Forest Preserve District
OF WILL COUNTY

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MEMORANDUM

TO: BOARD OF COMMISSIONERS OF THE FOREST PRESERVE DISTRICT OF WILL COUNTY

FROM: Ralph Schultz, Chief Operating Officer

DATE: August 15, 2016

SUBJECT: Approval of Continued Deer Management at Nine (9) Forest Preserves or Preserve Complexes for 2016-17

Background

In September 2010, the Board approved the 2010-11 Operational Plan for the Forest Preserve's Deer Management Program. This plan established that sharpshooting was to be used to manage the deer population to achieve an initial target density of between 20 to 30 deer per square mile. Although the overall deer management program was approved, each year staff provides specific recommendations on the number of deer to be removed from select forest preserves.

Adoption of the Operational Plan (Plan) for Deer Management

The Forest Preserve's Plan states that the deer management program goal is to allow for a sustainable relationship between the deer population, biological diversity and habitat structure, with an initial target deer density of 20 deer per square mile. The Plan also states that the program will be ongoing and that the target deer density per square mile is expected to change as a result of the Forest Preserve's monitoring which is designed to collect and assess data on deer population levels, habitat recovery, and deer management program effectiveness. The results of the monitoring program will be used to modify and adapt management strategies and targets to existing conditions and insure the ongoing effectiveness of the deer management program. The Plan also states that staff will consider program effectiveness measured against operational expense and make the necessary programmatic changes to the deer management program to maintain cost effectiveness and ensure long-term sustainability.

2016 - 2017 Fall-Winter Deer Management Recommendations

Preserve Locations and Deer Removal Number

Aerial deer population surveys were completed in winter of 2015-16. Table 1 (see Attachment 2) lists the properties that are proposed for deer management based on that survey data as well as the estimated deer density and area counted as part of each property. Deer removal is recommended in the following nine preserves or complexes (complexes may contain more than one preserve, but the IDNR considers them a single management unit) for the 2016-17 program: Romeoville Prairie Nature Preserve Area, including the Isle a la Cache Museum; Lockport Prairie Nature Preserve; McKinley Woods Preserve, including Four Rivers Education Center; Lockport Prairie East Preserve; Goodenow Grove Nature Preserve; Hickory Creek Preserve; Raccoon Grove Nature Preserve; Thorn Creek Woods Nature Preserve; and Prairie Bluff Preserve. The total number of deer proposed for removal during the 2016-17 management season is 200 (see Table 2, Attachment 2).

The deer removal goals at some preserves are not intended to accomplish the desired population density by the end of this season. In these preserves the deer population size and current density is such that establishing the desired population size within the time constraints of single season and Deer Population Control Permit (DPCP) is not feasible. Additional deer removal in subsequent years will be necessary to achieve site goals.

It is important to note that the population sizes reported in Table 1 do not reflect any immigration, emigration, mortality or births which may have occurred since the time of the aerial survey, and that the aerial deer counts represent a conservative population estimate based on the presence of deer within the preserve or survey area at the specific time of the flyover. Aerial surveys are generally considered to underestimate the actual population size by 25%. Also, it is very common for deer to exhibit daily movements between Forest Preserve properties and adjacent properties depending on various conditions.

Required Documentation for the Deer Population Control Permit Application

IDNR requires deer browse monitoring during the growing season preceding any proposed culling activities when reviewing permit applications. In July, Forest Preserve staff completed vegetation sampling at each of the areas recommended for culling during the 2016-17 season. This sampling documented ongoing deer browse pressure in support of the permit application to initiate or continue population reduction. The complete browse results will be included in the IDNR DPCP application and are summarized in Table 3 (see Attachment 2).

Vegetation sampling demonstrates the impact of deer browse on native plants by use of the coefficient of conservatism value (C-Value). The C-Value is a measure developed by staff at the Morton Arboretum to describe the authenticity of the affiliation of plant species to their respective habitats. The higher the C-Value, the distribution of a plant species becomes increasingly narrow and restrictive to unique and specific habitats, and becomes increasingly intolerant of any disturbances or degradations to the habitat. The lower the C-Value, the distribution of a plant species is broader and can be found in a variety of habitats. Plants species with higher C-Values are native species, are generally rare in their associated habitats, and not likely to be found outside of those habitats; while species with lower C-Values are generalists, include both native and exotic species, and are typically very tolerant of habitats that are disturbed or degraded.

Site Details

Pending issuance of the required population control permits from the IDNR, the District's Police Department will engage in sharpshooting to achieve the initial target deer density of between 20 and 30 deer per square mile at the nine identified areas.

The attached maps show the proposed positions of bait/shooting stations within each preserve (Attachment 1). The Bait station/shooting locations are based upon conversations with the sharpshooting personnel and are equivalent to the official bait station locations from the 2015/2016 season at Romeoville Prairie Nature Preserve, Lockport Prairie Nature Preserve, McKinley Woods Preserve, Goodenow Grove Nature Preserve, Hickory Creek Preserve, and Raccoon Grove Nature Preserve. The shooting locations at Lockport Prairie East Preserve, Thorn Creek Woods Nature Preserve, and Prairie Bluff Preserve will need to be approved of by the Illinois Department of Natural Resources. The bait stations have to be approved by the IDNR as part of the permitting process. Safety, specifically the location and terrain of the stations is the basis of the IDNR approval of a station. Habitat conditions, site access, deer availability, and safety considerations were primary factors affecting the selection of station locations. Firing stations will be in both elevated stands and at ground level. The main determinant in the firing station elevation is natural terrain. Natural terrain was considered at all stations in all preserves to ensure an acceptable backdrop for shooting in a downward trajectory at all times over a distance of 50 yards or less (the same distance required for IDNR sharpshooter certification); and shooting into the preserve, not toward or beyond the preserve's boundary. The following is a brief description of bait/firing stations and existing deer browse pressure at each of the nine areas:

Romeoville Prairie Nature Preserve and Isle a la Cache Area **(RPN)**
Romeoville Prairie Nature Preserve occupies over 590 acres of the DesPlaines River Valley north of 135th Street on the west side of the river. It is dominated by prairie, sedge meadow, and marsh communities. The preserve has no public access areas and is well buffered from residential and other public spaces. The terrain is very level and the landscape very open.

The Isle a la Cache occupies 96 acres on an island in the DesPlaines River south of 135th Street. While the Isle a la Cache museum and associated amenities occur in the northern half of this area, the southern half of the preserve is flat and largely wooded with a few isolated open areas well suited for sharpshooting.

Vegetation sampling from these two preserves documented that 57% of all native plants sampled exhibited some degree of deer browse and 72% of highly conservative plants, those with a coefficient of conservatism value (C-Value) of 7 or higher were browsed. Up to three bait station/shooting locations are proposed and staff intends to use elevated stands. The recommended 2016-17 removal target for the Romeoville Nature Preserve Area is 14 deer. Staff may also recommend lowering the target density for this site in future seasons if heavy browse of highly conservative plant species continues to be a problem.

Lockport Prairie Nature Preserve **(LPN)**

Lockport Prairie Nature Preserve is a 254-acre site located along the west bank of the DesPlaines River east of Route 53 and south of Route 7. The preserve has a relatively flat terrain; it occupies the floor of the river valley which is approximately 40 feet below the west bluff of the DesPlaines River valley along Route 53. Up to two bait stations/shooting stations are proposed and staff intends to use elevated stands.

Vegetation sampling from these areas documented that 79% of all native plants and 67% of highly conservative plant species with a C-Value of seven or higher exhibited deer browse within the plots evaluated. Woody vegetation throughout this preserve is continuing to experience excessive browse pressure. The recommended 2016-17 removal target for Lockport Prairie Nature Preserve is 10 deer. Staff may also recommend lowering the target density in future seasons for this site if heavy browse of highly conservative plant species continues to be a problem.

McKinley Woods Preserve and Four Rivers Environmental Education Center Area **(MWP)**
McKinley Woods is a 447-acre site situated on bluffs above the Illinois and Michigan (I&M) Canal and the Des Plaines River. The I&M Canal State Trail is between the river and the canal. The preserve is characterized by steep wooded bluffs and ravines that provide a very safe backdrop for firing stations. Up to four bait stations/shooting stations are proposed in this preserve.

The Four Rivers Environmental Education Center is a 78-acre area located essentially on an island in the DesPlaines River. Except for the narrow strip of land connecting it to the mainland, this area is surrounded on all sides by water providing good isolation for sharpshooting activities. While the northern half of this site is largely open, the southern half is predominately wooded. One bait station/shooting station may be located in this area; if so, District Police will coordinate with facility staff to avoid any scheduled public programs.

Vegetation sampling from these areas documented that 61% of all native plants and 67% of highly conservative plant species with a C-Value of seven or higher exhibited deer browse. Woody vegetation throughout this complex of preserves is continuing to experience excessive browse pressure. Data shows that native shrubs and trees within the plots are being browsed at a rate of 64% and 67% respectively. The recommended 2016-17 removal target for the McKinley Woods and Four Rivers Environmental Education Center area is 25 deer.

Lockport Prairie East Preserve **(LPE)**
Lockport Prairie East Preserve is located on the east side of the Des Plaines River adjacent to the I&M Canal and Dellwood Park West. It is a 30 acre preserve that contains a Natural Areas Inventory Site, harboring wet mesic to mesic dolomite prairie with exposed bedrock, leafy prairie clover, and a sedge meadow. One bait stations/shooting station is proposed.

Vegetation sampling documented that 72% of all native plants within the browse plots exhibited some degree of deer browse damage. All types of plants are experiencing significant levels of deer browse, particularly native shrubs which exhibited a browse rate of 90%. Additionally, the Leafy prairie clover (*Petalostemum foliosum*) is browsed at 78%. Leafy prairie clover is a federally listed plant and is presently listed as Endangered. The recommended removal target for

this preserve during the winter of 2016-17 is 6 deer.

Goodenow Grove Nature Preserve **(GGN)**
The Goodenow Grove Nature Preserve is an 891-acre complex located east of I-394 and north of Goodenow Road. The site is characterized by heavily wooded areas along Plum Creek and its tributaries, as well as barrens (shrubby prairies), savannas and grasslands associated with level areas. Staff intends to take advantage of natural elevated positions for clear shots and backdrops to minimize the potential flight of the projectiles. Up to four bait stations/shooting stations are proposed in this area.

Vegetation sampling documented that 67% of all native plants in the plots exhibited some degree of deer browse damage. All types of plants within the plots are experiencing significant levels of deer browse, particularly native shrubs which exhibited a browse rate of 87%. The recommended removal target for this preserve during the winter of 2016-17 is 20 deer.

Hickory Creek Preserve **(HCP)**
Hickory Creek Preserve is a 1,541-acre mosaic of natural communities including woodland, wetland, barrens and prairie around numerous public use amenities, all of which is surrounded by private residential and commercial properties. The preserve has terrain ranging from flat, to rolling, to steeply sloped areas. Using the large amount of interior space and varying terrain, sharpshooters will take advantage of the natural topography and elevated shooting positions from well buffered locations. Up to five bait stations/shooting stations are proposed in this preserve.

Vegetation sampling at HCP documented that within the browse plots, 69% of native plants and 42% of highly conservative plants with a C-Value of 7 or more currently exhibit some degree of deer browse damage. Seventy-six percent of moderately conservative plants had deer browse damage. The recommended removal target for this preserve during the 2016-17 management season is 60.

Raccoon Grove Nature Preserve **(RGN)**
Raccoon Grove Nature Preserve is a 213-acre, heavily wooded preserve south of Goodenow Road and east of Route 50, with a restored prairie on the south end and a former residential area on the west side that provides more of an open savanna structure. The preserve is characterized by rolling terrain, but often features steep slopes where Rock Creek has down-cut through the morainal deposits. The wooded, rolling terrain and steep slopes associated with the creek provide excellent backdrops for safely conducting sharpshooting activities. Up to three bait stations/shooting stations are proposed in this preserve.

Recent vegetation sampling confirms the existing deer population is causing excessive damage to the native vegetation. Overall, 71% of all native plants sampled were browsed. Additionally, very high levels of browse were evident in native shrubs and trees (85% and 86% respectively) and highly conservative species with a C-Value of 7 or more are being preferentially selected (76%). The recommended removal target for this preserve is 12 deer.

Thorn Creek Woods Nature Preserve **(TCN)**
Thorn Creek Woods Nature Preserve is a 996 acre preserve in Park Forest and University Park

that is managed by the Forest Preserve District of Will County. It contains upland, bottomland, ravine forested land, glacial potholes, prairie and wetlands. This site is topographically suited to deer management activities and may contain up to three bait stations.

Vegetation sampling documented that 96% of all native plants within the browse plots exhibited some degree of deer browse damage. All types of plants within the plots are experiencing significant levels of deer browse, particularly native trees which exhibited a browse rate of 80%. The recommended removal target for this preserve during the winter of 2016-17 is 33 deer.

Prairie Bluff Preserve **(PBP)**

Prairie Bluff Preserve was created in 2006 to allow restoration and hydrological management activities to promote groundwater recharge to support the ecosystems at Lockport Prairie Nature Preserve, including the seeps that are home to the Hine's Emerald Dragonfly. The preserve is comprised of 680 acres of property that is being restored or will be restored to native dominant species, and is targeted for major restoration activities over the next few years. Additionally, the site is likely supporting animals that are immigrating into the adjacent Lockport Prairie Nature Preserve, offsetting deer management efforts at that site. Up to two bait stations/shooting stations are proposed in this preserve.

Vegetation sampling documented that 81% of all native plants included in the browse plots exhibited some degree of deer browse damage. All types of plants are experiencing significant levels of deer browse, particularly native shrubs and forbs which exhibited a browse rate of 85% and 77% respectively, detracting from restoration efforts. The recommended removal target for this preserve during the winter of 2016-17 is 20 deer.

2016 - 2017 Schedule of Tasks

The attached schedule of tasks (Table 4) assumes a 60-day IDNR application review period. Ideally, desired winter conditions would allow sharpshooting activities to begin in early to mid-December, allowing the removal targets to be accomplished in time for aerial population counts to be conducted immediately afterwards. This is the ideal situation for assessing the resulting deer population density and determining the need for additional population management the following winter.

Table 5 (in Attachment 2) contains a list of sites which consistently have a white-tailed deer density above the target range over the past few years and which are in need of deer population reduction once the current deer management sites transition into a population maintenance phase. While the winter of 2015-2016 was a poor year for counting due to conditions, the last five years are included in Table 5 and demonstrate these high deer densities. Additionally, the Kankakee Geologic Area is included in the table as it has reached a maintenance phase in management. These sites may be included in future deer management recommendations as program resources allow.

Deer management activities will likely be completed by the end of February 2017, but could extend into early March depending on when the 90-day population control permit expires, if an extension is requested and granted, and the actual winter weather conditions persist.

Recommendation

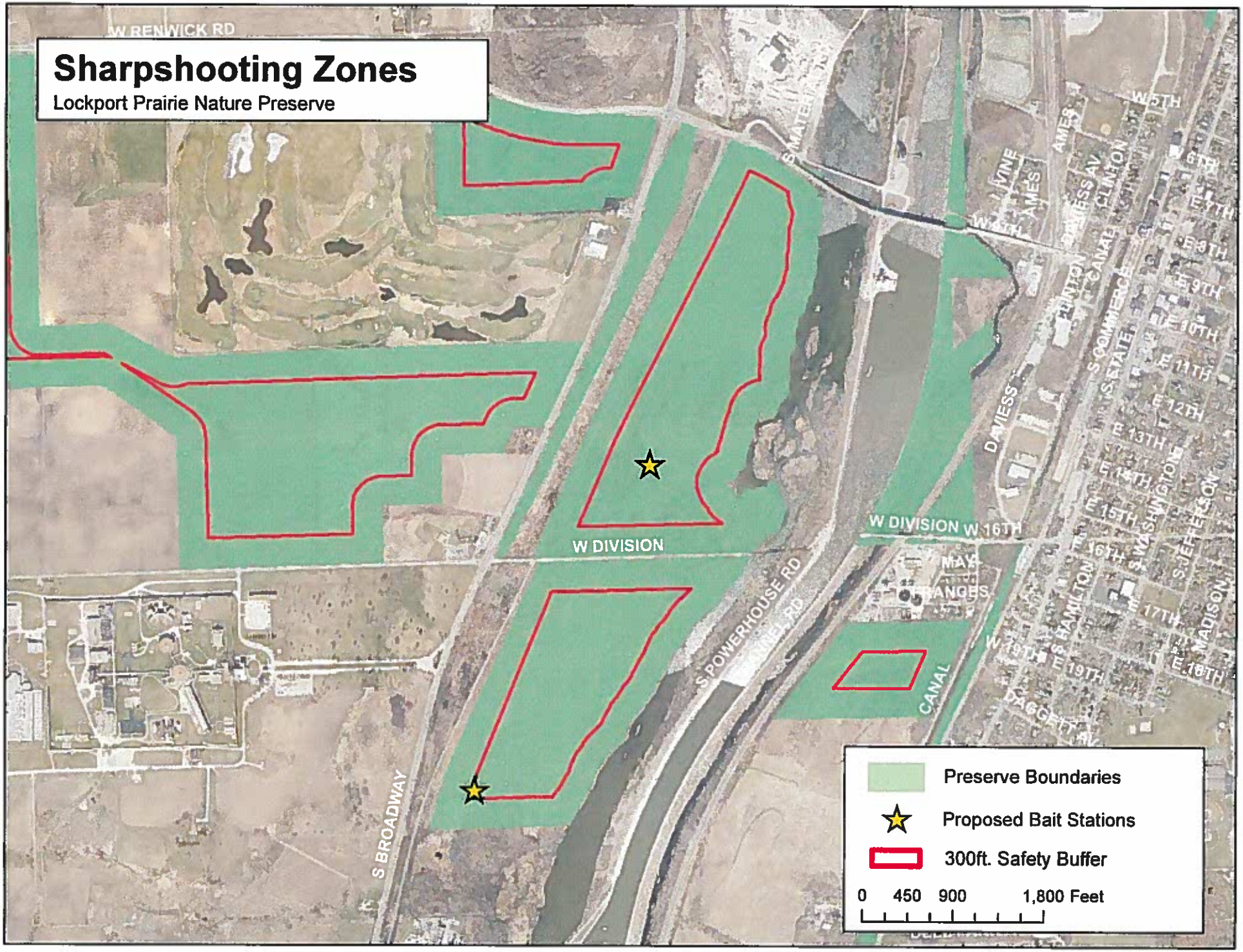
Staff recommends approval to remove 200 deer from 9 forest preserve areas during the 2016-2017 fall-winter season. Removal will be conducted by certified sharpshooters including both Forest Preserve Police Officers and volunteers under the direction of the Police Department in accordance with approved program guidelines and as authorized by the Illinois Department of Natural Resources.

If you have any questions regarding this program, please feel free to contact me.

Attachment 1

Sharpshooting Zones

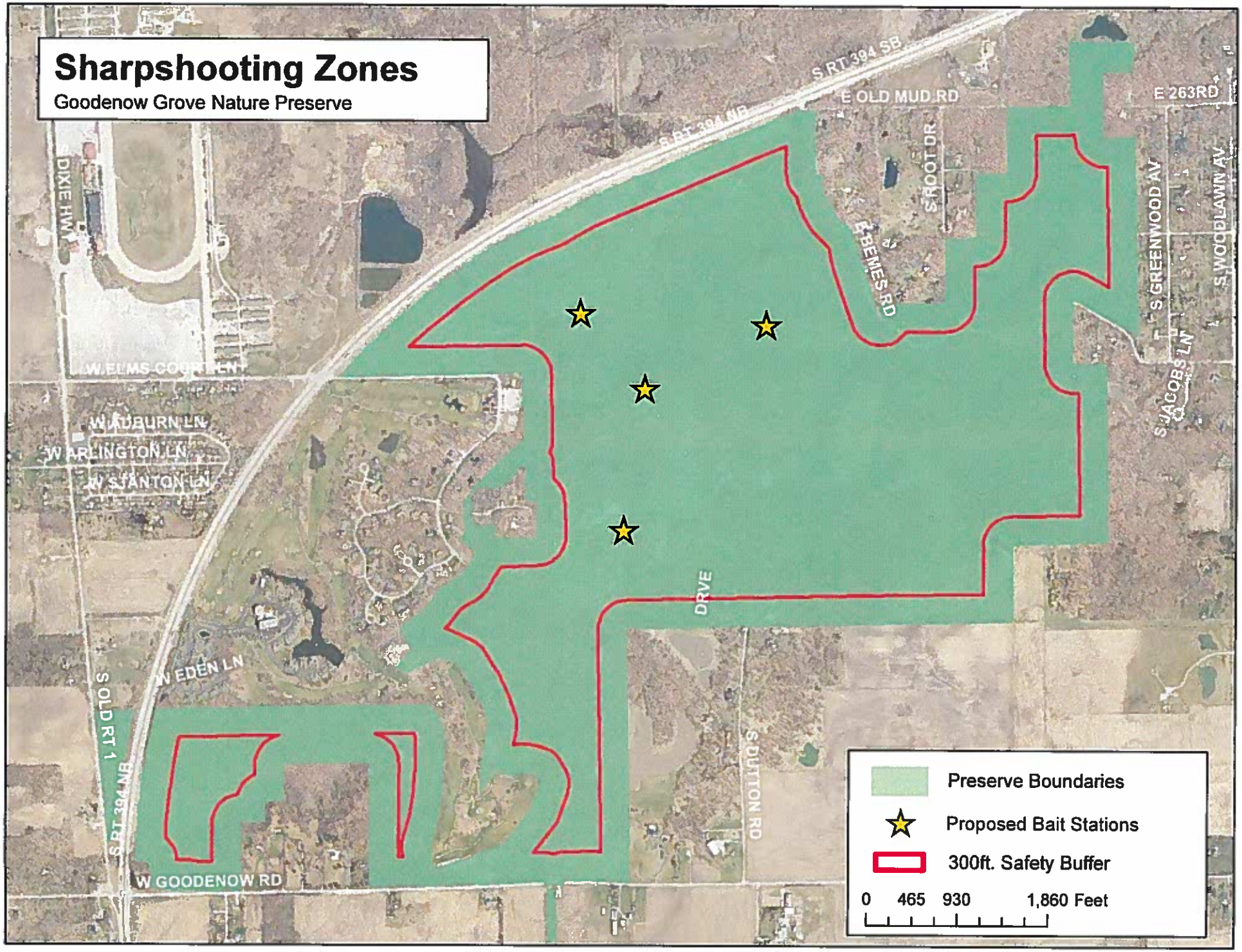

Sharpshooting Zones
Romeoville Prairie Nature Preserve Area
BEACON AV
RIDGEWOOD AV
ROCBAAR DR
PHELPS AV
TERRACE LN
FORESTWOOD DR
ARLINGTON DR
BELMONT DR
MONTROSE DR
JULIET AV
MIKAN LN
W ROMEO RD
GORDON AV
MCKOOL AV
KAREN AV
E ROCH RD
CENTENNIAL TR
E OLD ROMEO RD
S NEW AV
S HIGH RD
W 12TH
Preserve Boundaries
Proposed Bait Stations
300ft. Safety Buffer
0 475 950 1,900 Feet

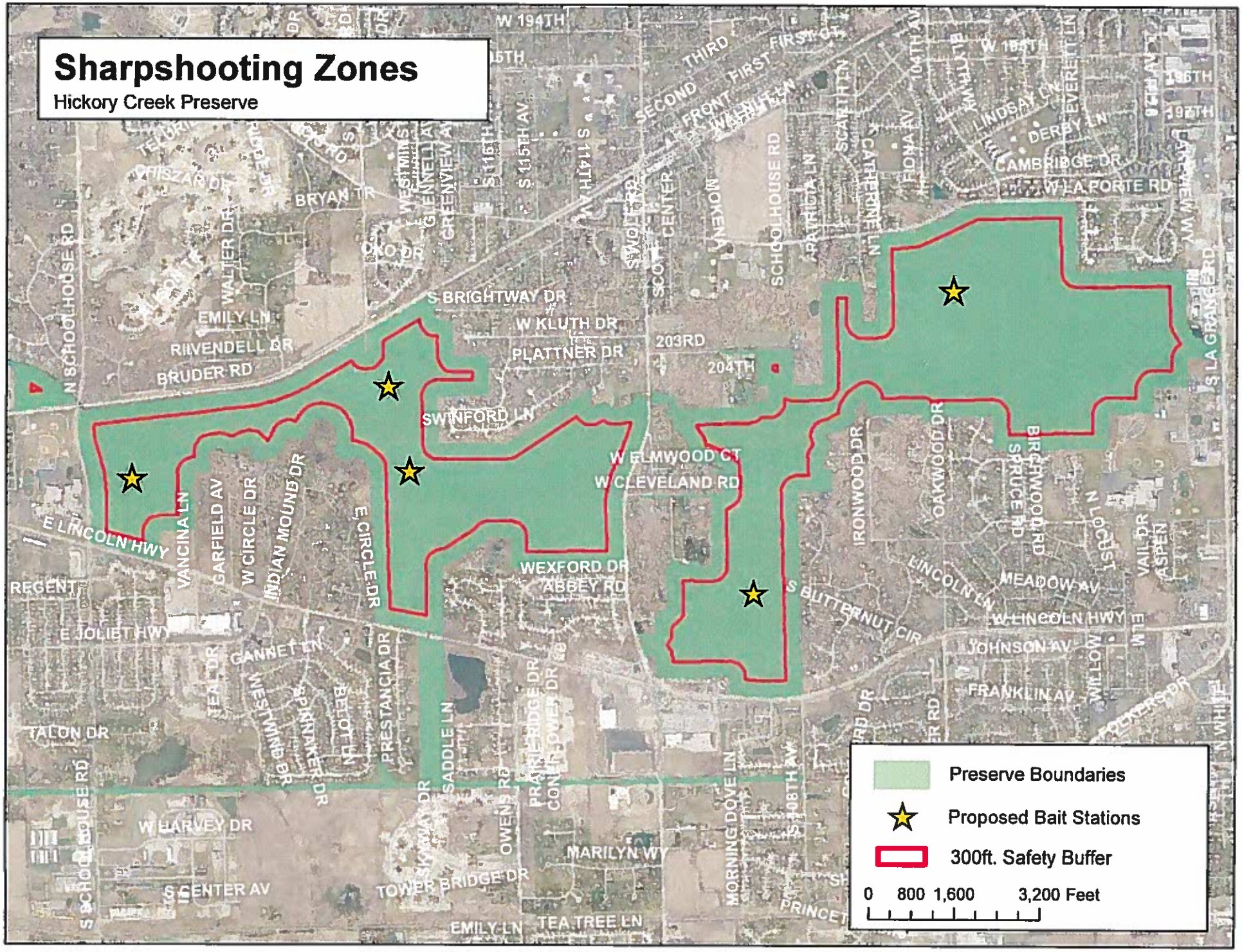

Sharpshooting Zones
Lockport Prairie Nature Preserve
W RENWICK RD
W DIVISION
W DIVISION W 16TH
S POWERHOUSE RD
S BROADWAY
CANAL
DAGGETT AV
DAVIESS
MAY RANGES
Preserve Boundaries
Proposed Bait Stations
300ft. Safety Buffer
0 450 900 1,800 Feet

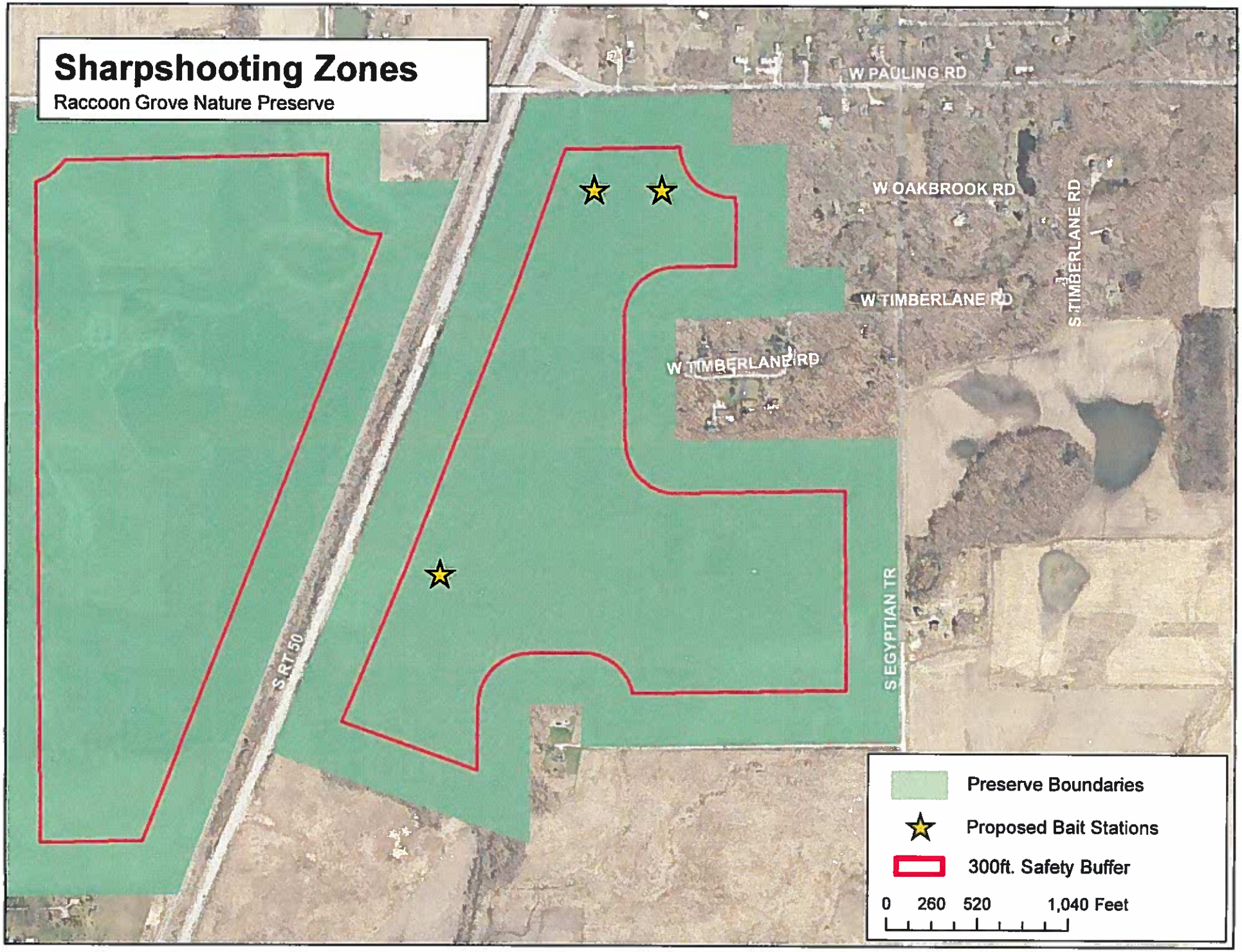
Sharpshooting Zones

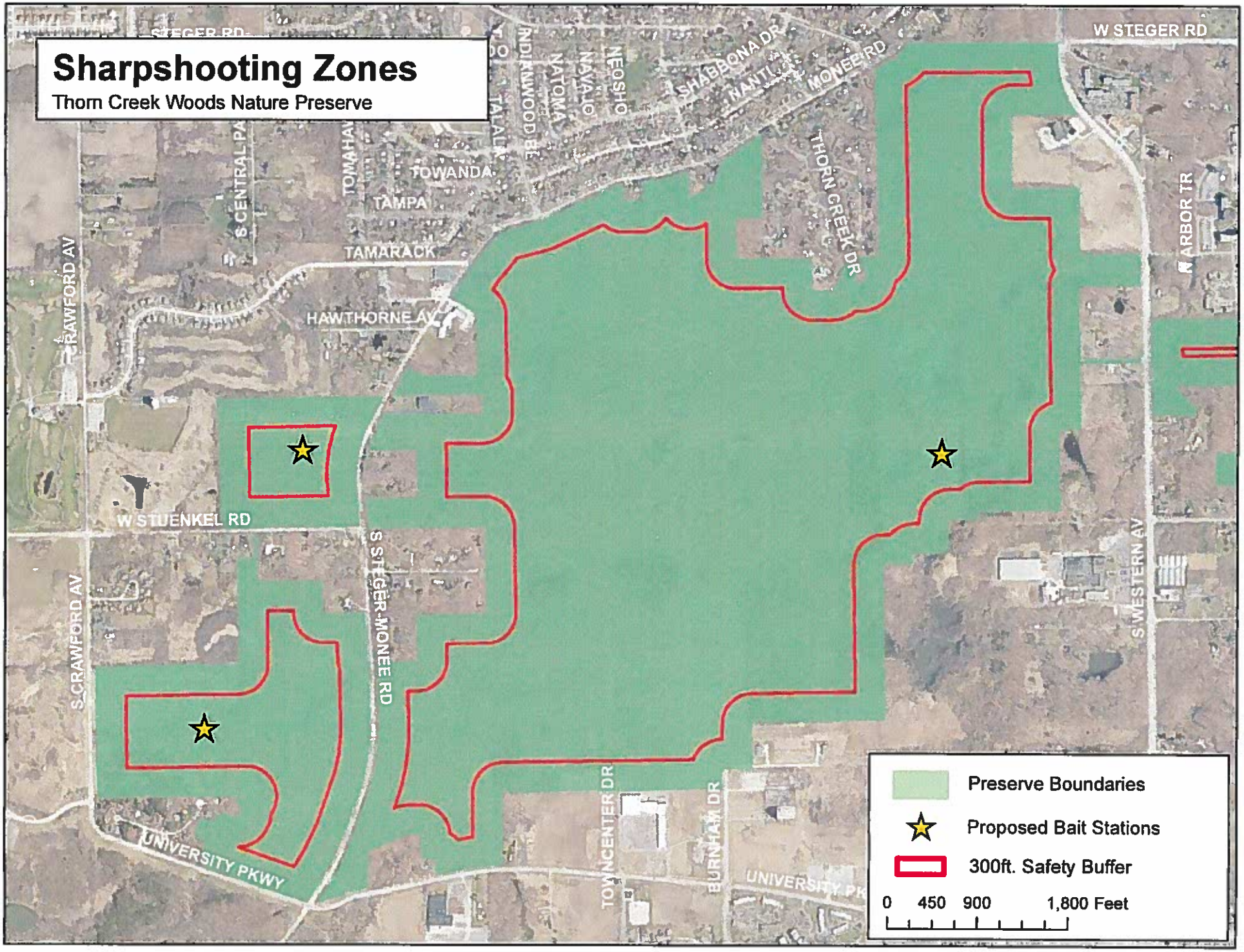
McKinley Woods Preserve

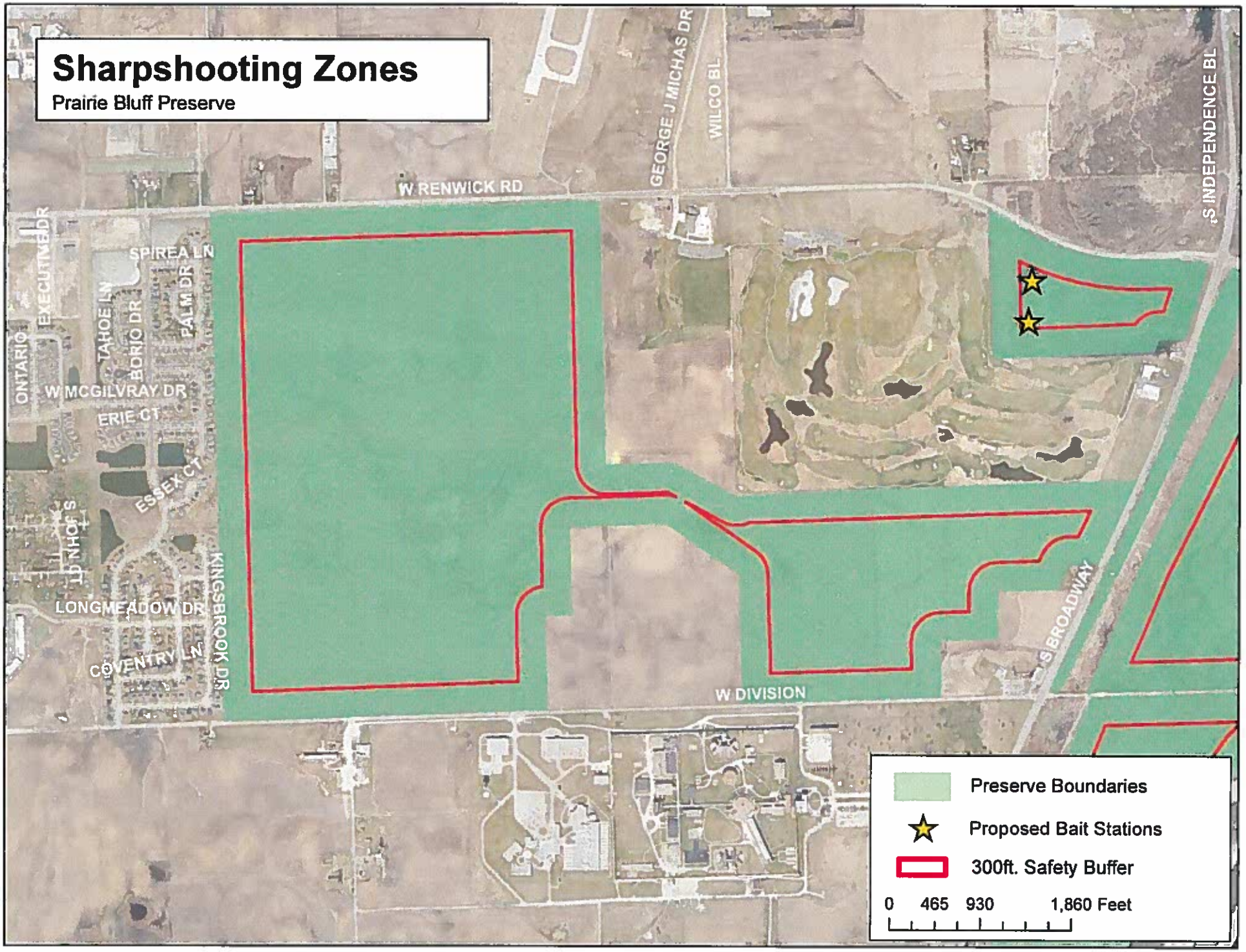

Sharpshooting Zones
Lockport Prairie East Preserve
CHANNEL RD
FRANCES
CANAL
Preserve Boundaries
Proposed Bait Stations
300ft. Safety Buffer
0 80 160 320 Feet


Sharpshooting Zones
Goodenow Grove Nature Preserve
S RT 394 SB
S RT 394 NB
E OLD MUD RD
E 263RD
DIXIE HWY
S ROOT DR
S BEMES RD
S GREENWOOD AV
S WOODLAWN AV
S JACOBS LN
W ELMS COURT LN
W AUBURN LN
W ARLINGTON LN
W STANTON LN
W EDEN LN
S OLD RT 1
S RT 394 NB
W GOODENOW RD
S DUTTON RD
DRIVE
Preserve Boundaries
Proposed Bait Stations
300ft. Safety Buffer
0 465 930 1,860 Feet


Sharpshooting Zones
Hickory Creek Preserve
Preserve Boundaries
Proposed Bait Stations
300ft. Safety Buffer
0 800 1,600 3,200 Feet
W 194TH
THIRD
SECOND
FIRST
FRONT
WALNUT LN
LINDSAY LN
DERBY LN
CAMBRIDGE DR
W LA PORTE RD
BRYAN TR
WALTER DR
EMILY LN
RIVENDELL DR
BRUDER RD
N SCHOOLHOUSE RD
S BRIGHTWAY DR
W KLUTH DR
PLATTNER DR
203RD
204TH
SCOTT CENTER
MOKENA
SCHOOLHOUSE RD
PATRICIA LN
CATHERINE LN
S LA GRANGE RD
SWINFORD LN
W ELMWOOD CT
W CLEVELAND RD
IRONWOOD DR
OAKWOOD DR
BIRCHWOOD
SPRUCE DR
E LINCOLN HWY
VANCINA LN
GARFIELD AV
W CIRCLE DR
INDIAN MOUND DR
E CIRCLE DR
WEXFORD DR
ABBEY RD
S BUTTERNUT CIR
LINCOLN LN
MEADOW AV
W LINCOLN HWY
JOHNSON AV
FRANKLIN AV
VAIL DR
ASPEN
REGENT
E JOLIET HWY
GANNET LN
PRESTANCIA DR
SADDLE LN
PRAIRIE RIDGE DR
CONNEMARA DR
OWENS RD
TALON DR
W HARVEY DR
S CENTER AV
TOWER BRIDGE DR
MARILYN WY
MORNING DOVE LN
EMILY LN
TEA TREE LN
PRINCE


Sharpshooting Zones
Raccoon Grove Nature Preserve
W PAULING RD
W OAKBROOK RD
S TIMBERLANE RD
W TIMBERLANE RD
W TIMBERLANE RD
S RT 50
S EGYPTIAN TR
Preserve Boundaries
Proposed Bait Stations
300ft. Safety Buffer
0 260 520 1,040 Feet


Sharpshooting Zones
Thorn Creek Woods Nature Preserve
W STEGER RD
TOWANDA
TAMPA
TAMARACK
HAWTHORNE AV
W STUENKEL RD
S CRAWFORD AV
S STEGER-MONEE RD
UNIVERSITY PKWY
TOWNCENTER DR
BURNHAM DR
S WESTERN AV
THORN CREEK DR
ARBOR TR
Preserve Boundaries
Proposed Bait Stations
300ft. Safety Buffer
0 450 900 1,800 Feet


Sharpshooting Zones
Prairie Bluff Preserve
W RENWICK RD
GEORGE J MICHAS DR
WILCO BL
S INDEPENDENCE BL
EXECUTIVE DR
ONTARIO
SPIREA LN
TAHOE LN
BORIO DR
PALM DR
W MCGILVRAY DR
ERIE CT
ESSEX CT
ST JOHN CT
LONGMEADOW DR
COVENTRY LN
KINGSBROOK DR
W DIVISION
S BROADWAY
Preserve Boundaries
Proposed Bait Stations
300ft. Safety Buffer
0 465 930 1,860 Feet

Attachment 2

Tables 1 - 5

Table 1

Area Counted (square miles)					
Preserve & Unit	**2010/2011**	**2012/2013**	**2013/2014**	**2014/2015**	**2015/2016**
Romeoville Prairie Area	0.90	0.95	0.90	0.90	0.90
Lockport Prairie Nature Preserve	0.43	0.43	0.43	0.45	0.45
McKinley Woods Preserve	1.11	1.11	1.11	0.88	0.88
Lockport Prairie East Preserve			0.05	0.05	
Goodenow Grove Nature Preserve	1.50	1.50	1.50	1.39	1.39
Hickory Creek Preserve	3.25	3.25	3.25	2.41	2.41
Raccoon Grove Nature Preserve		0.50	0.50	0.50	0.50
Thorn Creek Nature Preserve		2.92	2.92	1.56	
Prairie Bluff Preserve	0.98		0.98	1.06	1.06
Aerial Count					
Preserve & Unit	**2010/2011**	**2012/2013**	**2013/2014**	**2014/2015**	**2015/2016**
Romeoville Prairie Area	27	33	8	47	37
Lockport Prairie Nature Preserve	27	14	21	25	21
McKinley Woods Preserve	137	123	93	65	65
Lockport Prairie East Preserve			19	8	
Goodenow Grove Nature Preserve	98	94	76	59	52
Hickory Creek Preserve	147	248	205	175	132
Raccoon Grove Nature Preserve		32	59	20	22
Thorn Creek Nature Preserve		200	30	73	
Prairie Bluff Preserve	33		19	12	63
Densities (per square mile)					
Preserve & Unit	**2010/2011**	**2012/2013**	**2013/2014**	**2014/2015**	**2015/2016**
Romeoville Prairie Area	30	35	9	52	41
Lockport Prairie Nature Preserve	63	33	49	63	47
McKinley Woods Preserve	123	111	84	74	74
Lockport Prairie East Preserve			380	160	
Goodenow Grove Nature Preserve	65	63	51	42	37
Hickory Creek Preserve	45	76	63	79	55
Raccoon Grove Nature Preserve		64	118	40	44
Thorn Creek Nature Preserve		68	10	47	
Prairie Bluff Preserve	34		19	11	59

Table 2

	Current Population Size	Target Population Size	Current Density (Deer per square mile)	2016-17 Removal Target	Estimated Density after 2016-17 Removal Target Completed (Deer per square mile)
Romeoville Prairie Area	37	23	41	**14**	26
Lockport Prairie Nature Preserve	21	9	47	**10**	24
McKinley Woods and Four Rivers Environmental Education Center	65	30	74	**25**	45
Lockport Prairie East	8	2	160	**6**	40
Goodenow Grove Nature Preserve	52	30	37	**20**	23
Hickory Creek Preserve	132	65	55	**60**	30
Raccoon Grove Preserve	22	10	44	**12**	20
Thorn Creek Nature Preserve	73	40	47	**33**	26
Prairie Bluff Preserve	63	30	59	**20**	41

Table 3

	% Browse Native Vines	% Browse Native Trees	% Browse Native shrubs	% Browse Native Forbes	% Browse Plants C-value 0-3	% Browse Plants C-value 4-6	% Browse Plants C-value 7+	% Total Deer Browse
RPN	na	59%	93%	52%	60%	48%	72%	57%
LPN	na	100%	95%	70%	95%	61%	67%	79%
MWP	na	67%	64%	61%	59%	66%	67%	61%
LPE	na	100%	90%	65%	60%	77%	76%	72%
GGN	na	67%	87%	63%	63%	72%	na	67%
HCP	75%	93%	81%	57%	74%	76%	42%	69%
RGN	na	86%	85%	68%	77%	66%	76%	71%
TCN	68%	80%	98%	97%	97%	95%	63%	96%
PBP	na	100%	85%	77%	74%	93%	79%	81%

Table 4

Activity	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Presentation and approval of Logistical Plan	■										
Submission of IDNR Permit Application	■										
Train and Certify Volunteers	■	■	■								
Update Deer Management Brochure (If necessary)	■	■	■								
Post Deer Management Program Updates on Web Site	■	■	■								
IDNR Review and Approval of Application and Firing Stations	■	■	■								
Sharpshooter Qualification Testing		■	■								
Notification Letter to Adjacent Landowners (If necessary)		■	■								
Implementation of Culling Activities				■	■	■	■				
Complete Aerial Deer Population Surveys				■	■	■	■				
Prepare Annual Summary and Recommendations Report							■	■	■	■	■
Deer Browse Sampling and Preparation of Internal Memo										■	■

Table 5

Area Counted

Preserve & Unit	2010/2011	2012/2013	2013/2014	2014/2015	2015/2016
Plum Valley Ravines	1.65	1.65	1.65	1.60	
Plum Valley Preserve	1.36	1.36	1.36	0.71	
Monee Reservoir			0.33	0.39	
The Kankakee Geologic Area		3.07	2.21	2.21	2.21
Messenger Woods Nature Preserve	0.76	0.76	0.76	0.69	0.69
Messenger Marsh Preserve	0.73	0.73	0.73	0.97	0.97
Keepataw Preserve	0.55	0.55	0.55		
Lower Rock Run Preserve	0.57		0.57		
Rock Run Preserve (N. of Black Rd)	0.2		0.2	0.50	
Theodore Marsh Preserve	0.45			0.45	
O'hara Woods Preserve	0.08				
Bird's Junction Marsh	0.09		0.09		
Hammel Woods	0.66		0.66	0.70	

Aerial Count

Preserve & Unit	2010/2011	2012/2013	2013/2014	2014/2015	2015/2016
Plum Valley Ravines	149	152	151	144	
Plum Valley Preserve	61	54	75	35	
Monee Reservoir			12	0	
The Kankakee Geologic Area		112	112	110	61
Messenger Woods Nature Preserve	99	55	84	75	125
Messenger Marsh Preserve	79	55	32	60	58
Keepataw Preserve	61	10	33		
Lower Rock Run Preserve	82		99		
Rock Run Preserve (N. of Black Rd)	32		52	16	
Theodore Marsh Preserve	34			45	
O'hara Woods Preserve	4				
Bird's Junction Marsh	23		8		
Hammel Woods	27		27	20	

Density (deer per square mile)

Preserve & Unit	2010/2011	2012/2013	2013/2014	2014/2015	2015/2016
Plum Valley Ravines	90	92	92	90	
Plum Valley Preserve	45	40	55	49	
Monee Reservoir			36	0	
The Kankakee Geologic Area		36	51	50	28
Messenger Woods Nature Preserve	130	72	111	109	181
Messenger Marsh Preserve	108	75	44	62	60
Keepataw Preserve	111	18	60		
Lower Rock Run Preserve	144		174		
Rock Run Preserve (N. of Black Rd)	160		260	32	
Theodore Marsh Preserve	76			100	
O'hara Woods Preserve	50				
Bird's Junction Marsh	256		89		
Hammel Woods	41		41	29	