Element 1: Signature Page

PRESCRIBED FIRE PLAN

ADMINISTRATIVE UNIT NAME(S): Bayou LaCroix Coastal Preserve Admiral Isle Tract

PRESCRIBED FIRE NAME:

Prescribed Fire Unit (Ignition Unit): Admiral Isle Burn Unit

PREPARED BY:

Name (print): Risky Business Incident Management LLC Qualification/Currency: RXB2

Signature: _____ Date: _____

TECHNICAL REVIEW BY:

Name (print): _____ Qualification/Currency: _____

Signature: _____ Date: _____

COMPLEXITY RATING: Moderate **MINIMUM BURN BOSS QUALIFICATION**: RXB2 or State Equivalent

APPROVED BY:

Executive Director, MS Dept. of Marine Resources: Jamie Miller

Signature : _____ Date**:** _____

NOTARIZED BY:

Name – Notary (print): _____

Signature – Notary: _____ Date**:** _____

Element 2A: Agency Administrator Ignition Authorization

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_____ and_____. It is my expectation that the project will be implemented within this time frame and as discussed and documented and attached to this plan. If the conditions we discussed change during this time frame, it is my expectation you will brief me on the circumstances and an updated authorization will be negotiated if necessary.

Additional Instructions or Discussion Documentation attached (Optional): Yes ☐ No☐
Ignition Authorized by:
Jeff Clark, Coastal Program Director:_____ Date:

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

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**	

Burn Boss Signature:_____ Date:_____

Element 3: Complexity Analysis Summary

ELEMENT	RISK	POTENTIAL CONSEQUENCE	TECHNICAL DIFFICULTY
1. Smoke Management	Low	Low	Low
2. Public and Political Interest	Low	Low	Low
3. Off-site values	Low	Moderate	Moderate
4. On-site values	Low	Low	Low
5. Constraints	Moderate	Low	Low
6. Fire treatment objectives	Moderate	Low	Moderate
7. Ignition procedures/methods	Moderate	Moderate	Moderate
8. Fire behavior	Moderate	Moderate	Moderate
9. Potential for escape	Low	Low	Moderate
10. The number and dependence of activities	Low	Low	Low
11. Management organization	Moderate	Moderate	Moderate
12. Safety	Low	Low	Low
13. Project logistics	Low	Low	Low
14. Interagency coordination	Low	Low	Low

COMPLEXITY RATING SUMMARY	OVERALL RATING
RISK	Moderate
CONSEQUENCES	Moderate
TECHNICAL DIFFICULTY	Moderate
SUMMARY COMPLEXITY DETERMINATION	Moderate

Rationale:

The thick fuels and closeness of improvements on the western boundary add to the overall complexity of burning the unit. The Burn Boss must be skilled at coordination two activities which are not readily visible at any given point on the fireline. Any problem with mechanical equipment could jeopardize completion of the burn or place off site values at a greater risk.

Element 4: Description of Prescribed Fire Area

A. Physical Description

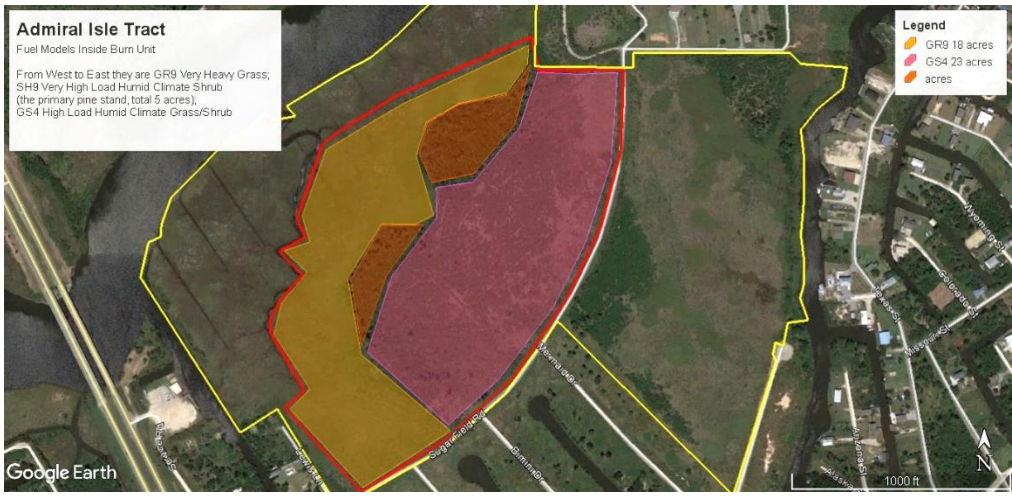
1. **Location: Hancock County, Mississippi** Lat: 30.3315264, Long: 89.4182961; Township 8S Range 14W, Section 40
2. **Size**: Total Admiral Isle Tract is 120 Acres. The target burn unit is 51 acres. It is surrounded to the east by a 37 acre parcel of DMR owned land (East MMA) and to the west and north by another 32 acre DMR owned parcel (West MMA).
3. **Topography:** Flat marsh terrain surrounds a slightly elevated central island with pine, hardwoods, grass and shrub. The East MMA is not tidally influenced, the West MMA is tidally influenced. The project area is bounded by densely developed residential lands, an abandoned subdivision, paved roads and open navigable waterways. There are still a number of vacant properties in the vicinity as a result of Hurricane Katrina.
4. **Project area**: The slightly elevated island is a mixture of southern pines (Slash, Longleaf) and southern hardwoods and shrubs. The surrounding marshes have a mixture of grasses, primarily Spartina (Cordgrass). The West MMA area is subject to tidal flooding and the grasses are emergent.
5. **Ignition units:** Mixture of southern pines (Slash, Longleaf), southern hardwoods, shrubs and grasses. There are two Maximum Management Areas identified within the boundaries of the Admiral Isle Tract that abut the primary ignition unit. Although these areas are not targeted for fire treatment, fire would be acceptable as long as confined to State owned lands.

B. Vegetation/Fuels Description:

This Plan uses the *Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model (Joe H. Scott & Robert E. Burgan), 2005*

1. **On-site fuels data:** The primary on-site fuels in the targeted Burn Unit are southern rough (modeled here using the Very High Load Humid Climate Shrub SH9 model) that is on the uplands of the central island. East of the island the fuels are a mixture of shrubs and grasses modeled here using High Load Humid Climate Grass-Shrub GS4. To the west and south of the island are Spartina marshes modeled using Very High Load Humid Climate Grass GR9.
2. **Adjacent fuels data:** The adjacent fuels inside the Admiral Isle Tract (the two MMA's) would be characterized by Very High Load, Humid Climate Grass with some mixed shrub. Outside of the Tract immediately to the east and southwest the fuels are scattered patches of Very High Load Humid Climate Shrub intermixed with residential areas of mixed vegetation and open water. To the west and north (across open waterways and four lane Highway 43) are marshes with Very High Load, Humid Climate Grass with embedded islands of pine (Very High Load, Humid Climate Shrub).

3. **Percent of vegetative type and fuels model(s):**



As described above there are three fuel models represented directly in the burn unit: the pine stands model is Very High Load Humid Climate Shrub (SH9); the shrubby/scrubby area east of the pines is High Load Humid Climate Grass Shrub (GS4); and the grassland marsh south and west is Very High Load Humid Climate Grass (GR9). The map at right shows their distribution within the burn unit. The Table below shows their percent.

Fuel Model	*Acres*	*Percent of Burn Unit*
Grass – GR9	20	39%
Grass/Shrub – GS4	23	45%
Pine/Hardwood – SH9	8	16%

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

The Admiral Isle Tract is not an area used commonly for public recreation. It is however an area that is used by migratory birds as a stopover site for rest and shelter after making migratory trips across open seas to the south. The marshes are also nesting sites for Mottled Ducks and other species.

The primary management goal is to re-establish and maintain the natural fire regime on what should be the pine dominated uplands adjacent to the marshes. Due to lack of fire these natural pine uplands are being encroached by hardwoods and shrubs, many of which are invasive plant species. Fragmentation and compartmentalization combined with development of the surrounding natural landscapes have reduced the frequency of naturally occurring fires in this area. So the primary value is to use fire to restore a small part of a fragmented and developed landscape.

There are numerous invasive plants on this Tract including Chinese Tallow (Triadica sebifera), pampas grass (Cortaderia sp.), common reed (Phragmites australis), torpedo grass (Panicum repens) and rattlebox (Sesbania punicea). After the last prescribed burn that was conducted on this Tract (Dec 2007) the area was subsequently treated with Clear Cast for Chinese Tallow.

D. Maps - Attach in Appendix A

1. Vicinity (Required) - See Vicinity Maps in Appendix A
2. Project/Ignition Unit(s) (Required) – See Appendix A
3. Significant or Sensitive Features (Optional): ☒ Included ☐ Not Included
4. Fuels or Fuel Model(s)(Optional): ☒ Included ☐ Not Included
5. Smoke Impact Area (Optional): ☒ Included ☐ Not Included

Element 5: Objectives

A. Resource objectives:

Restore open, wet pine flatwoods habitat in the upland portions of the Admiral Isle Tract.
Reduce hardwood and shrub invasion (including invasive species) in the areas where marsh grass prairies transition to the adjacent uplands. Maintain natural fire interval in marsh areas and reduce hazard fuels that can threaten surrounding private ownerships.

B. Prescribed fire objectives:

This Plan will have a five-year shelf life, and multiple burns may occur over the course of five years. To fully meet management objectives there may need to be “first entry” burns with the objective of top killing shrubs (including invasive species) and opening the tree and shrub canopies to encourage forbs, grasses and sedges and other herbaceous plants. An objective of these first entry burns would also be to kill mature hardwoods.

These first entry burns may occur in either the dormant or growing season. Subsequent to first entry burning a transition to growing season burns should occur, continuing the process of thinning mature hardwood trees, reducing shrub cover and encouraging more sunlight to assist in the recovery of forbs, grasses, sedges and other herbaceous ground cover.

Almost 40% of the burn unit includes marsh grasses. While DMR does not particularly want to target burning the marsh areas, the simple fact is that there is no fuel break between the uplands and the marshes. Marshes in coastal Mississippi are viewed as having a 2-5-year natural fire return interval prior to modern settlement, but

there were longer periods post hurricanes after hurricanes scoured fuels from them (personal communication, Dr. Bill Platt, LSU). Spartina cyosuroides (Big Cordgrass) is one of the more prevalent species in these marshes and is a fire adapted species and responds rapidly after burning provided the soils are damp and the rhizomes are not burned.

If specialized equipment was available during a burn (such as a MarshMaster) the marshes could be excluded. The burn unit was designed to minimize fire in the adjacent marshes by following a tidal creek along the western flank of the unit. The unit SW boundary was placed along the NE edge of the Coast Electric Power Association powerline right of way (which is routinely mowed) in an effort to minimize burned marsh acreage as well as distance the burn unit from the homes and utilities along Lewis Lane.

Objectives:

- On an ongoing basis provide for the safety of incident personnel and the public by adhering to appropriate DMR safety guidelines and policies and by using risk analysis processes to select the safest appropriate actions prior to field burn activities.
- Ensure agency and public notifications have been made and that Smoke warning signs are posted along appropriate roadways prior to ignition.
- Top kill 70% of shrubs throughout the Burn Unit immediately post burn.
- Achieve 60% mortality of immature and mature hardwoods and invasive species trees in transitional zone from lowland marshes to upland forests.
- Minimize fire extension into surrounding marsh areas when feasible by using natural breaks and ignition methods and timing that enhance mosaic burn results.

Element 6: Funding

A. Cost:

Item	Cost/Unit	Duration	Total
Personnel (8)	$500/Day	12 including prep day, burn day, patrol and monitoring	$6000
DMR Equipment	$200/Day Type 6 Engine	3 days	$600
DMR Equipment	$100/Day UTV	2 days	$200
Miscellaneous	$1000	Includes monitoring	$1000
Total Estimate			$7,800

B. Funding source:

Mississippi State Department of Marine Resources determined.

Element 7: Prescription

A. Prescription Narrative:

1. Describe how fire behavior will meet objectives

In order to meet the management objectives, moderate to high intensity fire is prescribed. Intense flanking and head fires during the dormant season will initially top kill unwanted shrubs, and thin encroaching mature hardwoods. Slash Pine, a common species in this Tract, is very resistant to fire mortality once it is established at more than 6' in height, but intense fire may achieve some mortality of mature pines and may help to clear thickets of immature Slash pine. The overall goal in the uplands is to reduce the amount of Slash pine and brush and increase the amount of Longleaf pine and herbaceous understory.

Once initial "first entry" burns have been conducted burning can be commenced in the growing season. The growing season fires will also be moderate to high intensity prescriptions. Early growing season burns tend to more successfully kill shrubs than dormant season burns since they deprive them of their energy. The stored energy in the root systems has been expended during the early growing season in foliating the shrubs leaving the plants in a weakened state. Deprived of their energy producing foliage by fire, the plants are more likely to die as a result of growing season fire. This defoliation of the shrubs, especially during the early growing season, also allows the existing seed bed of desirable forbs, grasses, other herbaceous plants and Longleaf pine to take advantage of the sunlight and thrive. It generally takes two growing season burns to obtain large beneficial response of the grasses, forbs and other herbaceous plants. One caution though is that many invasive species benefit from additional sunlight under the forest and shrub canopy, so manual or mechanical follow up treatments will be required to allow native grasses to thrive.

B. Prescription Parameters:

1. Environmental or fire behavior (or both)

FACTOR	Maximum	Minimum	Comments
1300 Temperature (F)	**85**	**40**	**Temperature as recorded at 1300 hrs. (1400 during DST)**
Relative Humidity (%)	**70**	**30**	**REQUIRED PARAMETER TO ATTEMPT BURN**
Wind Speed, 20'forecasted (MPH)	**15**	**5**	**REQUIRED PARAMETER TO ATTEMPT BURN**
Wind Speed, mid-flame (MPH)	**10**	**2**	**Measured on site by weather observer**
Wind Direction (20' forecasted)	**S, SW, W, NW**		**REQUIRED PARAMETER TO ATTEMPT BURN**
1 Hour Fuel Moisture %	**10**	**5**	**Calculated in Fireline Handbook Appendix B: Fire Behavior**
10 Hour Fuel Moisture %	**11**	**6**	**Add value of 1 to calculated 1 hr. fuel moisture**
100 Hour Fuel Moisture %	**12**	**7**	**Add value of 1 to 10 hr. fuel moisture.**

Live Woody Fuel Moisture %	**180**	**100**	
KBDI	**400**	**100**	**Recommended as guide to local drought conditions. Not accurate for Admiral Isles due to tidal influence**
Days Since Rain	**5**	**1**	**Recommended guideline as indicator of dead fuel moisture levels.**
Mixing Height (M)	**>500**		**500 is minimum forecasted value at which a permit will be issued REQUIRED PARAMETER TO ATTEMPT BURN**
Transport Wind Speed (M/S)	**>3.5**		**3.5 is minimum forecasted value at which a permit will be issued REQUIRED PARAMETER TO ATTEMPT BURN**
Stagnation Index	**0-3**		**Lower the value then the clearer the air and higher the potential for atmospheric mixing.**
Minimum Visibility (Mi.)	**5**		**Minimum value to meet MS Voluntary Smoke Mgt. Guidelines.**
Fog Potential	**Low-Moderate**		**Do not burn if fog potential is high.**

2. Fire Modeling or empirical documentation (or both)

FIRE BEHAVIOR OUTPUTS	LOW INTENSITY FIRE	HIGH INTENSITY FIRE
RATE OF SPREAD (CH./HR.)	**2**	**20**
FLAME LENGTH (FT.)	**2**	**15**
FIRELINE INTENSITY (BTU/FT./SEC.)	**10**	**100**

(Detailed predictive modeling BEHAVE runs in Appendix E)

Element 8: Scheduling

A. Implementation Schedule:

1. **Ignition Time Frames**: Ignition can be attempted any time during the five year time frame of the approved plan when prescribed parameters occur or are forecasted to occur within a one day time frame.

2. **Season**: Units may be burned any season in which parameters are met and no other agency determined decisions override the need to burn.

B. Projected Duration: All planned ignitions will be completed within one operational period. No resources are planned to be continuously on fire overnight. If the unit is not completed in one operational period, a separate burning permit from MFC will be required for each additional day that firing operations are conducted.

C. Constraints: Thick and tall marsh grass, shrubs and boggy soils cause some constraint to movement within the burn unit. Constraints will not affect timing of burn or width of burn windows. Constraints can be managed with increased coordination and effective communications between Burn Boss and igniters and holding crew.

Element 9: Pre-burn Considerations and Weather

A. Considerations:

1. **On-site:** Two wooden power poles and overhead wires are within the burn unit on the western side. The use of hand tools and or water combined with burning out around base of poles and using backing or flanking fires under the wires is sufficient to protect them from damage.

2. **Off-site**: The structures on Lewis Lane could be at risk since continuous fuels, boggy soils and spotting could hamper holding efforts. Igniting inside of the property line along Lewis Lane and holding it with engines and hand tools will establish sufficient black area to protect private property on Lewis lane. A type six engine, ATV with water, igniters with drip torches or fusees can establish black along Lewis Lane. A Marsh Master with pump and water tank or Bombardier with pump and water tank would assist greatly but is not required. A boat could be used to fire along Bayou La Croix to minimize chance of running fire spotting to the north or northwest but is not required for implementation of the burn.

   An additional off-site pre-burn consideration is to establish an agreement or otherwise obtain permission of the landowner (Barber Kelley) of the roadway immediately at the north end of the Tract to obtain permission to burn on his/her lands south and west of the dirt roadway.

C. Method and Frequency for Obtaining Weather and Smoke Management Forecast(s):

a. On the afternoon prior to the planned burn day download the NWS Fire Weather Zone Forecast (usually posted after 1500 hrs.) and check to see if required burn parameters are forecasted to be within prescription. If they are then request Spot Weather Forecast through NWS national fire weather website. www.weather.gov/spot. Online training is required prior to first use of this product. Contact Tim Destri, Fire Weather Focal Point at NWS New Orleans 985-649-0357 for technical support and additional information.

b. A dedicated fire weather observer will monitor and record weather information to include but not limited to mid-flame wind speed and direction, relative humidity and smoke column formation and movement on an hourly basis or more often as requested by the Burn Boss. In addition, the observer will calculate fine dead fuel moisture and probability of ignition.

C. Notifications:

1. **City of Bay St. Louis issues written burn permit.**
   a. Between one and two weeks prior to planned burn make personal contact with Bay St. Louis Chief

Monty Strong. Provide him with an approved copy of the burn plan and schedule a site visit with DMR representative and Burn Boss.

2. **News Media:**
    a. One day prior to planned burn request DMR Public Affairs to issue basic news release to local media outlets.
3. **Day of Burn:**

MS Forestry Commission	800-240-5161	Central Dispatch in Pearl MS, (for burning permit)
MS Forestry Commission	228-669-1537	Hancock County Forester, (courtesy call) Richard Ladner
Hancock County EMS Brian Adam Cell phone John Albert Evans Cell phone	228-255-0942 228-216-0738 228-493-7813	Director Brian Adam, Code Red Notifications: Will call each land line located within a specific geographic area notifying local residents of planned burn (activate "reverse 911"). Will also contact each of the other County contacts.
Bay St. Louis FD	228-467-4736	Chief Monty Strong.
MS Highway Patrol	228-396-7400	Provide closest road intersection: Hwy 43 and Sugar Field Rd.
Hancock County Sheriff	228-466-6900	Provide closest road intersection: Hwy 43 and Sugar Field Rd.
Tim Destri, Fire Weather Focal Point at NWS New Orleans	985-649-0357	Request NWS make notification of the prescribed burn on NOAA Weather Radio and associated NOAA notification systems

Element 10: Briefing

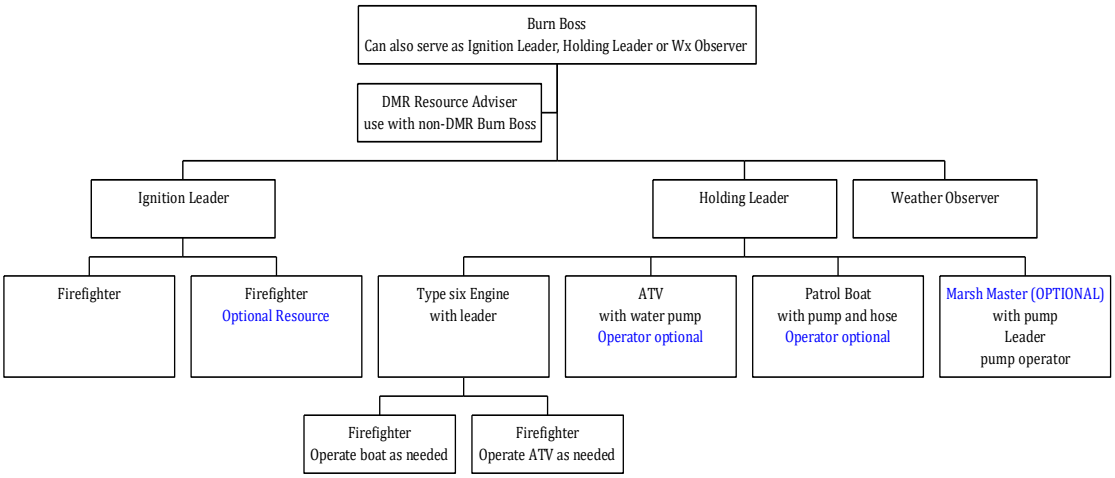
A. Briefing Checklist; including, but not limited to: (additional items may be added)

- Burn organization and assignments
- Prescribed Fire objectives and prescription
- Description of prescribed fire project area
    - Special considerations and sensitive features
- Expected weather and fire behavior
- Communications
- Ignition plan
- Holding plan
- Contingency plan and assignments
- Wildfire declaration
- Safety and medical plan
- Aerial ignition briefing (if aerial ignition devices will be used)

Element 11: Organization and Equipment

On morning of burn complete ICS-201, Block 9 with specific names, types and amount of equipment and identifiers (if known) of all resources assigned to the project. This chart represents the minimum number of resources required to safety complete the Admiral Isles Prescribed Fire Project.

Suggested organization and Minimum Resource Needs



A. Positions: <u>The suggested minimum number of people to safely and effectively staff this burn is 7.</u> The Burn Boss plus one fireline leader would meet the suggested ICS span of control of 5 resources. More individuals may be added if available or if conditions warrant. Trainees are acceptable but should not be included in the calculation to determine if the minimum number of individuals are included.

If contract resources are used to assist in accomplishing the burn, then it is suggested that they meet minimum NWCG standards for positions and equipment. Since DMR is not required to meet NWCG standards then the most qualified employees should be chosen for leadership positions in a solely DMR burn organization. Caution must be exercised in placing less qualified DMR employees in leadership over more qualified contractors.

When a non-DMR employee serves as Burn Boss then the most qualified DMR employee should be assigned as Resource Adviser to ensure that all burn objectives are met and all DMR specifications are followed and all resource management coordination and concerns are addressed.

B. Equipment: As a minimum one type 6 engine and one ATV with water pump is required.

A boat with pump and hose could provide access across Bayou La Croix if a spot should occur. A marsh master could easily safe the west line along Lewis Lane and tie the line into the Bayou. It could also establish a compression line to prevent fire from spreading into the secondary burn area if it was determined that the fire was doing damage to mottled duck nesting habitat.

C. Supplies: The only supplies needed are standard on engines and in fire caches. No specialized equipment is needed.

Element 12: Communication

A. Radio Frequencies:

Radio Frequency	Assignment
159.570	Command
159.975	Ignitions Tactical
159.510	Holding Tactical

B. Telephone Numbers: Cell phone coverage is available throughout the Tract. Complete the following chart for On Scene Rx Fire Resources the day prior to the burn and include in ICS201 action plan.

Name	**Fire Position**	**Cell Phone Number**
	Burn Boss	
	Resource Advisor	
	Weather/Fire Observer	
	Public Information	
	Ignitions Leader	
	FFT2 (Ignitions)	
	FFT2 (Ignitions)	
	Holding Leader	
	Engine Captain	
	FFT2 (Holding)	
	FFT2 (Holding)	
	UTV Operator	
	Tractor Plow Operator	
	DMR LE Officer	

Element 13: Public and Personnel Safety, Medical

A. Safety Hazards: See ICS 215A below.

B. Mitigation: Measures Taken to Reduce the Hazards: See ICS 215A below.

INCIDENT ACTION PLAN SAFETY ANALYSIS (ICS 215A)

1. Incident Name: Admiral Isle Prescribed Burn		**2. Incident Number:**
3. Date/Time Prepared: Date: Time:	**4. Operational Period:** Date From: Time From:	Date To: Time To:

5. Incident Area	**6. Hazards/Risks**	**7. Mitigations**
Public Safety	Periods of smoke may hamper visibility on public roads. Public with smoke sensitivities may be exposed to short term issues.	Prior to the burn ensure all public notifications and postings have been completed. Maintain smoke lookout on public roads and advise Burn Boss of issues. Burn Boss may need to adjust firing sequence or timing to reduce smoke hazards. Mop up of smoke sources may be required.
Firefighter Safety	Terrain is very thickly overgrown and includes marshy areas making it difficult for personnel and equipment access.	Use LCES and refer to IRPG LCES checklist with respect to Indirect fireline. Keep one foot in the black to extent possible. Mark escape routes and safety zones and make them know to all personnel. Maintain communications with adjoining forces. Maintain situational awareness.
	In these fuels Fire Behavior will be moderate to very high.	Use LCES. Keep one foot in the black. Mark escape routes and safety zones and make them know to all personnel. Maintain communications with adjoining forces. Maintain situational awareness.
	Trails and fire breaks may have dense smoke for extended periods of time.	Keep equipment lights on. Rotate holding and ignition forces out of smoky areas. Use spotters and backers.
Venomous Snakes / Irritating Plants	There are five kinds of venomous snakes in coastal Mississippi including rattlesnakes, coral snakes, copperheads and cottonmouths. Irritating plants could include poison ivy and poison oak.	Use caution inserting hands into crevices, under logs and vegetation. Keep alert for snakes while walking in brush and open trails or roads. Alert others as to presence of snakes and flag areas. Avoid contact with irritating plants. Wear gloves. Wash exposed areas immediately with detergent soap or Technu.
Boating Operations	Personnel will be on open waters. Smoke could reduce visibility. Personnel may be climbing in and out of boat near steep banks and slippery footing conditions.	Wear PFD's and follow all DMR boating safety policies and guidelines. Keep boating speed commensurate with visibility (slow down). Ensure boat is secured when loading and unloading passengers.

8. Prepared by (Burn Boss)**:** Name: _____ Signature: _____

ICS 215A Date/Time: _____

C. Emergency Medical Procedures: Notify Burn Boss of any injuries. Provide first aid to injured. Use 9 Line form (attached to ICS201 in Appendix D) to assess situation and gather info for reporting to 911 for assistance. Call 911 to activate medical response. If medical transport is needed, cease ignitions and assign Ignitions Leader to be in charge of this incident within the incident.

D. Emergency Evacuation Methods: Dependent upon nature and scope of injury the injured party may need to be transported to the Sugar Field Road via UTV or Engine Type 6. If remaining on scene a firefighter might need to be assigned with the UTV to proceed to Sugar Field Road to escort an ambulance or other first responders to the victims location.

E. Emergency Facilities:

Name	**Address**	**Phone**			**Paramedics**	
					Yes	**NO**
Baptist Life-flight, Mobile	Mobile (Jackson, Harrison, Hancock, and George Counties)	1-800-874-1555 (Dispatch) 911			X	
AMR Coastal Counties	12020 Intraplex Pkwy, Gulfport, MS 39503	911 (228) 897-1191)			X	
AAA Ambulance Services		911			X	
Name	**Address**	**Phone**	**Helipad**		**Burn Center**	
			Yes	**NO**	**Yes**	**NO**
Memorial Hospital	4500 13th Street Gulfport N30*22.0093 W89*06.9200	228-575-2020	X			X
Hancock Medical Center Urgent Care	149 Drinkwater Boulevard Bay St. Louis, MS 39520	228-467-8600		X		X
USA Medical/Burn Center	2451 Fillingin Street Mobile, AL N30*42.4909 W88*05.9636	251-471-7520	X		X	
Crosby Memorial	801 Goodyear BLVD, Picayune N30*31.8089 W89*41.2456	601-749-3118	X			X
Baton Rouge General Medical Center	3600 Florida BLVD Baton Rouge, LA	225-387-7000	X		X	
Singing River Hospital	2809 Denny Ave Pascagoula N30*22.4721 W88*31.9556	228-809-5000	X			X

Element 14: Test Fire

A. Planned Location: The test fire will be ignited on the downwind side of the burn unit adjacent to a suitable anchor point. This will usually be the most downwind corner of the unit. Holding personnel will have water and hand tools available to suppress the test fire should that be necessary. All water handling equipment will be tested prior to ignition. A sufficient sized area will be ignited and observed for a sufficient time to determine if fire behavior is in prescription and is likely to accomplish the fire treatment objectives for the unit and if smoke is adequately dispersing in the predicted direction.

If the decision is positive the burn will proceed according to the operational plan discussed during the pre-burn briefing. If the burn cannot be safely conducted, the test fire will be extinguished, the area mopped up, and the prescribed burn postponed.

B. Test Fire Documentation:

1. Weather conditions on site

Unit Name or #	Date	Time	Temp	RH%	WS	WD	Sky	ROS CH/HR	FL FT

2. Test fire results

Yes	No	Question
		Are Fire Treatment Objectives being met?
		Are smoke management objectives being met?
		Is fire behavior within predicted parameters?
		Does Test Fire Meet Prescription Parameters?
		In your opinion, can the burn be safely carried out according to the Prescribed Fire Plan and current and predicted conditions?
COMMENTS:		

Element 15: Ignition Plan

A. Firing Methods:

1. The unit will be ignited on the downwind side, burning back against the wind. Ignition will commence by lighting a narrow strip, along the containment line. One person with a drip torch will suffice, with the remaining individuals securing the line as it burns out. Additional narrow passes will continue, timing them so that the heat from the preceding pass does not make a run to the control line. The specific starting location will be decided on the day of the burn when the selected 20 foot and transport wind directions are known. If a SW, W or NW wind is used then ignitions will start from either end of the unnamed road at the east end of the unit. If a South wind is used, then ignitions will begin at the north end of Lewis Lane.

2. Once the downwind side is secure, strip width can be increased if a strip head ignition technique is desired, depending on fuel and weather conditions at the time as well as time constraints. Another technique would be to use flanking fire to burn the unit. In that case the igniters would light while walking into the wind allowing for less fire behavior than a strip head technique. Backing fire is not suggested as a technique to ignite the unit due to the length of time necessary to complete the unit.

3. Fire intensity and fire behavior can be controlled by using either continuous lines of fire or by using spot fires ignited at a pre-determined distance along each ignition line.

4. The Burn Boss or Ignition Leader will monitor current fire behavior, request weather observations as needed and adjust firing technique as necessary to achieve the fire treatment objectives for the unit.

B. Devices: Any devices which are available and of which there are qualified operators present may be used to ignite the unit. The most common devices used will be drip torches and fusees.

C. Minimum Ignition Staffing: An ignitions leader and one firefighter will be the minimum staffing. More igniters may be inserted as can be safely managed.

Element 16: Holding Plan

A. General Procedures for Holding: The Burn Boss will ensure all vehicles, watercraft and water handling equipment is positioned on site and functioning. Ensure that hand tools are readily available, including enough for the ignition crew. As the perimeter is fired, cool the perimeter along the fuel break edge or road and watch for spots, outside and downwind of the unit. Once this line is black continuing ignition will deepen the black to the rear. Holding forces will also be aware of those areas outside the unit where fire can creep past or spot across the line. The Holding Leader will notify the Burn Boss of any spots outside of the unit and then aggressively attack them. The burn boss will determine if ignitions must be suspended and if the igniters are necessary to control the spot(s). The perimeter along the Lewis Lane, Sugar Field Road and the east end road (unnamed) will be continuously monitored and patrolled for any escapes.

B. Critical Holding Points and Actions

1. **Lewis Lane**: The burn unit boundary along Lewis Lane is a critical holding point due to the proximity of residences, outbuildings and associated sewer lift stations. A black line must be established either at the property line adjacent to Lewis Lane or underneath the power poles which parallel Lewis Lane approximately 100' interior of the unit. The ignition crew can assist in establishing and holding this line as it will either be done early or late in the operation depending on which wind direction is chosen to burn on. The west line does not terminate at the end of Lewis Lane but rather continues to where the marsh meets the canal north of Lewis Lane. This point is the anchor point on the west end. The Burn Boss must ensure that this point is protected from any fire creeping around it.

2. **North end** (unnamed road owner Barber Kelley**):** Even though there are no structures along this short road the ignition phase will either begin or end here. Therefore, the entire crew will be available to ignite and secure this line. It must be completely burned out, mopped up and patrolled until there is no more danger of fire creeping around the very northeast end of the unit. Where the road is closest to the bayou is the anchor point of the burn

on this end. The Burn Boss must ensure that this point is protected from any fire creeping around it

C. Minimum Organization or Capabilities Needed: Refer to suggested minimum organization chart in Element 11. A leader and three firefighters are the minimum number of individuals suggested. A type six engine and ATV with water pump represents the minimum equipment other than back pack pumps and hand tools for the holders and igniters.

Element 17: Contingency Plan

A. Management Action Points or Limits:

Management Action Point - Documentation Element	Management Action Point Narrative
Designator and Description:	**Spot Fire(s) in East MMA that cannot be contained by initial action**
Condition:	**Onsite resources fail to contain spot fires.**
Management Intent:	**Prevent fire from leaving East MMA and encroaching on private lands.**
Recommended Action(s) to Consider:	**1. Depending on time of day and observed fire behavior in East MMA monitor fire movement while continuing ignitions in Burn Unit.** **2. If fire is moving rapidly and demonstrating short range spotting then cease ignitions and initiate indirect attack on wildfire. Order contingency resources.**
Recommended Resources:	**1. Most experienced firefighter on burn crew** **2. Burn crew minus those needed to keep prescribed fire in burn unit.**
Time Frame:	**1. Upon failure of initial attack** **2. Upon failure of initial attack**
Describe the consequences of not taking the recommended action(s) (Optional):	**Fire and or smoke will threaten public safety and health and possible damage or destroy private property.**
Responsibility:	**Burn Boss**

Management Action Point - Documentation Element	Management Action Point Narrative
Designator and Description:	**Spot fire(s) on private lands**
Condition:	**Onsite resources fail to contain spot fires.**
Management Intent:	**Protect life and private property and minimize burned area on private land.**
Recommended Action(s) to Consider:	**Cease ignitions and order contingency resources**
Recommended Resources:	**Burn crew minus those needed to keep prescribed fire in burn unit.**
Time Frame:	**Upon failure of initial attack.**
Describe the consequences of not taking the recommended action(s) (Optional):	**Threats to life and property**
Responsibility:	**Burn Boss**

Management Action Point - Documentation Element	Management Action Point Narrative
Designator and Description:	**Excessive smoke settling on major roadway.**
Condition:	**Wind shift or loss of transport wind**
Management Intent:	**Prevent accidents and injury on major roads due to loss of visibility**
Recommended Action(s) to Consider:	**Notify MS Highway Patrol. County Sherriff not allowed to close state or federal highway. Mobilize DMR patrol officers with blue lights to staff roadblocks.**
Recommended Resources:	**DMR law enforcement officers**
Time Frame:	**Immediately upon becoming aware of smoke problems on road**
Describe the consequences of not taking the recommended action(s) (Optional):	**Threat to life and property.**
Responsibility:	**Burn Boss**

B. Actions Needed: Burn Boss or Resource Advisor will notify his or her immediate supervisor at DMR of current conditions, planned actions and potential impacts anytime contingency actions are implemented.

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

City of Bay St. Louis Fire Dept. 15-20-minute response time,

Mississippi Forestry Commission Central Dispatch. Up to 1 hour.

Element 18: Wildfire Declaration

A. Wildfire Declared By:

Following the Management Action Points – Documentation Elements in the Contingency Plan (Element 17) the Burn Boss would declare a wildfire when on-site forces fail to contain a spot fire that is either within the Eastern or Western MMA or on private lands.

B. IC Assignment:

The Burn Boss would continue to function as the Incident Commander until relieved of command by the IC of the agency / fire department that has jurisdiction over the wildfire. The Burn Boss will brief the incoming IC on available resources, tactical actions taken, fire behavior and fuels conditions.

C. Notifications:

Bay St. Louis FD 228-467-4736 Chief Monty Strong.
Mississippi Forestry Commission Central Dispatch. 800-240-5161
DMR Patrol Officers:
DMR Agency Administrator / Agency Representative

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

Don't abandon the prescribed burn! Although a spot or spots has dictated a wildfire declaration it is possible that responding resources and their IC may focus on the uncontrolled fire. Ensure that a sufficient number of resources

remain assigned to patrolling and confining the prescribed fire ground to ensure containment other than the spot fire.

Element 19: Smoke Management and Air Quality

A. Compliance: The Burn Boss will complete and document the smoke screening process listed in "Voluntary Smoke Management Guidelines for Mississippi" revised 2012.

B. Permits to be Obtained: Day of burn call MS Forestry Commission Central Dispatch (800-240-5161) for verbal burning permit. Document in table below:

Permit #	Valid Date	Start & Finish Time	Name of Person Issuing Permit

C. Smoke-Sensitive Receptors: MS Hwy 43 is less than ½ mile west of the burn unit. The only other smoke sensitive areas are the few homes on either side and south of the burn unit.

D. Potential Impacted Areas: The area of most concern that is likely to be impacted by smoke to the point of limited visibility is the stretch of four lane MS Hwy 43 which is less than ½ mile from the burn unit. In the late evening and early morning hours following the burn it is possible that drift smoke may settle in the low areas of the roadway near the bridge over Bayou La Croix. Visibility could be significantly reduced until sunrise. If fog forms, then visibility could be reduced to zero on the roadway for at least ¼ mile in this area.

The residences along Lewis Lane will be affected by drift smoke during this same time period. The residences at the east end of Sugar Field Rd. will be impacted to a lesser degree than those on the Lewis Lane.

E. Mitigation Strategies and Techniques to Reduce Smoke Impacts:

- Plot smoke vectors for day of burn.
- Meet or exceed all requirements of Burn Permit.
- Use strip head or flanking fire to encourage rapid dispersion of smoke.
- Burn on days when the wind is blowing away from the four lane highway.
- Leave Smoke Ahead signs in place over night.
- Patrol MS Hwy 43 during early morning hours.
- Notify MS Highway Patrol if visibility is significantly reduced.
- Notify local residents prior to and day of the burn.

Element 20: Monitoring

A. Fuels Information Required and Procedures:

Pre Burn monitoring of prescribed burn indices (fuel moistures, weather, KBDI) should be commenced within a week of expected burn day. This information would be prepared by the Burn Boss, DMR Resource Advisor or the Weather/Fire Observer. The purpose is to ensure that required parameters will be met on burn day.

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

The Burn Boss will request and obtain a NWS Spot Weather forecast the day prior to the burn and obtain the forecast the morning of the burn. During the burn a dedicated fire weather observer will monitor and record weather information to include but not limited to mid-flame wind speed and direction, relative humidity and smoke column formation and movement on an hourly basis or more often as requested by the Burn Boss. In addition, the observer will calculate fine dead fuel moisture and probability of ignition. If no fire weather observer is assigned the Burn Boss

will be responsible for making and recording these observations or may assign it to the Holding Leader. It is highly recommended that a Weather/Fire Behavior monitor be assigned as the Burn Boss or Holding Leader will get distracted from primary duties while making and recording these observations.

C. Fire Behavior Monitoring Required and Procedures:

The Weather / Fire Behavior monitor will calculate rate of spread, flame length and fuel bed information during hourly weather observations at the most active area of the fire and record those observations for post fire use.

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

The primary responsibility of the Burn Boss is to ascertain whether treatment objectives (see Element 5) have been achieved immediately post burn. This can be performed by post burn inspection, but is mostly limited to the percentage of immediate top killing of shrubs.

It is ***recommended*** to evaluate long term objectives that 2 permanent photo points should be established prior to each prescribed burn treatment. They should be marked in advance with 3 rebar posts (photo site, line up point 20' away, line up point 30' away, but the lineup markers could be less distant if fuels are thick) at least one day in advance of the planned burn. Photos would be taken at that point within one week prior to the burn, the day after the burn, 6 months post burn, one year post burn and annually post burn. This would enable a comprehensive yet simple analysis basis. These plots would only need to be established prior to burning all or a portion of a burn unit, so they all don't need to be established immediately. In the long run however they can become an important reference tool for the entire tract.

E. Smoke Dispersal Monitoring Required and Procedures:

The Burn Boss or Weather/Fire Behavior Observer should monitor the smoke column hourly and document visibility on Highway 43 and/or other significant smoke vector points hourly. These observations must be documented and it is recommended that photos are taken to supplement the written narrative. Additionally, a request can be made from the NWS for digital copy of the radar imagery during the burn for documentation of the smoke plume.

Element 21: Post-burn Activities

Post-Burn Activities that must be Completed:

- The Burn Boss will complete the ICS 201 to document:
    - Resources on scene during the burn and used
    - Actions/Fire Behavior
    - Actual burned perimeter and significant unburnt interior islands

- Patrol the fire the next day and on subsequent days until the burn is declared out.
- Remove smoke signs when there is no longer smoke residual threat.
- If desired complete photo points for day 1 post burn
- Compile and file reports and burn information

Prescribed Fire Plan Appendices

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

Appendix B: Technical Reviewer Checklist

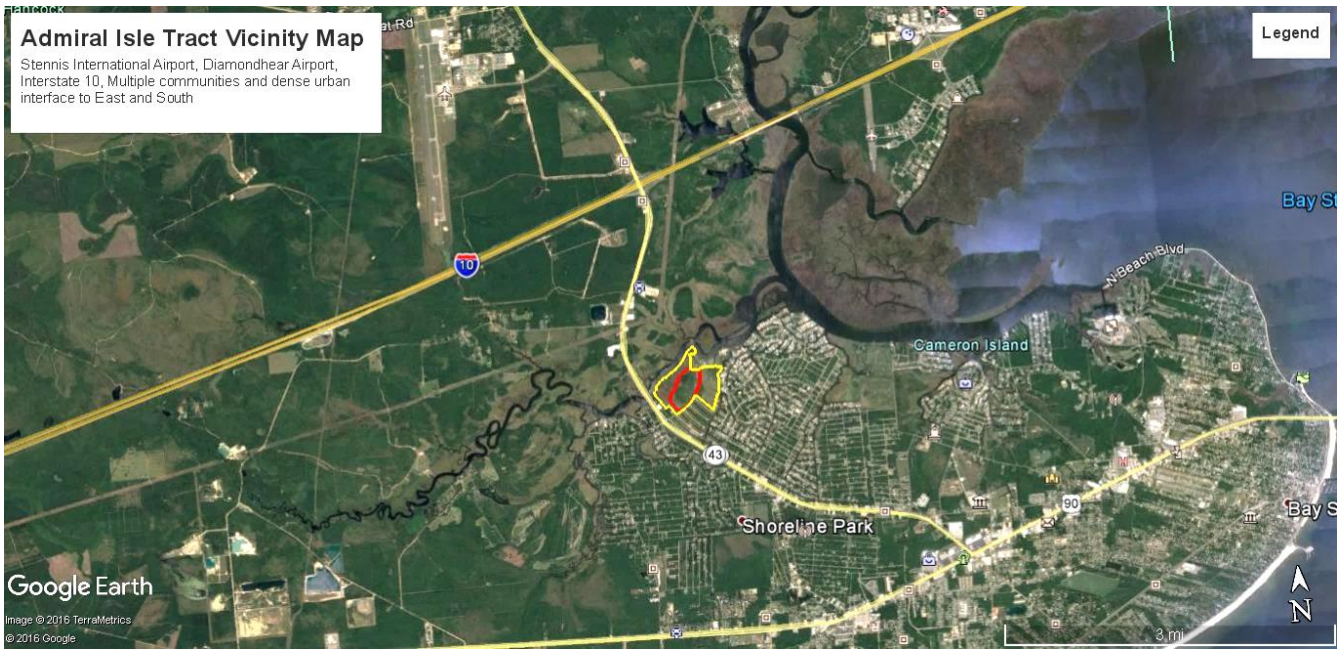
Appendix C: Complexity Analysis

Appendix D: ICS 201 Incident Briefing Form Planning / Documentation Example

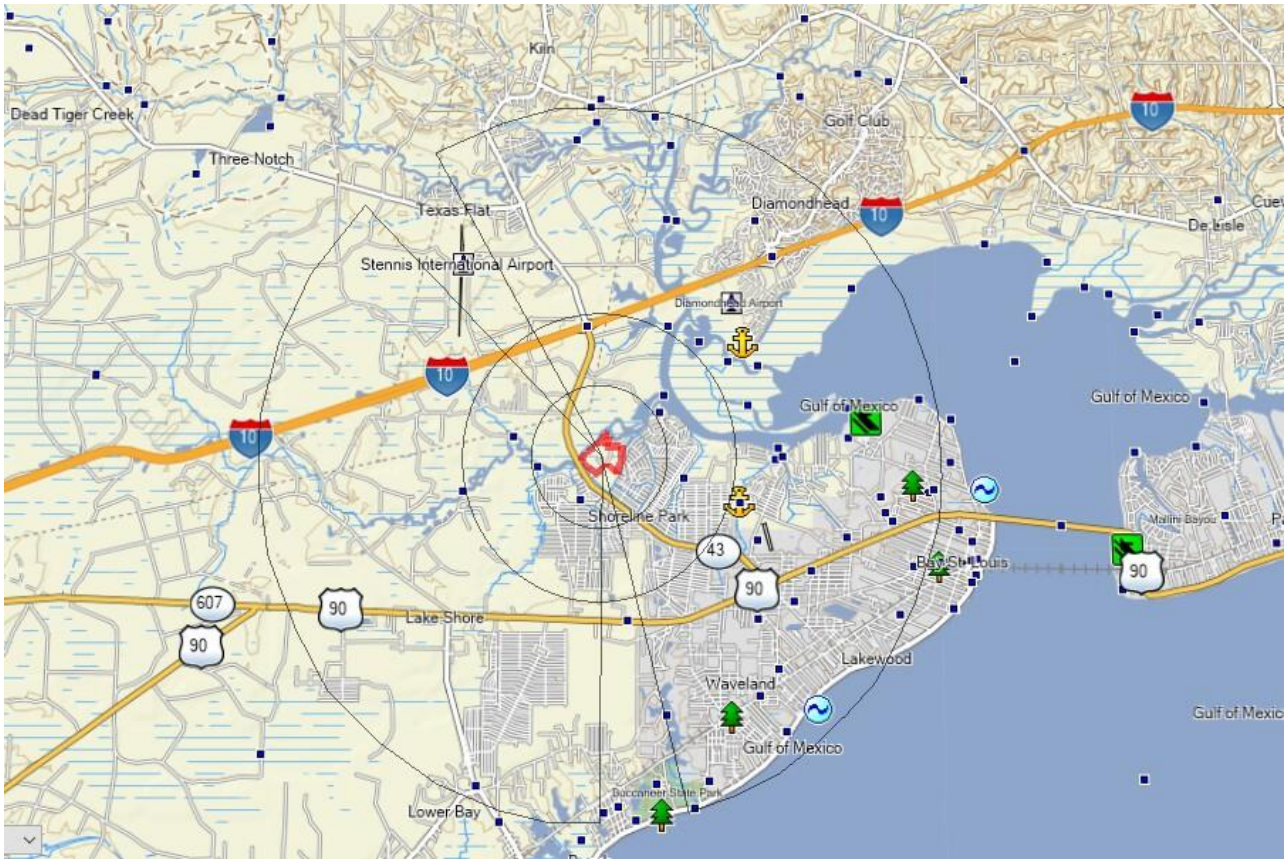
Appendix E: Fire Modeling BEHAVE Run Outputs and Historic Weather Data

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

Appendix A: Vicinity Map

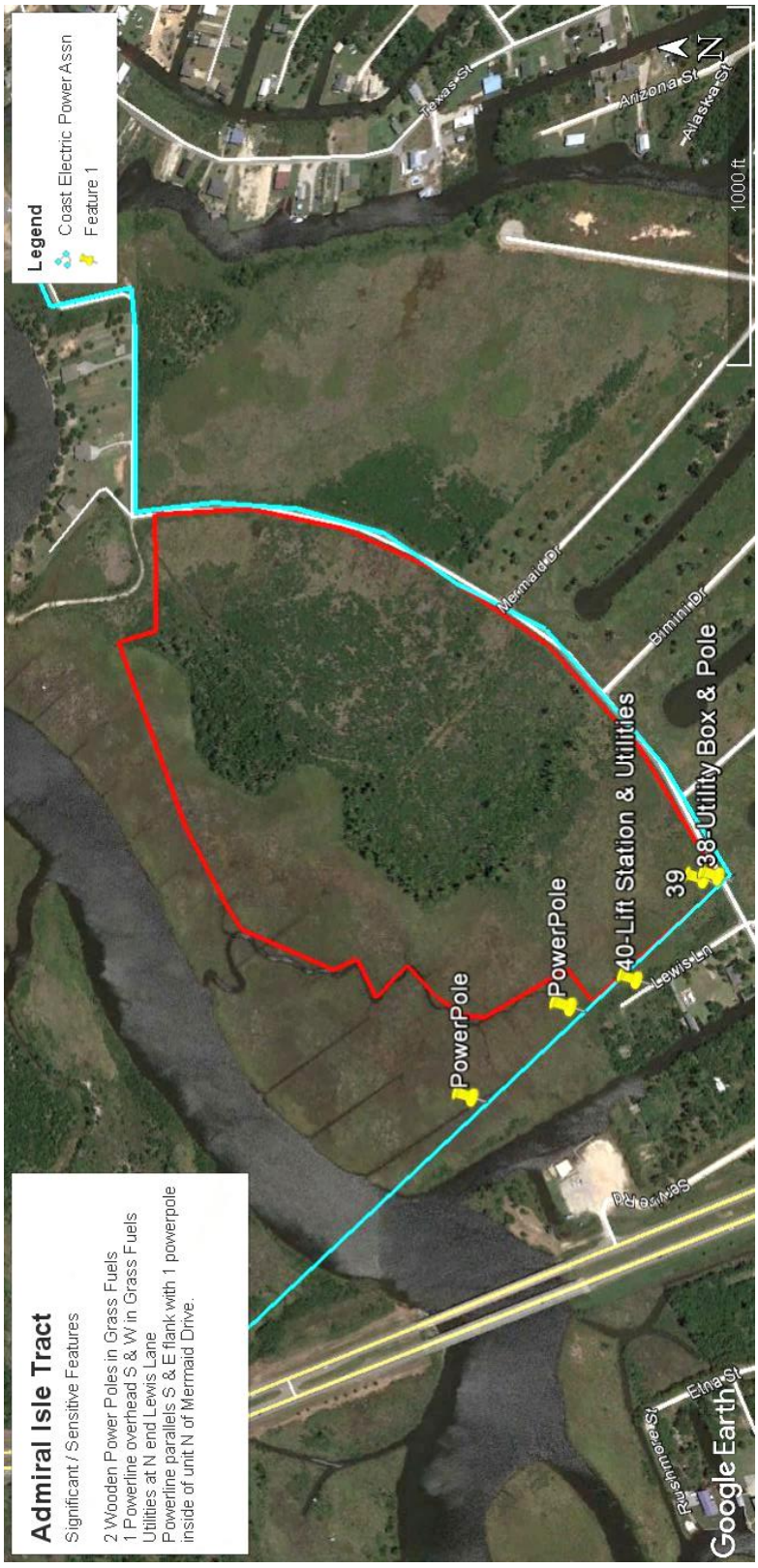


Admiral Isle Vicinity – outer rings are five miles distant from center of tract



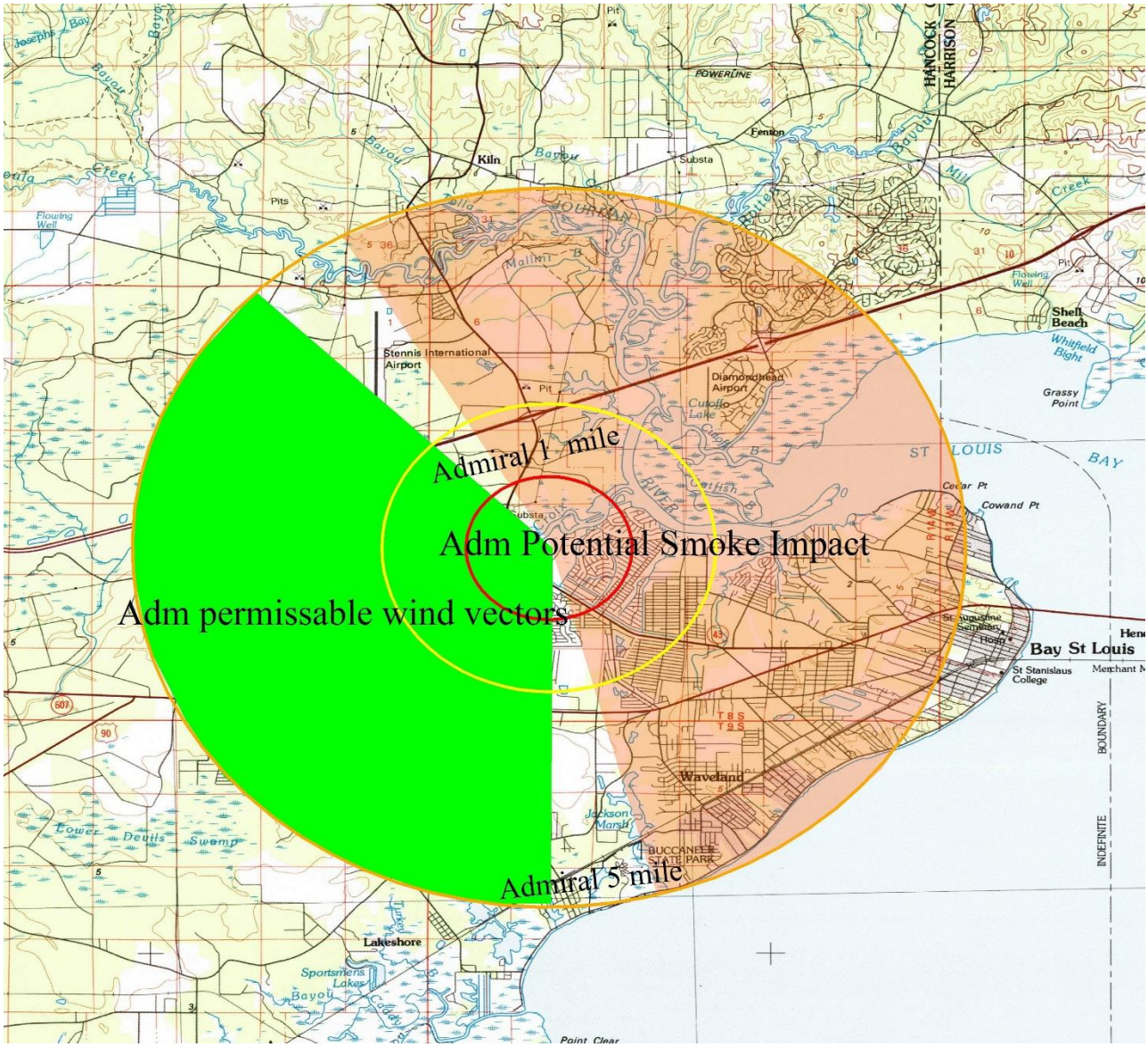
Appendix A: Project (Ignition Units) Maps

Appendix A: Significant or Sensitive Features Map



Appendix A: Fuels or Fuel Model:

Appendix A: Smoke Impact Areas: (Optional) Maps



Appendix B: Technical Reviewer Checklist

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

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

PRESCRIBED FIRE PLAN ELEMENTS	**RATING**	**COMMENTS**
1. Signature page		
2. A. Agency Administrator Ignition Authorization, PMS 485		
2. B. Prescribed Fire GO/NO-GO Checklist, PMS 486		
3. Complexity Analysis Summary		
4. Description of Prescribed Fire Area		
5. Objectives		
6. Funding		
7. Prescription: Prescription Narrative and Prescription Parameters		
8. Scheduling		
9. Pre-Burn Considerations and Weather		
10. Briefing		
11. Organization and Equipment		
12. Communication		
13. Public and Personnel Safety, Medical		
14. Test Fire		
15. Ignition Plan		
16. Holding Plan		
17. Contingency Plan		
18. Wildfire Declaration		
19. Smoke Management and Air Quality		
20. Monitoring		
21. Post-Burn Activities		
Appendix A: Maps		
Appendix C: Complexity Analysis		
Appendix D: ICS 201 Incident Action Plan / Documentation Template		
Appendix E: Fire Behavior Modeling Documentation or Empirical Documentation		
Appendix F: Smoke Management Plan and Smoke Modeling Documentation (Optional)		
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: _____ Qualification and Currency: _____

Date Signed: _____

Appendix C: Complexity Analysis

Prescribed Fire Complexity Rating System Guide Worksheet

Instructions: This worksheet is designed to used with the Prescribed Fire Complexity Rating descriptors on Page 6.

Project Name **ADMIRAL ISLES** Number _____

Complexity elements:

1. Smoke Management

Risk	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	Smoke management concerns are mainly limited to the four lane highway, MS 604/43. Smoke will only be emitted from the unit for one day. Smoke exposure will not cause health risks to local residents. The few residents within one mile of the burn unit are not averse to fire in the marshes.
Final Rating: **Low** *Moderate* *High*	Use and follow smoke screening tool and recommendations set forth in "Voluntary Smoke Management Guidelines for Mississippi" revised 2012. Burn on days when the wind is blowing away from the four lane highway. Notify local residents prior to and day of the burn.
Potential Consequences	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	Smoke column will be highly visible from the four lane. Passing motorists will flood 911 with calls reporting a wildfire. There will be some negative effects on firefighters from smoke exposure.
Final Rating: **Low** *Moderate* *High*	Post smoke ahead or Prescribed Fire signs in both north and south bound lanes. Alert 911 Dispatch Center of planned burn. Rotate firefighters out of and into the smoke on a regular basis.
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	A burn permit is required. Follow smoke screening guidelines. Burn boss will monitor smoke effects on firefighters.
Final Rating: **Low** *Moderate* *High*	Limitation on wind direction is in the plan. Get spot forecast from NWS fire weather forecaster day of burn. Have enough firefighters on crew to maintain full strength ignitions crew and holding crew.

2. Public and Political Interest

Risk	Rationale
Preliminary Rating: **Low** *Moderate* *High*	The burn unit is rather remote with less than 10 residences on either side of the unit. There have been little or no negative reactions to past burns in this area. MS 604/43 is only moderately used
Final Rating: **Low** *Moderate* *High*	Local residents understand the need for fire to manage natural resources.
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Unexpected or adverse events would attract some negative media attention and could cause delay or extra coordination of future projects
Final Rating: **Low** *Moderate* *High*	Normal news releases and personal contacts prior to burn are sufficient. In the event of adverse event interviews and statements from DMR leadership would be expected.
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	No special fire information function is required during firing operations. Personal contacts would be minimal.
Final Rating: **Low** *Moderate* *High*	Routine press release would suffice. Written notice of burn could be placed on door of local residences day prior to burn.

3. Off-Site Values

Risk	Rationale
Preliminary Rating: *Low* **Moderate** *High*	The structures on Lewis Lane could be at risk since continuous fuels, boggy soils and spotting could hamper holding efforts.
Final Rating: **Low** *Moderate* *High*	The structures and residences are mowed around. There is good access for engines, hydrants are present. Wind direction and relative humidity can be used to advantage in firing next to Lewis Lane.
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	If the wind shifts from southerly to an easterly direction, then long flame lengths from running fire could damage utility lines and sewer lift stations. Outbuildings and residences would be at risk.
Final Rating: *Low* **Moderate** *High*	Igniting inside of the property line along Lewis Lane and holding it with engines and hand tools will establish sufficient black area to protect private property on Lewis lane.
Technical Difficulty	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	A type six engine, ATV with water, igniters with drip torches or fusees can establish black along Lewis Lane.

Final Rating: *Low* **Moderate** *High*	A Marsh Master with pump and water tank or Bombardier with pump and water tank would assist greatly but is not required. A boat could be used to fire along Bayou La Croix to minimize chance of running fire spotting to the north or northwest.

4. On-Site Values

Risk	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	Dominant vegetation within unit is fire dependent. No T&E species are present. Two wooden power poles and overhead wires are within the burn unit on the western side.
Final Rating: **Low** *Moderate* *High*	Protection of poles and lines is easily accomplished with minimal effort and coordination.
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	There is potential for loss of power for certain neighborhoods if damage to poles or overhead lines occurs.
Final Rating: **Low** *Moderate* *High*	Damage is possible if problems occur during ignitions.
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	No special skills or procedures are required to protect on site values.
Final Rating: **Low** *Moderate* *High*	The use of hand tools and or water combined with burning out around base of poles and using backing or flanking fires under the wires is sufficient to protect them from damage.

5. Constraints

Risk	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Thick and tall marsh grass, shrubs and boggy soils cause some constraint to movement within the burn unit.
Final Rating: *Low* **Moderate** *High*	Fire from roads and set strip head fires to run across unit. Try to minimize interior firing.
Potential Consequences	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	Constraints are limited to access and mobility within the unit. Constraints will not affect timing of burn or width of burn windows.
Final Rating: **Low** *Moderate* *High*	The burn can be accomplished whenever favorable conditions occur which puts all elements in prescription.
Technical Difficulty	**Rationale**

Preliminary Rating: *Low* **Moderate** *High*	Constraints slightly increase complexity and call for coordination and clear communications between Burn Boss and igniters and holding crew.
Final Rating: **Low** *Moderate High*	Focusing on securing improvements on the west end of the burn unit and along Lewis Lane early will save ignition time later in the day.

6. Fire Treatment Objectives

Risk	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	The objectives of the prescribed fire operation call for a change in two fuel levels within the unit. Hazardous accumulations of grass and herbaceous plants must be reduced along with removing some of the mid-story pines and shrubs to improve ecosystem values.
Final Rating: *Low* **Moderate** *High*	The firing of interior lines is required to achieve both objectives. The Burn Boss must observe flame length (FL)and rate of spread (ROS) to determine effectiveness of ignitions.
Potential Consequences	**Rationale**
Preliminary Rating: **Low** *Moderate High*	Failure to achieve results would have few if any negative effects on the unit. Other management activities are not dependent on this fire.
Final Rating: **Low** *Moderate High*	Favorable weather conditions occur regularly. Several opportunities occur each year to achieve these objectives.
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** **Moderate** *High*	Moderate to intense fire behavior is needed to achieve treatment objectives. The needed fire behavior is easy to obtain with favorable wind and relative humidity levels. There are limits to access and mobility within the burn unit.
Final Rating: *Low* **Moderate** *High*	Burn Boss must monitor effectiveness of firing techniques in achieving objectives and adjust firing methods as needed to achieve objectives and provide for crew safety.

7. Ignition Procedures / Methods

Risk	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Firing sequence must be coordinated and initiated in proper location to achieve objectives and prevent large runs in the secondary burn area.
Final Rating: *Low* **Moderate** *High*	Burn Boss or a non-firing ignition specialist is needed to coordinate firing sequence, and spacing to control intensity.
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Coordination of igniters and clear communications between igniters and Burn Boss is required to meet safety standards achieve objectives and avoid entrapment.
Final Rating: *Low* **Moderate** *High*	Ignition specialist or Burn Boss must observe spacing, firing methods and resulting FL and ROS; then communicate instructions to igniters to maintain safe operations and achieve objectives.

Technical Difficulty	Rationale
Preliminary Rating: *Low* **Moderate** *High*	No special firing equipment is required bur procedures may become complex. Ignitions may need to be halted while crew repositions due to changing environmental conditions or to control fire behavior.
Final Rating: *Low* **Moderate** *High*	Direct supervision by the Ignition Specialist or Burn Boss and effective communications between Burn Boss, Ignition Specialist and crew is required.

8. Fire Behavior

Risk	Rationale
Preliminary Rating: *Low* **Moderate** *High*	Fuel loadings are normal for the fuel model representing this unit. The terrain is uniform; winds are consistent throughout the unit. Fire Behavior is predictable but some single tree torching is possible.
Final Rating: *Low* **Moderate** *High*	Fire behavior will show long flame lengths and rapid rates of spread. Some torching and spotting is possible. A wind shift could lead to an escape and force delays in the project.
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Fire behavior outside of the primary burn unit is expected to be similar or slightly less than that inside of the unit. An acceptable burn area (maximum management area or secondary burn unit) has been identified
Final Rating: *Low* **Moderate** *High*	No need to contain fire to the primary area. Fire within the secondary burn unit can easily be contained at the boundary of the tract (Bayou La Croix)
Technical Difficulty	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Standard safety briefings and procedures (LCES) are adequate for ignitions and holding operations. The natural barriers are sufficient to keep fire within the secondary burn unit on north and north west boundaries.
Final Rating: *Low* **Moderate** *High*	Burn in the mid-range of the prescription elements or attempt to complete ignitions 4-6 hours of a rising tide to minimize fire behavior in the secondary burn unit.

9. Potential for Escape

Risk	Rationale
Preliminary Rating: *Low* **Moderate** *High*	Thick and tall marsh grass, shrubs and boggy soils cause some constraint to movement within the burn unit and could allow for high fire behavior along Lewis Lane. which is a one lane road. Natural barriers to the northwest, north and northeast should be sufficient but also are a restriction to mobility and are a tactical barrier.
Final Rating: **Low** *Moderate* *High*	Lewis Lane is only a short distance. Set backing fire to approach Lewis Lane, patrol and wet down edge of marsh as fire approaches the road.
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Potential damage to sewage lift stations, utility lines and outbuildings.
Final Rating: **Low** *Moderate* *High*	Pretreatment of west line, patrol and mop-up while interior ignitions are initiated.

Technical Difficulty	Rationale
Preliminary Rating: *Low* **Moderate** *High*	Possible to bush hog along Lewis Lane prior to burn, attempt to time burn with mowing of power line ROW. Type 6 engine, ATV with water and boat with pump to patrol Bayou La Croix.
Final Rating: *Low* **Moderate** *High*	Stay within prescription elements and wind blowing away from Lewis Lane. Burn Boss can supervise black line operations while ignitions begin on east side.

10. The Number and Dependence of Activities

Risk	Rationale
Preliminary Rating: **Low** *Moderate* *High*	The holding and firing operations can be conducted independently of each other and are only loosely dependent.
Final Rating: **Low** *Moderate* *High*	With west, southwest or south wind Lewis Lane can be secured either before or concurrently with ignitions being initiated on the east end of the unit.
Potential Consequences	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	Little coordination is required between holding and ignitions. There is only a small risk of lost time due to coordination.
Final Rating: **Low** *Moderate* *High*	Crew can be split and operate at each end of the burn with Burn Boss coordinating each operation through radio transmissions and face to face contact.
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	There should be little difficulty coordinating activities. There is good road access and the Burn boss can see the smoke column at each end from any location along the road or inside the burn unit.
Final Rating: **Low** *Moderate* *High*	Burn could be accomplished by one crew moving from end to end, spreading out to fire the interior or two groups working independently.

11. Management Organization

Risk	Rationale
Preliminary Rating: *Low* **Moderate** *High*	Burn Boss position should be filled by experienced person with RXB2 qualifications. Ignitions or holding could be supervised by experienced FFT1. Some individuals could fill two positions.
Final Rating: *Low* **Moderate** *High*	Two separate squads may be used on one squad sized crew split between ignitions and type 6 engine and ATV with water delivering capability.
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Communications failure could lead to not accomplishing fire treatment objectives or an increased risk to firefighter safety.

Final Rating: **Low** *Moderate* *High*	A complete pre-burn briefing and effective communications throughout the day will minimize the risk of adverse impacts.
Technical Difficulty	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Some or most of the crew may not be familiar with fire behavior in tall grass or marsh and with coastal wind conditions.
Final Rating: *Low* **Moderate** *High*	An RXB2 with one or two FFT1's can provide sufficient supervision and leadership. Obtain spot weather forecast day of burn, monitor fire behavior descriptors, winds and relative humidity during burn, watch for wind shifts in afternoon.

12. Safety

Risk	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	Safety issues are typical for a burn in this fuel type, smoke exposure, footing, fatigue, etc. Fatigue and exposure to risk is linked.
Final Rating: **Low** *Moderate* *High*	Hazards are common and can be mitigated by safety briefings and use of PPE. Igniters must move through burn unit with caution. LCES must be implemented.
Potential Consequences	**Rationale**
Preliminary Rating: *Low* **Moderate** *High*	There is a low risk of potentially serious injury to firefighters.
Final Rating: **Low** *Moderate* *High*	Communication of hazards between crewmembers and rotation of firefighters in and out of smoke will minimize fatigue and exposure to hazards.
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	Special mitigations are not necessary.
Final Rating: **Low** Moderate *High*	Most safety concerns are identified in briefings; specific hazards can be identified with flagging tape. Ignition crew will need to communicate regularly and be directed by Burn Boss or Firing Boss to maintain safe operations.

13. Project Logistics

Risk	**Rationale**
Preliminary Rating: **Low** *Moderate* *High*	Minimal logistical support is needed.
Final Rating: **Low** *Moderate* *High*	Supplies and equipment are readily available, on hand or easily procured.
Potential Consequences	**Rationale**

Preliminary Rating: **Low** *Moderate High*	Logistical problems may cause some delay in initiating burn but will not pose an increased risk of escape.
Final Rating: **Low** *Moderate High*	Checking stocking levels of supplies in house and starting engines and motors prior to burn day will minimize and delays.
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate High*	If non-local resources such as PFTC are mobilized lodging and meals will need to be procured.
Final Rating: **Low** *Moderate High*	Size of operation is small enough that Burn Boss can oversee logistical needs. PFTC comes self-contained.

14. Interagency Coordination

Risk	**Rationale**
Preliminary Rating: **Low** *Moderate High*	No other local, state or federal agency has lands near this tract that would require coordinating with prior to burning.
Final Rating: ***Low*** *Moderate High*	No coordination needed with other agencies.
Potential Consequences	**Rationale**
Preliminary Rating: **Low** *Moderate High*	No concerns have been identified with any partner agencies.
Final Rating: **Low** *Moderate High*	Project can be completed as planned.
Technical Difficulty	**Rationale**
Preliminary Rating: **Low** *Moderate High*	MS Heritage Program has been contacted. USFWS has been contacted. SHIPO has been contacted. No coordination problems with any agency.
Final Rating: **Low** *Moderate High*	Project can be completed as planned

COMPLEXITY RATING SUMMARY

RISK OVERALL RATING **MODERATE**

POTENTIAL CONSEQUENCES OVERALL RATING **MODERATE**

TECHNICAL DIFFICULTY OVERALL RATING **MODERATE**

SUMMARY COMPLEXITY RATING **MODERATE**

RATIONALE: The thick fuels and closeness of improvements on the western boundary add to the overall complexity of burning the unit. The Burn Boss must be skilled at coordination two activities which are not readily visible at any given point on the fireline.

Any problem with mechanical equipment could jeopardize completion of the burn or place off site values at a greater risk.

Prepared by:_____ Date:_____

Approved by: _____ Date:_____ (Agency Administrator)

Appendix D: ICS201 Form IAP / Burn Documentation Form

INCIDENT BRIEFING (ICS 201)

1. Incident Name: Admiral Isle Rx	2. Incident Number:	3. Date/Time Initiated: Date: Time:

4. Map/Sketch

5. Situation Summary and Health and Safety Briefing:

- ☐ **Burn organization and assignments**
- ☐ **Prescribed Fire objectives and prescription**
- ☐ **Description of prescribed fire project area**
  - ☐ **Special considerations and sensitive features**
- ☐ **Expected weather and fire behavior**
- ☐ **Communications**
- ☐ **Ignition plan**
- ☐ **Holding plan**
- ☐ **Contingency plan and assignments**
- ☐ **Wildfire declaration**
- ☐ **Safety and medical plan**

6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

ICS 201, Page 1 Date/Time: _____

INCIDENT BRIEFING (ICS 201)

1. Incident Name: ADMIRAL ISLE RX	2. Incident Number:	3. Date/Time Initiated: Date: Time:

7. Current and Planned Objectives:

- On an ongoing basis provide for the safety of incident personnel and the public by adhering to appropriate (agency) safety guidelines and policies and by using risk analysis processes to select the safest appropriate actions prior to field burn activities.
- Ensure agency and public notifications have been made and that Smoke warning signs are posted along appropriate roadways prior to ignition.
- Top kill 70% of shrubs throughout the Burn Unit immediately post burn.
- Achieve 60% mortality of immature and mature hardwoods and invasive species trees in transitional zone from lowland marshes to upland forests.
- Minimize fire extension into surrounding marsh areas when feasible by using natural breaks and ignition methods and timing that enhance mosaic burn results.

8. Current and Planned Actions, Strategies, and Tactics:

Time:	Actions:
Pre Ignition	Post Smoke Signs as appropriate
Pre Ignition	Contact adjacent homes regarding prescribed burn
Pre Ignition	Obtain Spot Weather Forecast from NWS
Briefing	All Tactical Resources attend on-site pre-ignition briefing
Monitoring	Burn Boss or Monitor confirm current and expected weather are in prescription
Test Burn	All Tactical resources on site at Test Burn
Ignition Phase	Ignition resources move ahead under direction of Burn Boss, Holding resources working behind/in tandem or as directed by Burn Boss
Monitoring	Burn Boss or Monitor record hourly weather and fire behavior observations including smoke impact observations surrounding the Burn. Holding resources patrol lines for holding success and spot suppression.
Holding	Post ignition all resources patrolling and holding
Mop Up	All lines are mopped up within 1 chain (66 feet). Any active or potential snags are dropped and mopped.
Mop Up/Smoke Management	As directed by Burn Boss all resources mop up interior smokes in 100 and 1000 hour fuels to reduce/eliminate overnight residual smokes.
Next Day/Subsequent Days	Patrol fire lines for threats. Mop up residual heat sources. Remove Smoke Signs on Roads when smoke threats are mitigated. Evaluate whether objectives were met.

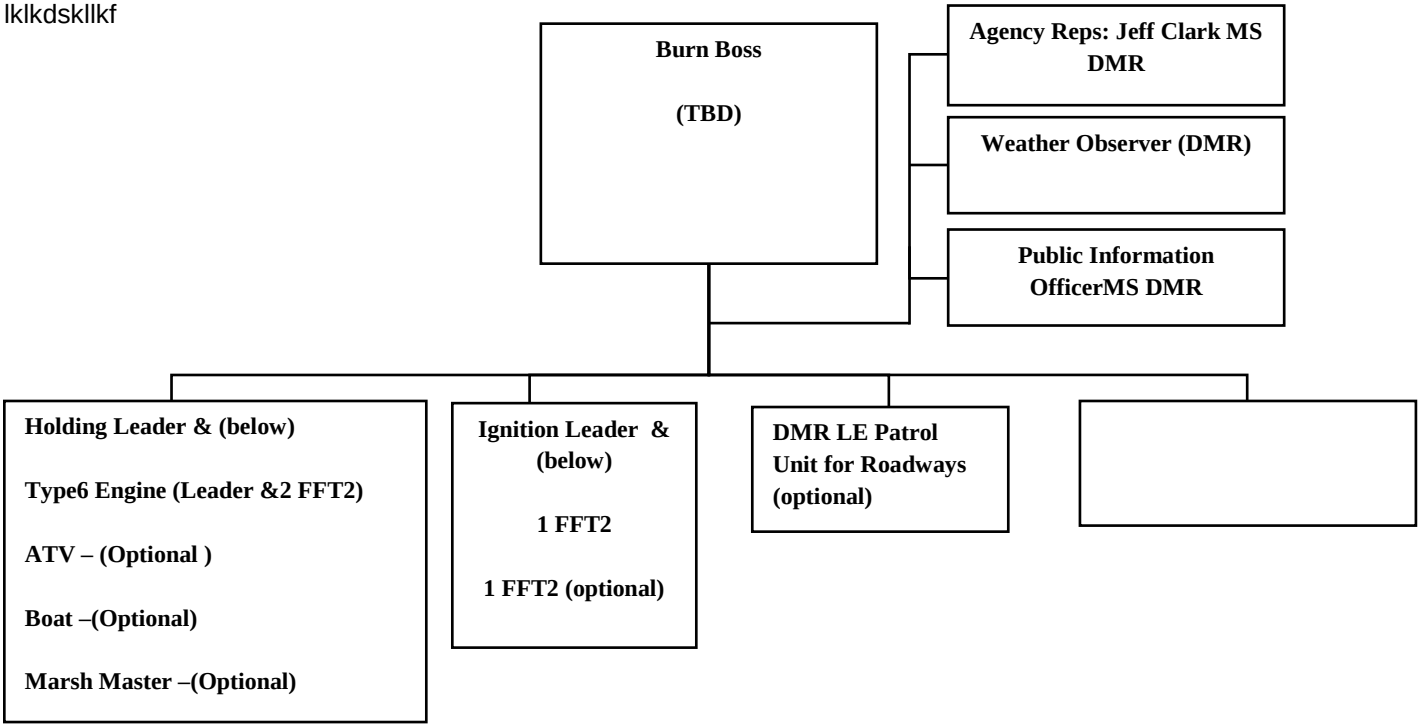
6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

Date/Time: _____

INCIDENT BRIEFING (ICS 201)

1. Incident Name: ADMIRAL ISLE RX	2. Incident Number:	3. Date/Time Initiated: Date: Time:

9. Current Organization (fill in additional organization as appropriate)**:**
lklkdskllkf



6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

 Date/Time: _____

INCIDENT BRIEFING (ICS 201)

1. Incident Name: ADMIRAL ISLE RX	2. Incident Number:	3. Date/Time Initiated: Date Time:

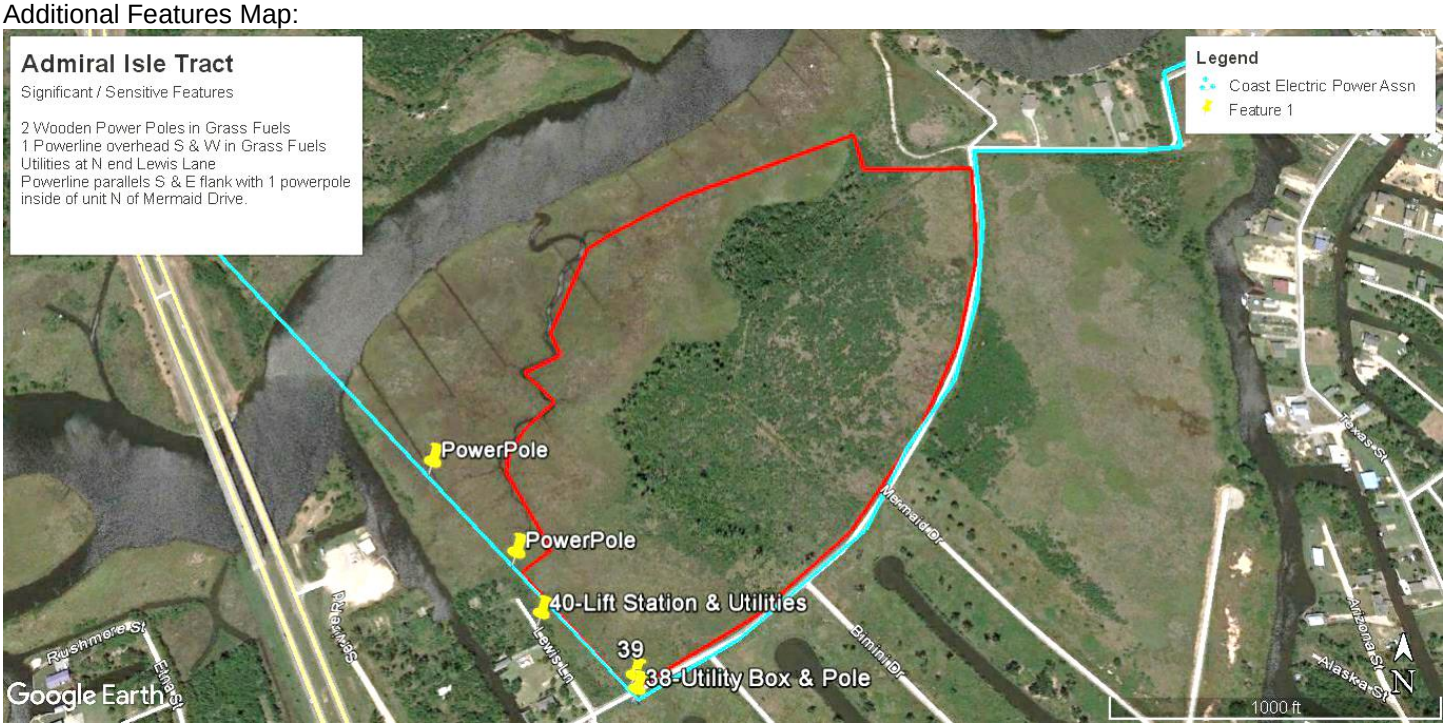
10. Resource Summary:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Notes (location/assignment/status)
Burn Boss (RXB2 or Equivalent)	Contract or State or Other			☐	Incident Command
Agency Rep DMR	DMR Coastal Preserve Director				Not an on scene resource. Is identified as the DMR Agency Rep for the Exec. Director on Burn Day.
PIO DMR	DMR Public Affairs				Not an on scene resource. Is identified as the DMR person responsible for pre-ignition coordination of information distribution to adjacent landowners and other stakeholders.
Fire Monitor	DMR or State other or Cooperator/Contractor				Record hourly weather readings and fire behavior observations. Monitor & record smoke observations adjacent to the burn.
Ignition Crew	DMR or State other or Cooperator/Contractor				Primary ignition resources.
Marsh Master	Cooperator				Holding
Engine Type 6/7	DMR				Holding
ATV	DMR				Holding
LE Patrol Unit	DMR				Traffic Management
Boat	DMR				Ignition/Holding platform

6. Prepared by: Name: _____ Position/Title: _____ Signature: _____

Date/Time: _____

Additional Features Map:



9 Line Medical Incident Report

Medical Incident Report

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

Use items one through nine to communicate situation to communications/dispatch.

1. CONTACT COMMUNICATIONS/DISPATCH

Ex: "Communications, Div. Alpha. Stand-by for Priority Medical Incident Report." (If life threatening request designated frequency be cleared for emergency traffic.)

***2.* INCIDENT STATUS:** *Provide incident summary and command structure.*

Nature of Injury/Illness		*Describe the injury (Ex: Broken leg with*
Incident Name		*Geographic Name + "Medical" (Ex: Trout*
Incident Commander		*Name of IC*
Patient Care		*Name of Care Provider (Ex: EMT*

3. INITIAL PATIENT ASSESSMENT: *Complete this section for each patient. This is only a brief, initial assessment. Provide additional patient info after completing this 9 Line Report.*

Number of Patients:	Male / Female	Age:	Weight:
Conscious? ☐ YES	☐**NO = MEDEVAC!**		
Breathing? ☐ YES	☐ **NO = MEDEVAC!**		
Mechanism of Injury: *What caused the injury?*			
Lat/Long (Datum WGS84) Ex: N 40° 42.45' x W 123° 03.24'			

4. SEVERITY OF EMERGENCY, TRANSPORT PRIORITY

SEVERITY	TRANSPORT PRIORITY
☐ **URGENT-RED Life threatening injury or illness.** *Ex: Unconscious, difficulty breathing, bleeding severely, 2° – 3° burns more than 4 palm sizes, heat stroke, disoriented*	Ambulance or MEDEVAC helicopter. Evacuation need is **IMMEDIATE.**
☐ **PRIORITY-YELLOW Serious Injury or illness.** *Ex: Significant trauma, not able to walk, 2° – 3° burns not more than 1-2 palm sizes.*	Ambulance or consider air transport if at remote location. Evacuation may be **DELAYED.**
☐ **ROUTINE-GREEN** Not a life threatening injury or illness. *Ex: Sprains, strains, minor heat-related illness.*	Non-Emergency. Evacuation considered **Routine of Convenience.**

5. TRANSPORT PLAN:

Air Transport: (Agency Aircraft Preferred)

☐ Helispot	☐ Short-haul/Hoist	☐ Life Flight	☐ Other

Ground Transport:

☐ Self-Extract	☐ Carry-Out	☐ Ambulance	☐ Other

6. ADDITIONAL RESOURCE/EQUIPMENT NEEDS:

☐ Paramedic/EMT(s)	☐ Crew(s)	☐ SKED/Backboard/C-Collar
☐ Burn Sheet(s)	☐ Oxygen	☐ Trauma Bag
☐ Medication(s)	☐ IV/Fluid(s)	☐ Cardiac Monitor/AED

☐ Other (i.e. splints, rope rescue, wheeled litter)

7. COMMUNICATIONS:

Function	Channel Name/Number	Receive (Rx)	Tone/NAC *	Transmit (Tx)	Tone/NA
Ex: Command	*Forest Rpt, Ch. 2*	*168.3250*	*110. 0*	*171.4325*	*110.9*
COMMAND					
TACTICAL					

*(NAC for digital radio system)

8. EVACUATION LOCATION:

Lat/Long (Datum WGS84) *EX: N 40 42.45' x W 123 03.24'*	
Patient's ETA to Evacuation Location:	
Helispot/Extraction Size and Hazards:	

9. CONTINGENCY:

***Considerations:* If primary options fail, what actions can be implemented in conjunction with primary evacuation method? Be thinking ahead...**	**REMEMBER:** **Confirm ETA's of resources ordered** **Act according to your level of training** **Be Alert. Keep Calm. Think Clearly. Act Decisively.**

BehavePlus 5.0.5 (Build 307)

Admiral Isles GR9
Wed, Dec 07, 2016 at 11:53:20

Input Worksheet

Inputs: SURFACE, IGNITE

Input Variables	Units	Input Value(s)
Fuel/Vegetation, Surface/Understory		
Fuel Model		gr9
Fuel Moisture		
1-h Moisture	%	5, 7, 9
10-h Moisture	%	8
100-h Moisture	%	
Live Herbaceous Moisture	%	150
Live Woody Moisture	%	
Weather		
Midflame Wind Speed (upslope)	mi/h	2, 4, 6, 8, 10, 12
Air Temperature	oF	85
Fuel Shading from the Sun	%	0
Terrain		
Slope Steepness	%	0
Notes		

Run Option Notes

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

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

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

Wind is blowing upslope [SURFACE].

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

1-h Moisture	Midflame Wind Speed (upslope) mi/h					
%	2	4	6	8	10	12
5	1.6	3.6	6.1	8.9	12.0	15.3
7	1.4	3.3	5.6	8.2	11.0	14.1
9	1.3	3.1	5.2	7.6	10.3	13.1

Results for: Fireline Intensity (Btu/ft/s)

1-h Moisture	Midflame Wind Speed (upslope) mi/h					
%	2	4	6	8	10	12
5	10	22	38	55	74	95
7	8	19	32	47	63	80
9	7	16	28	41	55	70

Results for: Flame Length (ft)

1-h Moisture	Midflame Wind Speed (upslope) mi/h					
%	2	4	6	8	10	12
5	1.3	1.9	2.4	2.9	3.3	3.7
7	1.2	1.7	2.2	2.6	3.0	3.4
9	1.1	1.6	2.1	2.5	2.8	3.2

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

1-h Moisture	Midflame Wind Speed (upslope) mi/h					
%	2	4	6	8	10	12
5	67	67	67	67	67	67

7	51	51	51	51	51	51
9	38	38	38	38	38	38

End

BehavePlus 5.0.5 (Build 307)

Admiral Isles GS4
Wed, Dec 07, 2016 at 11:28:37

Input Worksheet

Inputs: SURFACE, IGNITE

Input Variables	Units	Input Value(s)
Fuel/Vegetation, Surface/Understory		
Fuel Model		gs4
Fuel Moisture		
1-h Moisture	%	5, 7, 9
10-h Moisture	%	8
100-h Moisture	%	10
Live Herbaceous Moisture	%	150
Live Woody Moisture	%	150
Weather		
Midflame Wind Speed (upslope)	mi/h	2, 5, 8, 11
Air Temperature	oF	85
Fuel Shading from the Sun	%	5
Terrain		
Slope Steepness	%	1
Notes		

Run Option Notes

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

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

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

Wind is blowing upslope [SURFACE].

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

1-h Moisture	Midflame Wind Speed (upslope) mi/h			
%	2	5	8	11
5	1.1	3.2	5.8	8.8
7	1.0	2.9	5.3	8.1
9	0.9	2.7	4.9	7.5

Results for: Fireline Intensity (Btu/ft/s)

1-h Moisture	Midflame Wind Speed (upslope) mi/h			
%	2	5	8	11
5	14	41	76	116
7	12	35	63	97
9	10	30	55	84

Results for: Flame Length (ft)

1-h Moisture	Midflame Wind Speed (upslope) mi/h			
%	2	5	8	11
5	1.5	2.5	3.3	4.0
7	1.4	2.3	3.0	3.7
9	1.3	2.1	2.8	3.4

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

1-h	Midflame Wind Speed (upslope)

Moisture	mi/h			
%	2	5	8	11
5	67	67	67	67
7	50	50	50	50
9	38	38	38	38

End

Appendix F: Smoke Management Plan and Smoke Modeling Documentation

Refer to Mississippi Forestry Commission "Voluntary Smoke Management Guidelines, Revised 2012" for instructions in filling out prior to burn. Basically plot wind vector from center of unit (total burn acres less than 250). Show possible smoke plume 30 degrees either side of the wind vector.