

**Preliminary LCFM Staff Report: Technical and Operational Considerations Relating to
Proposed Frozen-Ground Motorized Access To The Tealey Creek Game Loop**

Chippewa County Forest: Sections 4, 5, 6, 7, 8, and 9, T32N R7W, Town of Birch Creek
2/15/18

Introduction

The Chippewa County Land Conservation & Forest Management Committee has received a citizen request to open gates that currently restrict motorized access to a 3.2 mile-long secondary road in the county forest that is commonly referred to as the Tealey Creek Game Loop, under frozen ground conditions.

Motorized access to the Tealey Creek Game Loop is currently prohibited under the 2006-2020 County Forest Comprehensive Land Use Plan (Plan), except for limited-term ATV use by disabled hunters. Approval of the requested use would be a change in current policy and would require a Plan amendment. Plan amendments require public input and the approval of the County Board and Department of Natural Resources.

Formal public input collected at multiple public informational hearings and a Staff report on an analysis of technical and operational considerations will be provided to the Land Conservation and Forest Management Committee to assist their consideration of the requested change in policy.

Objective of Staff Analysis

To analyze the citizen request using established policy criteria for the purpose of reporting resulting technical and operational considerations to interested citizens and the Land Conservation and Forest Management Committee.

Methods

1. Interview previous county staff to gain historical perspective relating to the Tealey Creek Game Loop.
2. Utilize site specific experience, the county geographic information system, and historic aerial photos to examine environmental characteristics of the Tealey Creek Game Loop.
3. Utilize the management provisions and criteria established under Section 700 of the County Forest Plan as a basis for staff analysis of the requested access to the Tealey Creek Game Loop.
4. Apply assumptions for frozen-ground access based on previous policy decisions.
5. Identify best management practices to limit or mitigate detrimental effects of motorized access.

Background Information

Environmental Setting

The Tealey Creek Game Loop (TCGL) is accessible from 300th Avenue via approximately 0.6 miles of the Chippewa County Forest ATV and Snowmobile Trail.

The TCGL is a curvilinear trail that is approximately 3.7 miles in length, has an average surface width of approximately 14 feet, contains well-established sod cover, and is surrounded by forest and marsh.

Relatively shallow ditches, flat ground, and cut banks flank the TCGL depending on the native topography.

Topography/Shape: (the attached Map A shows 20' contour lines on the 2017 aerial photo)

- The lowest point on the surface of the TCGL is approximately 1059 feet above sea level. (Chippewa County Geographic Information System 2011 LiDAR Dataset)
- The highest point on the surface of the TCGL is approximately 1140 feet above sea level. (Chippewa County Geographic Information System 2011 LiDAR Dataset)
- The average slope of the surface of the TCGL is 5.6%. Much of the trail surface is relatively flat, however there are numerous inclines and descents with slopes up to 25%. (Chippewa County Geographic Information System 2011 LiDAR Dataset)

Water Resources:

- Aerial photo interpretation, LiDAR data, USDA NRCS Soil Survey data, and on-site experience indicated that water table is within 2' of the surface on approximately 10% of the surface area of the TCGL.
- The attached Map B shows that the TCGL does not intersect any streams identified as intermittent or perennial streams on the 7.5 minute USGS Topographic Quadrangles
- The attached Map C shows that the TCGL was built across numerous areas mapped as wetlands by the Wisconsin DNR.

Soils:

- The attached Map D includes USDA NRCS Soil Survey data and shows that the trail crosses several soil units consisting of Greenwood peat soils.
- The Greenwood peat and several isolated low spots within the TCGL have been observed to contain saturated soils or standing water during portions of the growing season.
- The attached Map D also shows that much of the TCGL was built on well-drained Maery sandy loam and Alban fine sandy loam soils that formed on slopes ranging from 2% to 25%.

Vegetation:

- The TCGL appears to have been seeded to a cool season wildlife mix consisting of grasses, forbs, and legumes to provide nesting and brood rearing cover for birds as well as forage. Periodic mowing has suppressed woody encroachment and the TCGL remains relatively clear of sapling and pole-sized trees.
- The attached Map E shows that the majority of the vegetation adjacent the TCGL consists of Aspen. The second most prominent vegetation includes swamp conifers. There are a few isolated pine plantations, tag alders, and a minor component of northern hardwoods.
- The habitat adjacent the Tealey Creek Game Trail provides important winter habitat for numerous game and non-game species (i.e. thermal protection and food).
- There are no known invasive species growing on or adjacent the TCGL.

Wildlife:

- A diverse assemblage of game and non-game wildlife species are known to utilize this area of the County Forest, including gray wolves, according to the Wisconsin DNR website and as indicated by the attached Map F.
- A Natural Heritage Inventory Database search (1/30/2018) indicated that three (3) species of concern and four (4) endangered species have been observed within a 1-mile buffer of the TCGL.

History of TCGL

In a phone conversation with the current County Forest Administrator that occurred on February 1, 2018, Doyle Richards, retired Chippewa County Forest and Parks Administrator (1974-2009), confirmed that the TCGL was installed in the late 1970's. (*Aerial photos confirm that the TCGL was complete in May of 1981*). Mr. Richards advised that he and Brian Marinello, Wisconsin DNR Liaison Forester for Chippewa County, designed a permanent secondary road to provide access to mature stands of Aspen that were previously isolated. In consultation with Rollie Nesbit, Wisconsin DNR Wildlife Technician, it was determined that the planned secondary road could provide wildlife habitat benefit if it had sufficient width to allow adequate light penetration to maintain grass cover. This grassy opening would also serve as a hunter walking trail known at the TCGL. Wisconsin DNR Wildlife Habitat Aids were used in addition to the Forest and Park's Department's operational budget to hire private contractors to build the trail and to provide the subsequent mowing needed to maintain the grass cover. The TCGL was designed and constructed with the idea that motorized use of the TCGL would be limited to management activities, timber harvest operations occurring during the winter, and snowmobiles.

Chippewa County Forest Road System Policy

Chapter 700 of the 2006-2020 County Forest Comprehensive Land Use Plan establishes access control policy, including identification of provisions and criteria to be considered when addressing management issues on the County Forest. The following list is reprinted from Section 700 of the Plan:

“ LIST OF PROBLEM AREAS AND REASONS FOR ACCESS PLANNING

User conflict between groups: e.g., snowmobiling and ATV use versus cross-country skiing; hunting on foot versus use of vehicles for access to game populations.

Safety: e.g., pleasure riding of horses on the same trail with ATV vehicle traffic, or hiking.

Erosion: soils eroding due to use, or over-use by vehicles.

Damage to access: rutted or impassable roads requiring costly repair by the County or other specific user groups.

Litter: depositing garbage and waste on the Forest.

Over-utilization of resources: e.g. reduced availability of trophy-sized deer, excessive harvest of ruffed grouse along trails, etc.

Crowding: e.g. complaints from hunters about intensified competition for traditional hunting areas as a result of better access.

Fires: e.g. increased exposure of the resource to forest fire occurrence.

Endangered species management: e.g. high road densities conflict with timber wolf recovery, eagle and osprey nest disturbance.

Invasive species: e.g. introduction of invasive exotic species along travel routes.

Developmental trends: e.g. preservation of the County Forest solitude by limiting access versus development of high intensity use by additional roads and unlimited access.

Road placement: e.g. roads can be closed for improper location and evaluated for replacement.

Clear and concise policy for the public.”

The primary purpose of the Chippewa County Forest Road System is forest management, transport of forest products, and to provide access for recreational users. The county forest road system consists of permanent primary, permanent secondary and temporary roads, most of which were developed in part for the harvesting and transporting of forest products. Roads within the county forest are managed within the limits of available resources, and only to the minimum extent necessary to meet their intended purpose.

Permanent primary roads provide primary public access to the county forest and are designed, constructed, and maintained to serve as essential vehicular access corridors that qualify for the WisDOT County Forest Road Aids program. These roads are open to all licensed and registered vehicles, but are

not plowed in winter unless necessary for management activities. There are approximately 18.3 miles of permanent primary roads in the county forest. The Deer Fly Trail is an example of a permanent primary road.

The TCGL is classified as a permanent secondary road. Section 710.2 of the Plan states that “permanent secondary roads serve a variety of uses including forest management, fire protection, and recreation. Secondary roads are maintained as part of a permanent road system but are often narrower than permanent primary roads and are built and maintained to lower standards. Some of these roads are designed for use only when ground is frozen or firm.” Numerous recreational trails occupy permanent secondary roads (i.e. ATV Trail, Hay Meadow Horse Trail, Hickory Ridge Ski Trail, Ice Age Trail, Ruby Frozen Ground Motorized Access, and Snowmobile trail). These roads constitute the majority of the roads in the forest, in both mileage and number. Foot traffic is allowed on all secondary roads.

Section 710.2 of the Plan states that “motor vehicle use is limited or restricted on most secondary roads, due to concerns about perpetually wet soils, user conflicts, resource protection, potential for erosion, maintenance expense, illegal dumping, and human safety.”

The management provisions and criteria established under Section 700 the 2006-2020 County Forest Comprehensive Land Use Plan provide a basis for staff analysis of the proposed access to the TCGL.

Transferrable policy relating to frozen-ground access to permanent secondary roads in the Town of Ruby

Chippewa County Board Resolution 41-15 approved amendments to the 2006-2020 County Forest Comprehensive Land Use Plan to allow for the motorized vehicle access to permanent secondary roads in the County Forest within the Town of Ruby, under frozen ground conditions.

Under the approved Plan amendment:

- A. Frozen ground motor vehicle access is limited to select permanent secondary roads on county forest land in the Town of Ruby due to the following reasons:
 1. The county forest land in the Town of Ruby is a relatively flat landscape that is primarily internally drained or contains saturated soils/groundwater contact; whereas, other areas of the county forest (including Special Units) have irregular topography consisting of steep slopes, closed depressions, and a relatively dense surface drainage network (i.e. streams). Therefore, The county forest land in the Town of Ruby is significantly less susceptible to erosion and sediment loading to wetlands and surface water resources.
 2. The county forest land in the Town of Ruby has historically been less accessible by motor vehicles than other county forest land because of a low density of permanent primary county forest and town roads.
 3. Other areas of county forest (including Special Units) have a higher density of developed recreational trails. These trails increase accessibility and, as a result, there is more intensive recreational use.
- B. Maintenance required to facilitate access and/or minimize environmental damage is the responsibility of the Chippewa County Land Conservation & Forest Management Department Staff, including:
 1. Brushing and removal of wind throws and deadfalls.
 2. Installation and maintenance of road infrastructure such as culverts, at-grade crossings, ditches, and road surface.
 3. Snow removal (i.e. plowing) may be required to achieve and maintain frozen ground. In situations where maintained snowmobile trails use open permanent secondary roads, snow removal shall maintain adequate snow coverage on the road.
 4. Repair of rutting, erosion, and damage to vegetation.

C. Chippewa County Department of Land Conservation and Forest Management Department Staff is responsible for monitoring the permanent secondary road surface, corridor, and adjacent lands for the following:

1. Environmental damage to soil, vegetation, water resources.
2. Unauthorized dumping/litter.
3. Increase in unlawful activities.
4. Public safety concerns.

Note: Access to some or all of the permanent secondary roads can be temporarily or permanently suspended, for reasons related to the monitoring criteria listed above.

It is assumed that policy provisions relating to frozen-ground access to permanent secondary roads in the Town of Ruby would also apply to the proposed access to the TCGL.

Preliminary Findings

User Conflicts:

- Adjacent landowners may be affected by an increase in noise and trespass (intentional or accidental).
- The requested motorized use will require operation of motorized vehicles on the snowmobile trail for approximately 0.6 miles. Depending on the level of plowing required and/or the amount of operation of trucks on the snowmobile trail, the eligibility of this section of snowmobile trail for maintenance funding may become questionable.
- Members of the public who seek distance from motorized use and human disturbance now enjoy the area for quiet enjoyment, and the quality of their experience may become compromised.
- Small game and late season deer archery hunters (including hunters with disabled access permits) currently use the TCGL, and the quality of their experience may become compromised.
- Hunters using dogs currently utilize the TCGL and they may experience intensified competition, and the quality of their experience may become compromised.
- Individuals traveling to the TCGL through other areas of the county forest may accidentally mistake other gates that are temporarily open for maintenance operations (i.e. snowmobile or ski trail grooming), resulting in unauthorized operation on snowmobile or ski trails placing other recreationalists at risk and causing damage to the trail.

Public Safety

- Trucks will need to operate on the snowmobile trail for approximately 0.6 miles. Truck usage may result in dangerous conditions on snowmobile trail.
 - Truck usage may result in uneven conditions or rutting on the snowmobile trail.
 - Topography and curves result in relatively limited site distance, requiring fast reaction times by operators.
 - Snowmobiles are likely to be traveling at a faster rate of speed than trucks, causing potentially dangerous situations when snowmobiles approach trucks from behind, particularly in narrow, hilly, and/or curvilinear sections of the snowmobile trail.

- Licensed vehicles that are not well suited for the conditions (i.e. cars, minivans, etc.) may venture onto open roads and slide off the trail to become stuck or not be able to navigate slopes.
- Several locations on the Tealey Creek Game Trail are not wide enough for two-way traffic or to allow a moving vehicle to pass by a parked vehicle.
- Remote trails present greater challenges for emergency response operations than maintained roads. Difficulty increases in winter.

Environmental

Soils:

- Numerous soils within the TCGL may not freeze, especially when insulated by snow cover.
- Motorized use, if under frozen ground conditions, is not expected to have an appreciable impact on soils.
- Areas containing poorly drained soils are subject to rutting from the maintenance activities required to facilitate the proposed use.

Vegetation:

- The unpacked snow cover that forms due to lack of vehicle access protects the surface vegetation from frost and wind damage. In the event the road is plowed, frost damage to desired grasses, forbes, and legumes may increase.
- Snow compacted by vehicle traffic may transform to ice, resulting in increased wetness and decreased soil temperatures in spring. This may affect the diversity and mass of forage produced and may reduce available nesting cover.
- It is generally recognized that increasing motorized traffic to relatively undisturbed areas increases risk of importing invasive plant species.

Water resources:

- Motorized use under frozen ground conditions is not expected to impact groundwater elevation, quality, or quantity unless the motorized use results in a spill or leaks.
- Motorized use under frozen ground conditions is not expected to have a direct impact surface water quality.
- The maintenance activities required to facilitate the proposed use may impact surface water quality (i.e. sedimentation).

Wildlife:

- The resident threatened and endangered species listed on the Natural Heritage Inventory Database are not active during the winter months and are not expected to be impacted by the requested use. Certain species are likely to be impacted by summer and fall maintenance activities.
- Wildlife movement patterns may change impacting predator/prey dynamics if the TCGL is plowed or packed.
- There is potential for violent confrontations between gray wolves and hunting dogs, which commonly result in serious injury or death to the hunting dogs.

Law Enforcement

- There has been little to no dumping or appreciable littering on the TCGL, to-date. Remote roads tend to experience dumping of tires, household garbage, and demolition debris more frequently than roads and trails that experience greater traffic volume. There is a higher risk that unauthorized dumping and/or littering may occur on the TCGL if it is opened for motorized vehicle use under frozen ground conditions.
- Remote areas are often subject to infrequent law enforcement patrol and are known to be used for various unlawful activities such as drug-related activity, underage alcohol consumption, poaching, etc. Motorized access to the TCGL will increase access to a remote areas for individuals or groups with unlawful intent.
- Allowing motorized access to the TCGL may result in unlawful operation of trucks on the snowmobile trail, either intentionally or by accident.
- There are trails (i.e. historic skid trails, recent haul roads) that lead directly from the TCGL to adjacent private lands. Allowing motorized access to the TCGL may result in trespass on adjacent private lands, either intentionally or by accident.

Maintenance

- Improvements (i.e. culvert installation and replacement, grading, limited fill) will be required to facilitate requested use and maintenance.
- Portions of the TCGL may not freeze without snow plowing to remove snow.
- It is likely that required improvements may require permits from the State of Wisconsin (i.e. stormwater, wetlands, and waterways).
- Maintenance practices will require special precautions to protect threatened and endangered species.
- The frequency and nature of inspection and maintenance of the surface of the TCGL and the associated infrastructure will need to increase to facilitate the requested use, resulting in an increase in the County's operational expenses and demand on staffing resources.

Management options to limit or offset effects of motorized access

Environmental and Maintenance

- Mow the entire trail width on an annual basis, after nesting season, to control encroachment from woody plants to facilitate use and maintenance traffic. Mow the ditches every second or third year to maintain drainage function and allow for routine maintenance of ditch geometry as necessary.
- Conduct annual invasive species inspections and complete required treatments to minimize the risk of the spread of invasive species. Clean all maintenance equipment prior to moving from one site to another.
- Re-establish or install ditching in multiple areas to decrease surface wetness to: reduce the risk of rutting from summer/fall maintenance, increase the probability/duration of frozen ground, and accommodate plowing if needed.

- Add or replace culverts to decrease surface wetness to: reduce the risk of rutting from summer/fall maintenance, increase the probability/duration of frozen ground, and accommodate plowing if needed. Select locations may require the addition of fill to increase the separation distance between saturated soils (i.e. ground water) and the surface of the TCGL.
- Obtain DNR waterway, wetland, and stormwater permits where necessary for improvement projects.
- Employ best management practices for water quality (i.e. road drainage structures, soil stabilization, silt fence, seeding & mulching, etc.) to minimize sedimentation risks associated with certain soil disturbing maintenance and improvement projects.
- Follow Threatened and Endangered Species Guidance (timing, exclusion, etc.) and obtain incidental take permits where necessary, when implementing maintenance and improvement projects.
- Remove snow from the surface of the TCGL to achieve and maintain frozen-ground conditions in situations where snow cover prevents freezing. Rutting may be an unavoidable outcome of initial snow removal activities. In these situations rutting would need to be repaired on an annual basis to maintain compliance with sustainable forestry certification standards.

User Conflicts

- Install signage at off-site locations (i.e. ski and snowmobile trail road crossings) to inform public of motorized use prohibitions.
- Work in cooperation with Chippewa Valley Snowmobile Organization to develop a snowplowing standard that removes enough snow to provide safe travel for motor vehicles and retains adequate snow for snowmobile use.
- Delay the opening of roads until after the close of the deer archery season to avoid impacts to deer hunters and reduce the duration of snowmobile trail disruption during early snow years.
- Install a combination of paint lines, signage, and earthen traffic barriers at select locations along private property boundaries and previous skid routes leading to private lands to reduce the likelihood of trespass.
- Require that all motor vehicles meet standards established under Wisconsin Administrative Code Transportation 305 to control excessive noise and reduce public safety results.
- Require that Wisconsin Off-Highway Vehicle Regulations apply to control noise and reduce safety risks.

Public Safety

- Require that all motor vehicles and Off-Highway vehicles must be registered and licensed to provide license plates to assist law enforcement activities.
- Consider one-way traffic designation, install turnouts, or widen trail to alleviate limitations or safety risks related to narrow trail widths.
- Remove underbrush in select areas to improve visibility in corners on the snowmobile trail to reduce risk of collisions between snowmobiles and motor vehicles.

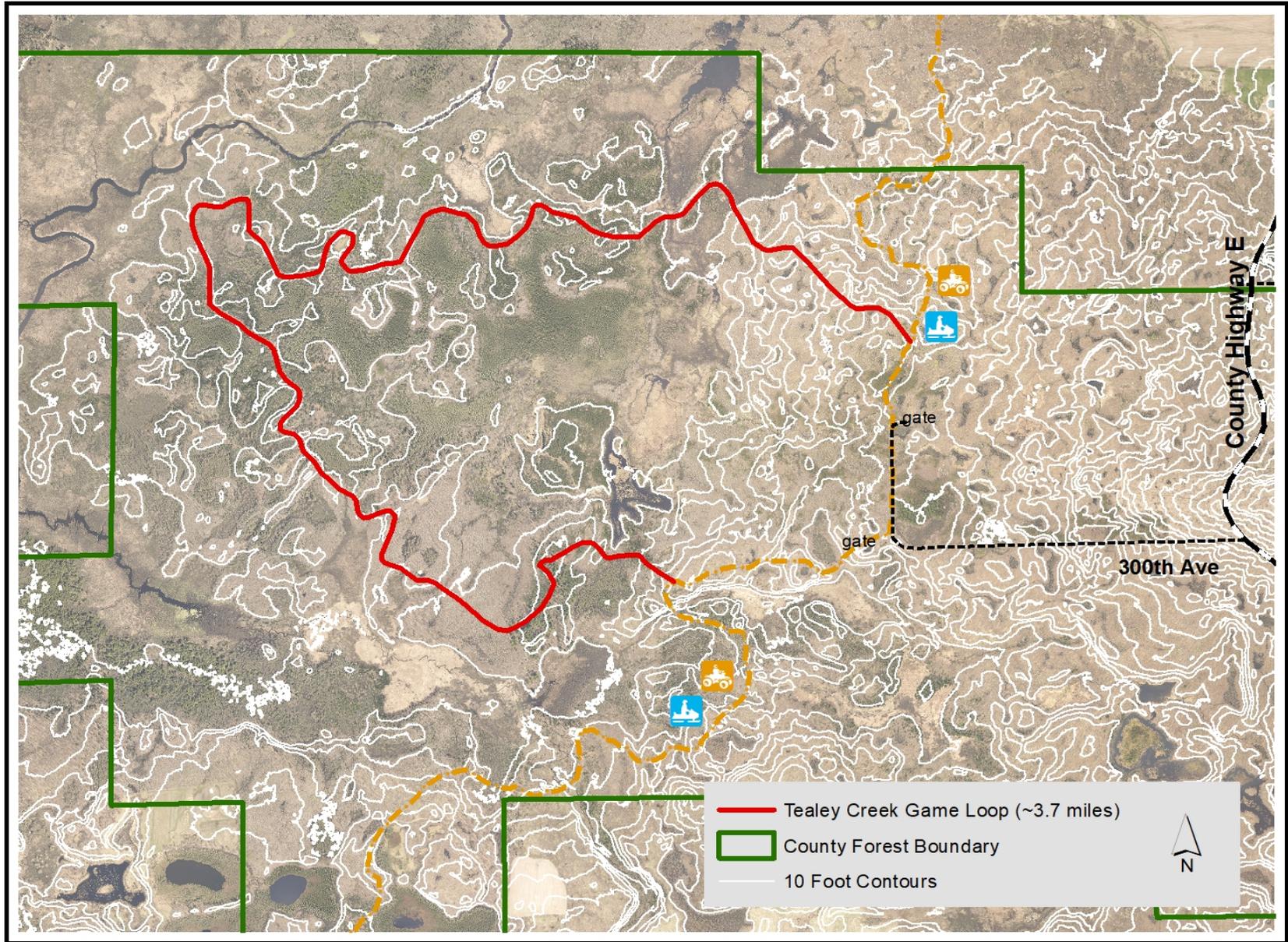
- Require snowmobiles to obey a speed limit to reduce speed differential and reduce the risk of collisions between snowmobiles and motor vehicles.
- Install signage at numerous locations to alert snowmobiles to potential motor vehicles and vice versa.
- Install signage to protect the groomed snowmobile trail from motor vehicles near points where the TCGL and snowmobile trail meet.

Law Enforcement

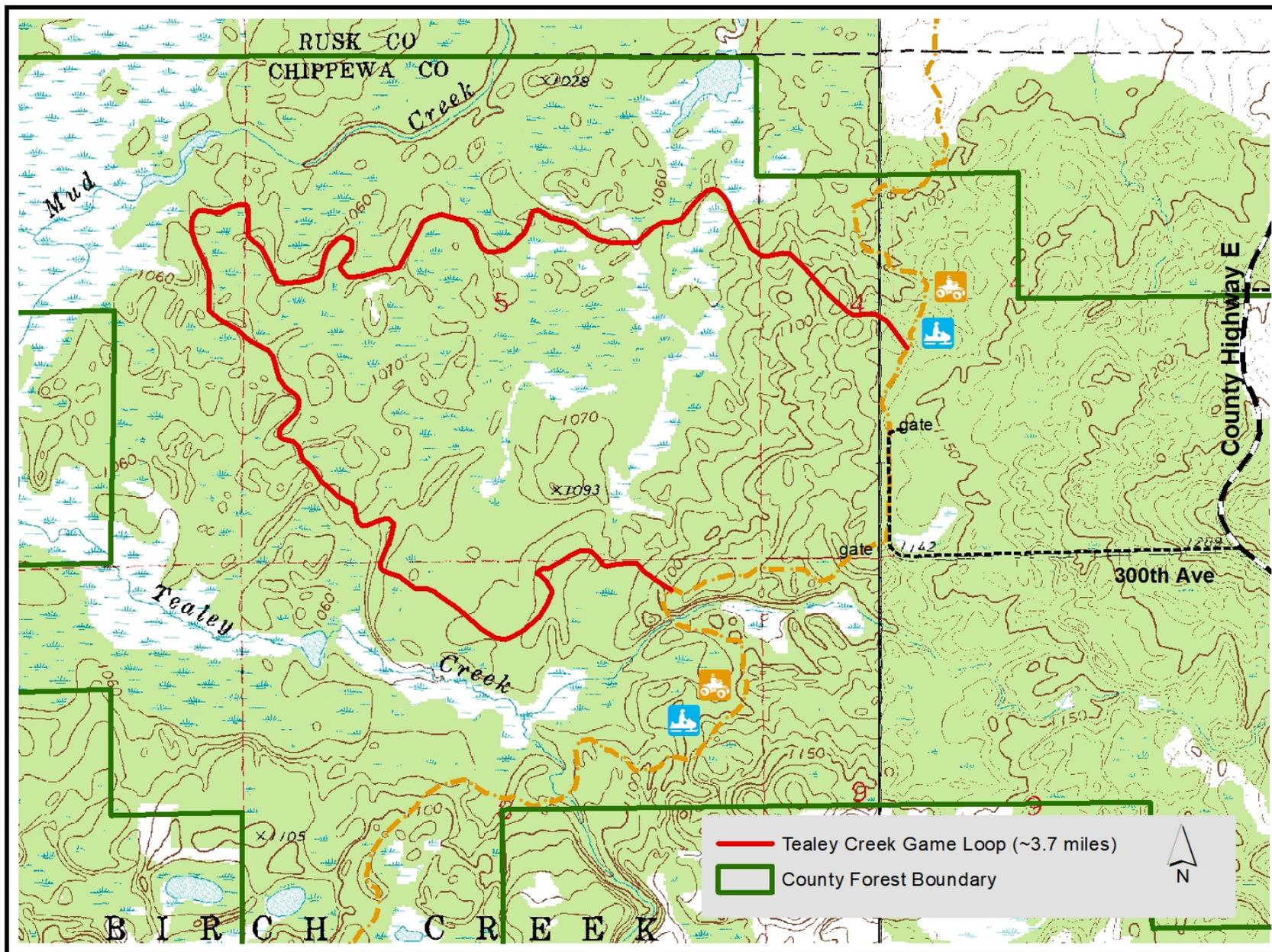
- Provide emergency service agencies with maps and electronic location data for the TCGL to decrease response times.
- Increase patrol by law enforcement and encourage citizen monitoring/reporting to minimize illegal activities.
- Install surveillance cameras to record and identify vehicles operating on the TCGL to assist law enforcement efforts.
- Prosecute unlawful activities to the greatest extent possible.

MAPS ARE ATTACHED ON THE FOLLOWING PAGES

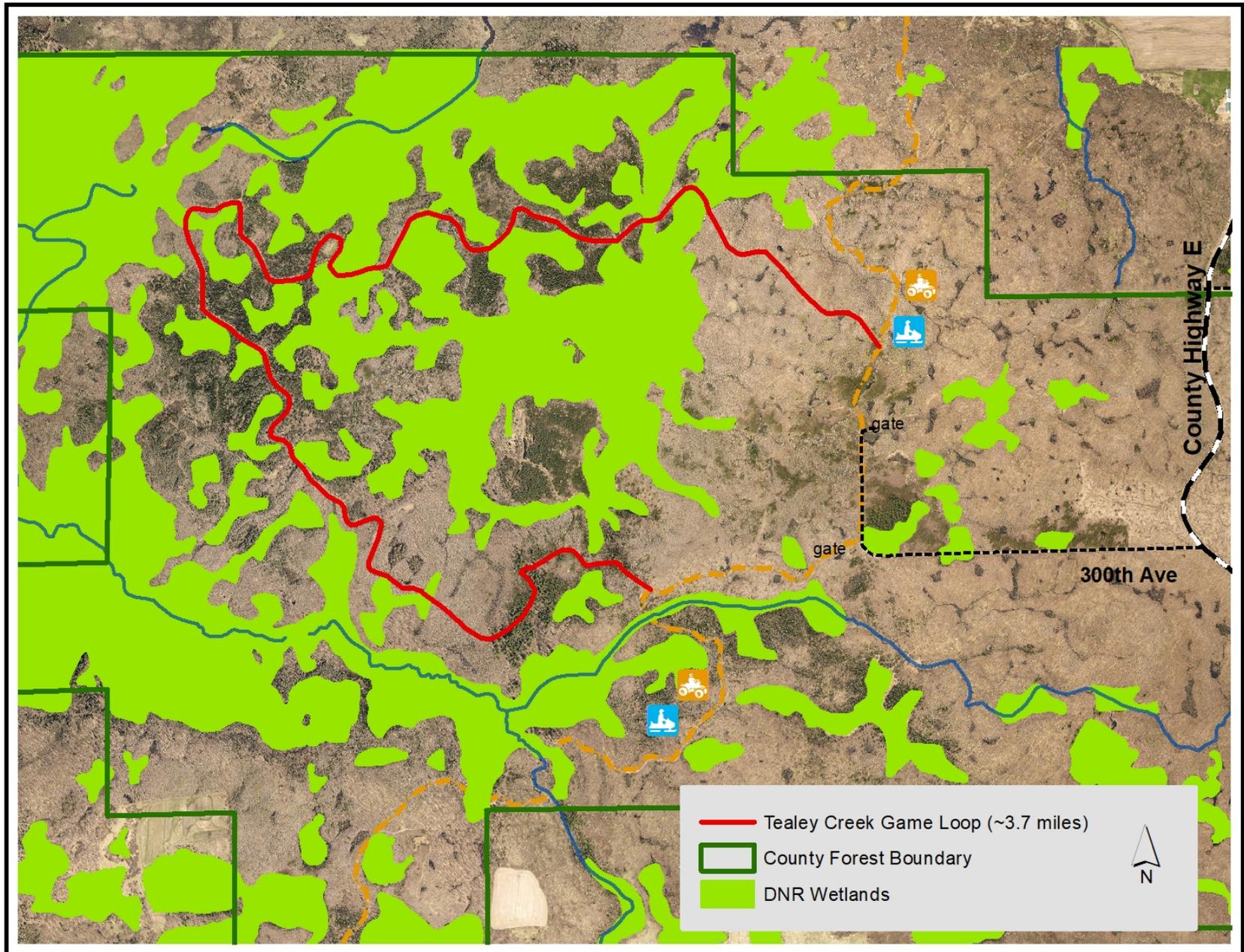
Map A. Tealey Creek Game Loop Topography - 10' Contour Interval



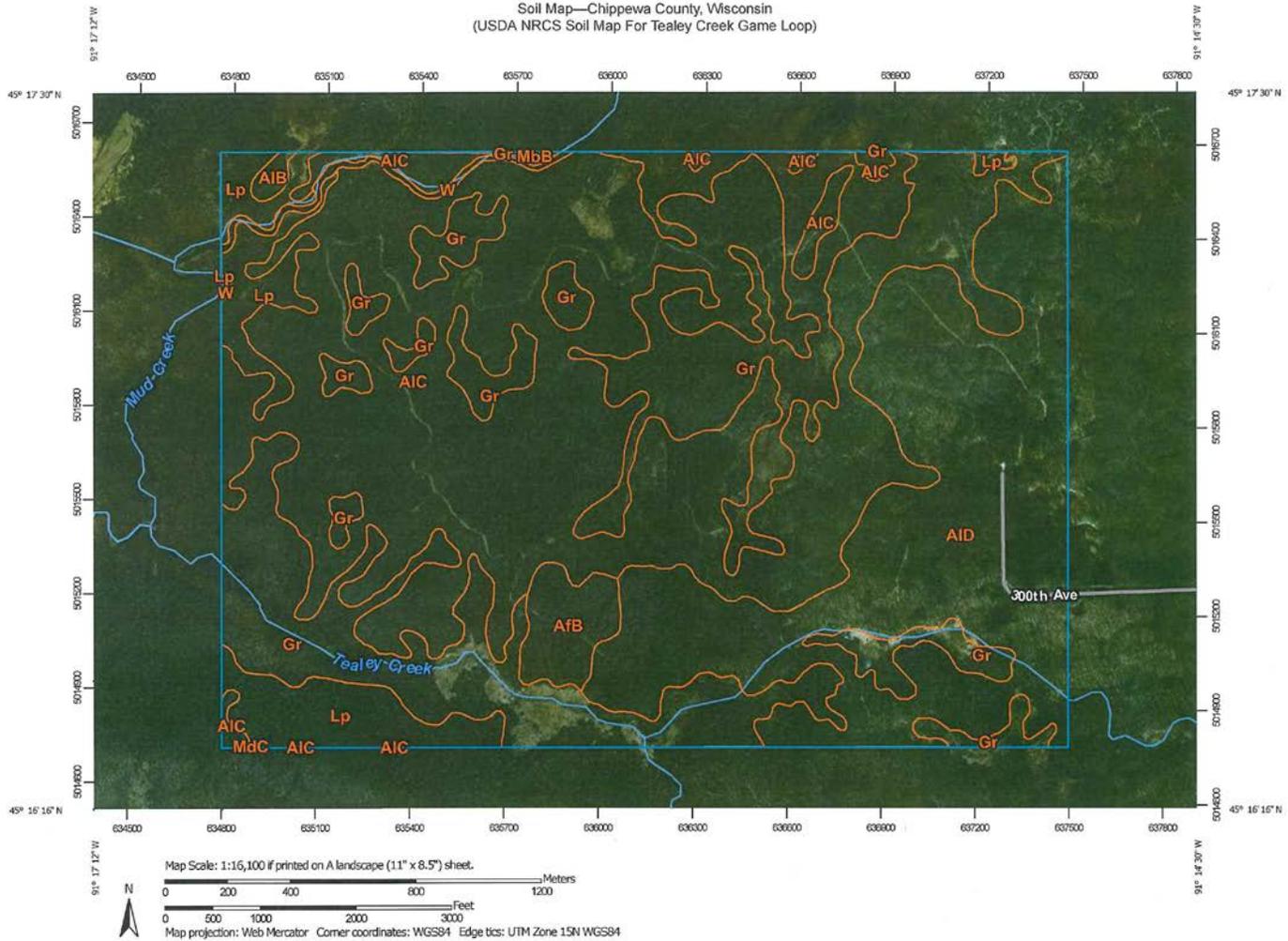
Map B. Tealey Creek Game Loop on 7.5' USGS Quadrangles



Map C. DNR Mapped Wetlands Adjacent The Tealey Creek Game Loop



Map D
 Soil Map—Chippewa County, Wisconsin
 (USDA NRCS Soil Map For Tealey Creek Game Loop)



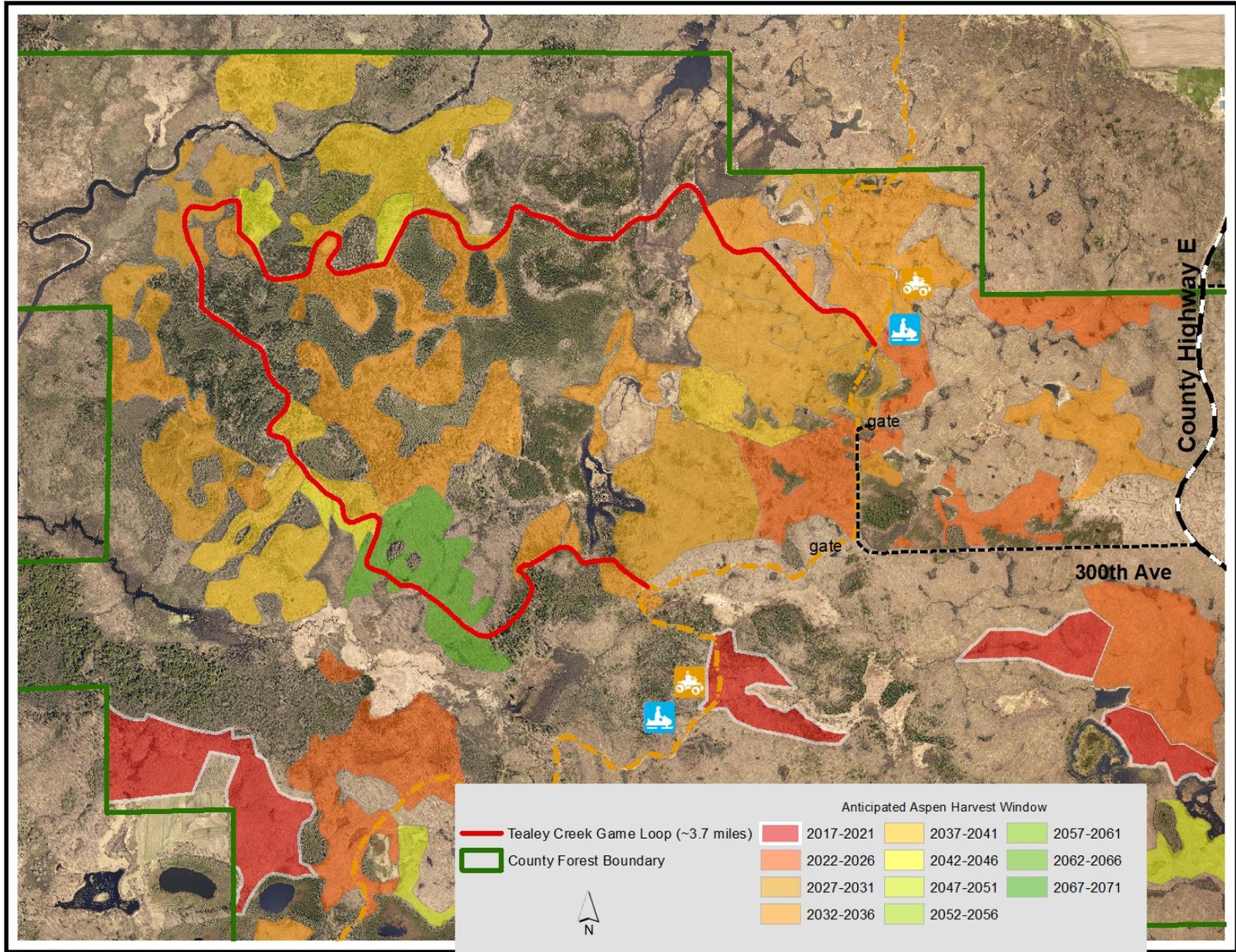
Map D
Soil Map—Chippewa County, Wisconsin
(USDA NRCS Soil Map For Tealey Creek Game Loop)

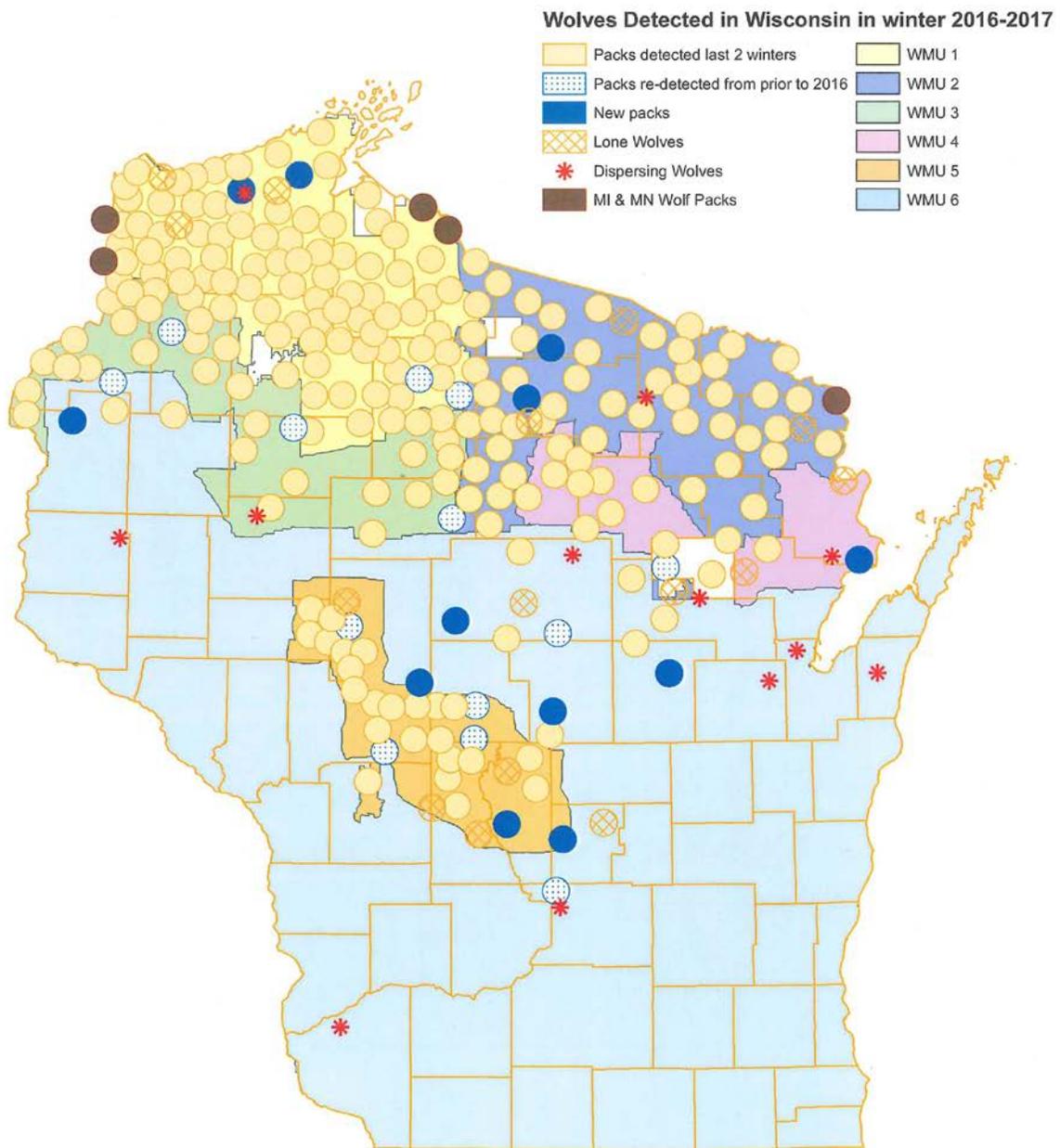
MAP LEGEND		MAP INFORMATION
<p>Area of Interest (AOI)</p> <p> Area of Interest (AOI)</p> <p>Soils</p> <p> Soil Map Unit Polygons</p> <p> Soil Map Unit Lines</p> <p> Soil Map Unit Points</p> <p>Special Point Features</p> <p> Blowout</p> <p> Borrow Pit</p> <p> Clay Spot</p> <p> Closed Depression</p> <p> Gravel Pit</p> <p> Gravelly Spot</p> <p> Landfill</p> <p> Lava Flow</p> <p> Marsh or swamp</p> <p> Mine or Quarry</p> <p> Miscellaneous Water</p> <p> Perennial Water</p> <p> Rock Outcrop</p> <p> Saline Spot</p> <p> Sandy Spot</p> <p> Severely Eroded Spot</p> <p> Sinkhole</p> <p> Slide or Slip</p> <p> Sodic Spot</p>	<p> Spoil Area</p> <p> Stony Spot</p> <p> Very Stony Spot</p> <p> Wet Spot</p> <p> Other</p> <p> Special Line Features</p> <p>Water Features</p> <p> Streams and Canals</p> <p>Transportation</p> <p> Rails</p> <p> Interstate Highways</p> <p> US Routes</p> <p> Major Roads</p> <p> Local Roads</p> <p>Background</p> <p> Aerial Photography</p>	<p>The soil surveys that comprise your AOI were mapped at 1:15,800.</p> <p>Please rely on the bar scale on each map sheet for map measurements.</p> <p>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</p> <p>Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.</p> <p>This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.</p> <p>Soil Survey Area: Chippewa County, Wisconsin Survey Area Data: Version 13, Oct 5, 2017</p> <p>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</p> <p>Date(s) aerial images were photographed: Sep 12, 2010—Nov 7, 2016</p> <p>The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.</p>

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AfB	Alban fine sandy loam, 2 to 6 percent slopes	23.2	1.8%
AIB	Amery sandy loam, 2 to 6 percent slopes	3.1	0.2%
AIC	Amery sandy loam, 6 to 12 percent slopes	549.1	43.3%
AID	Amery sandy loam, 12 to 25 percent slopes	308.3	24.3%
Gr	Greenwood peat, 0 to 1 percent slopes	305.7	24.1%
Lp	Lupton muck, 0 to 1 percent slopes	71.4	5.6%
MbB	Magnor silt loam, 0 to 4 percent slopes	1.1	0.1%
MdC	Mahtomedi loamy sand, 6 to 12 percent slopes	0.0	0.0%
W	Water	6.8	0.5%
Totals for Area of Interest		1,268.8	100.0%

Map E. Tealey Creek Game Loop Aspen Management Schedule





US Department of Agriculture, Farm Services Agency, 2008 NAIP Aerial Photography