Element 1: Signature Page

PRESCRIBED FIRE PLAN

ADMINISTRATIVE UNIT NAME(S): Columbia Basin Wildlife Area

PRESCRIBED FIRE NAME:
Prescribed Fire Unit (Ignition Unit): North Potholes, Frenchman

Prescribed Fire Name: Columbia Basin Reg. 2 Rx burn

Ignition Unit Name: North Potholes, Frenchman

PREPARED BY:

Name (print): Matt Eberlein Qualification/Currency: RXB2 Yes currency exp 5/31/2022

Signature: Matt Eberlein Date: 11/1/2019

TECHNICAL REVIEW BY: WDFW

Name (print): Duane VanWoert Qualification/Currency: RXB2 Yes currency exp 05/19/2024

Signature: Duane A VanWoert Date: 11/05/2019

COMPLEXITY RATING: Moderate

MINIMUM BURN BOSS QUALIFICATION: RXB2

APPROVED BY: WDFW

Name – WDFW Agency Administrator (print): Chad Eidson

Signature – Agency Administrator: Chad Eidson Date: 11/19/2019

APPROVED BY: Reclamation

Name – Reclamation Agency Administrator (print): Talmadge Oxford

Signature – Agency Administrator: Date:

Element 2A: Agency Administrator Ignition Authorization

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) or burn boss. Attach any additional instructions or discussion documentation (optional) to this document.

Key Discussion Items

A.	Has anything changed since the Prescribed Fire Plan was approved or revalidated? *Such as drought or other climate indicators of increased risk, insect activity, new subdivisions/structures, smoke requirements, Complexity Analysis Rating.*
B.	Have compliance requirements and pre-burn considerations been completed? *Such as preparation work, NEPA mitigation requirements, cultural, threatened and endangered species, smoke permits, state burn permits/authorizations.*
C.	Can all of the elements and conditions specified in Prescribed Fire Plan be met? *Such as weather, scheduling, smoke management conditions, suitable prescription window, correct season, staffing and organization, safety considerations, etc.*
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? *Such as preparedness level restrictions, resource availability, other prescribed fire or wildfire activity*
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?

Implementation Recommended by:
FMO or Prescribed Fire Burn Boss Signature:_____ Date:_____

I am authorizing ignition of this prescribed fire between the dates of 1/15/2021 and 1/15/2022. 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☐If more than 6 weeks has passed from the date of the signature on element 2a (ignitions authorization) an additional briefing will be provided to the Agency Administrator prior to ignitions.

Ignition Authorized by:

Agency Administrator Signature and Title:_____ Date:_____

Chad Eidson Wildlife Program, Lands, Columbia Basin Wildlife Area

Ignition Authorized by:
Agency Administrator Signature and Title:_____ Date:_____

Talmadge Oxford, Columbia Cascades Area Office Manager, Reclamation

Element 2B: Prescribed Fire Go/No-Go Checklist

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 **NO** proceed with the Go/NO-GO Checklist below, if **YES** 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 **YES**, proceed with checklist below. If **NO, STOP: Implementation is not allowed. An amendment is needed.**	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?	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?	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 judgment can the prescribed fire be carried out according to the prescribed fire plan and will it meet the planned objective? **Circle: YES or NO**

Prescribed Fire Name: Columbia Basin Reg. 2 Rx burn

Ignition Unit Name: North Potholes, Frenchman

Burn Boss Signature:_____ Date:_____

Element 3: Complexity Analysis Summary and Final Complexity

Columbia Basin Reg. 2 Rx Fire Plan		Quantity	Significance
Values	On-Site	Few	Mod
	Off-Site	Few	Mod
	Public/Political Interest	Few	Mod

Element	Preliminary Risk	Post-Plan Risk	Technical Difficulty	Calculated Rating
Safety	Mod	Mod	Mod	Mod
Fire Behavior	Mod	Mod	Mod	Mod
Resistance to Containment	Mod	Mod	Mod	Mod
Ignition Procedures and Methods	Mod	Mod	Mod	Mod
Prescribed Fire Duration	Mod	Mod	Mod	Mod
Smoke Management	Mod	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	Low	Low	Low	Low
Project Logistics	Mod	Mod	Mod	Mod

Calculated Summary Prescribed Fire Plan Complexity

Final Complexity Determination	Final Complexity Determination Rationale
Mod	The prescribed fire units are on relatively flat topography, although sloping fetures exsist with small draws. All of the units are best repersesnted by fuel model 3. Fuel arrangements and loading will contribute to increased fire behavior depending on aspect, elevation, position on slope, seasonal timing and the weather conditions at the time prescribed fire operations are conducted. Smoke may be visible from a number of communities. Prescribed fire operations may suspended due to hunting seasons or unfavorable weather conditions. The Final Complexity Determination for the Columbia Basin Prescribed Fire Burn Plan is Moderate. An individual certified at the RXB2 level or greater will conduct the prescribed fire operations.

Signatures	Rx Burn Plan Preparer's Name: Matt Eberlein X_____ Date: 11/1012019 Technical Reviewers Name: Duane VanWoert X_____ Date: 11/05/2019 Agency Administrator's Name: Chad Eidson X_____ Date: 11/19/2019 Agency Administrator's Name: Talmadge Oxford X_____ Date:_____

Element 4: Description of Prescribed Fire Area

A. Physical Description

North Potholes: The prescribed fire unit is located approximately a ½ mile south of I 90 and 2 miles west of Moses Lake (Appendix A: Vicinity Map). The north control line is an access road to a rock source accessed from S. Frontage Rd NW. The west, south, and east control lines are a combination of hand lines, natural barriers, or two tract access roads.
Ownership breakdown:
Unit 1 - DNR 79 acres, BOR 84 acres
Unit 2 - All BOR -37 acres
Unit 3 - DNR 3 acres, BOR 36 acres
Unit 4 - All BOR

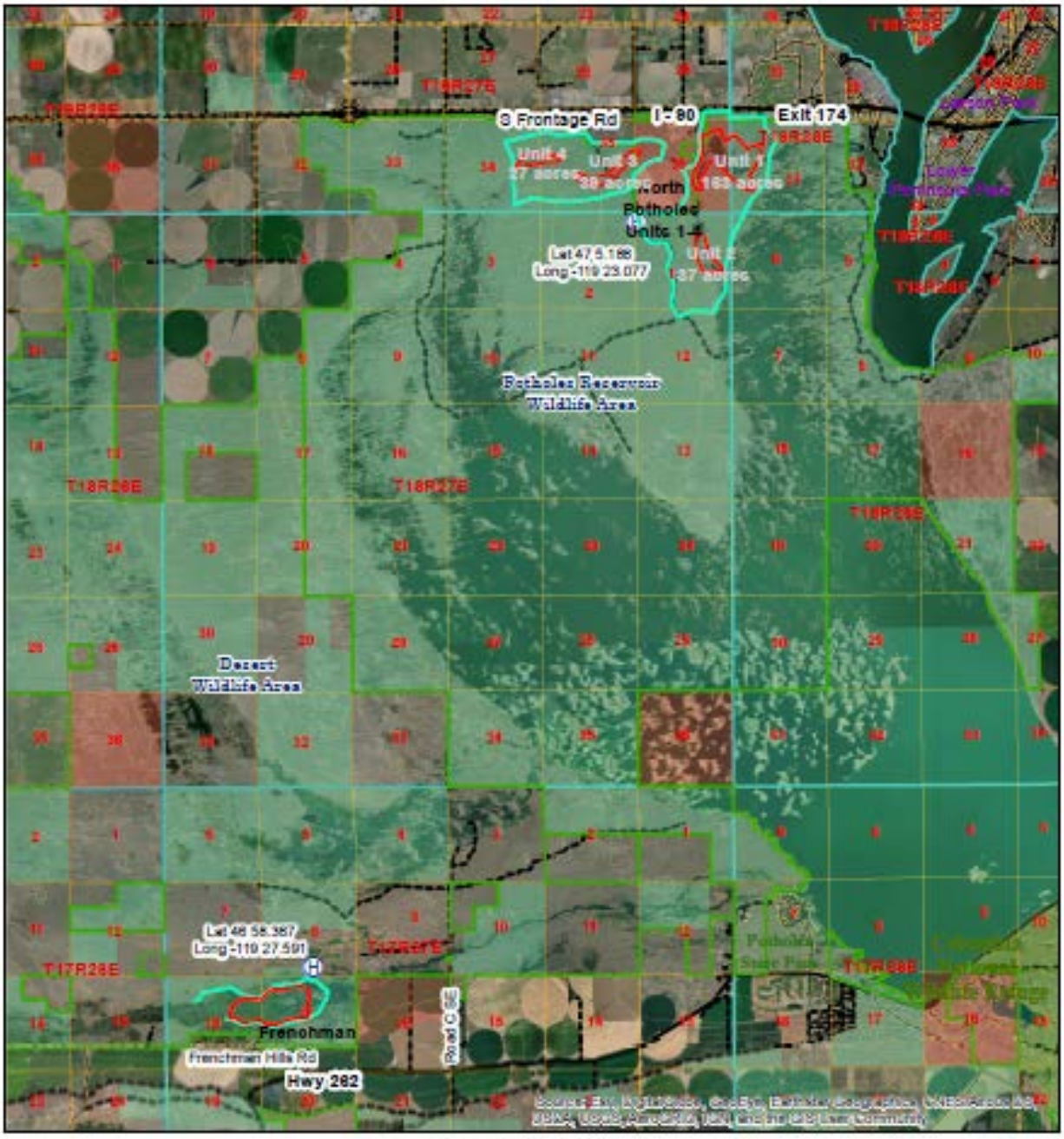
Frenchman: The prescribed fire unit is located approximately 1-mile north of Frenchman Hills Rd and 1.5 West of Road C SE. (Appendix A: Vicinity Map). The north end of the unit is accessed using the Frenchman Reserve road accessed from Road C SE. The control lines are a combination of hand lines, natural barriers and two track access roads.
Ownership breakdown:
All BOR- 151 acres

County	Grant	**Burn Project Name**	North Potholes, Frenchman	**Reason to Burn**	Ecosystem health restoration, habitat improvement, hazard fuel reduction
Burn Type	Prescribed/Activity	**Latitude**	47° 5.388 46°58.023	**Longitude**	-119°22.242 -119°28.209
Township - Range - Sections	T19N, R27E, S36 T18N, R27E, S1 T17N, R27E, S17	**Elevation**	Top: 1100' Bottom: 1050'	**Less than 3" Rotten (Tons/acre)**	0
Litter (Tons/acre)	1.05	**Shrub (Tons/acre)**	.02	**Grass/Herb (Tons/acre)**	1.95
Duff Type	Black	**Forest Health Exempt**	N/A	**Size of Unit**	N Potholes – 266 ac Frenchman – 151 ac
General Species	Cat Tails/ Bulrush/ Phragmites	**Ignition Method**	Hand	**NEPA Document**	Columbia Basin Wildlife Area RX Fire Project PN-EA-20-1
Aspect	South	**Drainage**	Potholes Reserve	**Max/Min Ave Slope**	0% to 10% Ave 0-5%

Consume 4.2 Fuel Consumption – *TOTAL BURN PLAN* – 1255 Ton / 417 Acres (3.01 ton/acre).

B. Vegetation/Fuels Description

ON-SITE FUELS DATA (Pre burn fuels data)				ADJACENT FUELS DATA		
Fuels Category		Activity		Fuels Category		Activity
	X	Natural			X	Natural
FBPS Fuel Model(s)	3			FBPS Fuel Model(s):	2	
Photo Series	Central Lake St TP 17			General Description of Adjacent Fuels		
NFDRS Fuel Model				Adjacent ownerships are a mix of private, DNR and Bureau of Land Management (BLM), Bureau of Reclamation (BOR) lands. This property ownership is shrub steppe and pot hole marsh lands. Adjacent fuels are best represented by Fuel Models 2, or transforming from marsh land fuels to a shrub step model. Adjacent fuels in the shrub step are not the focus of the burn and only would be included from a containment factor.		
Consume	4.2					
Dead 0 – ¼"	.7					
Dead ¼ -1"	.1					
Dead 1-3"	0					
Dead 3-9"	0					
Dead 9-20"	0					
Dead 20" and greater						
Duff Depth (Nearest 1/10th)	0.5 2 tons/ac					
Litter Depth (nearest 1/10th)	1 1.84 ton/ac					
Grass ton/ac	2.1					
Shrub ton/ac	.23					
TOTAL FUEL LOADING	6.97					
Slope %	0%					
Cut Date						
Snow-off Date						


Columbia WLA - Vicinity Map
North Potholes - 266 acres
T19,R 27, S 36
Lat: 47 5.388 / Long: -119 22.242
Frenchman - 151 acres
T 17,R 27, S 17
Lat: 46 58.023 / Long: -119 28.209
0 0.75 1.5 3 Miles
Legend
Other Public and Private Land
US BOR
WA DNR
I-90
Exit 174
Frontage Rd
Unit 4
Unit 3
Unit 1
Unit 2
North Potholes Units 1-4
Potholes Reservoir Wildlife Area
Desert Wildlife Area
Frenchman
Frenchman Hills Rd
Hwy 262
Road O SE
T18R28E
T18R27E
T17R28E
T17R27E

On-Site Fuels: The prescribed fire units consist of predominately Cattails, Phragmites, and Bulrush. Other on-site fuels are comprised of various brushes and grass openings throughout the prescribed fire units. Fuels within the units are representative of Fire Behavior Prediction System (FBPS) fuel models 3. Tall marsh grasses will be the primary carrier throughout the majority of the unit areas (80 to 90%), except in areas also containing Russian Olive, sage brush with a grass component, adding to the fine fuel strata.

Adjacent Fuels: Adjacent fuels are best represented by Fuel Models 2, or transforming from marsh land fuels to a shrub step model. Adjacent fuels in the shrub step are not the focus of the burn and only would be included from a containment factor. Slope transforms from 0% of the primary focus area up to 20% into the shrub step. Agricultural fields surround many of the units identified that lay adjacent to the shrub step which could act as a contingency fuel break if needed with minimal to no environmental damage due to the time of year burning would be conducted.

Frenchman - looking southwest, Phragmites and cattails

Fuels represented on the North Potholes and Frenchman units farther from the main water sources

Overview south of North Potholes

Overview west of North Potholes

C. Description of Unique Features, Natural Resources, Values:

The prescribed fire project consists of several units to burn tall emergent vegetation (cattail, bulrush, phragmites) during winter to achieve 75-90% consumption of stems to allow the northern leopard frog (*Lithobates pipiens*), a Washington State Endangered Species and Species of Special Concern, to have suitable habitat for egg mass attachment. Removal standing dead material (mostly phragmites) will allow for better herbicide contact during the growing season. This Prescribed Fire Plan is part of the Washington Department of Fish and Wildlife (WDFW) Lands Division, Wildlife Program to improve wildlife habitat and restore fire effects and fire by-products within the ecosystem on the Columbia Basin Wildlife Area.

Offsite features and values consist of signage, hunting blinds and fences most of which are located well outside identified burn areas.

D. Maps – See Appendix A

1. Vicinity Map

Project (Ignition Units) Maps – North Potholes, Frenchman

Element 5: Objectives

OBJECTIVES ARE SMART: Specific ~ Measurable ~ Attainable ~ Reasonable ~ Time Related

RESOURCE OBJECTIVES	PRESCRIBED FIRE OBJECTIVES
Fire/Fuels • Reduce fuel loadings in the following size classes by: o 1 hour 70-90% o 10 hour 40-60% o 100 hour N/A o 1000 hour N/A	• Flame lengths will be managed with ignition techniques to maintain control of the fire. In this fuel type, flame lengths are not a critical factor since there is no over story vegetation. • Project burn objective is to burn approximately 75% of the project area while achieving the desired fuel consumption by size class.
Ecosystem • Remove standing dead fuels mostly Phragmites, cattails, and bullrush for better herbicide contact during growing season • Reduce competition of noxious and evasive species to promote native species growth	• Flame lengths will exceed 12‘or greater in this fuel type. If flame lengths drop below 1’ then firing will be adjusted to increase the flame lengths. • Manage ignition operations to not exceed objectives or damage protected species (Northern leopard frogs).
Wildlife • Create suitable habit for Leopard frogs • Rejuvenate and enhance degraded wetlands • Improve vertical hiding cover by reducing dead materials and invigorate shrub and tree species with fire disturbance. • Sustain fire effects necessary for a functional fire dependent habitat	• Unburned areas of fuel will not be reignited unless they present an escape risk. The unburnt areas will contribute to plant community mosaic.
Protect Plant Species • Willow or other non Russian Olive • Reduce fire escape into adjacent dry uplands	• Wet or hand line around tree basses • Wet lines or hand line may be placed around edges of tall wetland vegetation to reduce fire creep and minimize resource damage.
Constraints • Keep fire mostly contained to wetland basins and or wetland species • Avoid burning trees that are not Russian Olive i.e. mature willows etc.	

Element 6: Funding

A. Cost:

Average cost per acre is determined for all efforts: planning, setup, implementation, mop up, and tear down.
Estimated Expenditure: is based on $300.00 per acre
Total Cost: is subject to change based on funding sources available and associated budges

B. Funding source:

Funding Source: Are subject to change as sources become available
Funding Code: Are subject to change as sources become available

Element 7: Prescription

A. Prescription Narrative:

Tall grass, forbs, and shrubs, best represented within Fuel Model 3 will contribute to predicted Fire Behavior outputs. Flame lengths could reach twelve feet or greater at the upper environmental parameters of the prescription. Adjustments in fire technique will be made to make sure the flame lengths will not have any detrimental effect on desirable plant species.

The fuel types and fuel loading are relatively consistent throughout the units as a whole but could have differing accumulations and arrangements of the grass, forbs and shrubs. Prescribed fire will be applied when fuel conditions are within the burn plan prescription. Fire behavior will result in one to twelve plus-foot flame lengths to eliminate tall emergent vegetation. This will assist with regeneration of desired plant species and reduce surface fuel loading to improve breeding and foraging habitat for Northern leopard frogs (Appendix D- Fire Behavior Modeling).

B. Prescription Parameters:

1. Environmental parameters

   Timing of burns will be determined by seasonal conditions. The best time to burn units will be in the winter to early spring to reduce environmental and wildlife impacts of the leopard frogs and have suitable habitat for egg mass attachment

	ACCEPTABLE RANGE	MINIMUM ACCEPTABLE MOISTURE OUTSIDE THE UNIT TO REDUCE RISK OF ESCAPE
Temperature (°F)	40 - 85 degrees	
Relative Humidity (%)	20%-70%	
Midflame Wind Speed (MPH)	2-10 mph	
Wind Direction (Azimuth °)	Any, 0 to 180 preferred	
1-Hour Fuel Moisture (%)	5 – 15	5
10-Hour Fuel Moisture (%)	6 – 12	

2. Fire Modeling parameters

	ACCEPTABLE FIRE BEHAVIOR RANGE INSIDE UNIT		EXPECTED FIRE BEHAVIOR OUTSIDE THE UNIT AT THE HOT/DRY MAX RANGE
Fuel Model(s) (FBPS)	3		1, 2, 3
Rate of Spread (ch/hr.)	1-20		5-18
Flame Length (feet)	1-12>		2-5
Probability of Ignition (%)	30-70		70%
Scorch Height (feet)			
Spotting Distance (miles)			.2

ADDITIONAL INFORMATION

Go-NO-Go and "Shut Down" should not be based exclusively on a single parameter, but a combination of environmental and observed fire behavior parameters. To ensure the prescribed fire is not exceeding objectives, the burn boss should utilize a combination of prescriptive parameters to ensure they are meeting objectives while staying within prescription.

Element 8: Scheduling

A. Implementation Schedule:

Burn seasons: winter / spring

Ignition durations: Ignition duration should not exceed 360 minutes per shift due to the fuels types being burned. Unit size and weather conditions may require additional ignitions of the unit to complete.

B. Projected Duration:

Depending on other prescribed fire priorities, smoke management and weather, each project area should be completed within one to three days.

C. Constraints:

Authorities managing smoke and air quality may restrict burning on certain days of the week or holidays throughout the burning season. Other constraints that cannot be controlled, are weather factors such as unseasonably dry or wet conditions, winds, and smoke influences. The burn should occur when Northern leopard frogs are overwintering so that we can avoid any accidental mortalities. Northern leopard frogs become active (and start breeding) as soon as water and air temperatures begin reaching 50 °F consistently. The Columbia Basin experiences variable weather during the timeframe of December 1-March 1, so average daytime high temperatures should be taken into consideration.

Hunting seasons and recreational activities that may affect implementation of prescribed fire activities. Notifications through public media venues and local onsite postings will be completed prior to burning.

Element 9: Pre-burn Considerations and Weather

A. Considerations:

1. A burn permit must be obtained from WA ECY (Dept. of Ecology) prior to the implementation of prescribe fire operations.

2. Mitigation efforts will be completed (such as construction of containment lines- see Appendix A), preparation of critical holding areas, snags to be felled or protected, equipment to be pre-positioned, and weather evaluation recorded prior to anticipated ignition as well as evaluation of current and expected weather forecasts. Other mitigation efforts will be conducted as needed such as fuels condition sampling, unit monitoring, preparatory duties and responsibilities, and evaluation of timeframes.

3. WDFW Rx Program warning signs will be placed nearby the burn area notifying the public of prescribed fire activity.

Timely notification will be provided to adjacent landowners and other agencies. Notifications will be identified by frequency and type via mail, phone or postings. The Fire Managers and Wildlife Area Managers should ensure that news release is submitted before each burn season. The news release will describe areas/units that are anticipated to be treated with prescribed fire during that particular season. Prescribed fire information will be posted in visible areas near the planned burn area. B. Method and Frequency for Obtaining Weather and Smoke Management Forecast(s):

Spot weather forecasts will be obtained daily prior to ignition and during ignition if conditions become unrepresentative. Weather observations will be taken hourly and data recorded during ignition operations.

The Burn Boss will acquire Smoke Management Approval prior to ignition referenced in **Element 19.**

C. Notifications:

Local Notifications:

Agency/Individual	Contact	Phone #	Contacted By Whom	Frequency	Date of Contact	
Dept. of Ecology	Front Desk Burn team Kary Peterson	Office 509-329-3400 509-329-3523	RXB2	Daily		
Grant County Sheriff		509-754-2011 800-572-0119	RXB2	Daily		
Grant Co. Fire Dist. 5 Moses LK / N Potholes	Chief Dan Smith	Office 509-765-3550 509-675-3175	RXB2	Daily		
Grant Co. Fire Dist. 11 Royal Area / Frenchman	Chief Eric Linn	Office 509-346-2000 509-346-2658	RXB2	Daily		
DNR Dispatch CWICC –SE Region		(509) 884-3473	RXB2	As needed		
USF&W - Fire AFMO	John Janak	509-546-8066 C:509-378-5391	RXB2	Daily		
BLM Fire FMO	DO Phone number	509-536-1288	RXB2	As needed		
DFW South Lands Operation Manager, Reg 2	Rich Finger	Office 509-754-4624 x229 Cell 509-237-2917	RXB2	Initial		

DFW Columbia Basin Wildlife Area Manager	Chad Eidson	509-765-6641	RXB2	Daily		
DFW Rx Fire Program Manager	Matt Eberlein	Cell 509-429-4236	RXB2			
DFW NC Rx Fire Unit Manager			RXB2			
Bureau of Reclamation	Kendra Fallon	208-801-3650	Rxb2	Daily		
DFW Enforcement Officer	Sergeant Chris Busching	509-989-3134	RXB2	As needed		

Private Land Owners:

Individuals	Physical Address	Mailing Address	Phone #	Contacted By Whom	Date of Contact	
North Potholes						
DNR/ SE Reg. Ag Program		716 Bowers Rd Ellensburg WA 98926	509-925-8510	Mail		
WA DOT	5501 S Frontage Rd Moses Lk WA, 98873	1551 N Wenatchee Ave Wenatchee WA, 98801		Mail		
Frenchman						
LMark LLC		PO Box1186 Mattawa WA, 99349		Mail		
Woody & Jean Trihey	906 E Frenchman Hills Rd Moses Lk WA, 98837	PO Box 1156 Moses LK WA 98837		Mail		
Chester Ferguson		417 E Q St Yakima WA, 98901		Mail		
Paul & Eveann Spartveit	1504 E Hwy 262 Moses Lk WA, 98837	PO Box 32 Manson WA 98831		Mail		

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
- ☐ Expected weather and fire behavior
- ☐ Communications
- ☐ Ignition plan
- ☐ Holding plan
- ☐ Contingency plan and assignments
- ☐ Wildfire declaration
- ☐ Safety and medical plan
- ☐

Other hazards: Potential for fire-weakened trees to fall on the roads. Crews should carefully check for potential hazards that may strike the roads. If necessary, the burn boss shall temporarily conduct an emergency road closure until the hazards are mitigated.

Element 11: Organization and Equipment

A. Positions:

POSITION	ICS CODE	MINIMUM AMOUNT NEEDED	LINE BUILDING RATES (Ch/Hr.)
Prescribed Fire Burn Boss	RXB2	1	0
Firing boss	FIRB	1	
Holding Specialist *(Designate SKILL level)*	FF1 or appropriate ICS position to meet span of control.	1	
Engine Crew (3 personnel)	Engine	1	24
Ignition Crew	FFT2	1	6
Holding Crew	FFT2	3	12

B. Equipment/ Supplies:

DESCRIPTION	UNIT OF MEASURE	TOTAL AMOUNT NEEDED	TOTAL Need To Order
Engine – 200 gal. or greater	Type 6	1	
March Tractor	Type 3	1	
Drip Torches/ Propane Torches		8	
Chain Saws		2	
Hand Tools		10	
Portable Water Tanks	1000 gal or greater	As needed	
Tender	1000 gal or greater	On call as needed	
Dozer	D4	On call as needed	
Hose (1 ½ inch) (Burn Trailer 10,000' hose)	Burn Trailer	1	

Element 12: Communication

A. Radio Frequencies:

BANDWIDTH	GROUP/CHANNEL	LABEL	FREQUENCY	ASSIGNMENT
N	Zone 27 Channel 8	ST Grant	T-151.29500 D431 R- 159.42000 D431	Command/ CWICC
N	Zone 27 Channel 12	ST Badger	T-151.29500 D606 R- 159.42000 D606	Command/ CWICC
N	Zone 27, Channel 3	TAC 6A	T- 153.93500 186.2 R- 153.93500 186.2	Tactical Primary
N	Zone 27, Channel 4	TAC 18A	T- 151.49000 186.2 R- 151.49000 186.2	Tactical Secondary Backup

B. Telephone Numbers:

***** See **(Element 9.C. Notifications)** for a complete phone contact list**.**

Element 13: Public and Personnel Safety, Medical

A. Safety Hazards:
&
B. Mitigation: Measures Taken to Reduce the Hazards:

Safety Hazards and Measures Taken to Reduce the Hazards:
Hazard: Potential for fire weakened trees and rocks to become a debris hazard on access roads. **Mitigation**: Prior to ignition, identify and assess potential hazard trees that may impact access roads and mitigate/identify for mop up. Post cautions signs on the roads that may be impacted and notifications on area reader boards. Post ignition analysis for fire-weakened trees will be conducted, and potential hazard trees will be flagged, monitored or felled. **Hazard**: Potential on-site smoke intrusions causing reduced visibility on I-90, local access roads, and nearby WL use areas. **Mitigation**: Monitor smoke conditions on local roads and post warning signs as needed. Conduct in-person WL use areas visits if deemed necessary by the Burn Boss. The Burn Boss will stop all ignitions if necessary until smoke clears if wind directions blowing smoke across local roads or highways and could impact safety or vision, **Hazard**: Local smoke intrusions. Smoke intrusions due to evening inversion could impact the local community's and nearby residences. If this occurs, it is anticipated to last less than 24 hours. **Mitigation**: In addition to RXB2 monitoring smoke, it is also monitored by the Department of Ecology. Post notification signs in local information sites. Provide day-of-burn telephone notifications if deemed necessary by the Burn Boss. Attempt to complete ignitions before downslope winds initiate and nighttime inversions set in. Smoke mitigation processes will follow the Washington State Smoke Management Implementation Plan. **Hazard:** Escaped fire moving towards lands and residences. **Mitigation:** Holding and contingency resources meeting requirements in this plan are in place and available. Contact of landowners by phone will be provided in the case of an escape and at least 2 weeks prior to burning units by phone or mail.

C Incident within an Incident (IWI):

- If an incident-within-incident (IWI) occurs, the closest resource will notify their line supervisor. Subsequent notification will continue through the organization structure until the Burn Boss is notified.

- An IC will be established for the IWI and notification will directly proceed to Burn Boss for kind/ type of incident, severity and recommended actions.

- The Burn Boss or Holding Specialist will determine priorities and adjust resources to maintain holding operations while facilitating needs of IWI.

- Depending on nature of IWI, it may be prudent to utilize alternate communication frequencies.

- If prescribed fire incident personnel are requested for another incident, the burn boss should consider the potential impact to prescribed fire operations (maintain control of prescribed fire) and ability to lend or release resources.

- In the event an updated weather forecast indicates conditions adverse to maintaining containment of the prescribed fire, consider ordering contingency resources and commitment on-site.

D. Emergency Medical Procedures:

MEDICAL PLAN (ICS 206 WF)

Controlled Unclassified Information//Basic

Medical Incident Report

FOR A NON-EMERGENCY INCIDENT, WORK THROUGH CHAIN OF COMMAND TO REPORT AND TRANSPORT INJURED PERSONNEL AS NECESSARY.

FOR A MEDICAL EMERGENCY: IDENTIFY ON SCENE INCIDENT COMMANDER BY NAME AND POSITION AND ANNOUNCE "MEDICAL EMERGENCY" TO INITIATE RESPONSE FROM IMT COMMUNICATIONS/DISPATCH.

Use the following items to communicate situation to communications/dispatch.

1. CONTACT COMMUNICATIONS / DISPATCH (Verify correct frequency prior to starting report)
Ex: "Communications, Div. Alpha. Stand-by for Emergency Traffic."

2. INCIDENT STATUS: *Provide incident summary (including number of patients) and command structure.*
Ex: "Communications, I have a Red priority patient, unconscious, struck by a falling tree. Requesting air ambulance to Forest Road 1 at (Lat./Long.) This will be the Trout Meadow Medical, IC is TFLD Jones. EMT Smith is providing medical care."

Severity of Emergency / Transport Priority	☐ **RED / PRIORITY 1 Life or limb threatening injury or illness. Evacuation need is IMMEDIATE** *Ex: Unconscious, difficulty breathing, bleeding severely, 2º – 3º burns more than 4 palm sizes, heat stroke, disoriented.* ☐ **YELLOW / PRIORITY 2 Serious Injury or illness. Evacuation may be DELAYED if necessary.** *Ex: Significant trauma, unable to walk, 2º – 3º burns not more than 1-3 palm sizes.* ☐ **GREEN / PRIORITY 3 Minor Injury or illness. Non-Emergency transport** *Ex: Sprains, strains, minor heat-related illness.*	
Nature of Injury or Illness & Mechanism of Injury		*Brief Summary of Injury or Illness (Ex: Unconscious, Struck by Falling Tree)*
Transport Request		*Air Ambulance / Short Haul/Hoist Ground Ambulance / Other*
Patient Location		*Descriptive Location & Lat. / Long. (WGS84)*
Incident Name		*Geographic Name + "Medical" (Ex: Trout Meadow Medical)*
On-Scene Incident Commander		*Name of on-scene IC of Incident within an Incident (Ex: TFLD Jones)*
Patient Care		*Name of Care Provider (Ex: EMT Smith)*

3. INITIAL PATIENT ASSESSMENT: *Complete this section for each patient as applicable (start with the most severe patient)*

Patient Assessment: See IRPG page 106

Treatment:

4. TRANSPORT PLAN:

Evacuation Location (*if different*): (*Descriptive Location (drop point, intersection, etc.) or Lat. / Long.*) Patient's ETA to Evacuation Location:

Helispot / Extraction Site Size and Hazards:

5. ADDITIONAL RESOURCES / EQUIPMENT NEEDS:

Example: Paramedic/EMT, Crews, Immobilization Devices, AED, Oxygen, Trauma Bag, IV/Fluid(s), Splints, Rope rescue, Wheeled litter, HAZMAT, Extrication

6. COMMUNICATIONS: Identify State Air/Ground EMS Frequencies and Hospital Contacts as applicable

Function	Channel Name/Number	Receive (RX)	Tone/NAC *	Transmit (TX)	Tone/NAC *
COMMAND					
AIR-TO-GRND					
TACTICAL					

7. CONTINGENCY: *Considerations: If primary options fail, what actions can be implemented in conjunction with primary evacuation method? Be thinking ahead.*

8. ADDITIONAL INFORMATION: *Updates/Changes, etc.*

REMEMBER: **Confirm ETA's of resources ordered. Act according to your level of training. Be Alert. Keep Calm. Think Clearly. Act Decisively.**

ICS 206 WF (03/18) Controlled Unclassified Information//Basic

Notify the burn boss immediately if serious accidents or injuries occur. Get the patient to definitive medical care as safely and quickly as possible.

D. Emergency Evacuation Methods:

The Burn Boss or Point of Contact (POC) will manage available resources to assess the patient's condition, determine the need for and best form of patient transport, and notify 911 if the agency's Fire Manager if Emergency Medical Services (EMS) is required. **Use the following communications plan.**

1. Declare the nature of the emergency, **DO NOT USE PATIENT NAME OVER RADIO**:
    - Type of medical injury or illness and whether it is life-threatening
    - Type of response needed:
        - Life-threatening = **Medivac**
        - Non-life-threatening = **Medical Transport**
2. Incident status; If emergency is serious or life-threatening, request that the designated frequency be cleared for emergency traffic.
    - Identify the on-scene Point of Contact (POC) by resource position and last name (i.e. Burn Boss Smith)
    - Nature of the incident (i.e. motor vehicle accident, snag fall, heart attack)
    - Number of people sick or injured
3. Initial Patient Assessment:
    - See IRPG page 106
    - Describe whether patient can walk or sit up
4. Transportation Plan:
    - Location geographical and lat/long
    - Route to access site
    - Recommended type of patient transportation (ground or air)

5. Request any additional resources or equipment needed.
6. Communications
    - Identify frequencies that will be used. (command, air to ground, EMS, phone numbers)
7. Contingency plan:
    - If primary plan fails what will be required to continue with assistance.(transportation options, higher medical experience, increased changes in the patient, environmental changes, etc.)
8. Identify any changes in the on-scene POC or medical personnel as they occur. *Inform 911 of any changes in patient location.*

AFTER CONTACTING Emergency dispatch center 911

Inform the Fire Manager of the current status of the medical incident and the prescribed burn, and request additional help as needed.

Optional information:

- *If a helicopter medivac or extrication is requested through 911, ensure that 911 relays this information to responding EMS resources and provides air medivac resources with relevant air-to-ground frequency.*
- *If the responding EMS resources recommend air medivac based on the initial patient assessment and their own protocols. The responding EMS personnel will coordinate that request with the on scene IC*
- *If a helicopter is operating under control at the project site, work with its helicopter manager to manage the airspace to prevent potential conflicts between medical and agency aircraft.*
- *Agency helicopters transporting patients need to have the **HEAR frequency (Tx/Rx 155.340)** programmed to communicate with the receiving ambulance/hospital/clinic.*
- *The LifeFlight helicopter pilot often will use the **LERN frequency (Tx/Rx 155.370)** as a backup radio frequency to contact ground resources.*

COMMUNICATION WITH EMS

Once EMS has been dispatched to the site, any patient movement MUST be communicated to them through 911.

PATIENT CARE

Immediate, quality patient assessment is critical to initiate the correct type of EMS response needed. Care for the patient at level of capability and training available. If patient is moved, use injury-specific immobilization as needed with trained, current medical personnel coordinating the move, except when **emergency** safety concerns endanger the patient. When the patient is in route to medical treatment, the burn boss or POC will notify 911 and the Fire Manager with patient's destination, ETA, and method of transport.

E. Emergency Facilities:

North Potholes:

Take Exit 169 from I 90, go south on Hiawatha road to S. Frontage Rd NW, travel east on S. Frontage Rd NW approximately 2.8 miles. Go south on dirt road access for approximately 1.5 miles to burn site.

Frenchman:

Take Exit 164 from I 90 to Dodson Road, travel south 10 miles to Frenchman Hills Rd. Go east on Frenchman Hills to intersection of Hwy 262, continue east 1.3 miles to Road C SE. take a left into Frenchman Reserve and follow dirt road to burn site.

Nearest Landing Zone for Air Ambulance

North Potholes HELISPOT	Latitude: 47° 5.186	Longitude: -119° 23.077	Elevation 1050 ft.
Frenchman HELISPOT	Latitude: 46° 58.367	Longitude: -119° 27.59	Elevation 1110 ft.

Emergency Medical Facilities:

Hospital Name	Address	City	Phone Number
Samaritan Healthcare - General Hospital	801 E Wheeler Rd	Moses Lake	(509) 765-5606
Central Washington Hospital	1201 S Miller St.	Wenatchee	509 662-1511
Harborview Medical Center	325 Ninth Ave,	Seattle	(206) 744-3000

Element 14: Test Fire

A. Planned Location:

The test fire should determine if the burn objectives can be met under the current and expected weather conditions and if fire behavior is within prescription. After an adequate test fire, the Burn Boss should notify CWICC and personnel on the burn unit whether ignition will continue or cease. If test fire results do not meet the fire behavior parameters in the prescription or if fire treatment objectives cannot be met, ignition should cease and the test fire should be secured prior to leaving the unit.

The test fire will be conducted in a representative fuel type and in an area that can be easily controlled; preferably downwind and/or at a high point on the burn unit near the planned starting point and located in an area that would not compromise the safety of hand lighters or other resources.

B. Test Fire Documentation:

Temperature:	RH:	Wind Speed and Direction:	Cloud Cover:
Fine Dead Fuel Moisture:	Ten Hour Fuel Moisture:	Probability of Ignition:	
Flame Length:	Rate of Spread:		
Burn Boss Signature:	Date:	Time:	

Element 15: Ignition Plan

A. Firing Methods:

Techniques, sequences and patterns

Ignition patterns will start after sufficient blacklining strip head firing into the wind with some use of dot firing around contours or important features. The distance and pattern may vary depending on the observed flame length, fire behavior and desired results. Units will be compartmented into smaller portions to aid in control and holding efforts. This will aid in utilizing other features in the landscape as check lines.

B. Devices:

Agency approved hand ignition devices

C. Minimum Ignition Staffing:

RXB2, FIRB, Holding Boss 1 lighter, 3 holding crew. 1 Engine with crew, 1 support burn trailer

Element 16: Holding Plan

A. General Procedures for Holding:

As ignition operations progress, holding forces will monitor and patrol control lines for spot fires outside the unit. Standard mop-up protocol is 25 feet and can be increased where needed. Mop-up will be accomplished along prescribed fire unit perimeter until there is no risk of fire escape. The need for water support (engine deployment and/or hose lays) will be determined prior to ignition by the burn boss. Appropriate suppression action will be taken with hand tools on any fire outside control lines. If the prescribed fire exceeds the capability of the holding crew on site, guidance will be followed as indicated in the attached Contingency Plan.

Significant hose lays may be required due to location of pumps. Additional engine(s), tenders, and UTV's may also provide needed water support. Patrols of the fire unit will be conducted on a routine basis. Frequency and staffing needs will be determined by the burn boss.

B. Critical Holding Points and Actions:

The projects are positioned near other ownerships. The project sites may experience strong diurnal winds, increased lake effect winds at times and erratic outflow winds from the passage of thunderstorms.

C. Minimum Organization or Capabilities Needed:

RXB2, 1-Holding Boss, 3 holding crew, 1 engine, 1 support burn trailer.

Element 17: Contingency Plan

Management Action Points or Limits:

Management Action Points or Limits

The contingency plan is the portion of the prescribed fire plan that considers low probability but high consequence events and the actions needed to mitigate them.

All Contingency MAPs, Plans, and Actions, will prioritize the protection of firefighters / public, life and safety first; private property, plantations, and cultural resources.

If any of the following situations occur, and or prescribed fire is not meeting, exceeds, or threatens to exceed any of the following Management Action Points. Contingency actions will take place:

Listed as M.A.P. in Order:

1. Fire threatens the project boundary control lines.
2. Fire outside primary unit boundary lines, spot fires and/or slop overs.
3. Smoke management objectives being impacted.
4. Fire effects objectives not in prescription parameters.
5. Unexpected, unanticipated events: organization diminished past minimum staffing requirements from "incidents within incidents," wildfire outside of incident, natural disaster, weather phenomenon, equipment breakdowns, etc.

Notify the Agency Administrators and Regional Fire Management Officer with-in 24 hours of taking contingency actions

Management Action Point - Documentation Element	Management Action Point Narrative
Designator and Description:	**M.A.P. #1 Fire threatens unit primary containment lines.**
Condition:	Active fire behavior threatening to exceed primary containment lines.
Management Intent:	Maintain fire within project boundary to prevent impacts to adjacent values, resources and property.
Recommended Action(s) to Consider:	• Utilize direction suppression action. Consider use of water handling resources to actively cool or pretreat areas. • Adjust or cease ignitions operations. • Consider indirection suppression action if direct action unlikely to be successful.
Recommended Resources:	Available holding and ignition resources, contingency resources may be utilized at any time
Time Frame:	Immediately
Responsibility:	Holding Specialist, Firing Boss, Burn Boss
Management Action Point - Documentation Element	**Management Action Point Narrative**
Designator and Description:	**M.A.P. #2 Fire outside unit primary containment lines, spot fires and/or slop overs.**
Condition:	More spot fires and/or slop overs than resources at scene can handle. Fire gets established outside of primary unit boundary. Possible fire behavior: torching, running, and or crowning.
Management Intent:	Control any spot fires and/or slop overs outside the primary unit boundary. Control within the operational shift to prevent damage to the adjacent natural and cultural resources, and life and property.
Recommended Action(s) to Consider:	• Immediately utilize direct suppression action if safe and likely to be successful. • Use of natural barriers, rivers, creeks, roads, trails and skid trails are preferred options whenever safe and prudent. • Consider ceasing ignitions if until prudent to resume. • Utilize indirect suppression operations only when necessary for safety or direct suppression is unlikely to be successful.

	• **Order additional contingency resources**, through dispatch, at burn boss discretion. • If containment actions are likely to be unsuccessful by the end of the next burning period, consider conversion of prescribed fire to wildfire, refer to ELEMENT 18 – WILDFIRE DECLARATION, and consult with the Fire Management Officer and Agency Administrator when considering activation.
Recommended Resources:	Available holding and ignition resources, contingency resources may be utilized at any time
Time Frame:	Immediately
Responsibility:	Holding Specialist, Burn Boss
Management Action Point - Documentation Element	**Management Action Point Narrative**
Designator and Description:	**M.A.P. #3 Smoke Emissions or Impacts exceed planned limits**
Condition:	Smoke impacting smoke sensitive receptors and/or surrounding community and/or creating hazardous conditions. (Smoke not lifting/ dissipating/ anticipation of heavy, dense, low level smoke).
Management Intent:	Minimize smoke impact to Smoke Sensitive Receptor Areas (SSRA's) and/or surrounding communities.
Recommended Action(s) to Consider:	• Personnel collecting weather data should notify the Burn Boss of changes in weather conditions that will create smoke impact i.e. smoke column characteristic changes and smoke dispersion changes. • The Burn Boss should determine if current and predicted weather conditions will remain favorable and continue to meet required agreements with Dept of Ecology (DOE) Air Quality and the Smoke Management Plan (SMP). If adverse weather conditions continue and areas of concerns are impacted, consider sending personnel to patrol the areas of concern. • If smoke impacts anticipated for prolonged duration, consider ceasing or modifying ignition operations; take appropriate actions to secure prescribed fire as directed by the Burn Boss. • If smoke is impacting SSRA's, suppression and mop-up actions should take place as agreed upon with DOE and SMP to reduce smoke impacts. Consider contacting DOE to consult about potential smoke impacts.
Recommended Resources:	Available holding and ignition resources, contingency resources may be utilized at any time
Time Frame:	Immediately / or as directed by BURN BOSS
Responsibility:	Burn Boss
Management Action Point - Documentation Element	**Management Action Point Narrative**
Designator and Description:	**M.A.P. #4 Fire effects objectives not being met.**
Condition:	Fire behavior exceeding objectives and producing negative impacts. Or, fire behavior not adequate to achieve fuel consumption and/ or desired mortality. Fire not meeting desired resource or prescribed for objectives.
Management Intent:	Implement prescribed fire to achieve desired fire effects and prescription parameters to meet objectives. A mosaic clean burn that meets the desired outcome.
Recommended Action(s) to Consider:	• Weather observations should be provided to the Burn Boss. The Burn Boss should determine if changes in weather

	conditions will affect the overall objectives and prescription parameters. • If resource objectives are not being met due to low or high fire behavior, consider adjusting ignition patterns, methods, and techniques used to gain a more desirable effects. • If adverse weather conditions should occur and the burn is no longer in prescription, i.e. burning to cold or too hot, consider ceasing ignition operations and take appropriate actions to secure the prescribed fire.
Recommended Resources:	Available holding and ignition resources, contingency resources may be utilized at any time
Time Frame:	Immediately / or as directed by BURN BOSS
Responsibility:	Burn Boss
Management Action Point - Documentation Element	**Management Action Point Narrative**
Designator and Description:	**M.A.P #5 Unexpected, unanticipated events.**
Condition:	"Incidents within incidents," wildfire outside of incident, natural disaster, weather phenomenon, equipment breakdowns, delay in resources, etc. If any circumstances cause the minimum implementation organization to no longer be effective and/or diminished past minimum staffing requirements for any reason.
Management Intent:	Prescribed fire organization should be fully staffed at the levels required by this burn plan under Element 11. There should be no gap in critical positions i.e. any position needed to effectively, efficiently, and safely keep the prescribed fire within the project boundary lines and under the prescribed fire management's control.
Recommended Action(s) to Consider:	• If an incident-within-incident (IWI) occurs, the closest resource will notify their line supervisor. Subsequent notification will continue through the organization structure until the Burn Boss is notified. • An IC will be established for the IWI and notification will directly proceed to Burn Boss for kind/ type of incident, severity and recommended actions. • The Burn Boss or Holding Specialist will determine priorities and adjust resources to maintain holding operations while facilitating needs of IWI. • Depending on nature of IWI, it may be prudent to utilize alternate communication frequencies. • If prescribed fire incident personnel are requested for another incident, the burn boss should consider the potential impact to prescribed fire operations (maintain control of prescribed fire) and ability to lend or release resources. • In the event an updated weather forecast indicates conditions adverse to maintaining containment of the prescribed fire, consider ordering contingency resources and commitment on-site.
Recommended Resources:	Available holding and ignition resources, contingency resources may be utilized at any time
Time Frame:	Immediately / as directed by BURN BOSS
Responsibility:	Burn Boss

Element 18: Wildfire Declaration

A. Wildfire Declared By:

A prescribed fire, or a portion or segment of a prescribed fire, must be declared a wildfire by those identified in the plan with the authority to do so, when either or both of the following criteria are met:

Prescription parameters have been exceeded, and holding and contingency actions cannot secure the fire by the end of the next burn period; or,

The fire has spread outside the burn plan area or is likely to do so, and the associated contingency actions are likely to fail or have failed and the fire cannot be contained by the end of the next burn 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 Local RFD or BLM.

B. IC Assignment:

In coordination with DFW the Local RFD/BLM will identify who will be the Incident Commander (IC) and what positions will be used to transition to a wildfire ICS organization. The burn boss will assume the role of IC until relieved by an appropriate qualified person.

The Incident Commander is responsible for establishing strategy & tactics, resource assignments, operational briefings, and trigger points.

C. Notifications:

After the initial notification to the local 911 dispatch center is made, see notifications list in Element 9 section C contact list, and make any additional contacts with AA's, Land Managers, or additional resources needed.

CWICC (Central WA Interagency Communications Center) may be used for ordering declared wildfire resources. Coordination with BOR, and BLM fire managers will be made by the designated IC

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

Unified command will be established with local fire districts, BLM, BOR, and DFW Closest resources may be requested through Grant Co dispatch. Grant Co Fire Districts #5 or 11 until coordinated efforts can be established. If the wildfire is threatening to or is established on private lands. CWICC may assist with dispatching additional resources.

Element 19: Smoke Management and Air Quality

A. Compliance:

Daily smoke management requests are to be submitted the day before the scheduled operation. Burn in unstable atmospheric conditions. Use test balloon to check wind direction and atmospheric stability.

B. Permits to be obtained:

Pre-burn info will be submitted to WA ECY through the ECY Burn Permit process.

C. Smoke-Sensitive Receptors:

Receptor	Direction	Distance
Moses Lake	Northeast	1 miles
Quincy	Northwest	28 miles
Royal City	South	10 miles
Warden	East	20 miles
George	West	25
Othello	Southeast	20

D. Potential Impacted Areas:

Westerly winds are likely to cause a smoke intrusion in Moses Lake, WA or other possible communities. Northerly winds could potentially impact Royal City or Othello, depending on the amount of smoke produced and the atmospheric conditions during the operation. During winter spring burning periods, deep inversions of stable air could create conditions that are likely to cause the air shed to become saturated. Winds in the Columbia Basin are fairly predictable during the day.

E. Mitigation Strategies and Techniques to Reduce Smoke Impacts:

Despite all precautions to avoid smoke intrusions, occasionally smoke intrusions may occur. This condition could last from several days following ignition. Prescribed burning and smoke hazard warning signs will be posted in the project areas. If smoke becomes a problem all ignition will be halted until conditions improve.

Daily Smoke Management Approval requests will be submitted to Dept. of Ecology (ECY) prior to 2 PM of the day before the planned implementation of prescribed fire activity, using the format below.

Permit #	Unit Name(s)	Date of Request	Date of Ignition	Ignition Period (in minutes	Time of Ignition	Comments	Total Burn Acres	Burn Quantity (in tons)

Element 20: Monitoring

A. Fuels Information Required and Procedures:

Monitor fuel moisture content and estimate reduced fuel loadings after burning. Post burn reports will be provided to the ECY.

B. Weather Monitoring (Forecasted and Observed) Required and Procedures:

A spot weather forecast shall be obtained in advance of the operation. Weather observations shall be taken hourly and documented during the operation (wind, temp, RH, cloud cover).

C. Fire Behavior Monitoring Required and Procedures:

Burn Boss will monitor fire behavior and adjust operations accordingly.

D. Monitoring Required to Ensure that Prescribed Fire Plan Objectives are Met:

Flame length, scorch height, mortality, fuel consumption, weather and fuel moisture parameters will be monitored and compared with the burn plan prescription, project goals and objectives. Prescribed burning will be suspended if the operation is not meet firing prescriptions and/or project goals and objectives.

E. Smoke Dispersal Monitoring Required and Procedures:

Wind speed and direction and smoke dispersion shall be monitored during ignition.

Element 21: Post-burn Activities

A. Post-Burn Activities that must be completed:

Post-Burn Activities That Must Be Completed: Burn units will be patrolled on a daily basis as determined by the Burn Boss or designee to assure they are secure. Any fire activity which may threaten control lines will be mopped up. The patrol will continue until the units are declared out by the Burn Boss or designee. Unit control lines will be secured before continuing operations on additional prescribed fire units.

Report consumed tonnage to Dept. of Ecology within 72 hours of burn completion.

All monitoring surveys will be completed when appropriate.

Prescribed Fire Plan Appendices

Appendix A: Maps: Vicinity, Project or Ignition Units

Appendix B: Technical Reviewer Checklist

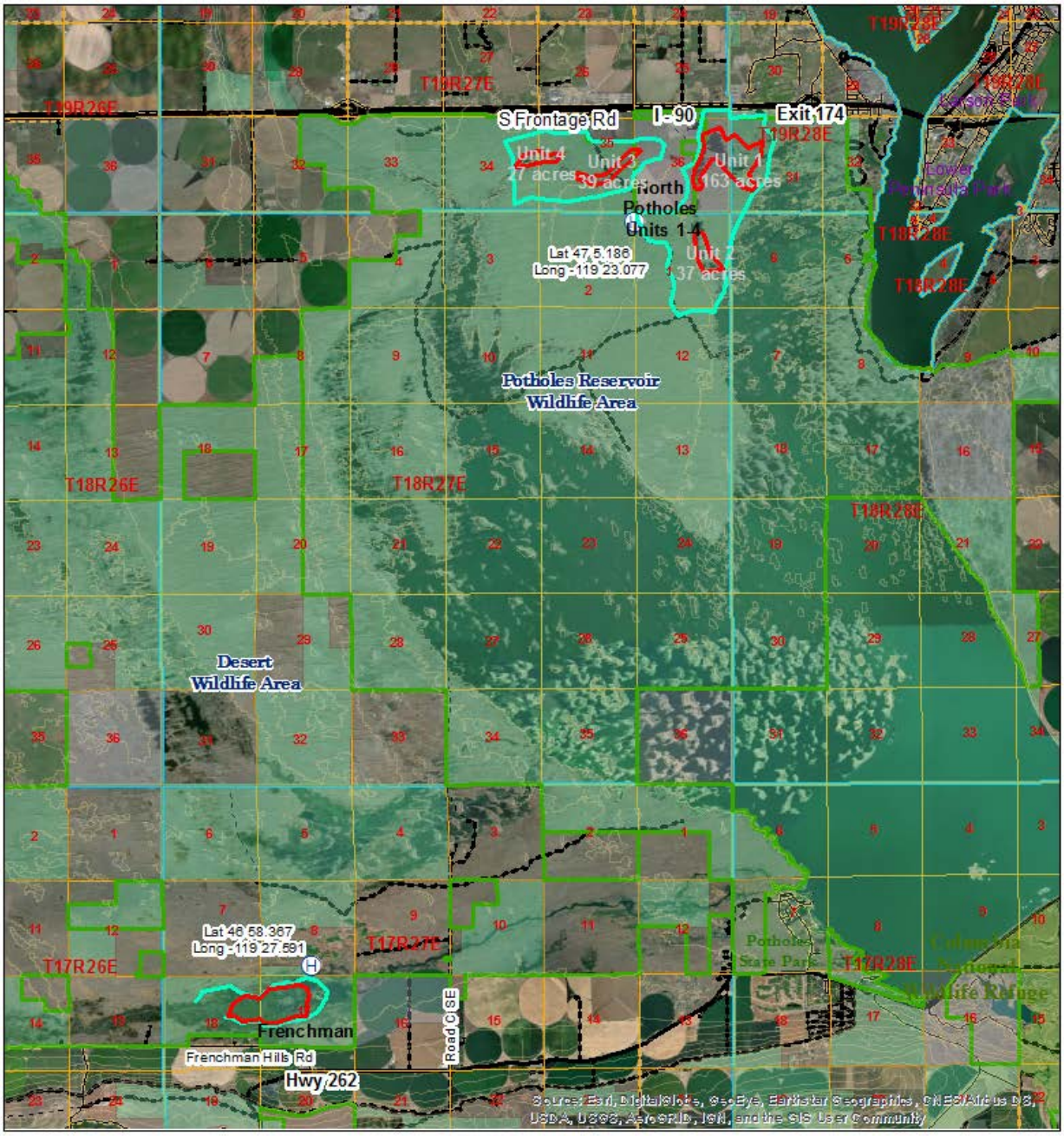
Appendix C: Complexity Analysis

Appendix D: Agency-Specific Job Hazard Analysis

Appendix E: Fire Behavior Modeling Documentation

Appendix F: Burn Boss Packet Information

Appendix A: Vicinity Map



Columbia WLA - Vicinity Map

North Potholes - 266 acres
T19,R 27, S 36
Lat: 47 5.388 / Long: -119 22.242

Frenchman - 151 acres
T 17,R 27, S 17
Lat: 46 58.023 / Long: -119 28.209

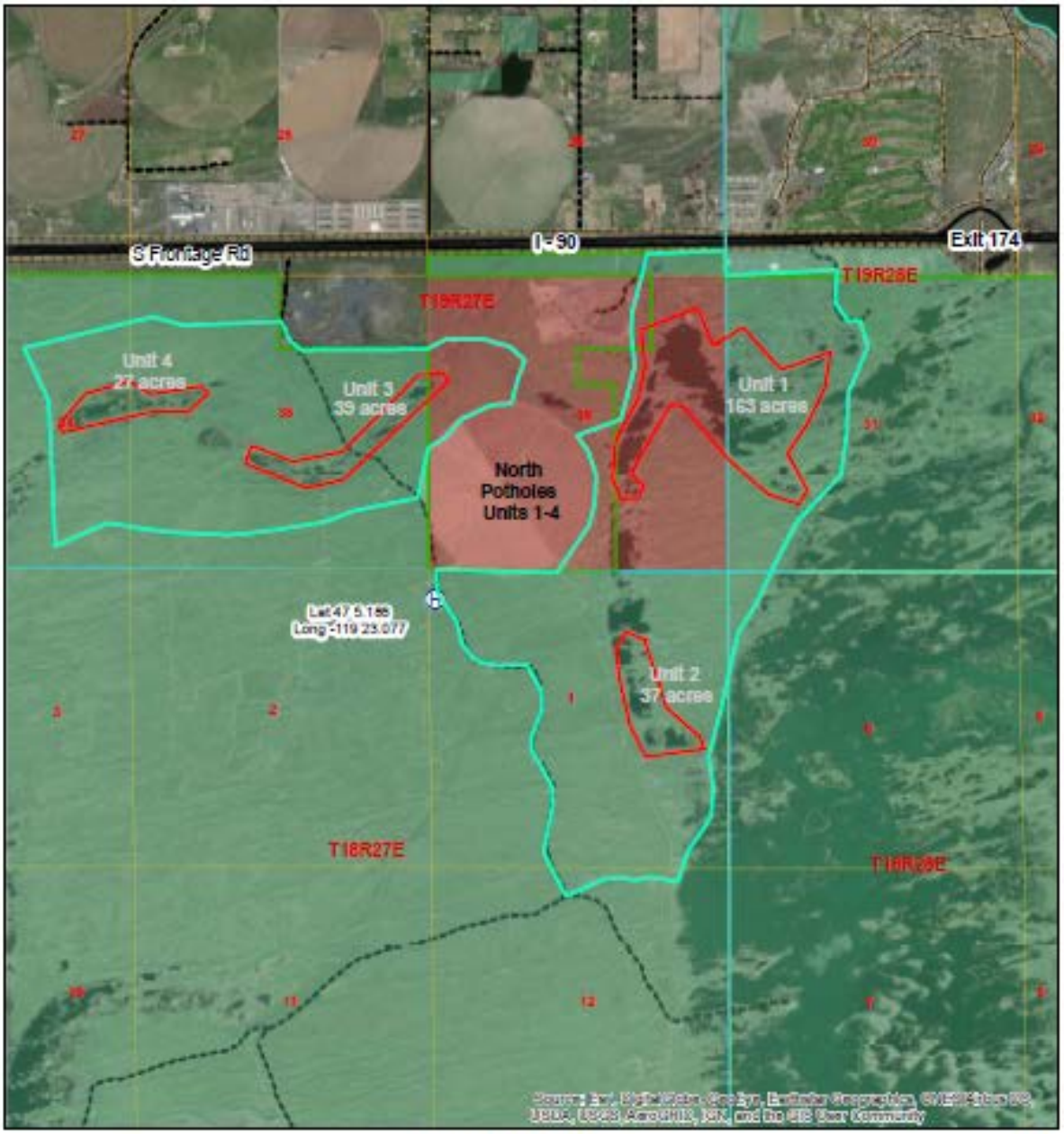
0 0.75 1.5 3 Miles

Legend
- Frenchman
- Contingency
- Heli Spot
- WDFW Wildlife Area

Other Public and Private Land
- US BOR
- WA DNR

Appendix A: Project (Ignition Units) Maps

North Potholes Unit



Columbia WLA
North Potholes - 266 acres
T19,R 27, S 36
Lat: 47 5.388 / Long: -119 22.242

Contingency lines will utilize existing roads, trails, natural barriers, and water features.

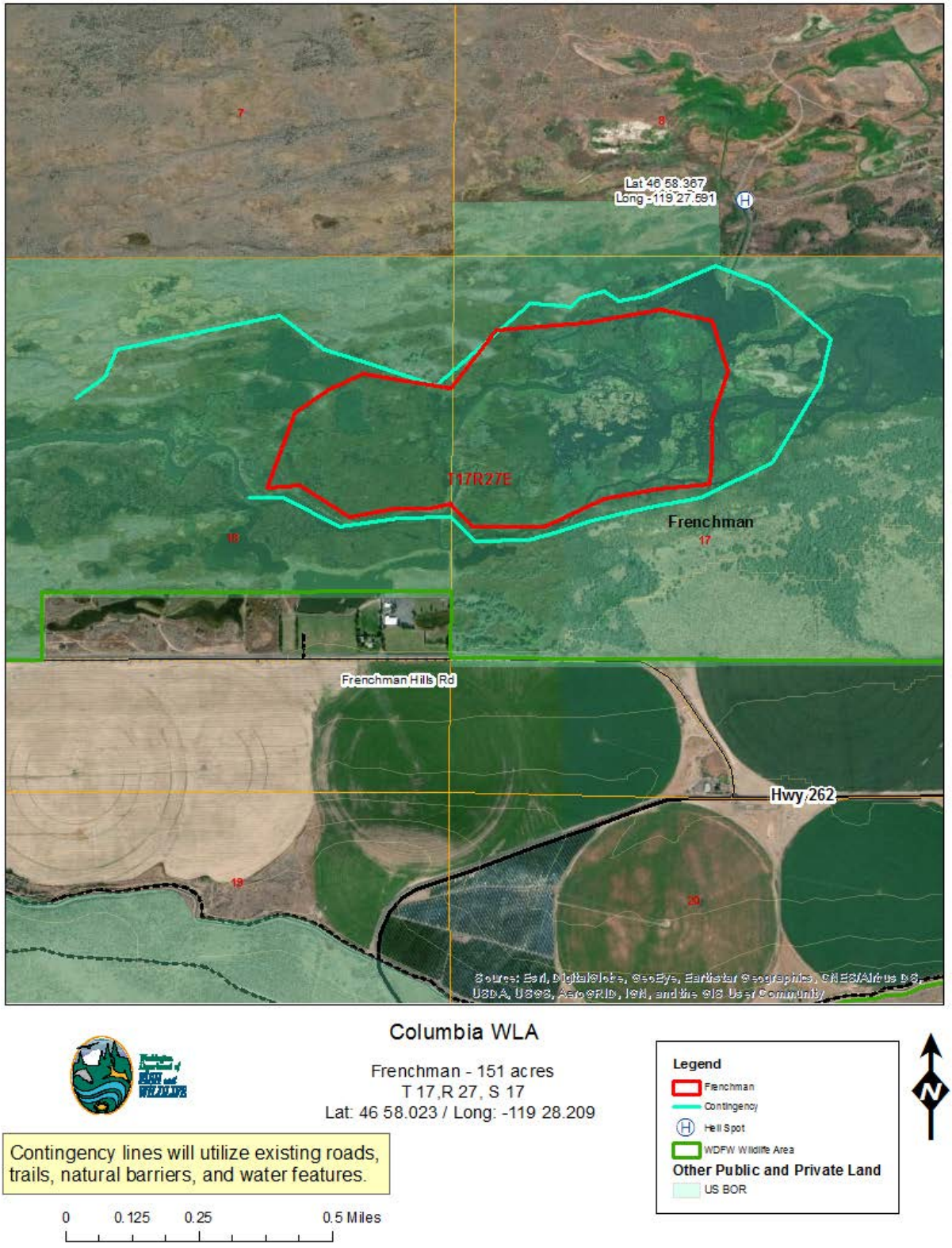
0 0.25 0.5 1 Miles

Legend
Frenchman
Contingency
Heli Spot
WDFW Wildlife Area
Other Public and Private Land
US BOR
WA DNR

N

Appendix A: Project (Ignition Units) Maps

Frenchman Unit



Prescribed Fire Name: Columbia Basin Reg. 2 Rx burn

Ignition Unit Name: North Potholes, Frenchman

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	S	
2. A. Agency Administrator Ignition Authorization	S	
2. B. Prescribed Fire GO/NO-GO Checklist	S	
3. Complexity Analysis Summary	S	
4. Description of Prescribed Fire Area	S	
5. Objectives	S	
6. Funding	S	
7. Prescription: Prescription Narrative and Prescription Parameters	S	
8. Scheduling	S	
9. Pre-Burn Considerations and Weather	S	
10. Briefing	S	
11. Organization and Equipment	S	
12. Communication	S	
13. Public and Personnel Safety, Medical	S	
14. Test Fire	S	
15. Ignition Plan	S	
16. Holding Plan	S	
17. Contingency Plan	S	
18. Wildfire Declaration	S	
19. Smoke Management and Air Quality	S	
20. Monitoring	S	
21. Post-Burn Activities	S	
Appendix A: Maps	S	
Appendix C: Complexity Analysis	S	
Appendix D: Agency-Specific Job Hazard Analysis or Risk Assessment	S	
Appendix E: Fire Behavior Modeling Documentation	S	
Appendix F: Reference Information & Burn Boss Documentation	S	
Other		

☒ **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: Dean A. VanWout

Qualification and Currency: RXB2

Date Signed: 11/05/2019

Appendix C: Complexity Analysis

Columbia Basin Rx Potholes burn units		Quantity	Significance	Values Description: Describe the identified off-site, on-site and political values
Values	On-Site	**Few**	**Mod**	Special features may be present within the unit that may need to be addressed in planning, strategies and briefings, and during project implementation. Some limited areas of high value are located within the project area. Some fences and property boundary markers need to be protected
	Off-Site	**Few**	**Mod**	There are adjacent ownerships including DNR, BOR Grant County and private, as well as other WDFW lands. The nearest homes and/or structures are located adjacent to unit borders.
	Public/Political Interest	**Few**	**Mod**	The public visits and / or passes through the project area for recreational use. Smoke from the project area may be visible from Moses Lake and neighboring areas.

Preliminary Risk:

Element	Preliminary Risk	Risk Rating Descriptors	Agency Administrator/ Preparer Discussion Completed
Safety	Mod	• Safety issues are pronounced and require detailed briefings, with certain hazards requiring special caution. • A small organization with a single branch results in modest exposure of personnel to hazards. • Adverse impacts to public health and safety are possible. • At least one activity is low frequency/high risk. • Fatigue and extended exposure to hazards are anticipated. Smoke emissions will be monitored closely and if needed the Rx Burn boss will stop or adjust ignitions to reduce negative impacts.	No
Fire Behavior	Mod	• Fuels vary within the unit, both in loading and arrangement. • Fire behavior may present control challenges that are easily mitigated. • Medium fuel loadings with some high concentrations are present. • Variable terrain features may significantly affect fire behavior and present moderate ignition and control problems. • Local winds and burning conditions may vary enough to cause shifts in fire behavior that briefly exceed modeled fire behavior and threaten controllability. • Periodic torching can be expected either as isolated points or in limited areas. • Probability of ignition outside of the unit is low and any spotting is expected to be short-range. There are residual fuels following a commercial harvest of over ten years ago. Some accumulations of fuel were created but most of the residual slash has been dispersed on site.	No
Resistance to Containment	Mod	• 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. • Some fuel concentrations or ladder fuels exist near critical holding points. • Expected fire intensities in the primary fuel type create little potential to challenge standard fire lines. • The probability of ignition in fuels outside of control lines is low to moderate. • Some dependency on natural fuel breaks to hold the prescribed fire. • Local drought and or fire indices are expected to be moderate to high. Holding action during the prescribed fire activity can be accomplished by skilled and prompt holding actions. Fuel concentrations will be identified and mitigated through a combination of lighting techniques, pre-burn treatments and/or additional resources and patrol.	No
Ignition Procedures and Methods	Mod	• Multiple firing sequences patterns and timing must be coordinated to meet project objectives and reduce the risk of an unexpected or adverse event. • 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. Firing patterns will be designed to meet project objectives utilizing a variety of techniques including ignition sequence, number of lighters, topographic features and weather conditions.	No
Prescribed Fire Duration	Mod	• Active ignition, fire spread, and patrol is expected to occur for several operational periods. • Some residual burning (heavy fuel smoldering, stump holes, etc.) is expected to occur for several days after the primary burn out of the unit. • Mop-up and patrol is typical with minimal resource and equipment needs. • Primary holding phase is expected to be completed within reasonably predictable local weather forecasts. • The prescribed fire depends on accurate forecasts through three days.	No

Smoke Management	Mod	• Noticeable smoke will be produced creating at least some public concern. • Short-term health or safety concerns related to smoke exposure may occur if actual weather deviates from forecasted. • Nearby communities are highly conscious of smoke from wildland fire. • Some possibility for a NAAQS exceedance violation. • The prescription or ignition portions of the plan need to consider smoke management. Prior to ignition, landowners and local media will be notified of possible smoke concerns.	No
Number and Dependence of Activities	Mod	• Several activities depend on achievement of previous or concurrent actions. • Several activities are interactive. • Communication is routine for coordination of activities and project success. • The project involves another land management agency, ownership or jurisdiction but project completion is not dependent on coordinated implementation. • Adjacent ownership supports the implementation of the prescribed fire. Prescribed fire will only occur during acceptable weather conditions. Risks will be mitigated through pre-constructed containment lines using roads, or hand line and mechanical line construction. Holding crews or engine patrol and hose lays will be used to support control lines.	No
Management Organization	Mod	• Two levels of supervision are needed (i.e. Burn Boss, Ignition Specialist, and/or Holding Specialist, plus lighters and holders). • Special skills or supervision required for one function (RXB2 is suggested).	No
Treatment/Resource Objectives	Mod	• Issues are present that hamper or may prevent meeting treatment resource objectives. • Failure to meet objectives could have short-term adverse impacts. • Associated resources could be damaged if the prescribed fire did not meet resource objectives. • Few critical holding points. Prior commercial harvest activities that produced slash have aged, therefor reducing volitile fuel loading. The prior activity has minimized potential damage to the residual timber stand and will assist in accomplishing overall treatment objectives.	No
Constraints	Low	• Constraints exist with little impact on implementing the prescribed fire or achieving objectives.	No
Project Logistics	Mod	• Some phases of the prescribed fire may require logistical support in order to safely meet project objectives. • Limited amount of special equipment or communication equipment requiring more intensive logistical support may be needed to complete the project. The primary logistical support will be deployment of a water delivery system to conduct and support the operation. Installation of port a tanks and hose lays will be required.	No

Post Plan Risk:

Element	Preliminary Risk	Post-Plan Risk	Risk Rating Descriptors	Elements and Actions in the RX Fire Plan that Address Risk Mitigation
Safety	Mod	Mod	• Safety issues are pronounced and require detailed briefings, with certain hazards requiring special caution. • A small organization with a single branch results in modest exposure of personnel to hazards. • Adverse impacts to public health and safety are possible. • At least one activity is low frequency/high risk. • Fatigue and extended exposure to hazards are anticipated. Hazards have been identified and will be discussed during briefings. Impacts to public health and safety will be addressed with appropriate warning signs and press releases prior to conducting operations.	Element 13.
Fire Behavior	Mod	Mod	• Fuels vary within the unit, both in loading and arrangement. • Fire behavior may present control challenges that are easily mitigated. • Medium fuel loadings with some high concentrations are present. • Variable terrain features may significantly affect fire behavior and present moderate ignition and control problems. • Local winds and burning conditions may vary enough to cause shifts in fire behavior that briefly exceed modeled fire behavior and threaten controllability. • Periodic torching can be expected either as isolated points or in limited areas. • Probability of ignition outside of the unit is low and any spotting is expected to be short-range. Firing techniques will be adjusted accordingly to minimize control concerns.	Element 7.
Resistance to Containment	Mod	Mod	• 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. • Some fuel concentrations or ladder fuels exist near critical holding points. • Expected fire intensities in the primary fuel type create little potential to challenge standard fire lines. • The probability of ignition in fuels outside of control lines is low to moderate. • Some dependency on natural fuel breaks to hold the prescribed fire. • Local drought and or fire indices are expected to be moderate to high. The prescribe fire operation can be held by skilled and prompt holding actions. Fuel concentrations will be identified and mitigated through a combination of lighting techniques, pre-burn treatments and/or additional resources and patrol.	Elements 16, 17 and 18.
Ignition Procedures and Methods	Mod	Mod	• Multiple firing sequences patterns and timing must be coordinated to meet project objectives and reduce the risk of an unexpected or adverse event. • 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. Firing methods and procedures will be coordinated to provide for personal safety and to accomplish prescribed fire objectives.	Elements 14 and 15.
Prescribed Fire Duration	Mod	Mod	• Active ignition, fire spread, and patrol is expected to occur for several operational periods. • Some residual burning (heavy fuel smoldering, stump holes, etc.) is expected to occur for several days after the primary burn out of the unit. • Mop-up and patrol is typical with minimal resource and equipment needs. • Primary holding phase is expected to be completed within reasonably predictable local weather forecasts. • The prescribed fire depends on accurate forecasts through three days.	Element 15. Prescribed fire units will be divided into smaller areas to aid in ignition, holding and control efforts. This will occur with the use of natural features, check lines and pre-constructed control lines. Due to size, some units will require multiple shifts to complete. Daily accomplishment will be dependent on ignition, holding and control conditions. Prescribed fire accomplishments will be secured daily.
Smoke Management	Mod	Mod	• Noticeable smoke will be produced creating at least some public concern. • Short-term health or safety concerns related to smoke exposure may occur if actual weather deviates from forecasted. • Nearby communities are highly conscious of smoke from wildland fire. • Some possibility for a NAAQS exceedance violation. • The prescription or ignition portions of the plan need to consider smoke management. Prior to ignition, landowners and local media will be notified of possible smoke concerns. Submission of post burn data will be submitted to WA DNR.	Element 19.

Number and Dependence of Activities	Mod	Mod	• Several activities depend on achievement of previous or concurrent actions. • Several activities are interactive. • Communication is routine for coordination of activities and project success. • The project involves another land management agency, ownership or jurisdiction but project completion is not dependent on coordinated implementation. • Adjacent ownership supports the implementation of the prescribed fire. Coordination of objectives and daily operations will be addressed at briefings. Safety concerns and contingency plans will also be identified and made known at briefings. Radio communications will occur throughout the daily operations. WA DNR will be informed about daily prescribed fire activity.	Elements 10, 11 and 12. Communication is required, including briefings, contacts with other agencies, adjacent land owners and the public.
Management Organization	Mod	Mod	• Two levels of supervision are needed (i.e. Burn Boss, Ignition Specialist, and/or Holding Specialist, plus lighters and holders). • Special skills or supervision required for one function (RXB2 is suggested). The RXB2 will continually evaluate management organization and will adjust on sight resources as needed.	Elements 11, 15 and 17. Conditions at the time of the operations will determine if additional resources are needed beyond the burn plan minimum requirements. This will be at the discretion of the RXB2 and the Program Manager. Contingency resource availability will also be considered.
Treatment/Resource Objectives	Mod	Mod	• Issues are present that hamper or may prevent meeting treatment resource objectives. • Failure to meet objectives could have short-term adverse impacts. • Associated resources could be damaged if the prescribed fire did not meet resource objectives. • Few critical holding points.	Elements 5, 6 and 7 discuss resource objectives, funding and desired fire behavior.
Constraints	Low	Low	• Constraints exist with little impact on implementing the prescribed fire or achieving objectives.	Elements 5, 7, 19 and other elements discuss required conditions prior to conducting operations.
Project Logistics	Mod	Mod	• Some phases of the prescribed fire may require logistical support in order to safely meet project objectives. • Limited amount of special equipment or communication equipment requiring more intensive logistical support may be needed to complete the project. Water delivery systems will be established where needed to accomplish prescribed fire objectives. Perennial and seasonal water sources will be evaluated to best support the prescribed fire objectives.	Elements 11, 14, 15, 16 and 17.

Post Plan Technical Difficulty

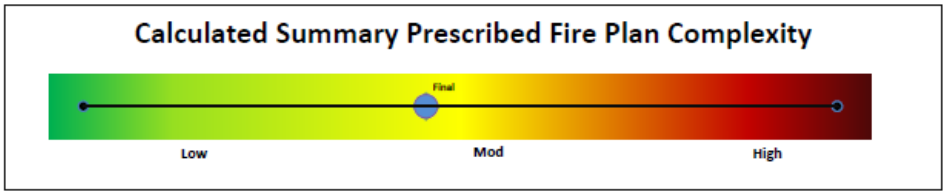
Element	Post-Plan Risk	Technical Difficulty	Rating Descriptors
Safety	Mod	Mod	• Potential serious accidents/injuries or multiple accidents/injuries to personnel or public are mitigated by standard safety briefings and identified in existing risk assessments/JHA. • Special emphasis is needed for some elements of LCES. Some standard preparation work and/or project design features are required. Safety hazards, mitigation measures taken to reduce the hazards, emergency medical procedures, emergency evacuation methods, emergency facilities and communication channels have been identified and will be provided at briefings.
Fire Behavior	Mod	Mod	• Some special provisions for safety are needed to protect personnel. • Fire behavior variations are minimal and do not require multiple fuel models to account for the fire behavior. • At least one barrier or containment opportunity exists. • Fire behavior is such that holding resources may need to use indirect tactics to control some spot fires and slopovers. • Occasional on-site fire behavior assessments or calculations may be needed and can be performed as a collateral duty. • Emission Reduction Techniques (ERTs) and Smoke Management Techniques (SMTs) require a close adherence to the prescription in the Rx plan. Multiple fuel breaks opportunities exist for containment purposes. In addition to direct attack, there are a number of roads, trails, and natural barriers that can be utilized to contain spot fires and slop-over fire. Weather readings will be taken and recorded hourly to monitor changes in weather and provide for anticipated changes in fire behavior.
Resistance to Containment	Mod	Mod	• Several types of resources are involved in the holding operation. • Some portions of the burn unit and project area are not easily accessible to the holding resources. • Expected fire behavior outside the unit may require developing indirect attack options. • Areas outside of the project area have specific suppression action constraints or are on other jurisdictional lands that may limit containment efforts. • Some site prep is required. • Expected fire behavior outside of the unit requires moderate contingency planning. Resource needs will be identified and positioned prior to ignition operations.
Ignition Procedures and Methods	Mod	Mod	• The need for multiple firing devices, sequences, techniques, or patterns has been identified. • Firing procedures are somewhat complex in at least some portions of the project area and a single Firing Boss (FIRB) is used. • Two different types of ignition devices are planned. • The ignition pattern requires direct control of the lighters to achieve project objectives and manage safety concerns. • Communications may require the use of a command (repeater) and at least two tactical frequencies will be used. • The project area is large but can be observed from high points and terrain and/or distance does not contribute to sequence and timing problems. The RXB2 or the FIRB will adjust firing techniques and patterns as needed to meet objectives with consideration for fuel loading, current and anticipated weather and terrain influences. The RXB2 will have contact with the firing boss and holding boss with a single frequency and will limit ignition areas to an area that can be observed.
Prescribed Fire Duration	Mod	Mod	• Ignition and mop-up operations are usually completed within 3 - 7 operational periods. • Multiple shifts may need staffing (day/night). • Required staffing may affect resource availability for other prescribed fires. • Additional dispatch support may be required. • Standard press release is sufficient for public notification. • The units Public Affairs Office (PAO) is required to be available to field questions from media and public. • Some fire behavior assessment is necessary to identify potential seasonality fire behavior. • Only a few Management action points (MAPs) are needed to identify how the fire will be managed if unfavorable events occur. • The length of time to complete the project and the size of the organization needed may increase. • ERTs and SMTs require daily attention to ensure that smoke constraints are not exceeded.

Smoke Management	Mod	Mod	• ERTs and SMTs require skilled application of the prescribed fire prescription. • Some considerations are needed in the prescription or ignition portions of the plan to employ ERTs, and SMTs. • Wind parameters are constrained but easy to achieve. • Sensitive receptors exist. • Burn window/opportunities are reduced by the required weather/dispersion conditions. • Normal coordination with air quality officials is required. • Some mitigation measures or additional smoke modeling may be needed to address potential concerns with smoke impacts. • Specific smoke monitoring may be required to determine smoke plume heights and directions. • Rotating project personnel out of dense smoke may be necessary but easy to accomplish. • Daily smoke management forecasts are adequate. Prior to ignition, landowners and local media will be notified of possible smoke concerns. Submission of post burn data will be submitted to WA DNR.
Number and Dependence of Activities	Mod	Mod	• Holding and lighting require close coordination and are dependent on each other to prevent spots or slopovers. • Continuous communication is necessary for successful project completion. • Some pre-burn considerations are required before ignition.
Management Organization	Mod	Mod	• At least one primary team member may need to come from outside of the local unit and may not be familiar with local factors. • The numbers of qualified personnel available on the local unit are limited. • Special skills or supervision required for one function (RXB2 suggested). • Some pre-burn preparation work may require special organizational planning and/or coordination. • Protection of resource values requires extra considerations when developing certain elements of the prescribed fire plan. • Few resources are required for mop-up and patrol. An RXB2 will be utilized to conduct the overall prescribed fire operation. All primary roles will be staffed by the WDFW Rx Fire Program. The WDFW Rx Fire Program will work with other local agencies and contract crews. Additional on site resources will predominately be staffed by contract crews.
Treatment/Resource Objectives	Mod	Mod	• There are several resource objectives to meet. • 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. • Additional monitoring of fire behavior and weather is needed to determine if prescribed fire objectives are being met. • Other opportunities to meet objectives are very limited in a given year. The objectives are easy to moderate to complete. The primary objects are to reduce on site fuel loading thereby reducing the impact of wildfire and provide for wildlife habitat improvement. Considerations that will effect meeting objectives are smoke management approval and burn windows that are directly affected by favorable weather and/or seasonal timing opportunities.
Constraints	Low	Low	• Constraints are easily accommodated and do not increase the difficulty of completing the project or achieving objectives. • Required weather and fuel conditions are locally very common.
Project Logistics	Mod	Mod	• Project implementation requires a small logistical support operation. • Logistical support may be combined with other functions. • Obtaining some personnel may require additional contacts and advanced scheduling. • Additional support may be needed for out-of-area personnel. WDFW Rx Fire Program, other agency and contractor fire staff will provide all of the logistical needs.

Complexity Summary:

Columbia Basin Reg. 2 Rx Fire Plan		Quantity	Significance
Values	On-Site	Few	Mod
	Off-Site	Few	Mod
	Public/Political Interest	Few	Mod

Element	Preliminary Risk	Post-Plan Risk	Technical Difficulty	Calculated Rating
Safety	Mod	Mod	Mod	Mod
Fire Behavior	Mod	Mod	Mod	Mod
Resistance to Containment	Mod	Mod	Mod	Mod
Ignition Procedures and Methods	Mod	Mod	Mod	Mod
Prescribed Fire Duration	Mod	Mod	Mod	Mod
Smoke Management	Mod	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	Low	Low	Low	Low
Project Logistics	Mod	Mod	Mod	Mod



Final Complexity Determination	Final Complexity Determination Rationale
Mod	The prescribed fire units are on relatively flat topography, although sloping fetures exsist with small draws. All of the units are best repersesnted by fuel model 3. Fuel arrangements and loading will contribute to increased fire behavior depending on aspect, elevation, position on slope, seasonal timing and the weather conditions at the time prescribed fire operations are conducted. Smoke may be visible from a number of communities. Prescribed fire operations may suspended due to hunting seasons or unfavorable weather conditions. The Final Complexity Determination for the Columbia Basin Prescribed Fire Burn Plan is Moderate. An individual certified at the RXB2 level or greater will conduct the prescribed fire operations.

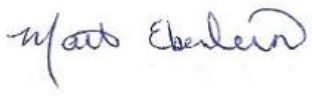
Signatures	Rx Burn Plan Preparer's Name: Matt Eberlein X _____ Date: 11/1012019 Technical Reviewers Name: Duane VanWoert X _____ Date: 11/05/2019 Agency Administrator's Name: Chad Eidson X _____ Date: 11/19/2019 Agency Administrator's Name: _____ X _____ Date: _____

Appendix D: Agency-Specific Job Hazard Analysis

Washington State Department of Fish and Wildlife	1. WORK PROJECT/ACTIVITY **Prescribed Burning**	2. LOCATION **Columbia Basin Wildlife Area**	3. UNIT **North Potholes / Frenchman**
JOB HAZARD ANALYSIS (JHA)	4. NAME OF ANALYST **Matt Eberlein**	5. JOB TITLE **Rx Fire Program Manager**	6. DATE PREPARED **01/11/18**
7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE	
Pre-burn Preparation			
Hose lays	**Strains**	ATV's may be used to help transport hose when necessary, and can be used for removing hose. If this is not possible, pack as much as you can safely carry given the conditions present. Limit hosepack to 60 lbs – each length of 1.5" hose weaighs 16 lbs. It is better to make more than one trip, rather than carry a load that is too heavy. It is recommended that hose be carried using back packs provided for carrying such loads. As with all lifting, individuals should use proper lifting techniques minimizing bending over and using knees.	
Mark 3 pumps and pump boxes; Volume pumps		For moving, lifting or transporting Mark 3 personnel should be moving and/or lifting Mark 3 or volume pumps while using proper lifting techniques minimizing bending over and using knees. Keep fuel cans away from exhaust port.	
Line Construction			
Chain Saw Use	**Unqualified Operator**	Ensure operators have had the training and certification necessary to use this and any other specialized equipment.	
	Loss of sight or hearing. Cuts and falls.	Wear Personal Protective Equipment: hardhat, hearing protection, safety glasses, gloves, chaps, long-sleeved shirt, and boots.	
	Rolling Logs	When cutting a log always work from the uphill side. Block log if possible to prevent rolling. Notify others in the vicinity before you begin cut and ensure no one is working below you.	
	Kickbacks	Always use both hands to grasp saw. Be aware of bar tip, keep end of bar from striking other objects, this can cause severe kickback. Throttle to full speed before starting to cut. Keep a proper grip on the saw with thumbs wrapped around handlebar. Keep weight balanced on both feet. Never cut above shoulder height.	
Handtool Use	**Inexperienced Operator**	Supervisor shall ensure that employees have been properly trained in the care and use of the handtools required by the work project activity.	
	Blisters/Cuts	Wear gloves at all times when using hand tools. Monitor blisters and/or cuts for signs of infection. Have first-aid kit available.	
	Injury	Maintain at least 10 foot spacing between people when working with or carrying tools. Keep tool guard on when walking to and from job site. Carry tool on downhill side of body. Watch your footing, and be sure to give verbal warning to others before swinging a tool. Make sure you have the right tool for the job and that it is in good condition.	

7. TASKS/PROCEDURES	8. HAZARDS	9. ABATEMENT ACTIONS Engineering Controls * Substitution * Administrative Controls * PPE
Unit Firing		
Firing Device Use	**Burns**	Wear PPE. Take damaged or leaking drip torches out of service. Carry torches away from body and change clothing if fuel is spilled on them. Assure that correct slash fuel mix ratio is used, 4:1 ratio of diesel to gasoline. Fire shelters will be carried on prescribed fires.
	Excessive Heat Buildup	Keep strips narrow to avoid the type of heat buildup that is common with a head fire. Use backing fire near control lines and through heavier fuel concentrations. Avoid lighting snags.
Organization and Communications	**Confusion/Unsure of Objectives**	Prior to beginning operations a project briefing will be provided to all prescribed fire personnel. This briefing will include information on the organization, weather, communications, safety, project objectives, burn unit maps and project assignments. The Burn Boss, holding boss and lighting boss will provide additional direction as issues develop. All supervisors will carry an operable two-way radio.
Fueling	**Fuel Rigs**	No smoking is permitted within 50 feet of slash fuel tank. Park and secure fuel rig in an area that is a safe distance from open flame of the burn. Park vehicle so that it is aimed down its escape route.
	Spills	Contain and clean-up small spills. For larger spills inform Wildlife Area Manager of situation. Inspect slash fuel tanks for leaks on a daily basis during burning season.
Holding and Firing	**Smoke Inhalation**	Minimize exposure to smoke. Rotate crews to fresh air as much as possible to limit overall exposure.
	Poor Visibility	Watch for wind shifts that can make visual contact with other personnel difficult. Adjust firing pattern or disengage lighting operations until smoke clears enough to allow burners and holders to see existing hazards.
	Heat Exhaustion/ Heat Stroke	Drink plenty of fluids and allow for breaks during strenuous work activities. Pace yourself and try to limit the exposure you have to the direct heat of the burn. Supervisors shall monitor workers for signs of heat-related fatigue.
	Snags	Snags and burning snags near control lines pose a threat to personnel and the integrity of the control line. Hazardous snags near control lines that are fire-weakened and can not safely be extinguished should be felled. Always be aware of work envronment and potential dangers.
ATV Operations		PPE (DOT helmet and leather gloves) will be worn by operator at all times ATV's are used. While on UTV's ahardhat or DOT helmet must be worn provided UTV has rollover protection.
Certification	**Unqualified Personnel**	All operators must successfully complete an approved ATV rider course.
Communications	**Being Stranded/ Confusion**	All riders will carry a hand held radio for communications. Let people know your destination and expected return time. Make contact with other persons occasionally as to your location and status. During operations identify people trained in first-aid who will provide care in case of accident and/or injury.

Driving On Slopes	**Rollovers**	Be aware of slope limitations and restrict operation of machines on side hills under 10% and observe procedures recommended for uphill and downhill use.
Driving On Rough Or Uneven Ground	**Accidents**	Reduce speed when riding on rough ground. Watch for rock or log hazards that can make an ATV become high-centered. Drive around obstacles.
Driving on roads		Never operate ATV in excess of safe speeds for conditions.
Prescribed Burning	**Injury/Burns**	Only use slash fuel mixed at a 4:1 diesel to unleaded gas ratio. When stopped, extinguish wick. Use buddy system while burning and be aware of others at all times. Keep good radio contact with overhead and other personnel. Never allow ignitions to trap other personnel. If you become trapped or stuck notify others and the overhead to stop ignitions.
Mop-up and Patrol	**Burns**	Do not stand or walk through hot areas for extended periods of time, boots will become hot quickly and take a long time to cool. Wear gloves and other PPE when mopping up. Avoid walking through stump holes.
	Weather Changes	Be aware of weather changes that can affect fire behavior. Take weather observations and record the data regularly. Do not become complacent; burns can be just as dangerous one or two days after ignition.
	Escape	Ensure adequate patrol of fireline daytime and nighttime. All outside lines should be checked once or twice a day, more if conditions are dry or windy. It is best to check lines during the burning period as well as post burn until inner margin of unit has been mopped up or declared secure.
Travel		
Vehicle Travel	**Smoke**	Keep vehicle lights on when traveling around unit. Drive slowly.
	Backing	Use guide if one is available, if not get out of vehicle and check behind you for hazards. Use mirrors before and during backing. Sound horn.
	Fatigue	Maintain 2 to 1 work/rest guidelines. If you become drowsy while driving pull over and take a break. Change drivers if possible.

10. LINE OFFICER SIGNATURE	11. TITLE	12. DATE
	**Rx Fire Program Manager**	**01/11/2018**

Appendix E: Fire Behavior Modeling Documentation

BehavePlus 5.0.5 (Build 307)

Columbia Basin Rx Burn

Tues, Nov 5, 2019 at 12:32:59

Input Worksheet

Inputs: SURFACE, SIZE, CONTAIN, IGNITE

Input Variables	Units	Input Value(s)
Administrative Unit		Columbia Basin WLA Reg 2
Prescribed Fire Name		Columbia Basin Reg 2 Rx burn
Prepared By		Matt Eberlein
Fuel/Vegetation, Surface/Understory		
Fuel Model		3
Fuel Moisture		
1-h Moisture	%	15, 20, 25, 30
10-h Moisture	%	
100-h Moisture	%	
Live Herbaceous Moisture	%	30
Live Woody Moisture	%	100
Weather		
Midflame Wind Speed (upslope)	mi/h	2, 4, 6, 8, 10
Air Temperature	oF	45
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	0
Fire		
Elapsed Time	h	.1
Suppression		
Suppression Tactic		Head
Line Construction Offset	ch	0

Resource Line Production Rate	ch/h	40
Resource Arrival Time	h	.1
Resource Duration	h	8

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

1-h	Midflame Wind Speed (upslope)				
Moisture	mi/h				
%	2	4	6	8	10
15	24.7	56.9	94.8	136.9	182.5
20	16.4	37.9	63.1	91.1	121.4
25	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0

Results for: Flame Length (ft)

1-h	Midflame Wind Speed (upslope)				
Moisture	mi/h				
%	2	4	6	8	10
15	6.0	8.9	11.2	13.3	15.2
20	4.4	6.5	8.2	9.7	11.0
25	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0

Results for: Area (ac)

1-h	Midflame Wind Speed (upslope)				
Moisture	mi/h				
%	2	4	6	8	10
15	0.4	1.5	3.1	5.2	7.8
20	0.2	0.6	1.4	2.3	3.4
25	0.0	0.0	0.0	0.0	0.0

30	0.0	0.0	0.0	0.0	0.0

Results for: Perimeter (ch)

1-h	Midflame Wind Speed (upslope)				
Moisture	mi/h				
%	2	4	6	8	10
15	7	15	23	31	41
20	5	10	15	21	27
25	0	0	0	0	0
30	0	0	0	0	0

Results for: Contain Status

1-h	Midflame Wind Speed (upslope)				
Moisture	mi/h				
%	2	4	6	8	10
15	Escaped	Escaped	Escaped	Escaped	Escaped
20	Contained	Escaped	Escaped	Escaped	Escaped
25	Contained	Contained	Contained	Contained	Contained
30	Contained	Contained	Contained	Contained	Contained

Results for: Time from Report (h)

1-h	Midflame Wind Speed (upslope)				
Moisture	mi/h				
%	2	4	6	8	10
15	0.1	0.1	0.1	0.1	0.1
20	0.5	0.1	0.1	0.1	0.1
25	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0

Results for: Contained Area (ac)

1-h	Midflame Wind Speed (upslope)				
Moisture	mi/h				
%	2	4	6	8	10
15	-1.0	-1.0	-1.0	-1.0	-1.0
20	1.9	-1.0	-1.0	-1.0	-1.0
25	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0

Results for: Fireline Constructed (ch)

1-h	Midflame Wind Speed (upslope)				
Moisture	mi/h				
%	2	4	6	8	10
15	0.0	0.0	0.0	0.0	0.0
20	16.1	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0	0.0

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

1-h	Midflame Wind Speed (upslope)				
Moisture	mi/h				
%	2	4	6	8	10
15	12	12	12	12	12
20	4	4	4	4	4
25	1	1	1	1	1
30	0	0	0	0	0

Appendix F: Reference Information & Burn Boss Documentation

Contractor Resource Priority List

	Region 1			Region 2				Region 3		
	5-person Squad	Fire Engine	Dozer	5-person Squad	Fire Engine	Dozer	Water Tender	5-person Squad	Fire Engine	Dozer
Brothers Fire LLC	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**2**	**2**	**1**
Chloeta	**3**	**3**	**2**	**3**	**3**	**2**		**3**	**3**	**3**
Wildfire Services	**2**	**2**		**2**	**2**			**1**	**1**	
Bachelor Excavation			**3**			**3**				**2**

The resource priority list is only a guide and fire management is not bound to priority numbering. Availability, best practices, logistics, fire needs, equal opportunity, cost, etc. all play into decision making for resource ordering. Fire managers will need to document their decision making process when selecting resources.

Contractor	Phone	Email
Batchelor Excavation LLC Jay Batchelor	Ph: (509)-470-2122	(jdbex@msn.com)
Brothers Fire LLC Saul Labanauskas	Ph: (509) 997-1011 Cell: (509)-322-4150	saul@centurytel.net
Wildfire Services Tim Logozzo	509-453-3473 Cell 509-949-2825	wfstim@gmail.com
Chleota Chet Dodrill	877-245-6382	cdodrill@chloeta.com

Contacts and Notification Summary

Local Notifications:

Agency/Individual	Contact	Phone #	Contacted By Whom	Frequency	Date of Contact	
Dept. of Ecology	Front Desk Burn team Kary Peterson	Office 509-329-3400 509-329-3523	RXB2	Daily		
Grant County Sheriff		509-754-2011 800-572-0119	RXB2	Daily		
Grant Co. Fire Dist. 5 Moses LK / N Potholes	Chief Dan Smith	Office 509-765-3550 509-675-3175	RXB2	Daily		
Grant Co. Fire Dist. 11 Royal Area / Frenchman	Chief Eric Linn	Office 509-346-2000 509-346-2658	RXB2	Daily		
DNR Dispatch CWICC –SE Region		(509) 884-3473	RXB2	As needed		
USF&W - Fire AFMO	John Janak	509-546-8066 C:509-378-5391	RXB2	Daily		
BLM Fire FMO	DO Phone number	509-536-1288	RXB2	As needed		
DFW South Lands Operation Manager, Reg 2	Rich Finger	Office 509-754-4624 x229 Cell 509-237-2917	RXB2	Initial		
DFW Columbia Basin Wildlife Area Manager	Chad Eidson	509-765-6641	RXB2	Daily		
DFW Rx Fire Program Manager	Matt Eberlein	Cell 509-429-4236	RXB2			
DFW NC Rx Fire Unit Manager			RXB2			
Bureau of Reclamation	Kendra Fallon	208-801-3650	Rxb2	Daily		
DFW Enforcement Officer	Sergeant Chris Busching	509-989-3134	RXB2	As needed		

Private Land Owners:

Individuals	Physical Address	Mailing Address	Phone #	Contacted By Whom	Date of Contact	
North Potholes						
DNR/ SE Reg. Ag Program		716 Bowers Rd Ellensburg WA 98926	509-925-8510	Mail		
WA DOT	5501 S Frontage Rd Moses Lk WA, 98873	1551 N Wenatchee Ave Wenatchee WA, 98801		Mail		
Frenchman						
Bureau of Reclamation						Burn Plan review
LMark LLC		PO Box1186 Mattawa WA, 99349		Mail		
Woody & Jean Trihey	906 E Frenchman Hills Rd Moses Lk WA, 98837	PO Box 1156 Moses LK WA 98837		Mail		
Chester Ferguson		417 E Q St Yakima WA, 98901		Mail		
Paul & Eveann Spartveit	1504 E Hwy 262 Moses Lk WA, 98837	PO Box 32 Manson WA 98831		Mail		

Columbia WLA / North Potholes - Frenchman Units:

Unit Name	Date(s)	Start Ignition	End Ignition	Ignition Method	Acres

WEATHER / FUELS/ FIRE BEHAVIOR OBSERVATIONS								
OBSERVER NAME:	PROJECT: Columbia Basin Rx Units:					DATE:		
OBSERVATION TIME (24 Hr.)								
SLOPE (%)								
ASPECT								
ELEVATION (FEET)								
FUEL MODEL (1-13)								
SHADING (<50% OR >50%)								
DRY BULB TEMPERATURE (°F)								
WET BULB TEMPERATURE (°F)								
RELATIVE HUMIDITY (%)								
EYE LEVEL WIND SPEED (MPH)								
WIND DIRECTION								
PROBABILITY OF IGNITION (%)								
CLOUD COVER (%)								
1-HR FUEL MOISTURE (%)								
10-HR FUEL MOISTURE (%)								
1000-HR FUEL MOISTURE (%)								
FIRE BEHAVIOR								
FIRE TYPE (HEAD, FLANK, BACKING)								
AVERAGE FLAME LENGTH (Feet)								
MAXIMUM FLAME LENGTH (Feet)								
TORCHING / CROWNING (Y OR N)								
FIRE WHIRLS (Y OR N)								
SPOTTING OCCURRENCE (Y OR N)								
SPOTTING DISTANCE (Feet)								
RATE OF SPREAD (Ch/Hr. OR Ft/Min)								
SMOKE DIRECTION								
SMOKE RISE								
SCORCH								
NOTES:								

Mop-up and Patrol Documentation

Date Burned: _____ Date Declared Out: _____

Utilize this form for post-burn day documentation.

Date Checked	By Whom: (Initial)	Action Taken:	Comments:

- Burn boss/RXM2 will coordinate mop-up and patrol plan schedule.
- Burn Boss/RXM2 will initial OUT date.
- When OUT, return form to burn plan.

PRESCRIBED FIRE GO/NO-GO CHECKLIST:
Units: _____

* 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 NO proceed with the Go/NO-GO Checklist below, if YES 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 YES, proceed with checklist below. If NO, STOP: Implementation is not allowed. An amendment is needed.	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?	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?	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 judgment can the prescribed fire be carried out according to the prescribed fire plan and will it meet the planned objective? Circle:	YES NO

* Items required if checklist is modified *

Burn Boss Signature: _____ Date: _____

TEST FIRE: Units: _____

A: Planned Location:

- The test fire will be conducted in a representative fuel type and in an area that can be easily controlled; preferably downwind and/or at an uphill point in the burn unit near the planned starting point, and located in an area that would not compromise the safety of hand lighters or other resources.

B. Test Fire Documentation:

Temperature: _____ RH: _____ Wind Speed and Direction: _____ Cloud Cover: _____

Fine Dead Fuel Moisture: _____ Ten Hour Fuel Moisture: _____ Probability of Ignition: _____

Flame Length: _____ Rate of Spread: _____

Burn Boss Signature: _____ Date: _____ Time: _____

Comments: WA DNR Burn Permit: _____

POST BURN DATA Turn In within 24 hours of burn	Required for Broadcast/Natural: Burn Date: _____ Ignition Time: _____ Ignition Durations in Minutes: _____ Burned/Black Acres: _____ Fuel Moisture Method: (Circle One) Measured ADJ-TH NFDR-TH Wind Speed: _____ Days since Rain: _____ 10 HR Fuel Moisture %: _____ 1000 HR Fuel Moisture %: _____ Duff Fuel Moisture %: _____ (not required)	Weather Observations

Time	Dry B.	Wet B.	RH	WS	WD	FFM	PI	Cl. Cov.

When requesting Smoke Management Approval, use the format below and submit to Dept of Ecology by 2pm on the day before the planned prescribed fire activity.

Permit #	Unit Name(s)	Date of Request	Date of Ignition	Ignition Period (in minutes	Time of Ignition	Comments	Total Burn Acres	Burn Quantity (in tons)