



# MN DNR Prescribed Burn Unit Plan

NA-01990-04

<b>Burn Unit Name and ID:</b>		<b>Holly 2 Prairie Bank</b>					
County Name	Lat/Long DMS	Sec	Twنشp	Rng	Forty	Management Unit Name and Number	Administrator
Murray	N 44 11 11 E 95 30 01	2	T108N	R39W	SW1/4	Center unit	Eco Services - SNA

### Burn Unit Description

Fuel Model	ECS Type/Sub Type <sup>1</sup>	Size of Burn (acres) <sup>1</sup>	Fuel Loading (tons/acre) <sup>1</sup>
70% model 3	Upa13d	40 acres <b>57 acres</b>	3.01 T/acre (estimation from NFES 1574)
18% model 9	MHs38b	10 acres	3.48 T/acre (estimation from NFES 1574)
12% model 8	FFs59c	7 acres	5.0 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 and predominantly Southern Dry Prairie, and Southern Oak and Floodplain Forest. Landscape management goals are to maintain the prairie to pre-settlement flora and fauna conditions. Within the unit there are many standing live deciduous trees and downed woody material of various size classes. There are a few interior fences from previous farming activities, but no power lines or structures in the unit. This prairie provides habitat for various grassland dependant wildlife species. The burn unit is bounded a mowed breaks, crop fields, and water on all sides. The crop fields surrounding the unit are tilled, corn residue and stubble is not available as fuel.

### Objectives

**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 prairie plant vigor and seed production, top kill 50% of woody material <0.5 inch in diameter.

**Long term resource objectives:** Eliminate Siberian elm, Boxelder, and other woody invasives from upland prairie areas, and reduce the density of brush sps. (i.e. native plum, snowberry) by 95%. Reduce exotic grass cover 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%, top kill on <0.5 inch woody of 20%-100%, 20%-100% reduction in exotic grass seed production, and any reduction in dominance of brush sps.

**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. May consider fall burn to control woody sps. Once long term goals have been met, a more diverse burn regime will be implemented. Effective reduction of woody species will occur mid-spring after leaves have appeared.

<b>Burn Complexity: Use NWCG Complexity Rating Guide (NFES 2474) to Determine Burn Complexity (keep on file)</b>	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				
SE, S, SW	Maximum Prescription	FM 3 483 ch/hr	FM 3 7 ch/hr	FM 3 25.7'	FM 3 3.3'	Max	Max *	Max *	Min *	6	NA
	Minimum Prescription	FM 3 75 ch/hr	FM 3 4 ch/hr	FM 3 10.1'	FM 3 2.7"	Min	Min	Min	Max		

\* Burns shall not be conducted when all *Guidance Prescription Parameters* are at maximums.

### Additional Considerations

Consideration	Mitigation
Cultural site(s): unknown	
Natural Heritage Elements: no	Prairie habitat for grassland obligate invertebrates and birds has been divided into units to avoid burning all available habitat and provide refugia.
Adjacent Land Concerns: yes	Prescription keeps smoke from residences and township road. 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: difficulty w/access	Crew will be prepared to use hose lays and ATV's to access unit

Emergency Telephone Numbers		Burn Activity Contacts	
Fire Dept: (county dispatch)	507-836-6168	DNR contact	XXX-XXX-XXXX
Sheriff: (county dispatch)	507-836-6168	Landowner	XXX-XXX-XXXX
Hospital: Tracy Municipal Hospital	507-629-3200	Sioux Falls Weather Service:	605-330-4244
Air Ambulances: "Intensive Air / Trauma 1" - Sioux Falls Air Ambulance	911	DNR Forestry (permit validation)	XXX-XXX-XXXX
"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		
Poison Control Center	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 (minimum)	ATV w/slip-on unit		
4	Drip torches		
6	Backpack sprayers		
6	Radios (for each person)		
1	Pulaski		
1	Shovel		
1	Fire rake		
1	Weather kit		
1	Chainsaw & safety gear		
6	PPE gear (for each person)		
2	"Caution Smoke Ahead" road signs		
2	"Stop/Slow" two sided hand held paddles		
1	First aid kit		
1	Cellular phone		

## Operations Plans

**Pre-burn Site Preparation Plan:** Firebreaks mowed dividing units – DNR crew. 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: south

1. Lighting method: drip torches
  - 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. Start test fire at this location and observe fire behavior to determine if in prescription parameters.
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 half the width of already established black next to the strip (if there is 4' of black, strip in 2' intervals).
5. Cease lighting if spot fires occur and are under control. Cease lighting until burn boss gives the signal if escape.
6. Holding crews will pre-treat signs, power poles, etc (if present), before running fire through them.

**Holding Plan:** (Staging area, holding lines, resources and positions) (points described from unit map attached): A deep (3ft) perennial stream runs through the Holly 2 Prairie management unit (Plum Creek). This stream typically experiences high flows in the spring making equipment crossing impossible, but works well for holding operations. One engine will be placed near point B for use on fire line B to C. Under most conditions an engine can be driven to point B. The second engine (or tender) will be placed at point D for use on fire line E to D, and water supply. An ATV or hose lay will be needed on line F to E. An ATV(s) will be used for holding on line I to H and line H to G. Other control lines are adjacent to open water or tilled fields and should not require holding. The perennial creek in the burn unit typically has sufficient flow to allow for a portable pump and hose lay to be used.

**Patrol/Mop-up Plan:** (Mopup instructions, safety concerns, weather, contingency, rehab, patrol instructions): There are many trees live and standing dead on the interior of this burn unit (Cottonwood, Boxelder, Basswood, Oak, etc). 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, streams, grazed pasture, 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. 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 an engine out with an ATV in staging area and have one person work on the failing equipment if fixable in the field. The perennial creek near the burn unit typically has sufficient flow to allow for a portable pump and hose lay to be used as contingency water supply. Contingency resources may be drawn from: the Tracy Fire Department, approximately 9 driving miles from the burn unit.

## Smoke Management Plan – REQUIRED BY MNPCA<sup>1</sup>

**Smoke Dispersion Category:** should be fair or better to burn<sup>1</sup>, 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)<sup>1</sup>:** Several residences within a mile. There is also a moderately traveled county road to the south (County Rd 22). Burning within prescription should not cause problems for these smoke receptors.

**Smoke Management Plan** (Describe how you intend to mitigate the effects of smoke on roads, firefighters, neighbors and other sensitive receptors. Include safety considerations)<sup>1</sup>: Avoid smoke downwind to receptors by using prescribed wind direction. Rotate firefighters

<sup>1</sup> Required for MN Pollution Control Agency reporting requirements

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 county road and put “smoke over road” signs out or road control personnel if unexpected conditions occur. Burning under good dispersion conditions will minimize potential problems for neighboring residences and roads. Duration of smoke is estimated at 5 hours.

**Safety Plan**

(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.

**Medical Plan**

(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): 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, Tracy Municipal Hospital (507) 629-3200 is 9 miles away.** To get to Tracy from the Holly 2 Prairie Bank, travel 1 mile north on 275<sup>th</sup> Ave, 3 miles north county road 75, then 5 mile west on Hwy 14. The hospital is located at 251 5<sup>th</sup> St E. 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.

**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: Prairie Specialist	Date:
Reviewed by <sup>2</sup> :	Title: State Prairie Biologist	Date:
Reviewed by <sup>3</sup> :	Title:	Date:
Approved by <sup>3</sup> :	Title: State Prairie Biologist	Date:

<sup>2</sup> All burn plans must be reviewed and signed by a qualified Burn Boss 1 or 2 as specified by Commissioner’s Operational Order 47

<sup>3</sup> As per Division policy



### MN DNR Prescribed Burn Unit Plan

NA-01990-04

**Burn Unit Name and ID:** Holly 2 Prairie Bank – center unit

#### Go/No Go Checklist

ALL burn prescription elements met.	ALL personnel have the required PPE with them.
ALL smoke management specifications met.	ALL pre-burn considerations (line preparation) identified in the plan addressed.
ALL current and projected fire weather forecasts have been obtained and are favorable.	ALL the required notifications been made. (landowners, media, cooperators, sheriff etc)
ALL planned operations personnel and equipment on-site, available and operational.	ALL permits and approvals been obtained. (open burning permit, Non-DNR land permission)
APPROPRIATE contingency resources have been confirmed and are available	ALL on-site holding forces adequate for containment under the expected conditions.
ALL personnel briefed on the burn objectives, their assignment, safety hazards, escape routes and contingency plan.	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

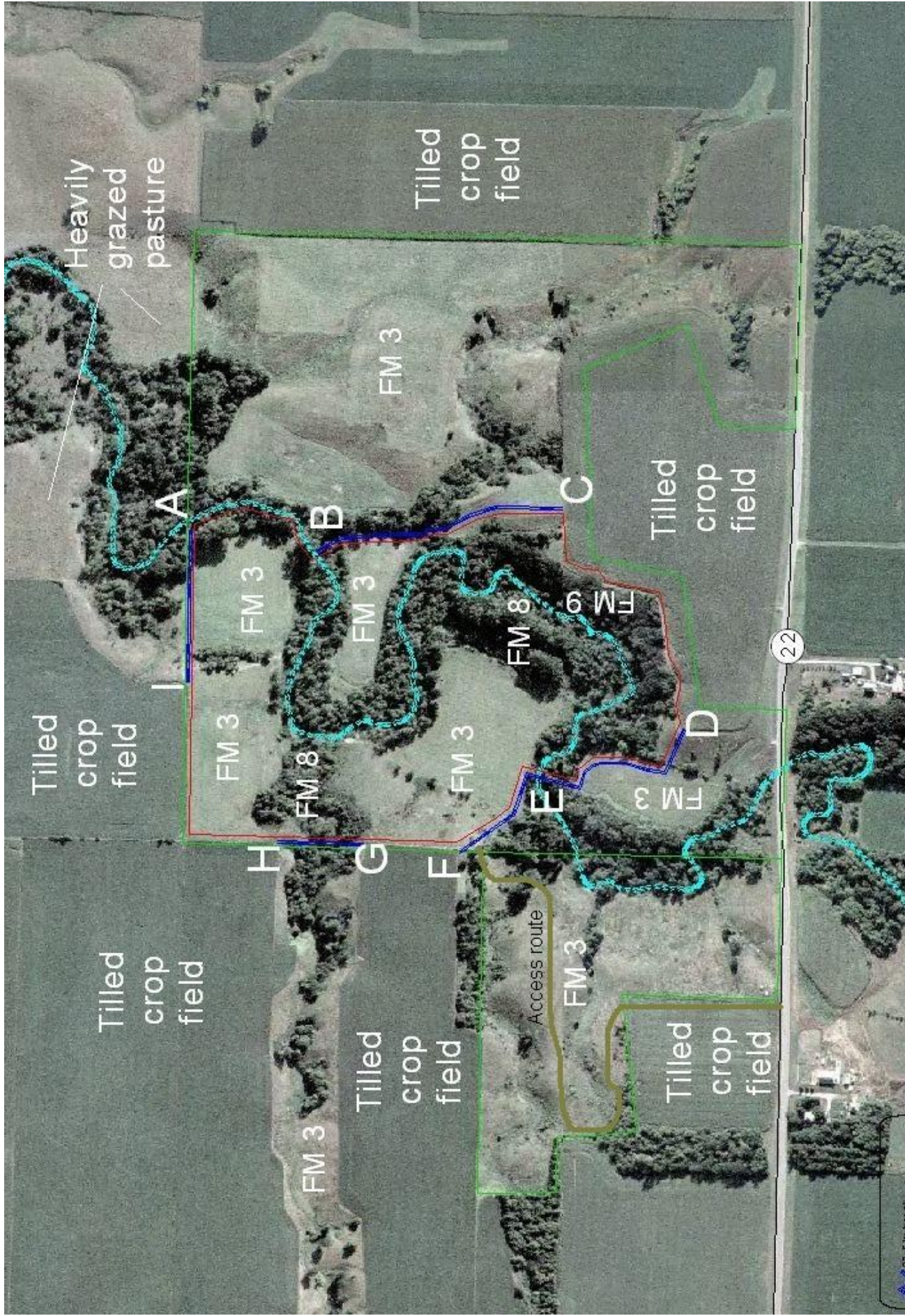
Fuel Model	Completed Acres	ECS Type Sub Type	Completed Acres

##### Post Burn Observations

##### Recommendations

##### Burn Boss Signature

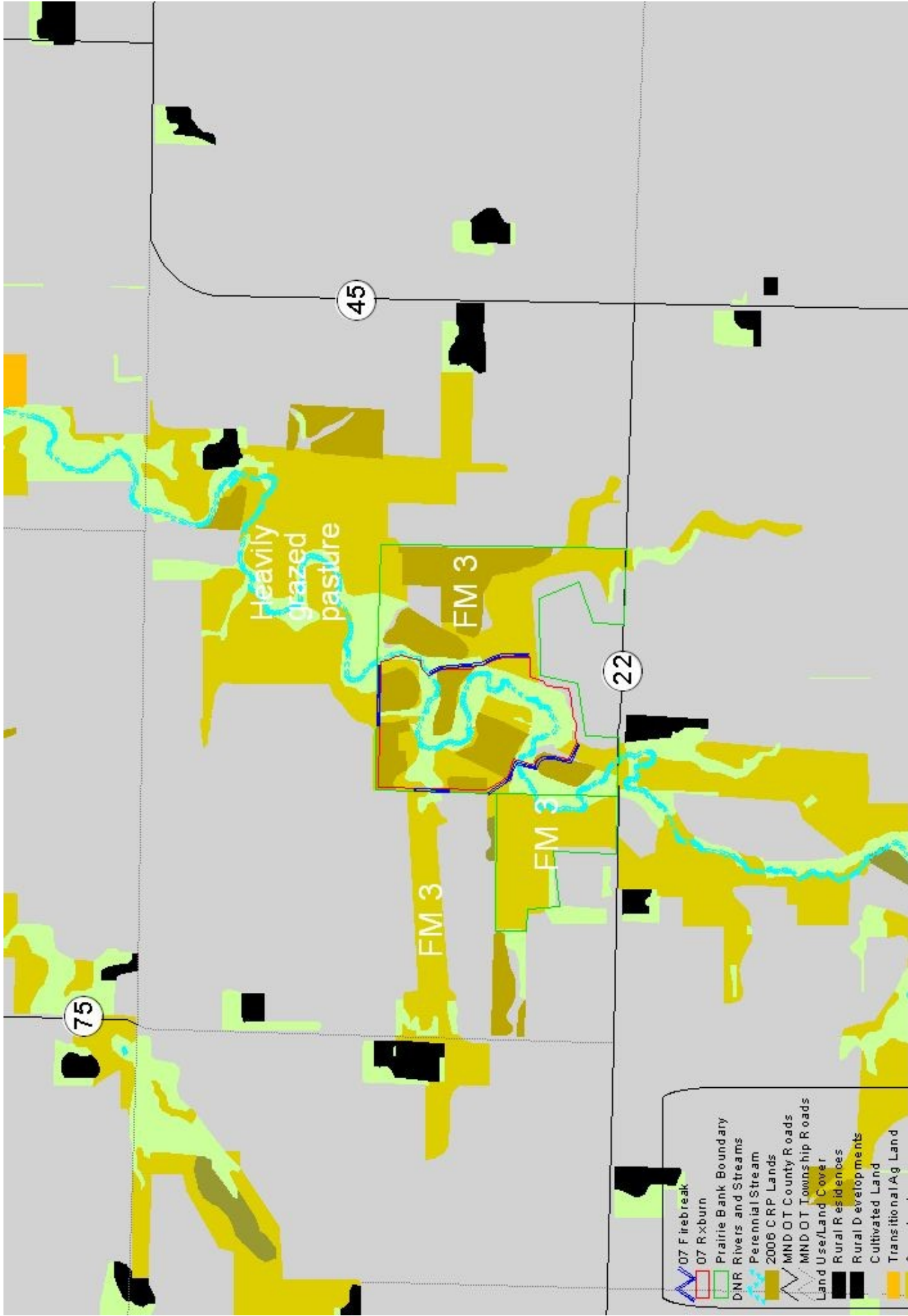
Name:	Title:	Date:
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**Holly 2 Prairie Bank**  
 Murray County  
 T108 R39 Sec 2

**Legend**

- OT File break
- OT Field ID
- Prairie Bank Boundary
- DNR Rivers and Streams
- Perennial Stream
- MNDOT County Roads

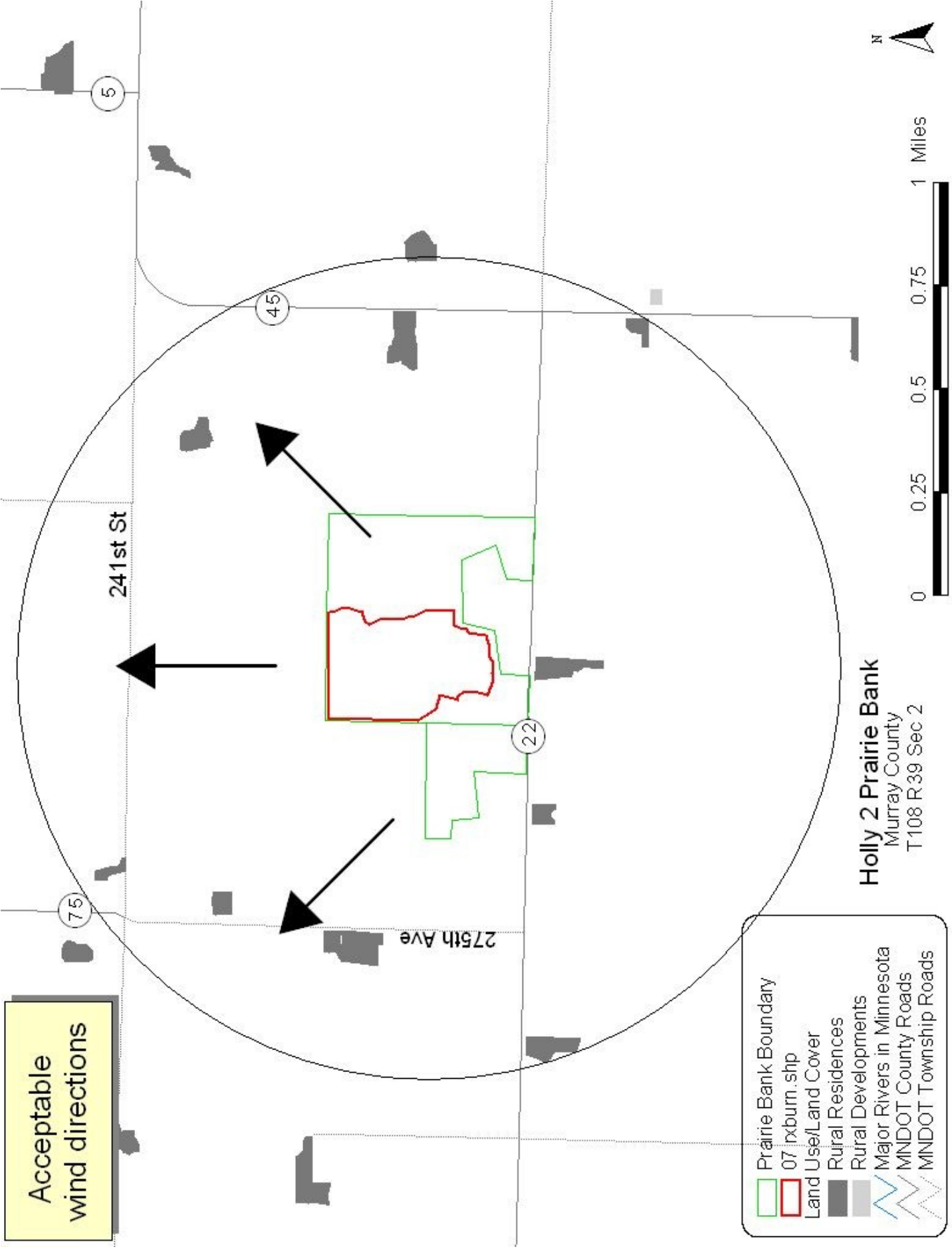


**Holly 2 Prairie Bank**  
 Murray County  
 T108 R39 Sec 2

- 07 Firebreak
- 07 Rxburn
- Prairie Bank Boundary
- DNR Rivers and Streams
- Perennial Stream
- 2006 CRP Lands
- MND OT County Roads
- MND OT Township Roads
- Land Use/Land Cover
- Rural Residences
- Rural Developments
- Cultivated Land
- Transitional Ag Land
- Grassland
- Grassland-Shrub-Tree
- Deciduous Forest
- Water
- Wetlands



Acceptable  
wind directions

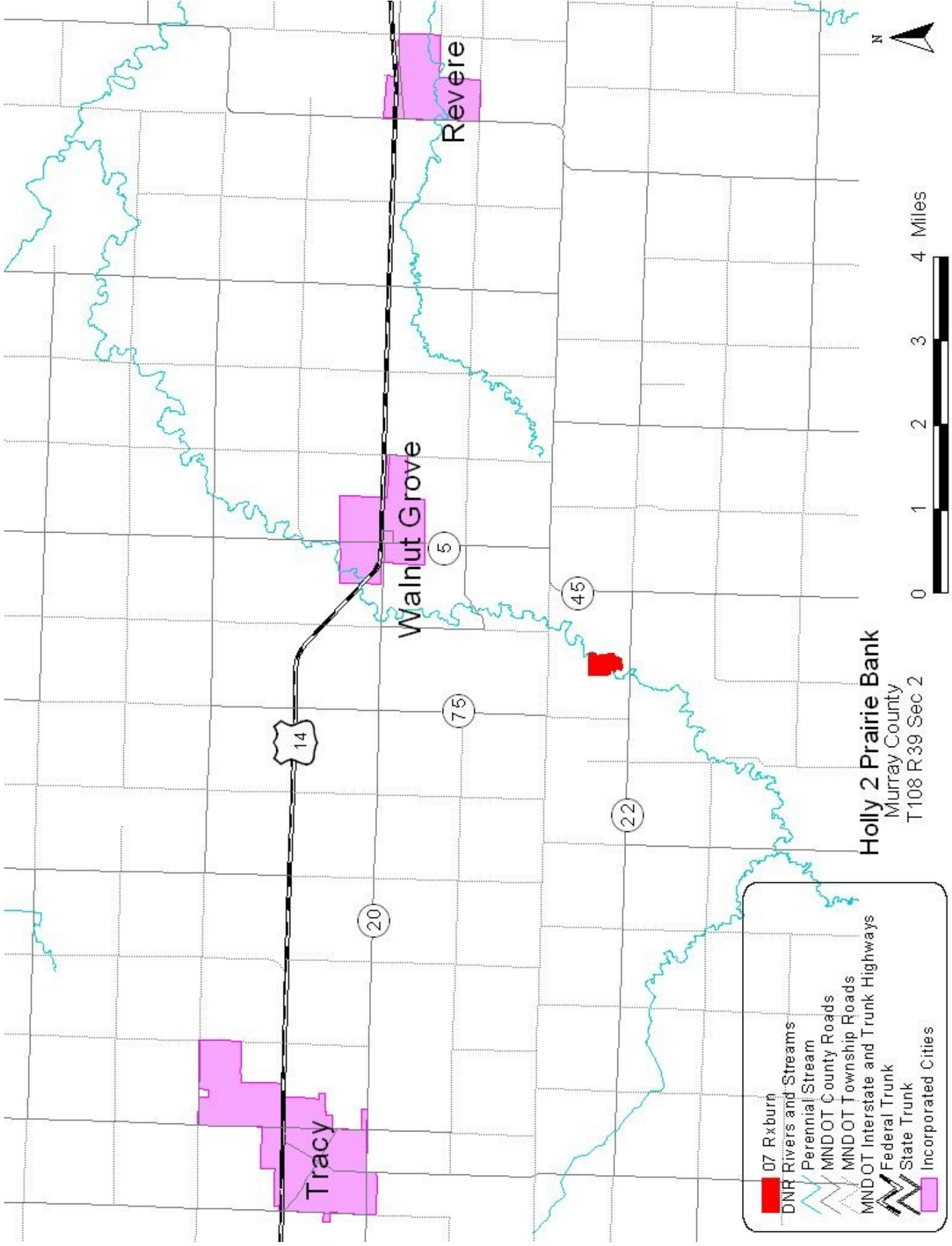


**Holly 2 Prairie Bank**  
Murray County  
T108 R:39 Sec 2

- Prairie Bank Boundary
- 07 rxburn.shp
- Land Use/Land Cover
- Rural Residences
- Rural Developments
- Major Rivers in Minnesota
- MNDOT County Roads
- MNDOT Township Roads



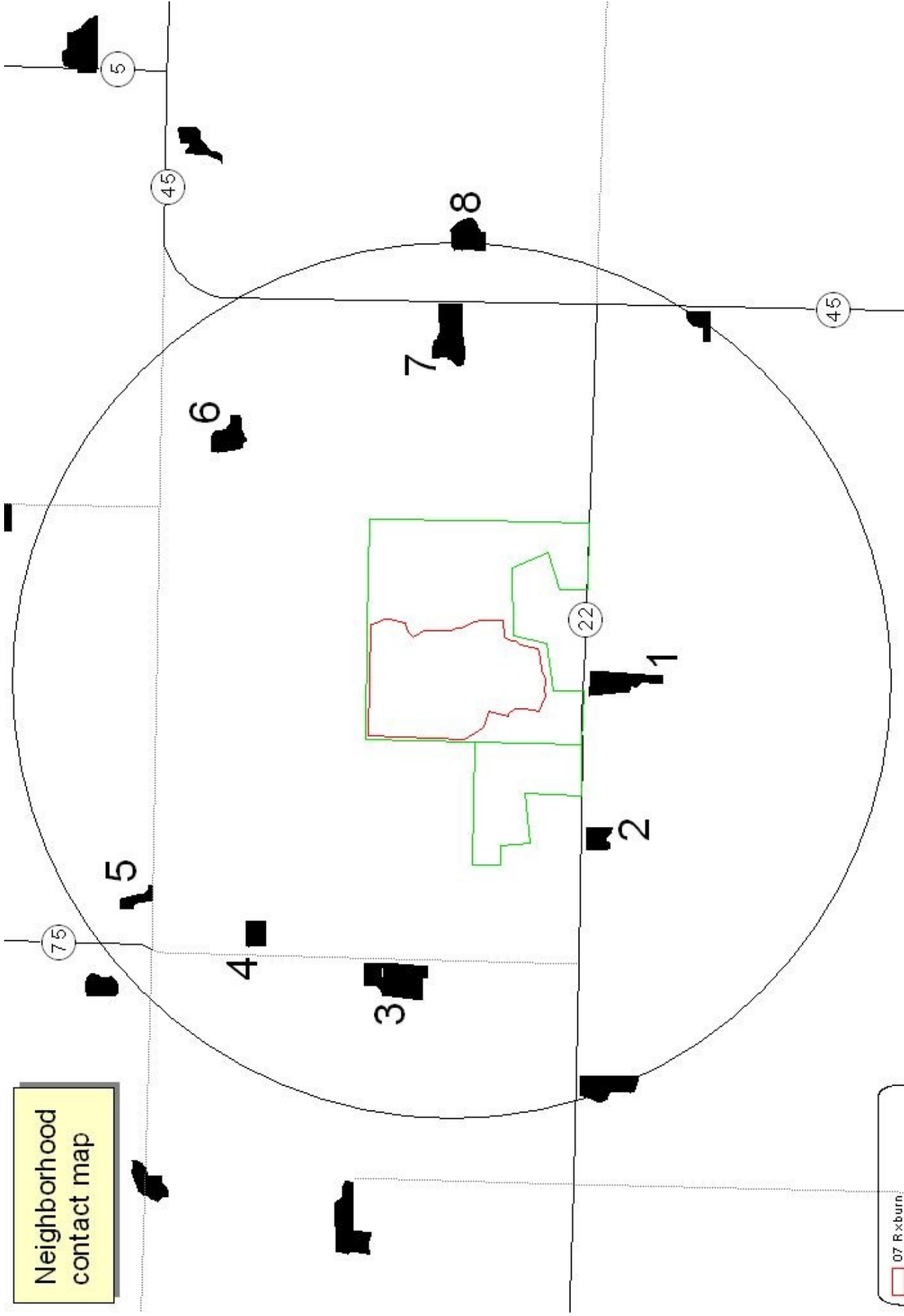




**Holly 2 Prairie Bank**  
 Murray County  
 T108 R39 Sec 2

- 07 Rxburrs
- DNR Rivers and Streams
- Perennial Stream
- MNDOT County Roads
- MNDOT Township Roads
- MNDOT Interstate and Trunk Highways
- Federal Trunk
- State Trunk
- Incorporated Cities

Neighborhood  
contact map



**Holly 2 Prairie Bank**  
Murray County  
T108 R39 Sec 2

- 07 Rxburn
- Prairie Bank Boundary
- MND OT County Roads
- MND OT Township Roads
- Land Use/Land Cover
- Rural Residences





Department of Natural Resources  
NA- 01990-03

Site Name: Holly 2 Prairie Bank

Date: \_\_\_\_\_

List individually neighbors to be contacted.

Map#	Name	Phone #	Letter <input checked="" type="checkbox"/>	Contacted <input checked="" type="checkbox"/>	Response
1					
2					
3					
4					
5					
6					
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