



MN DNR Prescribed Burn Unit Plan

NA-01990-04

Burn Unit Name and ID:			Storden 28 Prairie Bank				
County Name	Lat/Long DMS	Sec	Twنشp	Rng	Forty	Management Unit Name and Number	Administrator
Cottonwood	N 44 02 57 E 95 17 34	28	107N	37W	NW	East unit	Eco Services - SNA

Burn Unit Description

Fuel Model	ECS Type/Sub Type ¹	Size of Burn (acres) ¹	Fuel Loading (tons/acre) ¹
100% model 3	Ups13d, UPs23a	40 acres	3.01 T/acre (estimation from NFES 1574)

Additional Burn Unit Descriptors (e.g. land management goals, overstory/understory, ECS plant community, soil, water, other ownerships/administration within burn area, other descriptors (power lines, roads etc))

Burn unit is native tall grass prairie. Landscape management goals are to maintain the prairie to pre-settlement flora and fauna conditions. The unit has scattered standing or downed woody material in the burn interior. This prairie is a nesting site for various grassland bird and invertebrate species. There is an abandoned Railroad Right-of-way (without ties) along the south boundary of the property. There are woody power poles requiring pre-treatment along the east and north lines. The burn unit is bounded a streams, crop fields, or mowed breaks on all sides.

The abandoned bridge and township road east of the bridge on the north line are passable to ATV traffic.

Objective

Site goals: Maintain fire dependent prairie species and reduce exotic competitors.

Purpose of burn (measurable treatment objectives): Reduce fine dead fuels by 90% to stimulate native prairie plant vigor and seed production.

Long term resource objectives: Reduce exotic grass cover and woody invasives by 75% by timing and sequence of burns, maintain historic burn regime of prairie ecosystems.

Range of acceptable results: Fine fuel reduction of 75%-100% and 20%-100% reduction in exotic grass seed production.

Timing of treatment (in calendar terms and phenological terms): For reduction in dominance of exotic cool-season grasses, late spring burning when cool-season grasses are actively growing. Effective reduction of woody species will occur mid-spring after leaves have appeared.

Burn Complexity: Use NWCG Complexity Rating Guide (NFES 2474) to Determine Burn Complexity (keep on file)	Low	Moderate X	High
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Burn Prescription Window


		Outputs Prescription Parameters				Guidance Prescription Parameters					
Wind Direction		Spread Rate		Flame Length		Wind Speed		Temp.	Relative Humidity	1 Hr Fuel Moisture	1000 Hr Fuel Moisture or Drought Code
		Head	Backing	Head	Backing	20'	Mid flame				
SW S SE E	Maximum Prescription	FM 3 483 ch/hr	FM 3 5 ch/hr	FM 3 25.7'	FM 3 3.3'	Max 20	Max ** 15 mph	Max ** 80 F	Min ** 30%	6	NA
	Minimum Prescription	FM 3 75 ch/hr	FM 3 4 ch/hr	FM 3 10.1'	FM 3 2.7"	Min 5	Min 5 mph	Min 50 F	Max 60%	15	NA


* Live herbaceous & woody fuel factors are not represented in the BEHAVE Prescription Parameter Output model. These live fuels will moderate fire behavior. ** Burns shall not be conducted when all Guidance Prescription Parameters are at maximums or lowest range minimum in the case of RH.

Additional Considerations


Consideration	Mitigation
Cultural site(s): unknown	
Natural Heritage Elements: yes	Prairie habitat for obligate insects and grassland birds has been divided into units to avoid burning all habitat and refugia.
Adjacent Land Concerns: yes	Prescription minimizes smoke on residences and roads. Notify residents within a mile of unit prior to burn.
Peat Soils or Wet Soils: yes	Avoid driving in wet areas on unit and fire line. Rehab any ruts
Other: yes (working near road)	Keep flashing lights going on vehicles near the road. Personnel wear reflective clothing when working near road.

Emergency Telephone Numbers	Burn Activity Contacts
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Burn Unit Name and ID:		Storden 28 Prairie Bank	
Fire Dept: Storden (Cottonwood County Dispatch)	507-831-1375	DNR contact	XXX-XXX-XXXX
Sheriff: Cottonwood County	507-831-1375	Landowner:	XXX-XXX-XXXX
Hospital: Westbrook Health Center	507-274-6121	Sioux Falls Weather Service:	605-330-4244
Windom Area Hospital	507-831-2400	DNR Forestry (permit validation)	XXX-XXX-XXXX
Air Ambulances: "Intensive Air / Trauma 1" - Sioux Falls Air Ambulance	911		
"Life Link" - St. Paul Air Ambulance	911		
"Careflight" - Sioux Falls Air Ambulance	911		
Nearest Burn units: McKennan Hospital - Sioux Falls, SD	911		
Hennepin County-Minneapolis, MN	911		
Personnel Needs			
Burn Boss Level (Note: tied to the burn complexity level):		MN RXB2	
Number Needed	Position	Names(Optional)	
1	MN RXB2 (or NWCG RXB2)		
1	MN RXI2 (or NWCG RXI2)		
4	MN FFT2 (or NWCG FFT2)		
Equipment Needs			
Number needed	Equipment Type	Source	
2	Engine w/200 gal. slip-on unit (or 1 Engine and 1 equivalent capacity tender unit)	Contractor	
1	ATV w/slip-on unit		
4	Drip torches		
6	Backpack pumps		
6	Radios (for each person)		
1	Pulaski		
1	Shovel		
1	Fire rake		
1	Weather kit		
2	"Caution Smoke Ahead" road signs		
2	"Stop/Slow" two sided hand held paddles		
1	Chainsaw & safety gear		
6	PPE gear (for each person)		
1	First aid kit		
1	Cellular phone		

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Operations Plans		
Pre-burn Site Preparation Plan: Firebreaks mowed dividing units. Any hold-over hazards away from fire line – DNR crew.		
Ignition/Firing Plan: (Include provisions for a test fire, firing pattern, firing device, preferred wind direction, hazards/special considerations): Preferred wind direction is South.		
<ol style="list-style-type: none"> 1. Lighting method: drip torches <ol style="list-style-type: none"> a) radio communications between ignition specialist and ignitors b) all ignitors know where escape routes and safety zones are throughout the fire c) all ignition only by direction of ignition specialist. d) ignitors need to watch for sudden wind shifts and flare ups in volatile fuels. Be especially watchful in areas of heavy fuel, such as cattail, next to firing line, may produce flare ups with 20' flame. e) Because wind will change direction unexpectedly (counter to the prevailing winds) due to the topography, headfires can change direction unexpectedly for short duration. Igniters watch for this. f) Igniters will keep sleeves buttoned and shrouds and goggles on to protect from flames and heat. 2. At a minimum, Burn Boss and Ignition Specialist will check burn unit perimeter for potential problem areas, fuel changes, weak line spots etc. 3. Anchor ignition in burn unit (usually corner) opposite current prevailing wind 4. Burn out and secure control lines by igniting backing or flanking fires. Black lines need to hold against maximum prescribed head fire flame lengths. Typically 50-75' of black is necessary before allowing a head fire to run at control lines. Because this may be time consuming in some fuels, strip firing can be used to widen the black line. A general rule of thumb for grass models is to strip fire only a distance half that of the black next to the strip (if there is 4' of black, strip in 2' intervals; if 10' of black, then 5' intervals...). 5. With burn lines secure, interior of unit may be ignited by using backing, flanking, or head fires. 6. Cease lighting if spot fires occur and are under control. Cease lighting until burn boss gives the signal if escape. 7. Holding crews will pre-treat signs, power poles, etc. before running fire through them. 		
Holding Plan: (Staging area, holding lines, resources and positions): Staging area is the gravel pit west of the burn unit. One engine will be placed on the north line for water supply, wetlining, and contingency on the north and east firebreaks. The second engine (or tender) will be staged on the west side of the creek for wetlining or water supply on the western line. An ATV will be used for operations where an engine or hose lay will not reach. The ATV may also frequent the west side of the creek for monitoring and contingency. Wet lines will be adjusted for changes in fuels. Resources may be adjusted in response to actual fire behavior. Burn crew shall consider use of a portable pump and hose lay when wetlining on areas near the creek (sufficient water supply in typical years). A portable pump in the creek could also serve as a refill for engines and ATV's.		
Patrol/Mop-up Plan: (Mopup instructions, safety concerns, weather, contingency, rehab, patrol instructions): Mop up all flaming and smoldering materials within 100 feet of the fire line. Put out any flaming or smoldering wood above ground in trees within 200 feet of fire line. Patrol until released by burn boss. Monitor weather and smoke conditions from fire line for smoke dispersal. Report any significant weather changes, smoke dispersal changes or fire behavior to burn boss.		
Contingency Plans		
(Include secondary control lines, termination of ignition procedures, list of contingency resources and approximate response times, trigger points, backup plan for equipment failure etc.): Secondary control lines are tilled fields and roads on surrounding sides. If fire goes across the line, ignition will end, holding forces will take action under direction of burn boss to anchor, flank and pinch escape while containing existing burn unit. Contingency resources may be drawn from: Storden Fire Department (20 min.), Westbrook Fire Department (25 min.), and Windom Rural Fire (35 min.). If conditions trigger continuing spot fires over the fire line, prescribed fire will be put out and mopped up. If fire line equipment fails, rotate out with engine and gator in staging area and have one person work on the failing equipment if fixable in the field.		
Smoke Management Plan – REQUIRED BY MNPCA¹		
Smoke Dispersion Category: should be FAIR or better to burn ¹ NOTE: 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!		
Distance and Direction from Smoke Sensitive Area(s) ¹ : Several residences within a mile. There are also township roads directly to the west ¼ mile, and ½ mile to the east. Minnesota State Hwy 30 runs along the south edge of the burn unit. The community of Storden is 1 mile WSW of the burn unit.		
Smoke Management Plan (Describe how you intend to mitigate the effects of smoke on roads, firefighters, neighbors and other sensitive receptors. Include safety considerations) ¹ : A possible inversion with sunset hours could place smoke on		

¹ Required for MN Pollution Control Agency reporting requirements

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<p>the state highway to the south. Any hold over fuels should be extinguished before inversion conditions occur. Avoid smoke downwind to receptors by using prescribed wind direction. Rotate firefighters out of smoke, have good firebreaks and wet line so firefighters do not have to be in heavy smoke to hold. Igniters will use goggles and neck shrouds when igniting. Monitor smoke over roads and put "Caution Smoke Ahead" signs out and road control personnel if needed. Burning under good dispersion conditions will minimize potential problems for neighboring residences and roads. Duration of smoke is estimated at 3 hours.</p>					
Safety Plan					
<p>(Identify safety zones, escape routes, communications plan): Safety zones and escape routes will change as the burn progresses, this will be monitored and communicated during the burn. In general, the 12' wide mowed green breaks provide good escape routes. Black areas and tilled fields are safety zones. Lights on for all engines, and watch for traffic when operating near roads. ATV's will not be used on steep terrain. Monitor and communicate any irregular fire behavior such as whirlwind or fire devil activity. All personal on the fire will have access to radio communication.</p>					
Medical Plan					
<p>(In addition to notification of 9-1-1 dispatcher, identify nearest ground and air ambulance service, availability of paramedics, location of nearest hospital, phone number of Minnesota Poison Control Center and list what first aid supplies are available at the burn site and what person or equipment they are assigned to): Nearest air ambulances are located in Sioux Falls, SD and Minneapolis, MN. Nearest hospital and ground ambulance are located in Westbrook and Windom, MN (numbers are on contact list). First aid kits should be located on all Engines. At least one cell phone should be available on the burn. At least one member of the crew should be trained in Advanced First Aid/CPR and Outdoor Emergency Care.</p>					
List of Attachments					
Project Unit Map	X	Permission to Burn on non-DNR Land	X		
Surrounding Fuels Map	X	Fire Behavior Calculations (optional)			
Wind Direction Map	X	Risk/Safety Assessment (optional)			
Neighborhood contact Map	X	Road Control Plan (optional)			
Location Map	X	Organization Chart (optional)			
Signatures					
Prepared by:	Title:			Date:	
Reviewed by ² :	Title:			Date:	
Reviewed by ³ :	Title:			Date:	
Approved by ³ :	Title:			Date:	

² All burn plans must be reviewed and signed by a qualified Burn Boss 1 or 2 as specified by Commissioner's Operational Order 47

³ As per Division policy

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Burn Unit Name and ID:	Storden 28 Prairie Bank
Go/No Go Checklist	
ALL burn prescription elements met. ALL smoke management specifications met. ALL current and projected fire weather forecasts have been obtained and are favorable. ALL planned operations personnel and equipment on-site, available and operational. APPROPRIATE contingency resources have been confirmed and are available ALL personnel briefed on the burn objectives, their assignment, safety hazards, escape routes and contingency plan.	ALL personnel have the required PPE with them. ALL pre-burn considerations (line preparation) identified in the plan addressed. ALL the required notifications been made. (landowners, media, cooperators, sheriff etc) ALL permits and approvals been obtained. (open burning permit, Non-DNR land permission) ALL on-site holding forces adequate for containment under the expected conditions. Burn Boss believes the burn can be carried out according to the Prescribed Burn Unit Plan and will meet the planned objectives.

Prescribed Burn Unit Report						
Weather						
	Time	Wind Direction	Wind Speed	Temperature	Relative Humidity	Comment
Forecasted Fire Weather						
Spot weather forecast						
Observed weather						

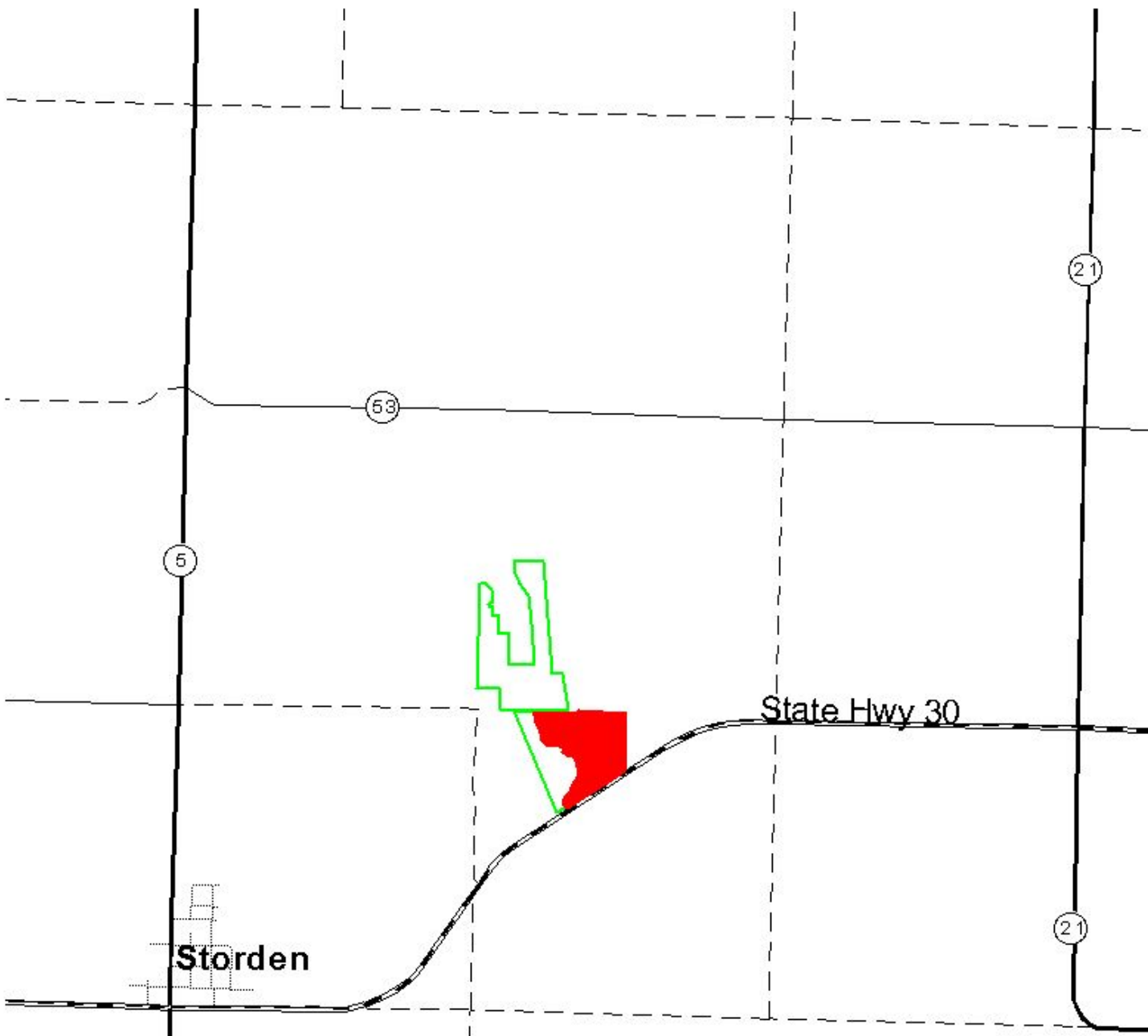
Observed Fire Behavior			
Time	Spread Rate	Flame Lengths	Scorch Height

Acres Burned by Cover Type			
Fuel Model	Completed Acres	ECS Type Sub Type	Completed Acres

Post Burn Observations

Recommendations

Burn Boss Signature		
Name:	Title:	Date:



Storden

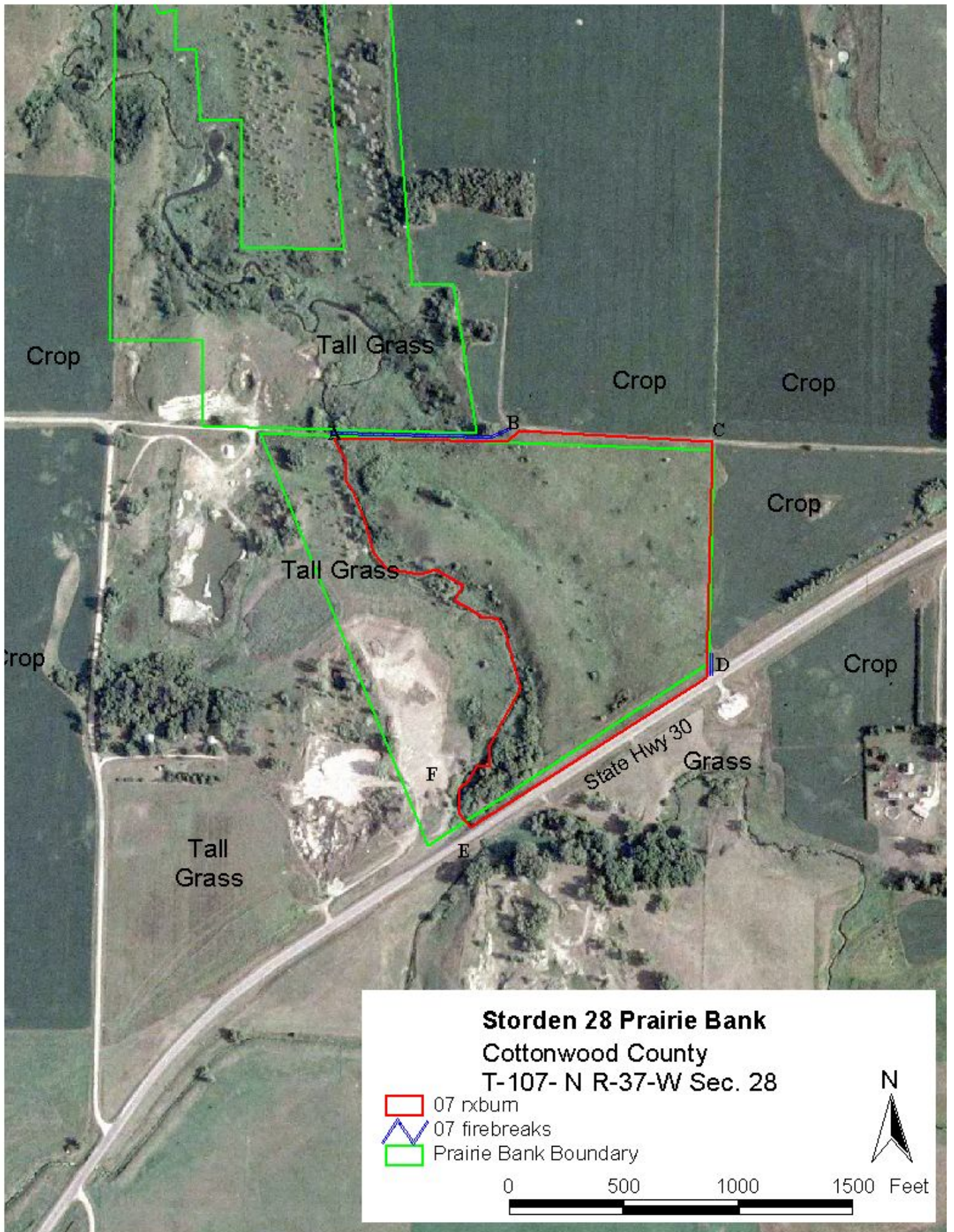
State Hwy 30

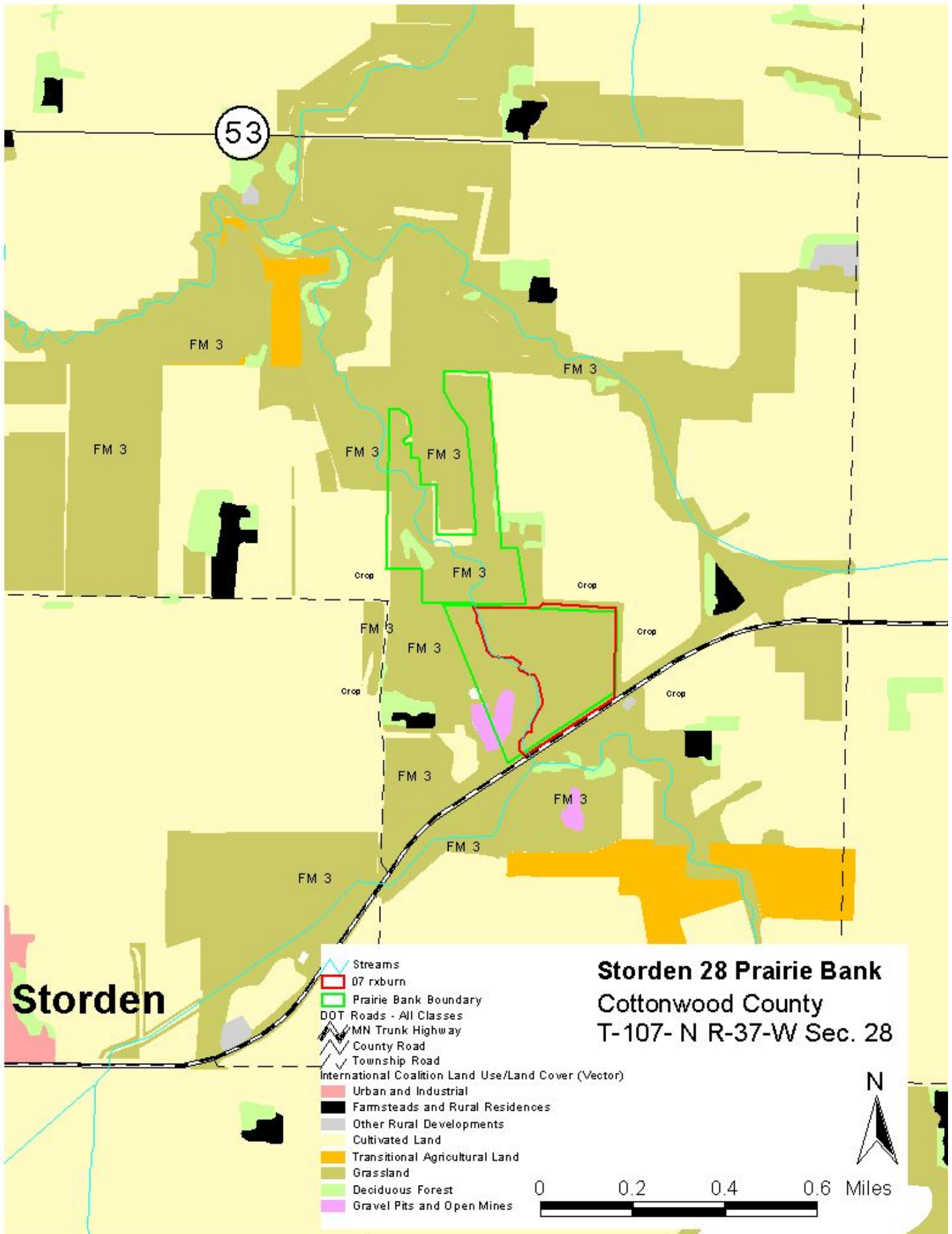
-  07 rxbum
-  Prairie Bank Boundary
- DOT Roads
-  MN Trunk Highway
-  County State-Aid Highway
-  County Road
-  Township Road
-  Other Road

Storden 28 Prairie Bank
Cottonwood County
T-107- N R-37-W Sec. 28

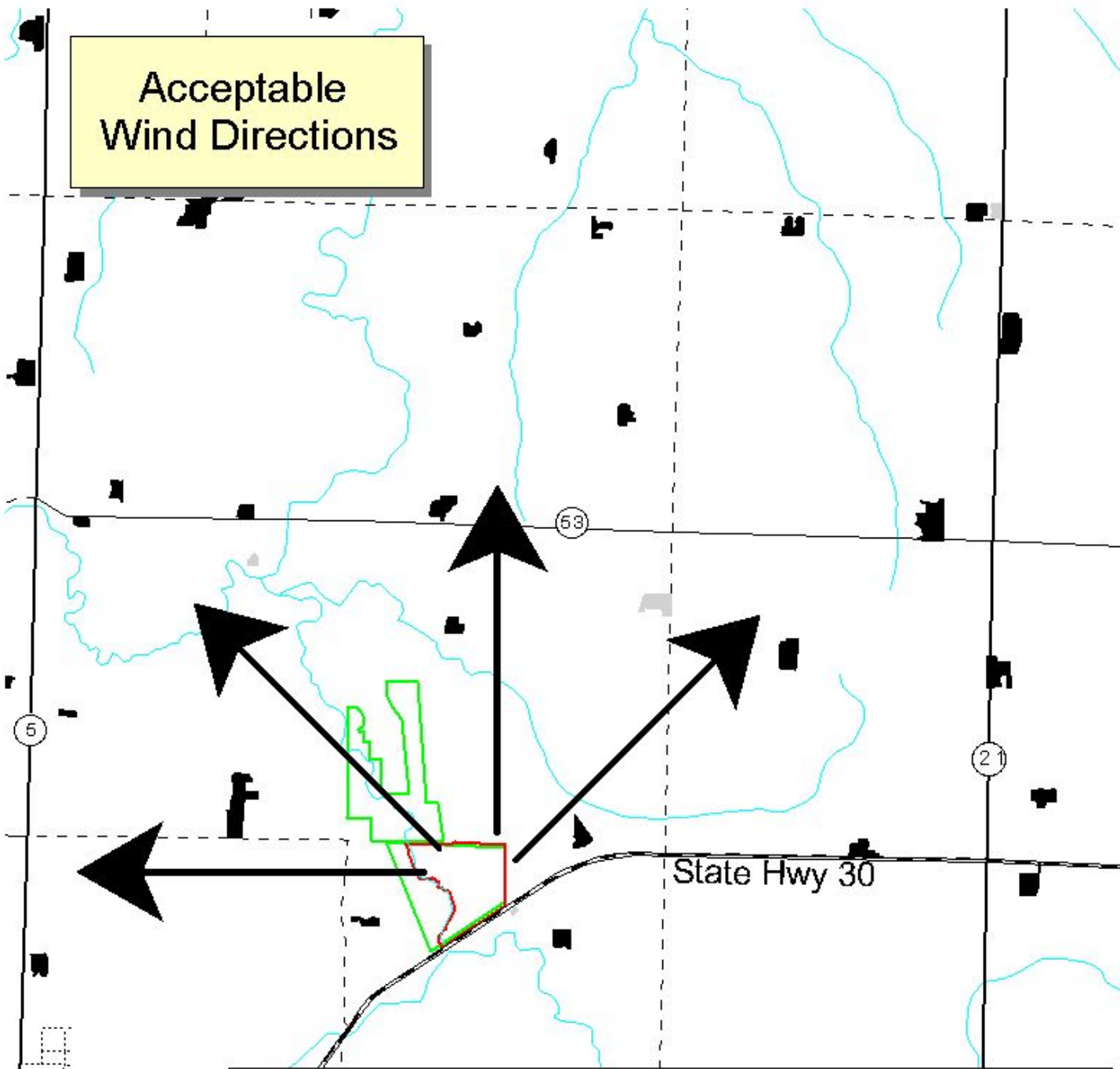
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Acceptable
Wind Directions



Storden

Storden 28 Prairie Bank
Cottonwood County
T-107- N R-37-W Sec. 28

International Coalition Land Use/Land Cover

- Farmsteads and Rural Residences
- Rural Residential Development Complex
- Other Rural Developments

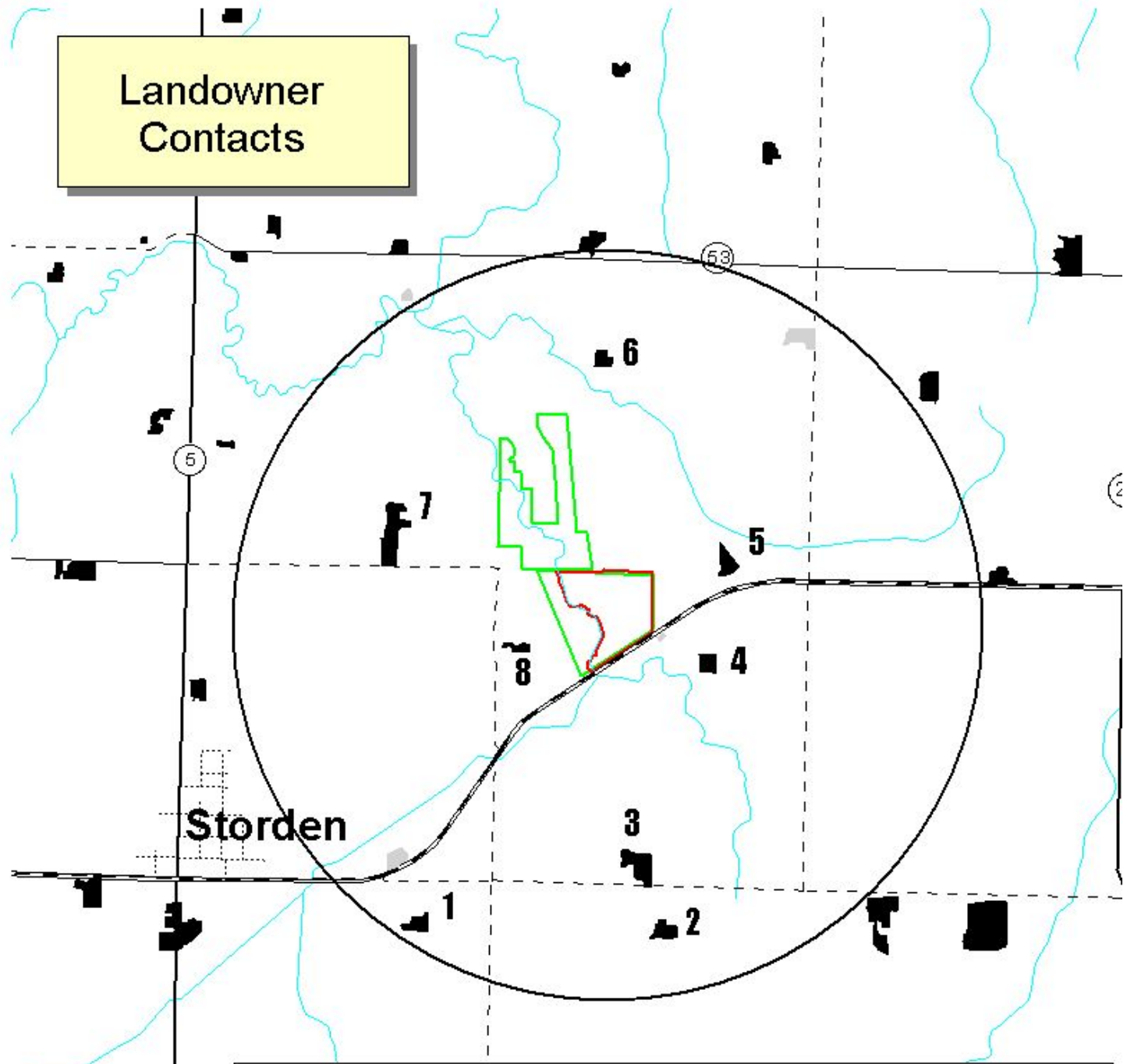
DOT Roads - All Classes

- ▤ MN Trunk Highway
- ▤ County State-Aid Highway
- ▤ County Road
- ▤ Township Road
- ▤ Other Road

- ▭ 07 rxburn
- ▭ Prairie Bank Boundary

0 0.4 0.8 1.2 Miles

Landowner Contacts



Storden 28 Prairie Bank
Cottonwood County
T-107- N R-37-W Sec. 28

International Coalition Land Use/Land Cover

- Farmsteads and Rural Residences
- Rural Residential Development Complex
- Other Rural Developments

DOT Roads - All Classes

- MN Trunk Highway
- County State-Aid Highway
- County Road
- Township Road
- Other Road

- 07 rxburn
- Prairie Bank Boundary

0 0.4 0.8 1.2 Miles

N



Site Name: Storden 28 Prairie Bank

Date: _____

List individually neighbors to be contacted.

Map#	Name	Phone #	DNR Letter <input checked="" type="checkbox"/>	Contacted <input checked="" type="checkbox"/>	Response
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
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