PRESCRIBED FIRE PLAN 2006

Unit: Great Bend 29 Prairie Bank Subunit(s):

Prepared By: Jason Garms (Prairie Specialist – MNDNR) Date: 03/8/06

Reviewed By: _____ (Zone Fire Management Officer) Date:

Reviewed By: _____ (Additional Reviewers - as Required) Date:

Approved By: _____ (State Prairie Biologist - MN DNR) Date:

The approved Prescribed Fire Plan constitutes the authority to burn, pending approval of Section 7 Consultations, Environmental Assessments, or other required documents. No one has the authority to burn without an approved plan or in a manner not in compliance with the approved plan. Prescribed burning conditions established in the plan are firm limits. Actions taken in compliance with the approved Prescribed Fire Plan will be fully supported, but personnel will be held accountable for actions taken which are not in compliance with the approved plan.

Prescribed Fire Plans Approved in prior years must be re-certified in the year in which they are to be burned.

Valid Until_____

Prescribed Fire Plan Implementation

To be completed prior to the burn. Attach additional copies of this page to the burn plan as necessary.

DELEGATION OF AUTHORITY

(To be completed only if the Burn Boss is NOT a U.S. Fish and Wildlife Service employee)

Effective this date, _____ is hereby delegated the authority to execute this approved prescribed burn plan subject to the stipulations listed below under "Burn Boss Concurrence".

_____ _____

Refuge Manager/Agency Administrator Date

Burn Boss Concurrence

(To be completed in all cases)

As the burn boss who will conduct this prescribed burn, I certify that I have reviewed this Prescribed Fire Plan, that conditions described in this Plan are substantially still the same, and I believe the prescribed burn can meet the planned objectives when carried out according to this Plan

I also understand that:

- Any changes to this plan must be approved by the Agency Administrator or his/her acting in writing
- ALL questions on the Go/No Go Checklist must be honestly answered "Yes" before the burn proceeds
- The execution of this plan shall be halted if the prescribed burning conditions established in the plan are no longer present.
- I am responsible for all aspects of the burn until relieved by the Agency Administrator or his/her acting.

I accept the responsibility of conducting this burn.

Date:
Prescribed Fire Burn Boss:

AGENCY ADMINISTRATOR GO/NO-GO PRE-IGNITION APPROVAL CHECKLIST

PRESCRIBED FIRE NAME: Great Bend 29 Prairie Bank

Instructions: The Agency Administrator's GO/NO-GO Pre-Ignition Approval is the intermediate planning review process (i.e. between the Prescribed Fire Complexity Rating System Guide and Go/No-Go Checklist) that should be completed before a prescribed fire can be implemented. The Agency Administrator's Go/No-Go Pre-Ignition Approval evaluates whether compliance requirements, Prescribed Burn Plan elements, and internal and external notifications have been completed and expresses the Agency Administrator's intent to implement the Prescribed Burn Plan. If ignition of the prescribed fire is not initiated prior to expiration date determined by the Agency Administrator, a new approval will be required.

YES	NO	KEY ELEMENT QUESTIONS
		Is the Prescribed Fire Plan up to date? *Hints: amendments, seasonality.*
		Have all compliance requirements been completed? *Hints: cultural, threatened and endangered species, smoke management, NEPA.*
		Is risk management in place and the residual risk acceptable? *Hints: Prescribed Fire Complexity Rating Guide completed with rational and mitigation measures identified and documented?*
		Will all elements of the Prescribed Fire Plan be met? *Hints: Preparation work, mitigation, weather, organization, prescription, contingency resources*
		Will all internal and external notifications and media releases be completed? *Hints: Preparedness level restrictions*
		Are key agency staff fully briefed and understand prescribed fire implementation?
		Other:

Recommended by: _____ Date: _____
FMO/Prescribed Fire Burn Boss

Approved by: _____ Date: _____
Agency Administrator

Approval expires (date): _____

PRESCRIBED FIRE GO/NO-GO CHECKLIST

PRESCRIBED FIRE NAME: Great Bend 29 Prairie Bank

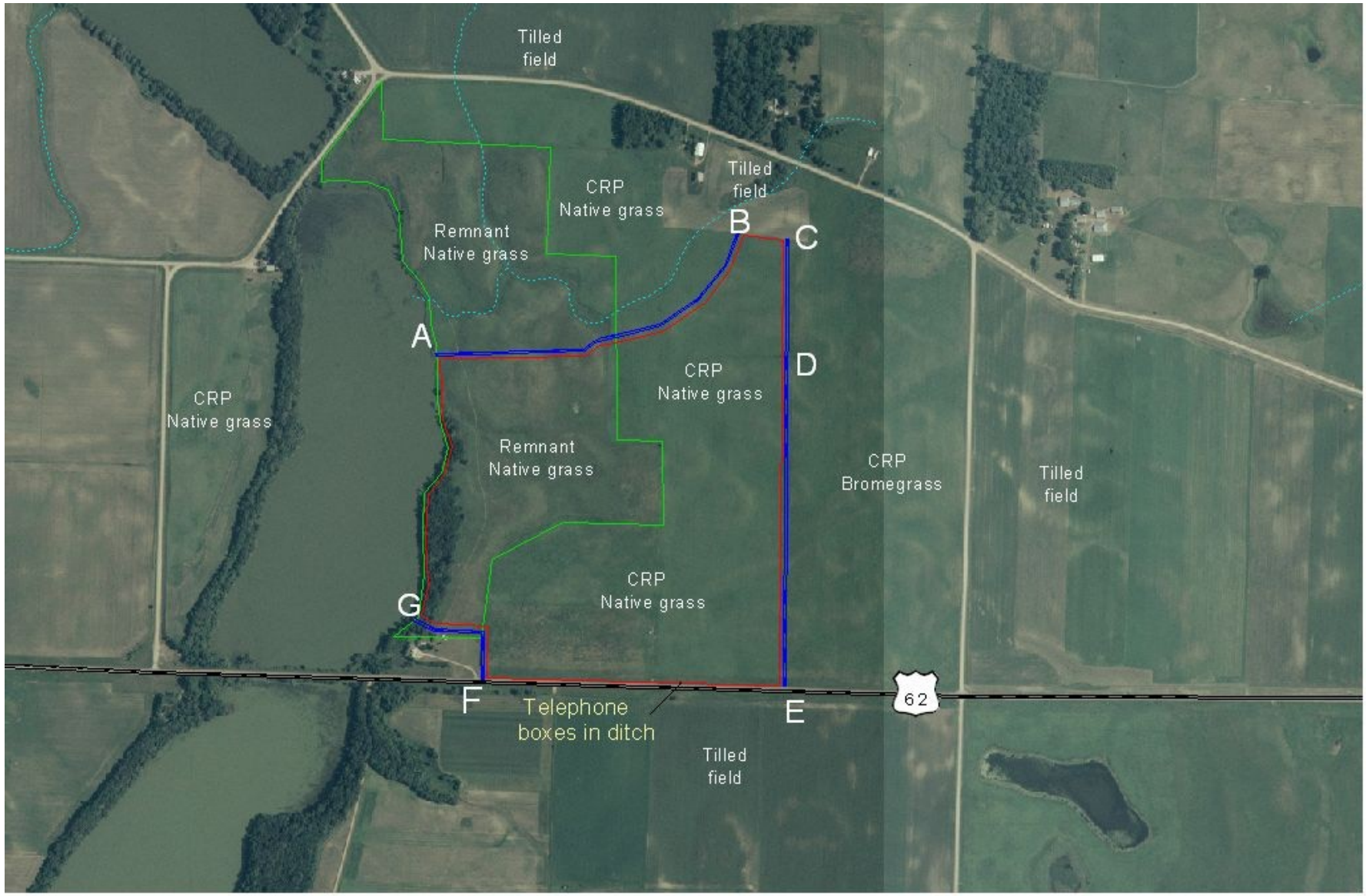
	YES	NO
A. Has the burn unit experienced unusual drought conditions or contain above normal fuel loadings which were not considered in the prescription development? If NO proceed with checklist., if YES go to item B.		
B. If YES have appropriate changes been made to the Ignition and Holding plan and the Mop Up and Patrol Plans? If YES proceed with checklist below, if NO STOP.		

YES	NO	QUESTIONS
		Are ALL fire prescription elements met?
		Are ALL smoke management specifications met?
		Has ALL required current and projected fire weather forecast been obtained and are they favorable?
		Are ALL planned operations personnel and equipment on-site, available, and operational?
		Has the availability of ALL contingency resources been checked, and are they available?
		Have ALL personnel been briefed on the project objectives, their assignment, safety hazards, escape routes, and safety zones?
		Have all the pre-burn considerations identified in the Prescribed Fire Plan been completed or addressed?
		Have ALL the required notifications been made?
		Are ALL permits and clearances obtained?
		In your opinion, can the burn be carried out according to the Prescribed Fire Plan and will it meet the planned objective?

If all the questions were answered "YES" proceed with a test fire. Document the current conditions, location, and results

_____ _____

Burn Boss Date



Rivers and Streams
Intermittent Stream
06 Rxburn
06 Firebreak
Prairie Bank Boundary
MNDOT Interstate and Trunk Highways
State Trunk

Great Bend 29 Prairie Bank
Cottonwood County
T-105-N R-36-W Sec 29

0 0.25 0.5 Miles

N

5

PRESCRIBED FIRE PLAN

Name of Area: Great Bend 29 Prairie Bank **Unit No.**
Acres to Be Burned: 116 acres **Perimeter of Burn**: 2.5 miles
Legal Description: Lat. 43 52 10 **Long**. 95 11 26 **T** 105-N **R** 36-W **Sect.** 29
County: Cottonwood

Is a Section 7 Consultation being forwarded to Fish and Wildlife Enhancement for review? No.
No impacts on listed or proposed species known at this time.

I. GENERAL DESCRIPTION OF BURN UNIT

Physical Features and Vegetation Cover Types (Species, height, density, etc.): Flat to rolling terrain; native prairie grass and forb species, seeded native grass species, and wet riparian vegetation. An area of Oak Savanna exists within the unit, compact leave litter. The burn unit landscape is uniform containing fuel models 1, 3, and 8.

Fuels/features/land ownership adjacent to the burn unit: The land adjacent to the burn unit is private grass/upland habitat (same ownership), open water, and tilled crop fields. The surrounding grass/upland habitat consists primarily of fuel model 3. Approximately 116 acres are to be treated with this burn plan. No public property will be included in the burn. The nearest well-traveled road (10-20 car/hr) is County Hwy 62, which is directly south.

To the North: North of the burn unit is an un-occupied building site surrounded by seeded natives (same owner as burn unit). Beyond is a lightly traveled (2-5 cars/hr) township road (423rd St). Across this road to the north are two occupied building sites surrounded by tilled crop field. Along the north road are also wooden power line poles (not in burn unit).

To the East: Directly to the east of the burn unit is CRP containing grass/upland habitat (FM3). To the east .25 miles is a lightly traveled (2-5 cars/hr) township road (450th Ave).

To the South: Directly to the south of the burn unit is the well traveled (10-20 cars/hr) County Hwy 62. Directly southwest of the burn unit is an occupied building site (mow lawn surrounding).

To the West: Directly to the west of the burn unit is a large body of water (String Lake). Beyond the lake .2 miles is an occupied building site, there is grass fuel south of that building site. Also west are two lightly traveled (2-5 cars/hr) roads (425th St and 440th Ave).

Primary Resource Objectives of Unit:
1) To increase diversity and seed production of prairie plants.
2) To stimulate growth and vigor of warm season native prairie plants so they can out-compete the introduced non-native grass species.
3) Reduce woody encroachment into grassland areas

Acceptable Range of Results (Area burned vs. unburned, scorch height, percent kill of a species, range of litter removed, etc.):
1) Remove 70 to 100% of fine fuels.
2) 20-100% reduction in exotic grass seed production.
3) 20%-100% top kill on <0.5 inch woody plants
4) Any reduction of woody plant invasion

II. PRE-BURN MONITORING

Vegetation Type	Acres	% of Burn Unit	FBPS Fuel Model
Tall Seeded Prairie Grasses	54	47%	3 (tall grass 2.5ft)
Tall Native Prairie Grass	27	24%	3 (tall grass 2.5ft)
Short Native Prairie Grasses	30	26%	1 (short grass 1ft)
Closed Timber litter	5	3%	8 (closed timber)
Total	**116**	**100%**	-

✓ Fuel Loading – Tons per Acre (Great Bend 29: 30x .74; 81x3, 5x5 = 290.2 Tons)

Fuel Type	**1 hr**	**10 hr**	**100 hr**	**Live**	**Total**	**1000 hr**	**Total including 1000 hr**
1-Short grass (1 foot)	**.74**	**0**	**0**	**0**	**.74**	**0**	**.74**
3-Tall grass (2.5 feet)	**3.0**	**0**	**0**	**0**	**3.0**	**0**	**3.0**
8-Closed timber litter	**1.5**	**1**	**2.5**	**0**	**5.0**	**0**	**5.0**

III. PLANNING AND ACTIONS

Prescribed Fire Complexity Worksheet

Station: _____ **Burn Unit Name**: Great Bend 29

Element	Sub Element	Rating Value (L-M-H)		Rationale
1. Potential for Escape	Risk	Preliminary	M	Potential for escape is possible due to adjacent continuous grass fuels to the north and east. Use roads and open water as natural firebreaks. Mowed firebreaks exist along critical control lines containing adjacent continuous fuels. There is no residual fire expected beyond the day of ignition.
		Final	L	Mowed firebreaks in place along north and east perimeters. Open water and roads along west and south perimeters. Access to water along the west perimeter. Ignition will include black lining along critical areas to reduce spotting.
	Potential Consequences	Preliminary	M	An escape could result in damage to natural resource values. The fire could burn onto private or public land. Damage to surrounding natural resources would be minimal.
		Final	L	The crew will use natural firebreaks whenever possible. Mow lines are in place to reduce chances of affecting adjacent land. There will be only minimal impact to the public or users.
	Technical Difficulty	Preliminary	L	The burn unit is accessible to the holding resources identified in the plan. A 15 ft. mow line currently exists along the east and north perimeters. Natural firebreaks such as roads and water surround portions of the burn unit. Contingency plan in place.
		Final	L	No change.
2. Number & Dependency of Activities	Risk	Preliminary	M	All prescribed fire activities are interconnected and related
		Final	L	Pre- burn briefing insures all are aware of objectives and procedures.
	Potential Consequences	Preliminary	L	Coordination problems will not threaten the completion of the project or the ability to meet project objectives. Good communication between crew members insures successful completion.
		Final	L	No Change.

	Technical Difficulty	Preliminary	L	Coordination problems do not threaten the completion of the project or the ability to meet project objectives.
		Final	L	Any communication problems will be dealt with accordingly. Spare radios and batteries are kept in engines at all times. All fire personnel and engines have radios. Objectives and assignments will be clearly explained in briefings.
3. Off-Site Values	Risk	Preliminary	M	Burn unit is on a Prairie Bank easement. Most land adjacent to the burn unit is the same ownership as the easement. Tall grass vegetation exists outside of the burn unit perimeter. The nearby building sites will require some attention.
		Final	L	A mowed firebreak is in place to reduce holding efforts and spotting potential along the east and north perimeters.
	Potential Consequences	Preliminary	M	The vegetation affected (wetland/upland grass habitat) has rapid recovery rate with minimal or no value loss. Negative impacts would occur if homes were impacted by an escaped fire.
		Final	L	All necessary precautions including additional prep work, equipment and personnel have been taken. Good team coordination required.
	Technical Difficulty	Preliminary	M	Protection of the off-site values requires special management, equipment or skills.
		Final	L	All necessary precautions including additional prep work, equipment and personnel have been taken.
4. On-Site Values	Risk	Preliminary	M	The nearby building sites will require some attention. Within the burn unit there are telephone boxes needing protection.
		Final	L	The risks are considered to be minimal since a mowed firebreak protects from escapes to nearby buildings. Telephone boxes within the unit have been mowed around and fuels raked away.
	Potential Consequences	Preliminary	M	Implementation problems would result in a reduction to on-site resources.
		Final	L	Items will be treated with water prior to ignition around sensitive structures.
	Technical Difficulty	Preliminary	L	A total of 2 sensitive items exist (telephone boxes). Any sensitive items will be sprayed with water before igniting around.
		Final	L	No change.
5. Fire Behavior	Risk	Preliminary	L	Fuels are uniform, fire behavior is predictable and terrain is mostly rolling. Fuel models 1, 3, & 8 characterize fuels.
		Final	L	No change.
	Potential Consequences	Preliminary	M	Fire behavior outside of the primary unit boundary would be about the same as that experienced within the burn unit except for areas containing disked agricultural fields or open water. The habitat adjacent the control lines contain the same fuel type as within the burn unit. Spotting, if any, is expected to be short range.
		Final	L	Holding lines are secure, holding forces adequate and patrolling of critical control lines will be conducted. If the fire escapes onto other property no or minimal damage would result to the natural resource value.
	Technical Difficulty	Preliminary	L	Standard fire safety precautions are adequate to ensure personnel safety. Spot fires would not require any additional suppression resources. Most spot fires would be controlled by using a direct attack. No on-site operational fire behavior assessment or calculations are needed.

		Final	L	No change.
6.Management Organization	Risk	Preliminary	L	A singe person will fill several positions. A single level of supervision is all that is needed (i.e. Burn Boss plus lighters and holders). Seven qualified people are needed to implement the prescribed fire.
		Final	L	No change.
	Potential Consequences	Preliminary	L	Problems related to supervision or communication would be expected to be minimal due to the on-site spare radio and fire equipment.
		Final	L	No change.
	Technical Difficulty	Preliminary	L	Qualified contractors are required to be familiar with local factors affecting project implementation.
		Final	L	No change.
7.Public & Political Interest	Risk	Preliminary	L	The prescribed fire is in an isolated area and medium in size (116 acres). Little or no public or political controversy related to the project. A routine neighborhood contact will be conducted. No special notifications of the public are needed.
		Final	L	No change.
	Potential Consequences	Preliminary	L	Unexpected events would attract little public or media attention due to the timing of the burn. Rural area. Prescribed fire is used frequently and understood within this rural area.
		Final	L	No change.
	Technical Difficulty	Preliminary	L	Inform landowners around the burn unit about Rx fire and its effects on the natural resource prior to ignition.
		Final	L	No change.
8. Fire Treatment Objectives	Risk	Preliminary	L	Objectives are to reduce woody species encroachment and to increase native prairie plant diversity. Stimulate native grass and forb species.
		Final	L	No change.
	Potential Consequences	Preliminary	L	A wide burn window exists to achieve the burn objectives. Failure to reach fire objectives would have few adverse impacts on the natural resources.
		Final	L	No change.
	Technical Difficulty	Preliminary	L	The measures used to reach the objectives are easy to complete and there are few restrictions on technique. Wide prescription range can be used to achieve the objectives.
		Final	L	No change.
9. Constraints	Risk	Preliminary	M	Constraints related to access of fire lines exist potentially wet draws on the burn unit. The State of Minnesota (MNDNR) having purchased administrative rights via an easement mitigates many private land issues.
		Final	L	Placement of control lines and ignition sequence will allow unit to be burned without fire line access issues.
	Potential Consequences	Preliminary	L	The project can be implemented whenever in prescription. Must monitor roads, weather, smoke and dispersion.
		Final	L	No change.
	Technical Difficulty	Preliminary	L	Constraints do not increase the difficulty of the project.
		Final	L	No change.

10. Safety	Risk	Preliminary	L	Potential hazards will be addressed in the briefing. (Internal ignition, wet areas, rapid ROS, traffic, ATV safety & smoke). Fatigue and exposure to safety risks are limited. Activities can be characterized as low risk.
		Final	L	No change.
	Potential Consequences	Preliminary	L	The potential for serious accidents or injuries to the firefighter is minimal. Few hazards safety hazards exists.
		Final	L	No change.
	Technical Difficulty	Preliminary	L	Safety concerns will be addressed in the briefing through LCES. (Internal ignition, wet areas, traffic, rapid ROS, smoke and ATV safety). Spotting potential across control lines.
		Final	L	No change.
11. Ignition Procedures Methods	Risk	Preliminary	L	The majority of the project area is visible to the burn boss. The firing sequence is not critical to reach burn objectives.
		Final	L	No change.
	Potential Consequences	Preliminary	L	Firing methods do not pose a safety concern to personnel or compromise project objectives.
		Final	L	No change.
	Technical Difficulty	Preliminary	M	Firing procedures are simple using one type of ignition device (drip torch). The ignition requires minimal supervision, however the control lines will be black lined to reduce the chances of spotting into adjacent fuels.
		Final	L	Technique involves back burning or lighting into the wind whenever possible along the control lines. Multiple igniters are possible. Increase crew size to monitor control lines and additional persons acting as ignition specialists will be used.
12.Interagency Coordination	Risk	Preliminary	M	Project involves other agencies/contractor, but concerns and interests are easily addressed.
		Final	M	No change.
	Potential Consequences	Preliminary	L	Project will be completed as planned.
		Final	L	No change.
	Technical Difficulty	Preliminary	M	Project may require simple agreement(s) between agencies and contractor. Qualified contractor will implement Rx burn adhering to USFWS burn policies and prescriptions.
		Final	M	No change.
13. Project Logistics	Risk	Preliminary	L	The project duration is expected to be <1 day. All needed equipment is readily available. Additional unlimited water source on site.
		Final	L	No change.
	Potential Consequences	Preliminary	L	Logistical problems will not affect the completion of the project or increase the risk of escape.
		Final	L	No change.
	Technical Difficulty	Preliminary	L	Supplies and personnel will be readily available. The burn boss will handle any support needs.
		Final	L	No change.
14. Smoke Management	Risk	Preliminary	M	Without good lift burning with a south winds may place smoke on to occupied building sites or township roads. The burn will not be conducted with a wind directions that will impact Hwy 62 with smoke.

		Final	L	The smoke concerns are few and can be easily mitigated. Burn will not be conducted with winds if negatively affecting smoke sensitive targets such as roads or occupied residences for extended periods. Dispersion will be FAIR at a minimum to reduce smoke impacts.
	Potential Consequences	Preliminary	M	A minor impact to isolated residences or roads is expected. Personnel may be exposed to smoke for short periods.
		Final	L	Due to the proximity of residences, some people may smell smoke. Burn should last for one operational period.
	Technical Difficulty	Preliminary	L	Wind speed and smoke dispersion limitations are present in the plan. Two personnel will be become dedicated to controlling traffic and temporarily closing affected roads if unexpected smoke issues exist.
		Final	L	No change.

SUMMARY COMPLEXITY RATING

RISK OVERALL RATING: **Moderate**

POTENTIAL CONSEQUENCES OVERALL RATING: **Moderate**
TECHNICAL DIFFICULTY OVERALL RATING: **Moderate**
SUMMARY COMPLEXITY RATING: MODERATE

RATIONALE: The Rx burn complexity rating is considered moderate due to the following reasons.
The burn unit is located in a rural area away from communities. The community of Windom (pop. 4283) is located 4 miles to the east. The chance of an escaped fire is minimal due to the fact that mowed firebreaks, open water, and roads surround the burn unit. A crew of seven personnel is needed to complete the burn safely with no need for special equipment. The only areas of concern are nearby and occupied building sites. These areas will not be included in the burn unit and are protected by a mowed firebreak. Within the burn unit there are telephone boxes that will nee to be pre-treated with water and defended. No buildings or electrical poles exist in the burn unit that need to be protected. This burn is considered to be of medium burn unit size (116 acres). Smoke may impact township roads to the east and north for a short period if unexpected climatic conditions occur (no lift). If smoke problems exist, ignition will cease, smoke sensitive area such as building sites and roads will be monitored and the appropriate actions will be taken. Traffic may be slowed at a minimum or stopped until conditions improve. Smoke dispersion categories of Fair or better may be used to safely conduct this Rx burn for fuel model 3. Moderate ratings where given to 'interagency coordination' because of the partnership situation between the USFWS service (funding), the Minnesota DNR (coordinator), and private landowners.

Prepared by: Jason Garms - Prairie Specialist (MN DNR) Date: 3/8/06

Approved by: _____ _____Date:_____
(Agency Administrator)

Site preparation (What, when, who & how. Should be done with Burn Boss): Initially checked all fuel conditions around perimeter of burn during November of 2005 (JDG). In addition, the burn unit will again be field checked each year it is planned to be burned. All critical control lines adjacent to continuous grass fuels will be a 15 ft. wide mowed fire break. Fuel conditions around the burn perimeter will be checked by burn boss on the day of the burn.

Weather information required (who, what, when, where, how, and how much): The Burn Boss will be responsible for delegating a weather observer to hourly record current weather information. The remaining burn crewmembers will monitor weather and smoke conditions throughout the burn. Weather information will be taken with a belt weather kit hourly during the burn and will be recorded on the forecast form and attached to this plan. Hourly weather reports and unexpected weather or smoke conditions will be broadcast via radios to crewmembers. A **Spot Weather Forecast** will be obtained from the National Weather Service in Sioux Falls, SD (605) 330-4244 or toll free at 1-800-852-9470. The fire weather forecast includes smoke management information and is available by 0800 hours with an updated afternoon forecast available by 1600 hours. Data can be collected from the NOAA (National

Oceanic and Atmospheric Administration), via the Internet at http://www.crh.noaa.gov. This information can be utilized for fire effects monitoring.

Additional information used to assist in planning or conducting a prescribed burn can also be found at the above web site such as the Drought Monitor, Fire Weather Forecast, Grassland Fire Danger, Fire Wx Watch or Red Flag Warning, Haines Index, NFDRS Fire Danger Class, Interactive Forecast Graphics, Keetch-Byram Drought Index and the Palmer Drought Index etc. The Fire Weather Forecast is a narrative issued every morning around 6 to 6:30 am from March 20th - May 31st and again from Sept. 1st - November 10th).

The Burn Boss will be responsible for delegating a weather observer to hourly record current weather information. All burn crew members will monitor weather and smoke conditions throughout the burn. Hourly weather reports and or unexpected weather/smoke conditions will be broadcast over radios.

Safety considerations and protection of sensitive features (Adjacent lands, visitors, facilities, terrain, etc., and needed actions. Include buffer and safety zones. Be specific; indicate on a burn unit map. Map should be a USGS quadrangle if possible, so ridges, washes, water, trails, etc. can be identified.)
The main areas needing additional holding is the area along the north and east perimeters due to adjacent continuous grass fuels. These areas will be monitored/patrolled to minimize the chance of fire escaping onto other property. There are mowed firebreaks existing adjacent to the grass/upland habitat to minimize holding efforts. The south, west, and north perimeter are accessible with a type 6 engine. A majority of the east line is accessible with a type 6 engine, but there's potential for areas of wet terrain. Smoke may be an issue if proper wind direction and lifting do not occur. Several building sites exist within 1 mile of the burn unit. There will be no burning without proper winds or lifting, which would negatively affect nearby smoke sensitive targets such as occupied building sites or highly traveled roads. If smoke problems exist, ignition will cease, smoke sensitive areas such as building sites and roads will be monitored and the appropriate actions will be taken. Traffic may be slowed at a minimum or stopped until conditions improve.

Special Safety Precautions Needing Attention (Aerial ignition, aircraft, ignition from boat, etc.):
All personnel will wear the required PPE equipment (Nomex clothing, boots, fire shelter, gloves, hard hat and other protection as needed) at all times. All personnel will obey and practice the Standard Fire Orders at all times. Use LCES, identify escape routes and make them known. Fire personnel will be briefed on escape routes and safety zones before the prescribed burn begins. Travel off of designated paths or trails inside the burn unit, is not recommended with engines. Visibility will be reduced because of smoke. Low, wet areas will greatly increase the possibilities of getting equipment and personnel trapped if a vehicle becomes stuck. If a vehicle and/or crew become stuck they shall notify the burn boss immediately. If a crewmember or engine becomes entrapped, burn out a safety zone and stay in the black.

Special Constraints and Considerations (Private land etc. discuss with Burn Boss): A majority of this burn unit is in private ownership, but under a management agreement with the Minnesota Department of Natural Resources. The burn boss (contractor) will be responsible for contacting the Minnesota DNR the day before or day of ignition to make any arrangements that may be necessary (Jason Garms - Windom, MN: Office# 507-831-2926 ext223, cell# 507-xxx-xxxx).

Communication and Coordination on the Burn (Who will have radios, frequencies to be used, who will coordinate various activities.): All burn crewmembers will have access to radios, either hand held or mobile. All crewmembers using hand held radios will carry a spare radio battery with them at all times during the burn. The burn boss will have radio contact with all crewmembers. At a minimum, one cell phone will be available for the burn boss. The burn boss will coordinate all activities during pre-burn, burn, and post-burn operations.

IV. IGNITION, BURNING AND CONTROL

	Planned or Proposed	Actual
Scheduling: Approx. Date(s)	April 1 – May 31	_____
Time of Day	1000 - 2000 Hrs.	_____

Acceptable Prescription Range

FBPS Fuel Models 1& 3 NFES 1574	Low	High	Actual
Temperature	40° F	80° F	
*Relative Humidity	60%	30%	
Wind Speed (20' forecast)	5 MPH	20 MPH	
*Wind Speed (mid-flame or eye level winds)	5 MPH	12 MPH	
*Wind Direction / Acceptable	Desired: S	Acceptable: SE, S, SW	
Dispersion Category / Acceptable	Desired: Excellent	Acceptable (F, G or E)	
Cloud Cover (%)	0%	100%	
ENVIRONMENTAL CONDITIONS			
Soil Moisture	10%	100%	
1 hr. Fuel Moisture	15%	6%	
10 hr. FM	N/A	N/A	
100 hr. FM	N/A	N/A	
1000 hr. FM (Drought Trigger Point: 15%)	N/A	N/A	
Herb. Live Fuel Moisture	N/A	N/A	
FIRE BEHAVIOR TAKEN FROM BEHAVE 4.4			
Type of Fire (Head,Backing,Flanking)	**Backing**	**Head**	
Rate of Spread	1 ch/hr	361 ch/hr	
Fireline Intensity	1 btu/ft/s	4919 btu/ft/s	
Flame Length	2.7”	22.5’	

* A maximum mid-flame wind speed of 15 mph will be allowable when there is significant green-up of fuels (~50% or more of the fuel bed). This is under the assumption that smoke-sensitive areas will not be impacted any more than if using the normal prescribed mid-flame wind speed.
* Burning with RH as low as 25% may be conducted when there is significant green-up of fuels (~50% or more of the fuel bed). Minimum staffing required will also need to be evaluated and additional staffing may be needed. Holding concerns are present due to adjacent continuous grass fuels.
* If burning with a NE wind, additional traffic control people will be needed.

Cumulative effects of weather and drought on fire behavior:
The Contractor will use, primarily, the Drought Monitor as issued by the University of Nebraska weekly to determine drought intensity. This is an attempt to standardize drought monitoring in the FWS MN Zone where stations do not have access to a RAWS. The Drought Monitor summary map identifies general drought areas, labeling droughts by intensity, with D1 being the least intense and D4 being the most intense. D0, drought watch areas, are drying out and possibly heading for drought, or are recovering from drought but not yet back to normal, suffering long-term impacts. Drought intensity categories are based on six key indicators and numerous supplementary indicators.

• Prolonged drought will cause drying of larger fuels and possibly litter, duff, and soil layers which do not normally burn. The FBPS fuel models do not account for these fuels burning so BEHAVE will not predict this. In some drought situations, higher flame lengths, increased fireline intensity, resistance to control efforts, prolonged smoldering of large logs and duff layers, difficult mop-up, and lingering smoke problems can be expected. Drought may have a profound effect on marsh-type and fuels since the organic soils may add to the intensity, mop-up problem, and smoke production if they are dry. If soils are not organic, cumulative drought will not cause them to contribute to additional fire intensity although the duff on top of the soils may. In severe cases vegetation such as grasses and forbs may not even green up or may cure out earlier than expected.

• Other drought monitoring indices can and will be used to determine ability to safely implement any burn and meet treatment objectives. Drought indexes will be followed utilizing a variety of methods in order to present the best overview of actual conditions. Systems monitored may include the Palmer Drought Index, Keetch/Byram Drought Index and or the State of Minnesota Fire Danger Index. All available factors will be considered to determine if conditions are present which will give the desired results and what effects those conditions may have on fire behavior. The zone fire management officer will be consulted if needed for assistance with drought indicator interpretations.

The Drought Monitor website is located at: http://www.drought.unl.edu/dm/monitor.html

Description of Drought Monitor categories:

D0-D4: The Drought Monitor summary map identifies general drought areas, labeling droughts by intensity, with D1 being the least intense and D4 being the most intense. D0, drought watch areas, are either drying out and possibly heading for drought, or are recovering from drought but not yet back to normal, suffering long-term impacts such as low reservoir levels.

A and H: Since "drought" means a moisture deficit bad enough to have social, environmental or economic effects, we generally include a description of what the primary physical effects are:

A = agricultural (crops, pastures, and grasslands)
H = water supplies (rivers, groundwater and reservoirs)

Drought Monitor Classification	Action
D0 Abnormally Dry	Staffing, equipment, mop up standards, and patrol standards identified in the burn plan will be evaluated by the burn boss to ensure an adequate response to dry conditions is in place. Changes to the burn plan may be necessary, if so they will be amended at the local level by the Burn Boss and Contract Administrator (MN DNR).
D1 Moderate Drought	Staffing, equipment, mop up standards, smoke mgt., and patrol standards identified in the burn plan will be re-evaluated. Changes to the burn plan may be necessary. Changes to the Burn Plan will be amended by the Burn Boss, Contract Administrator (MN DNR), and the USFWS Zone FMO
D2 Severe Drought	Significant changes to the burn plan may be necessary. Burn Plan will be amended by the Burn Boss, Contract Administrator (MN DNR), and the USFWS Zone FMO
D3 Extreme Drought	Prescribed burns will not be implemented.
D4 Exceptional Drought	Prescribed burns will not be implemented.

Determining Acceptable Prescription Parameters for Burning:

The behave fire prediction model does not have the ability to factor in the effects of green-up in fuel models 1 and 3. The model is based on the assumption the fine dead fuels will be the principle carrier of the fire. Another assumption or limitation for behave is that the model assumes all fuels are uniform and continuous. The model does not adequately predict fire behavior predictions in grass fuel types with a high live to dead fuel ratio during spring or fall green-up. The predicted rate of spread and flame lengths using Behave will be more accurate when there is little to

no green-up present. The fact that exotic and native cool season grasses will typically begin to green-up in the spring/fall will lessen the fire behavior substantially from the predicted fire behavior.

The experience of the burn boss will give them the judgment to use varying degrees of the parameters based on their relationship: e.g., the cooler the temperature and the higher the relative humidity's, the upper wind limits will be used; higher temperatures with lower relative humidity's, the lower wind limits will be used; the more green-up showing, the upper limits of all parameters could be used safely.

Headfires should not be used along the perimeter of the fire especially with fuel model 3 because the fire intensity would make it extremely difficult to manage the control lines. Headfires can be used in the interior of the fire with little or no concerns of holding after the perimeter has been sufficiently black lined.

Adjacent land use also plays a major role in acceptable prescription parameters. If cropland is in a tilled state or if a pasture is heavily grazed then the area receiving treatment may be burned with higher fire behavior indices due to the ease of holding in these areas based upon lack of fuel. Areas with CRP, cured crop, or heavy pasture will require significantly more holding forces and will be burned with lower prescription limitations.

Ignition Technique (Explain and include on map of burn unit)

All ignition operations will be done using drip torches or other hand-held ignition devices. A backing fire will be used to establish black lines on the downwind side(s) along the firebreak. Ignition sequence will depend on wind direction, working into the wind whenever possible. The Burn Boss or the Ignition Specialist based on personnel and equipment availability, weather, and fuel conditions will decide the actual firing pattern the day of the burn. Regardless of conditions, backing fires will be employed on all baselines, especially sensitive locations, and areas with possible holding problems.

Due to the size of the unit, internal ignition may be required. This will be performed either by crew members on foot or on ATV. Final determination will be made by the burn boss on the day of the burn and will be based on current fuel conditions. If ATV's are utilized for internal ignition, the following criteria must be met:

1.) The operator must be certified and well experienced on ATV's.

2.) The firefighter must be well experienced with the fuel models and fire behavior pertaining to the burn unit.

3.) The firefighter must have an understanding of safe and effective firing techniques applicable to internal ignition. (Minimum qualification level of FFT1 is strongly recommended)

4.) Crew members performing internal ignition must be closely supervised by the Burn Boss and/or the Ignition Specialist (if available).

Sample Ignition Sequence with Desired Wind Direction:

Wet lines will be placed at appropriate locations on the border of the burn unit and ignitions will take place along the wet line. A black line of usually of 100-300 feet depending on fuel conditions and fuel types will be in place on the downwind side before the head fire is ignited. The Burn Boss will be responsible for making sure black lines are adequate prior to the ignition of the head fire.

A south wind is desired. Ignition will be done using hand-held drip torch(es). A test burn will be ignited prior to the main burn and will show expected fire behavior. The required equipment including 15' wide mow lines will be used to assist with holding operations while establishing control lines. Starting with a south wind, the test burn would begin in the southeast at point B. With the area at point B anchored the ignition crew can light line B to C. One igniter and an engine for holding will begin igniting line B to A. At the same time another igniter and holding crew will begin lighting line C to D. Once the crew has line C to D ignited they will hold at point D until the line B to A is complete. With line B to A tied off to open water and widened to 100ft, crew can resume ignition from line D to E, tying off to the road. The engine on line B to A can be repositioned to point G (water refill possible at point A). While crew is lighting the line D to E, one igniter can light from point A to the midpoint of line A to G. With line C to E is complete the engine from that line can patrol and monitor the north and east perimeters. Line G to F can be ignited, tying from open water to the road. With line G to F complete and held, crew can begin lighting line F to E. In the road right-of-way are two

telephone boxes that will need to be pretreated and burned around. Completing line F to E will close the fire. After completing the ignition sequence around the perimeter, any poorly burned areas along the perimeter or large unburned areas within the burn unit will be ignited. The actual firing pattern will be decided the day of the burn by the burn boss based on personnel and equipment availability, weather, and fuel conditions. Regardless of conditions, backing fires will be employed on all baselines, sensitive locations, and areas with possible holding problems.

Prescribed Fire Organization (See Section VII, Crew and Equipment Assignments. All personnel and their assignments must be listed. All personnel must be qualified for the positions they will fill.)

Minimum Personnel Required:	
RXB2	1
RXI2	1
FFT2	5
Traffic Control	2*

* Traffic control will also be needed if there is an unforeseen wind switch and smoke impacts area roads. These positions will not be counted in the minimum crew size and are not mandatory under SE, S or SW winds. Smoke will be monitored by burn crew throughout the burn.

Equipment Needs:

# needed	Equipment Type	Source
2	Type 6 Engines (or one Type 6 and two Type 7 Engines)	Contractor
1	Portable pump unit	“
1	Tender truck (1000gal) or Drop Tank	“
6	Drip torches	“
7	Radios (for each person)	”
1	Weather kit	“
1	Chainsaw & safety gear	“
7	PPE gear (for each person)	”
1	First aid kit	“
1	Cellular phone	“

*ATV with 50-gallon capacity and pump with minimum of 5 gpm ouput is highly recommended. It will be especially useful to access areas of difficult terrain and in disturbance sensitive areas.

Other (If portions of the burn unit must be burnt under conditions slightly different than stated above, i.e., a different wind direction to keep smoke off of a highway detail here.) This Rx burn is 116 acres and considered to be a medium category burn (50-150 acres). Burning with prescribed south winds will require some attention to occupied houses and lightly traveled roads to the north. Burning with acceptable winds is allowed during days of FAIR, GOOD or EXCELLENT dispersion. Burn will not be conducted or will be halted if proper lifting does not occur thereby negatively affecting smoke sensitive targets such as occupied building sites or moderate to highly traveled (>20 cars per hour) roads.

Prescription monitoring (Discuss monitoring procedure and frequency to determine if conditions for the burn are within prescription): Weather will be monitored and recorded throughout the burn. Temperature, relative humidity, wind direction and speed, fire behavior and fire intensity will be closely monitored and recorded to insure conditions remain within prescription parameters. Weather monitoring will be ongoing using a belt weather kit or equivalent (Kestrel). Weather information will be announced over the radio. If necessary, the burn boss may also call the National Weather Service and request a current spot weather forecast.

V. SMOKE MANAGEMENT

Permits required (who, when): A 'Minnesota Open Burning Permit' from MN DNR Area Forester must be obtained and attached to the burn plan by the qualified **contractor**. Area Forester has been supplied a copy of the burn plan, **contractor** will need to request a burn permit (provide Forester with burn unit ID). **Contractor** will need to sign permit to validate it, the **Contractor** will also need to call the Forester on the burn day for permit validation. (Minnesota DNR Area Forester, Greg Johnson, P.O. Box 607 New Ulm, MN 56073, 507-359-6057).

Distance and Direction from Smoke Sensitive Area(s): Many occupied residences are located <1/2 of a mile to the north, east, south, and west. The community of Windom (population 4283) is located 4 miles to the east of the burn unit. There are lightly traveled (2-8 cars/hr) gravel roads located within a .5 mile on the north, east, and west sides of the unit (423rd Ave, 450th Ave, 425th St, and 440th Ave). South of the burn unit is the well traveled (10-20 cars/hr) County Hwy 62.

Ideal Transport Wind Direction, Speed and Mixing Height (Explain how this information will be obtained and used): **In using the Dispersion Index, exercise caution with high transport wind and low mixing height or low transport wind and high mixing height which, although they combine to give an acceptable Category, can cause smoke dispersion problems as well as potential control problems!**

Transport Wind Speed: 6 mph
Wind Direction: Northwest wind is ideal. SE, S, SW winds are acceptable.
Mixing Height: >2,170 feet (500 meters)

Southerly winds will allow smoke to be sent in the safest direction. A Spot Forecast will be obtained from the National Weather Service in the Sioux Falls, SD. The Spot Forecast includes smoke management and dispersion information which is available by 0800 hours with an updated afternoon forecast becoming available by 1600 hours.

Smoke Management and Dispersion: The following Dispersion Index multiplies mixing height (measured in feet) and transport wind speed (measured in knots) to produce an index that describes the ability of the atmosphere to disperse emissions. To ensure optimum dispersal of smoke emissions during prescribed burns, the mixing layer must be deep enough and with sufficient transport wind speed to ensure the dilution and dispersal of emission concentrations. The dispersion information will be included as part of the daily fire weather forecast. It describes the mixing height, transport wind speed and **Dispersion Index for the afternoon (1300 hours)** of the day it is forecast. If intending to ignite burns in the morning, the burn boss will consult the local Weather Service office to determine the anticipated dispersion at the time of ignition

The following tables identify which dispersion category is acceptable for this prescribed fire project. Applicable criteria will be in ***red***:

Table 4.2.2.A

DISPERSION INDEX	DISPERSION CATEGORY
<13,000	Poor
13,000 – 29,999	Fair
30,000 – 59,999	Good
60,000 or greater	Excellent

Note that these are voluntary guidelines which may vary by the local unit's definition of smoke sensitive receptor and the ability to mitigate potential smoke problems such as by instituting traffic controls when smoke could impact major roads or by burning under fuel moisture conditions which limit consumption of heavier fuels.

Table 4.2.2.B - DAILY BURN UNIT SIZES

Small	< 50 acres
Medium	50 – 150 acres
Large	150 – 500 acres
Landscape	500 + acres

*assumes no more than one burn unit within a 5 mile radius

Table 4.2.2.C - DISPERSION CATEGORY: POOR*

PROXIMITY OF CLOSEST DOWNWIND SMOKE SENSITIVE AREAS	AVAILABLE FUEL LOADING DESCRIPTION
<0.25 mile	No burns
>0.25 mile	Small burns of primarily grass fuels.
>0.25 mile	Single large pile or scattered small piled debris

*In general, there should be no burning on Poor Category days, however burning could occur under some situations.

Table 4.2.2.D – DISPERSION CATEGORY: FAIR

PROXIMITY OF CLOSEST DOWNWIND SMOKE SENSITIVE AREAS	AVAILABLE FUEL LOADING DESCRIPTION
<0.25 mile	Small – Med burns in grass or leaf litter
>0.25 mile	Large burns in grass or leaf litter
>.5 mile	Small – Med burns in timber, slash, or piled fuels
>0.75 mile	Landscape burns in grass or leaf litter
>0.75 miles	Large burns in timber, slash or piled fuels
>1.0 mile	Landscape burns in timber, slash, or piled fuels

Table 4.2.2.E – DISPERSION CATEGORY: GOOD

PROXIMITY OF CLOSEST DOWNWIND SMOKE SENSITIVE AREAS	AVAILABLE FUEL LOADING DESCRIPTION
<0.25 mile	Small - Large burns in grass or leaf litter
<0.25 mile	Small – Med burns in timber, slash, or piled fuels
>0.5 mile	Landscape burns in grass or leaf litter
>0.5 mile	Large burns in timber, slash, or piled fuels
>0.75 miles	Landscape burns in timber, slash or piled fuels

Table 4.2.2.F – DISPERSION CATEGORY: EXCELLENT

PROXIMITY OF CLOSEST DOWNWIND SMOKE SENSITIVE AREAS	AVAILABLE FUEL LOADING DESCRIPTION
<0.25 mile	Small - Large burns in grass or leaf litter
<0.25 mile	Small – Med burns in timber, slash, or piled fuels
>0.25 mile	Landscape burns in grass or leaf litter
>0.25 mile	Large burns in timber, slash, or piled fuels
>0.5 mile	Landscape burns in timber, slash, or piled fuels

Visibility Hazard(s) (Roads, airports, etc.): Burning with the acceptable winds may negatively affect township roads along the north, east, or west perimeters. Directly south is County Hwy 62, a highly traveled (10-20 cars/hr) road. An escape to north could impact an unoccupied building site.

Actions to Reduce Visibility Hazard(s): All burning parameters as specified in this plan will be followed. Planned wind and atmospheric conditions will allow smoke to rise and disperse. The burn will not be conducted with a wind directions and lift which places smoke directly into occupied buildings. Smoke dispersal conditions which allow smoke to lift over occupied buildings and roads are acceptable. Smoke management contingency plans will be initiated immediately if needed.

Mop-up will begin as needed when firing is completed. If warranted, mop-up will continue after the burn until all smokes are extinguished. The amount of mop-up needed will be determined by the burn boss depending upon weather and other factors. Fire engines and ATV's used in the vicinity of the fire-lines where personnel are working will travel slowly and have their headlights on at all times. Communication between engine operators and fire line personnel will be maintained for the duration of the burn, and all line personnel will be made aware

of equipment movements.

Visibility hazards will be discussed during the pre-burn briefing. If exposed to heavy smoke, fire-line personnel will be rotated out of heavy smoke areas on a regular basis to allow their vision to clear and to limit exposure to carbon monoxide.

Residual Smoke Problems (Measures to reduce problem, i.e., rapid and complete mop-up, mop-up of certain fuels, specific fuel moistures, time of day, etc.): Mop-up will be an ongoing process as the burn progresses, with engine crews mopping up areas along the line as time permits. If warranted, a complete mop-up will be conducted. Burning will be initiated as early in the day as possible to allow total smoke dissipation prior to nighttime inversion development. All attempts will be made to complete burning by the middle of the day when fuels are driest to allow more complete combustion.

Smoke Management Contingency Planning:

- ✓ The Burn Boss will follow the Region 3 Prescribed Fire Smoke Management Policy effective as of August 21, 2002. The Burn Boss will also follow the MN Smoke Management Plan. Smoke management mitigation may include one or all of the following: extensive mop-up, early shut-down of firing, smoke sign placement, traffic control by personnel, state police, county sheriff or department of transportation, notification and request for assistance, temporary closure of county roads and any other actions deemed appropriate by the burn boss. (policies stated above available from Jason Garms, MN DNR 175 County Rd 26, Windom, MN. or the U.S. Fish and Wildlife Service)

- ✓ Burn personnel will monitor smoke dispersal throughout the burn and will take necessary actions in the event that possible smoke management problems develop. Smoke signs will be brought to the site on the day of the burn and will be utilized on area roads. Smoke signs will be placed on all potentially impacted roads following DOT requirements. A crew member will be assigned to monitor the road on each end of the area of concern and will be equipped with a radio and a vehicle with emergency lights for high visibility. Staff will wear high visibility vests when working on roads. If conditions warrant, traffic control will be initiated using appropriate "stop" and or "caution" signs, and the county sheriff or other law enforcement personnel will be called to assist with local traffic control, including temporary closure of area roads if deemed necessary by the burn boss.

- ✓ In the case of a contracted burn, the **contractor assumes all liability for smoke damages and claims**.

Sign Placement

Suggested advance warning sign placement:

	Distance from point of restriction to first sign	Distance from first sign to second sign	Distance from second sign to third sign
Urban (Low Speed)*	100 Feet	100 Feet	100 Feet
Urban (High Speed)*	350 Feet	350 Feet	350 Feet
Rural	500 Feet	500 Feet	500 Feet
Expressway/Freeway	1000 Feet	1500 Feet	2640 Feet

Speed category determined by highway agency

VI. FUNDING AND PERSONNEL

Funding: Funds provided by the USFWS Partners For Wildlife and the MN Department of Natural Resources
Personnel: Contractor hired by the MN Department of Natural Resources will implement the rxburn

VII. BURN-DAY ACTIVITIES

Public/Media Contacts on Burn Day:

- Minnesota DNR Prairie Specialist, Jason Garms out of Windom at (507) 831-2926 ext223
- Cottonwood Co. Dispatch at (507) 831-1375
- Minnesota DNR Area Forester, Greg Johnson out of New Ulm at (507) 359-6057 (needed for burn permit validation)
- One spot weather forecast, from the morning the burn is initiated, from the National Weather Service @ Sioux Falls SD (1-605-330-4244 or 1-800-852-9470, also at http://www.crh.noaa.gov/fsd/firewx.html) will be faxed to the MN DNR at 1-507-831-2921 attn. Jason Garms
- Prairie Bank easement landowner, Jim Cxxx at 612-xxx-xxxx or Loyd Kxxx at 612-xxx-xxxx
- Building sites within 1 mile of burn will be visited explaining prescribed burn objectives and addressing any concerns from landowners. If nobody is home, an informational note discussing prescribed burning will be left on door.

Also check the National Incident Management Situation Report at: http://www.nifc.gov/.

At National Preparedness level 4, Wildland Fire Use (WFU) and prescribed fire applications can be continued or be initiated if the proposed action is approved by an agency at the regional or state office level. This approval must be based on an assessment of risk, impacts of the proposed actions on area resources and activities, and include feedback from the Geographic Area Multi-Agency Coordinating (MAC) Group. The final decision to implement rests with the implementing agency.

At National Preparedness level 5, WFU and prescribed fire applications can be continued or be initiated if the proposed action is recommended at the regional or state level. The national agency representative will assess risk and impacts of the proposed actions and discuss with the National MAC Group. The final decision to implement resides with the implementing agency.

Crew & Equipment Assignments (List all personnel, equipment needed, and assignments. The following is not an all inclusive list for what you may need.)

- Burn Boss, Ignition Crew and Equipment, Holding Crew and Equipment.
- Personnel listed previously in plan
- Personnel and equipment will be selected and job assignments made on burn day. An individual may serve more than one position. Additional personnel may be utilized if available.

Crew Briefing Points (Communications, hazards, equipment, water sources, escape fire actions, etc. To be done by Burn Boss prior to ignition. Refer to Safety Considerations in Planning Actions and points listed): See attached briefing outline:

A pre burn briefing will be conducted on-site by the burn boss prior to the start of ignition. All personnel assigned to the burn will be briefed and will have maps of the unit. The following checklist will be covered as will all aspects of the **Go-No-Go checklist**. A post burn briefing will also be held after the burn has been completed and prior to burn team members departing the area. This will include time for questions and resolution of any unresolved issues or concerns.

Personnel Escape Plan: This will be discussed during the pre-burn briefing. Escape routes and safety zones may include burned areas, firebreaks, cultivated crop-land, wetlands and lakes, areas with sparse vegetation, mow lines, county roads and gravel roads.

Special Safety Requirements: Weather changes, erratic fire behavior, and the potential of fire smoldering or creeping through the litter accumulations along the black lines/firebreaks will be stressed during the briefing.

Holding and Control: Spotting potential is greatest adjacent areas containing grass/upland habitat. Approximately 50% of the unit is surrounded by grass/upland habitat. The type 6 engines, portable pumps and ATV's w/pump units will be used monitor for spotting along the control lines during firing and holding operations. Due to wet conditions, the engine may not be able to access the entire perimeter. If this is the case, the ATV's and hose lays will be the fire equipment used along the wet or steep portions of the control lines. To assist with holding, 15' wide mow lines have been put in along the west and north perimeters. Additional water source can be utilized by using the open water along the west perimeter of the unit for drafting purposes. If needed, a portable pump

will be used to assist with refilling of equipment. Gravel roads and open water will be used as natural firebreaks along the burn unit boundary. Spotting is possible. Contingency lines have been identified to prevent an escape for affecting other property and values. Any spots that occur will be attacked immediately and aggressively, making sure of control before continuation. If fire escapes to adjacent lands, an indirect attack may be necessary. Coordination of the ignition crew with holding resources is required. Lines on the downwind side will be widened to at least 50 feet wide before any head-fire strips are ignited.

Critical Control Problems: Critical control problems may exist along the adjacent grass habitat to the east and north boundaries. The lines will be monitored and effectively back burned to reduce the chances of spotting into areas with continuous fuels. The solid BLUE lines on the burn map indicate all mowed control lines. All black lines will be widened and monitored to reduce the chances of spotting across the control lines before continuing. To minimize the potential for escape near critical control lines adjacent to continuous fuels, a temporary 15 ft. mow line will be put in prior to the burn being conducted. In addition, the crew size and holding equipment will be sufficient for simultaneous ignition sequences. Fire equipment containing a pump unit, or equivalent, will be used to wet line all critical areas before igniting.

Water Refill Points: A water tender of 1000 gallons and mini-striker (or other portable pump unit) will be on site for use as needed. The open water located west of the burn unit will be used as a possible water source.

Contingency Plan for Escaped Fire: Burn Day contacts will include the County Dispatch Office. The Burn Boss or his/her designee will advise; burn location, size, ignition time, and name of burn boss. The Burn Boss or designee will check on available contingency resources and the Minnesota Daily Situation Report. National preparedness level, MN State preparedness level, and conflicting prescribed burns and wildfires will be considered prior to ignition and as part of the Go-No-Go Checklist.

Resources at risk: In the event the escaped fire has the potential to threaten private individuals, structures, livestock, or other non government property, the county dispatch office will be notified with a request for law enforcement to contact homeowners and assist with possible evacuation, road closures, and to request structure protection with Volunteer Fire Department structural fire equipment. County dispatch will also be notified should assistance be needed with traffic control and road closings due to hazardous smoke conditions.

Resources at risk specific to this burn are as follows: An occupied building site containing a house with several buildings directly south of the burn unit. There are continuous grass fuels running up to the building site, but a green lawn surround the buildings.

- ✓ **If fire escapes the following actions will be taken:**
    1. If fire burns outside the specified perimeter limits and cannot be quickly contained by on-site resources, the fire will then become a wildfire.
    2. All prescribed firing operations will cease.
    3. Available holding forces will perform initial attack.
    4. The burn boss or highest wildfire qualified individual on site will assume the duties of Incident Commander until relieved.
    5. Safety and protection of private citizens and property/structures will be the highest priorities.
    6. If in the opinion of the burn boss, on-site resources cannot contain the fire; contingency resources will be requested from the **Cottonwood Co. Dispatch (507) 831-1375 or 911** via cell phone. Fire resources are available from the Windom Fire Department, approximately 4 miles from the burn unit. Once on the scene, the department will be given radios or frequencies to use for communication (see communication plan). The mutual aid frequency will be used by the burn crew personnel and Windom VFD, if applicable. If communication problems exist, the VFD will be given one of the crew's radios.

Info for dispatcher:

Cottonwood Co. Dispatch (507) 831-1375 or 911
T-105-N R-36-W
Sections 29
4 miles west of Windom, MN

If a spot or escape cannot be caught with direct attack, the fire will be controlled by back firing from controllable points such as plowed fields, roads, and water. If the fire escapes to the north or east it will be attacked by backfiring from

the township roads to the east and north. An unoccupied building site and power-line poles to the north will be priority protection areas. Because of the fuels (FM3) a head fire would be hard to direct attack in if it escaped east or south.. To the west is open water, and south a road and largely tilled crop ground. An escape south or west is unlikely. The building site southwest of the burn unit will be a protection priority. Any spot fire and 'slop-over' will be immediately extinguished and firing will cease, when appropriate, until all available personnel can put out the spot.

Secondary containment lines, in a worst case scenario, would be the first roads out from the burn unit that will support vehicle traffic. An attached map displays the contingency lines.

NOTE: These are the first permanent fuel breaks but harvested crop lands, hayed fields, and wetlands may provide a break in fuel type and loading closer to the fire perimeter. These should be evaluated by the Burn Boss prior to ignition of the burn.


Occupied building site
Tilled field
432nd Ave
Occupied building site
Tilled field
CRP Native grass
Remnant Native grass
B
C
425th St
Occupied building site
Tilled field
A
D
CRP Native grass
440th Ave
CRP Native grass
Tilled field
Remnant Native grass
CRP Bromegrass
450th Ave
Tilled field
CRP Native grass
G
Occupied building site
F
E
62
Tilled field
USFWS Waterfowl Production Areas
Contingency line
06 Rxburn
06 Firebreak
Prairie Bank Boundary
MNDOT Interstate and Trunk Highways
State Trunk
Great Bend 29 Prairie Bank
Cottonwood County
T-105-N R-36-W Sec 29
0
0.25
0.5 Miles
N

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Mop Up and Patrol: Mop-up of the burn perimeter will commence with ignition of the burn, with holding crews extinguishing burning fuels immediately adjacent to the line that pose a threat to control. Checks for spot fires outside the firebreaks will continue throughout the duration of the burn. Mop-up will continue until all smokes are extinguished or until the possibility of escape or smoke management problems are eliminated. At least a 100 foot wide perimeter will be used for mop-up standards on all prescribed burns. Burning materials within this area will be extinguished with water and hand tools. If an unburned area is located near a control line, it will be burned out to prevent the possibility of spotting over the line. Mop-up may continue for several days after the burn to reduce and/or eliminate possible smoke management problems. The burn will be staffed daily after completion until all smokes are out to insure security.

Patrol will be an ongoing process during the prescribed burn. All personnel assigned to the holding crew will have their eyes to the "green" to catch any spot fires outside the control lines.

Rehabilitation Needs: none anticipated if burned within prescription.

Special Problems: None

COMMUNICATIONS PLAN

FIRE COMMUNICATIONS CHANNELS AND FREQUENCIES					
Channel	Name	Rx Frequency	Code	Tx Frequency	Code
1	Tactical Frequency	171.750		171.750	
2	MN State Emergency	155.475		155.475	
3	MNICS	170.475		170.475	
4	Fire Mutual Aid	154.295		154.295	
5	National Weather Service	162.450			

Medical Emergency Procedures

Brief Description: In case of injury needing immediate medical attention, the burn boss or designated fire crewmember will contact County Dispatch Office (911) for dispatching of nearest ambulance. The nature of injury will need to be conveyed from burn site through dispatchers to ambulance crew to insure proper response. If the nature of the injury requires medi-vac to trauma or burn center, request air ambulance through dispatchers. Allow ambulance crew to coordinate communications with air ambulance. **If medical emergencies exist, Windom Area Hospital (507) 831-2400 is 5 miles away.** To get to the hospital travel west on County Hwy 62 about 4 miles. Turn left on Hwy. 71 and go approximately 1 mile north. The hospital is located at 2150 Hospital Dr.

Ambulances

Name	Address	Phone Number	Paramedics Yes	Paramedics No
Cottonwood County Dispatch	Windom, MN	911 or 507-831-1375	X	

Air Ambulances

Name	Address	Phone Number		
Intensive Air / Trauma 1	Sioux Falls, SD	911		
Life Link	St.Paul, MN	911		
AAA Advanced Air Ambulance	Rochester, MN	911		
Mayo Medical Transport System	Rochester, MN	911		
Careflight	Sioux Falls, SD	911		

Hospitals

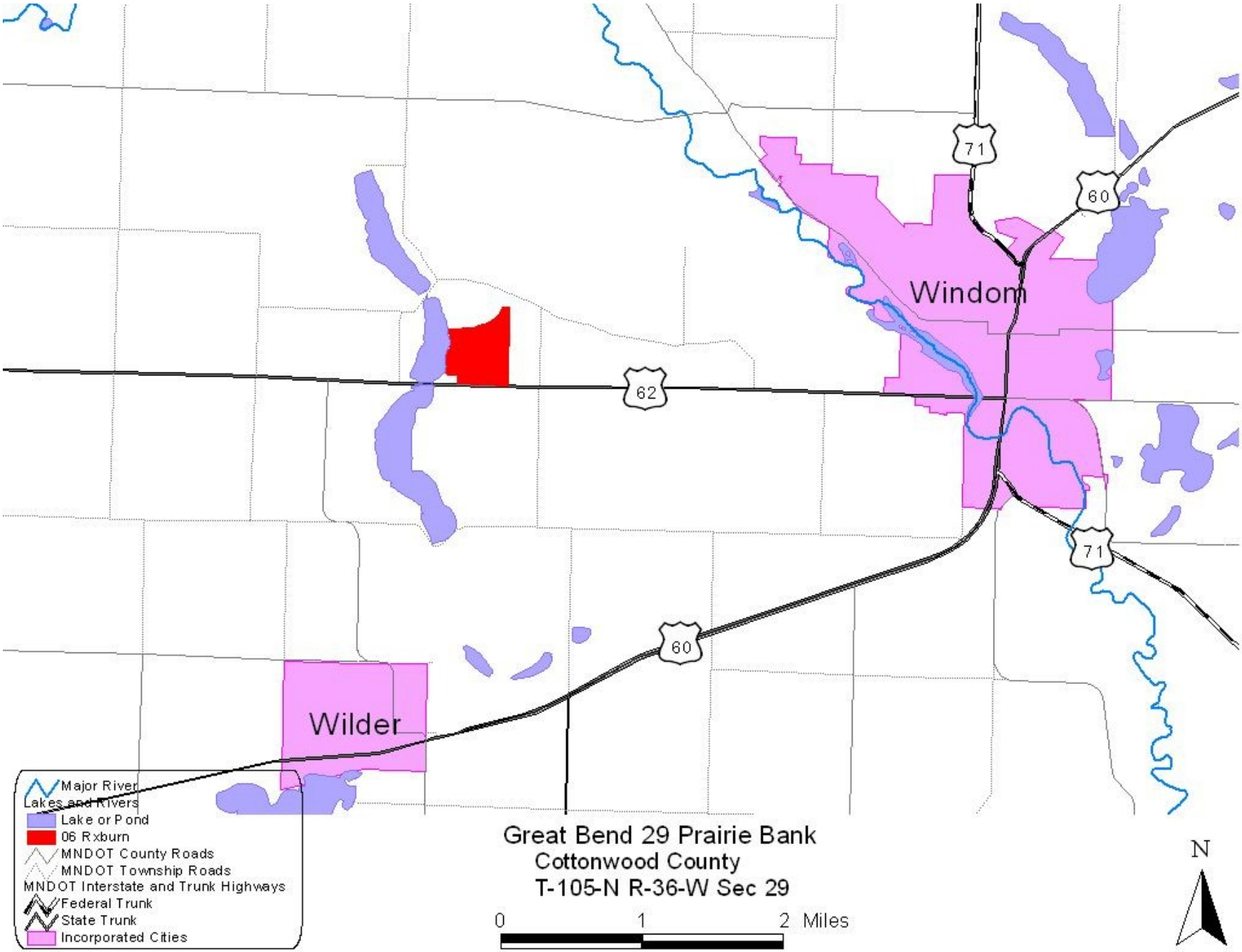
Name	Location	Phone Number	Travel Time (Ground)
Windom Area Hospital	Windom, MN	507-831-2400	5 minutes Helipad Not Available

Nearest Burn Center

Name	Location	Phone Number	Travel Time (Air/Ground)
McKennan Hospital Burn Unit	PO Box 5045 Sioux Falls, SD	911	30 min. air / 90 min. ground
Henennepin County Burn Center	701 Park Avenue Minneapolis, MN	911	40 min. air / 120 min. ground
Regions Burn Center	640 Jackson St. St Paul, MN	911	40 min. air / 120 min. ground

Supplies to the Field

Item	Person Responsible
First Aid Kits / Burn Kit (All Type 6 Engines) Fire Blanket Cell Phone	Burn Boss


71
60
62
71
60
Windom
Wilder
Major River
Lakes and Rivers
Lake or Pond
06 Rxburn
MNDOT County Roads
MNDOT Township Roads
MNDOT Interstate and Trunk Highways
Federal Trunk
State Trunk
Incorporated Cities
Great Bend 29 Prairie Bank
Cottonwood County
T-105-N R-36-W Sec 29
0
1
2 Miles
N

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VIII. CRITIQUE OF BURN

Prescribed Burn Field Report

Location:	Great Bend 29 Prairie Bank	Burn I.D.:	

	Observed Weather (required)					Observed Fire Behavior (optional)			Acres Burned by Cover Type	
	Time	Wind Dir.	Wind Speed	Temp.	Rel. Hum.	Spread Rate	Flame Lengths	Scorch Hgt.	Cover Type	Acres Burned
Forecast										
Spot										
Start										
End										

Post-Burn Observations

Remarks on control:

Remarks on fire behavior:

Remarks on ignition techniques:
___% backing fire
___% flanking fire
___% head fire

Remarks on fire effects to vegetation (burn plan objectives met?):

Remarks on smoke management:

Suggestions (what would you do differently):

Burn Boss Signature	Date of Burn
Title	

IX. POST-BURN MONITORING

The Minnesota DNR will conduct post burn monitoring and evaluations.

PRESCRIBED BURN BRIEFING OUTLINE:

I. Handouts:
A. Map of Burn
B. Organization Chart

II. Description of Burn Area
A. Objectives
B. Vegetation Type
C. Acreage
D. Slope
E. Roads/Access
F. Values at Risk
G. Water Sources
H. Natural/Manmade Barriers

III. General and Spot Weather Forecast
A. Wind Direction and Speed
B. Relative Humidity
C. Temperature
D. Fuel Moisture
E. Atmospheric Stability
F. Predicted Changes

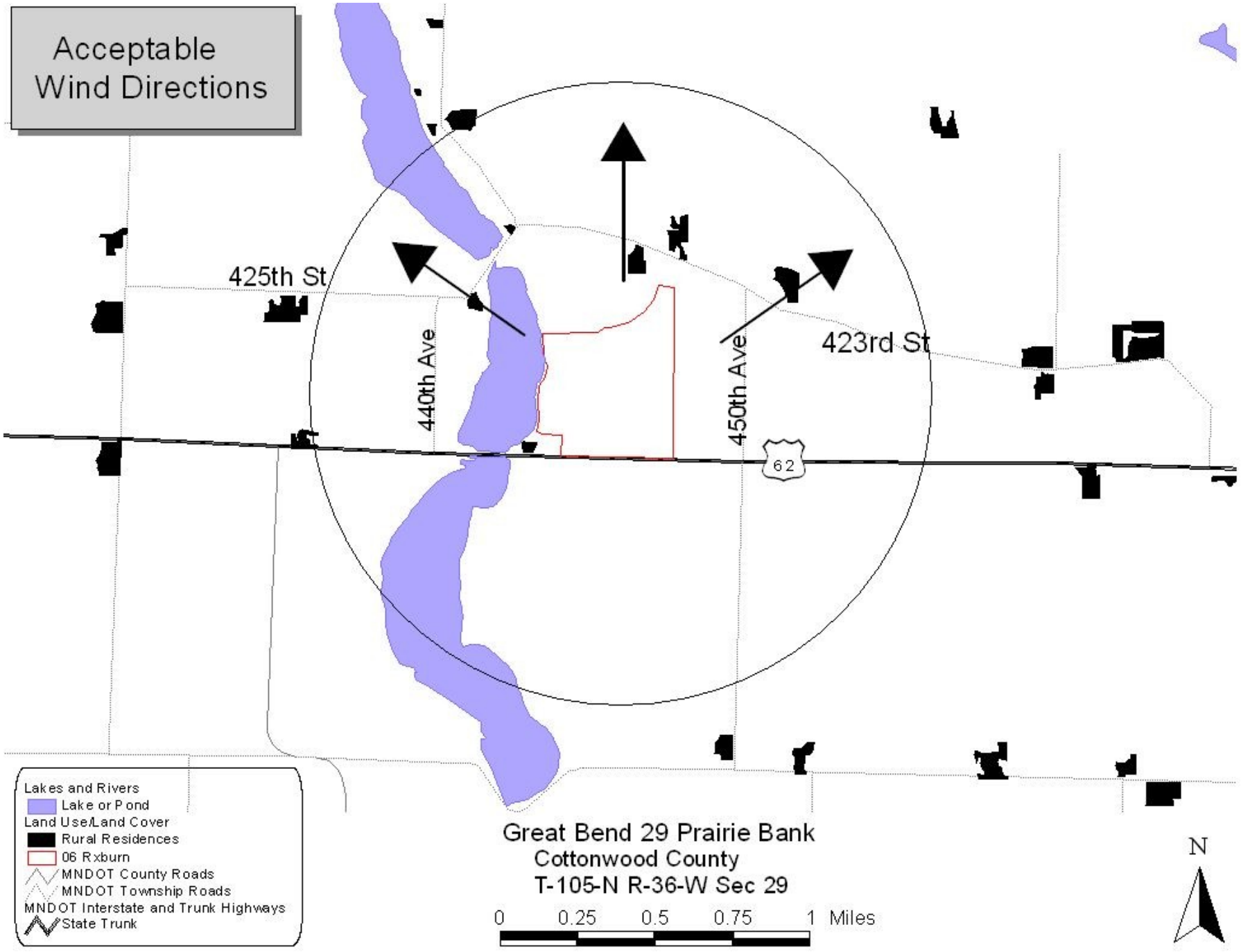
IV. Burn Organization
A. Organizational Chart/Position Assignments
B. Equipment Assignments
C. Other Resources
D. Escaped Fire Situations

V. Firing Sequence
A. Test Burn
B. Type and Sequence of Firing Patterns
C. Ignition Equipment (drip torch, flare pistol etc.)

VI. Communications
A. Procedures
B. Frequencies/Channels
1. Burn Crew
2. Dispatch
3. State Radio
4. Aerial Ignition Personnel
5. Other

VII. Safety
A. Escape Routes
B. Safety Zones
C. Hazards (power lines, wildlife, topography,
D. Potential Problems
E. Smoke Management
F. Aviation
G. Personal Protective Equipment
H. Refueling Procedures

VII. Comments and Questions


Acceptable
Wind Directions
425th St
440th Ave
450th Ave
423rd St
62
Lakes and Rivers
Lake or Pond
Land Use/Land Cover
Rural Residences
06 Rxburn
MNDOT County Roads
MNDOT Township Roads
MNDOT Interstate and Trunk Highways
State Trunk
Great Bend 29 Prairie Bank
Cottonwood County
T-105-N R-36-W Sec 29
0 0.25 0.5 0.75 1 Miles
N

29

Department of Natural Resources

NA- 01990-03

Site Name: _Great Bend 29 Prairie Bank____
Date: _____

Public Relations

List individually neighbors to be contacted.

Map#	Name	Phone #	Letter ☑	Contacted ☑	Response
1					
2					
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