model		tu5
<b>Fuel Moisture</b>		
1-h Fuel Moisture	%	8
10-h Fuel Moisture	%	9
100-h Fuel Moisture	%	12
Live Herbaceous Fuel Moisture	%	50
Live Woody Fuel Moisture	%	50
<b>Weather</b>		
20-ft Wind Speed (upslope)	mi/h	18
Wind Adjustment Factor		0.3
<b>Terrain</b>		
C:\Users\jess\Desktop\Rogue River_Siskiyou NF\Rogue River_KX	%	40
<b>Fire</b>		
Fire Size at Report	ac	.1
<b>Suppression</b>		
Suppression Tactic		Head
Line Construction Offset	ch	0

Resource Line Production Rate	ch/h	1, 6, 11, 16, 21, 26
Resource Arrival Time	h	0
Resource Duration	h	10

Notes

Run Option Notes

- Maximum effective wind speed limit IS imposed [SURFACE].
- Fire spread is in the HEADING direction only [SURFACE].
- Wind is blowing upslope [SURFACE].
- Wind and spread directions are degrees clockwise from upslope [SURFACE].
- Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].
- Suppression input is for a single resource [CONTAIN]; multiple values can be entered for any input variable.

Head Fire

Results

Production Rate	Surface Fire Rate of Spread	Surface Flame Length	Contain Status	Time from Report	Contained Area	Fireline Constructed
ch/h	ch/h	ft		h	ac	ch
1	15.4	9.4	Withdrawn	10.0	-1.0	308.5
6	15.4	9.4	Withdrawn	10.0	-1.0	308.5
11	15.4	9.4	Withdrawn	10.0	-1.0	308.5
16	15.4	9.4	Withdrawn	10.0	-1.0	308.5
21	15.4	9.4	Withdrawn	10.0	-1.0	308.5
26	15.4	9.4	Withdrawn	10.0	-1.0	308.5

low end fire behavior and spotting

Head Fire

Thu, Nov 08, 2018 at 10:02:40

Input Worksheet

Inputs: SURFACE, SPOT, IGNITE

Input Variables

Units

Input Value

Fuel/Vegetation, Surface/Understory

Fuel Model

tl3

Fuel/Vegetation, Overstory

Downwind Canopy Height

ft

30

Downwind Canopy Cover

closed

Torching Tree Height

ft

30

Spot Tree Species

PSME

D.B.H.

in

5

Fuel Moisture

1-h Fuel Moisture

%

13, 14, 15

10-h Fuel Moisture

%

15

100-h Fuel Moisture

%

17

Live Herbaceous Fuel Moisture

%

50

Live Woody Fuel Moisture

%

50

Weather

20-ft Wind Speed (upslope)

mi/h

0, 4, 8, 12

Wind Adjustment Factor

0.3

Air Temperature

oF

45

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Fuel Shading from the Sun

%

50

Terrain

Slope Steepness

%

40

Ridge-to-Valley Elevation Difference

ft

1000

Ridge-to-Valley Horizontal Distance

mi

.3

Spotting Source Location

MW



Fire

Number of Torching Trees

Notes

Run Option Notes

- Maximum effective wind speed limit IS imposed [SURFACE].
- Fire spread is in the HEADING direction only [SURFACE].
- Wind is blowing upslope [SURFACE].
- Wind and spread directions are degrees clockwise from upslope [SURFACE].
- Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Head Fire

Results for: Surface Fire Rate of Spread (ch/h)

1-h Fuel	20-ft Wind Speed (upslope)			
Moisture	mi/h			
%	0	4	8	12
13	0.5	0.6	0.9	1.1
14	0.4	0.6	0.8	1.1
15	0.4	0.5	0.7	1.0

Head Fire

Results for: Surface Fire Flame Length (ft)

ES	1-h Fuel	20-ft Wind Speed (upslope)				SISKIYOU NF, ROGUE RIVER, KX
	Moisture	mi/h				227100 1000 500 0000000
	%	0	4	8	12	
	13	0.5	0.6	0.7	0.8	
	14	0.5	0.6	0.7	0.8	

15	0.5	0.5	0.6	0.7
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Head Fire

Results for: Spot Dist from Torching Trees (mi)

1-h Fuel	20-ft Wind Speed (upslope)			
Moisture	mi/h			
%	0	4	8	12
13	0.0	0.1	0.2	0.2
14	0.0	0.1	0.2	0.2
15	0.0	0.1	0.2	0.2

Head Fire

Results for: Probability of Ignition from a Firebrand (%)

1-h Fuel	20-ft Wind Speed (upslope)			
Moisture	mi/h			
%	0	4	8	12
13	16	16	16	16
14	13	13	13	13
15	11	11	11	11

BehavePlus 6.0.0 (Build 626 Beta 3)

low end fire behavior and spotting

Head Fire

Thu, Nov 08, 2018 at 10:02:40

C:\Users\dem...Input Worksheet

Inputs: SURFACE, SPOT, IGNITE

Input Variables	Units	Input Value(s)
-----------------	-------	----------------

Fuel/Vegetation, Surface/Understory

Fuel Model	tl3
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Fuel/Vegetation, Overstory

Downwind Canopy Height	ft	30
Downwind Canopy Cover		closed
Torching Tree Height	ft	30
Spot Tree Species		PSME
D.B.H.	in	5

Fuel Moisture

1-h Fuel Moisture	%	13, 14, 15
10-h Fuel Moisture	%	15
100-h Fuel Moisture	%	17
Live Herbaceous Fuel Moisture	%	50
Live Woody Fuel Moisture	%	50

Weather

20-ft Wind Speed (upslope)	mi/h	0, 4, 8, 12
Wind Adjustment Factor		0.3
Air Temperature	oF	45
Fuel Shading from the Sun	%	50

Terrain

Slope Steepness	%	40
Ridge-to-Valley Elevation Difference	ft	1000
Ridge-to-Valley Horizontal Distance	mi	.3
Spotting Source Location		MW

Fire

Number of Torching Trees		3
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Notes

Run Option Notes

Maximum effective wind speed limit IS imposed [SURFACE].  
Fire spread is in the HEADING direction only [SURFACE].

Wind is blowing upslope [SURFACE].

Wind and spread directions are degrees clockwise from upslope [SURFACE].

Direction of the wind vector is the direction the wind is pushing the fire [SURFACE].

Head Fire

Results for: Surface Fire Rate of Spread (ch/h)

1-h Fuel	20-ft Wind Speed (upslope)			
Moisture	mi/h			
%	0	4	8	12
13	0.5	0.6	0.9	1.1
14	0.4	0.6	0.8	1.1
15	0.4	0.5	0.7	1.0

Head Fire

Results for: Surface Fire Flame Length (ft)

1-h Fuel	20-ft Wind Speed (upslope)			
Moisture	mi/h			
%	0	4	8	12
13	0.5	0.6	0.7	0.8
14	0.5	0.6	0.7	0.8
15	0.5	0.5	0.6	0.7

Head Fire

Results for: Spot Dist from Torching Trees (mi)

1-h Fuel	20-ft Wind Speed (upslope)			
Moisture	mi/h			
%	0	4	8	12

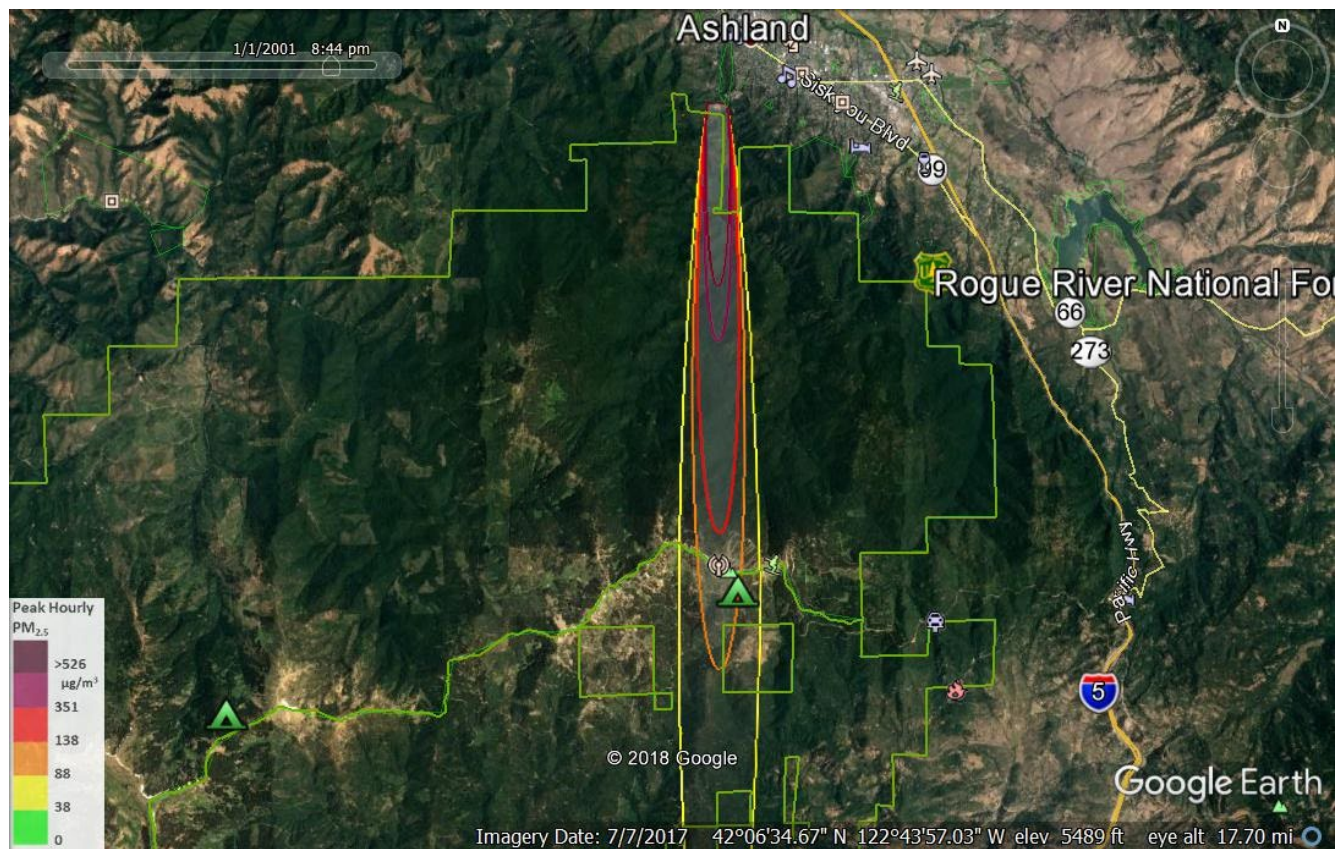
13	0.0	0.1	0.2	0.2
14	0.0	0.1	0.2	0.2
15	0.0	0.1	0.2	0.2

Head Fire

Results for: Probability of Ignition from a Firebrand (%)

1-h Fuel	20-ft Wind Speed (upslope)			
Moisture	mi/h			
%	0	4	8	12
13	16	16	16	16
14	13	13	13	13
15	11	11	11	11

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



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**Appendix G: Project Aviation & Safety Plan (PASP) (if applicable)**

Insert PASP here if applicable.

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	



[illegible]

## Weather and Fuels

**OBSERVATION TIME (24 HR)**

**SLOPE (%)**

ASPECT

ELEVATION (FEET)

### FUEL MODEL (1-13)

SHADING (&lt;50% or &gt;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 \_\_\_\_\_