



WILDWOOD

MEMORANDUM

To: Administration/Public Works Committee Members
From: Rick C. Brown, Director of Public Works / City Engineer
Date: June 5, 2023
Re: Deer Management Subcommittee – Quote from White Buffalo

Background: White Buffalo Inc. (WB), has provided the attached updated proposal, for 2023-2024, to begin the reduction of the deer population within the City of Wildwood. The goal of the WB proposal is to cull about 300 deer over 26 days to reduce the deer density to approximately 40 deer/mi² within the area “Northeast 1” (“NE1”). NE1 is the area of highest density deer population, based on the 2020 deer population counts completed by the Wildwood Precinct. NE1 has deer density of 94 deer/mi², and thus an excess population of 54 deer/mi². The NE1 area, which is shown as **Exhibit A**, is generally bounded by Route 100 on the south, Route 109 and Shepard Road on the West/North and Strecker/Valley Road on the North to the City limit on the East/South. The area totals 5.53 square miles in size.

WB has stated that they may need upwards of 40 property owners within the NE1 area to allow WB to bait and hunt on their property. Agreements with property owners, allowing this access, will be obtained in advance. Deer will be drawn to those properties by baiting, which will commence a minimum of 2 weeks prior to the culling effort. It is anticipated that the culling effort will begin by January 15th, although this will require the approval of the Missouri Department of Conservation. The culling effort would wind down by the end of February.

Cost: The cost of the WB proposal is \$215,759 to complete the first year of culling in area NE1 during next winter, or about \$719 per deer. The proposal from WB is attached as **Exhibit B**.

To achieve a meaningful reduction of the deer population citywide, from an overall level of approximately 73 deer per square mile (deer/mi²) to a goal of 40 deer/mi², will require a multi-year effort. Assuming a five-year deer reduction program, WB would hunt each winter within one of five designated areas of the City to cull a total of about 1,000 deer over 30 square miles of the City.

Recommendation: If the Committee passes a motion approving the proposal from WB, the Department will prepare the legislation enabling an agreement with WB to complete the culling program next winter, for the consideration of the City Council.

Interim City Administrator Thomas Lee, Captain Mundel, and I will be available for discussion or questions pertaining to this matter at the June 6, 2023, Administration and Public Works Committee meeting.

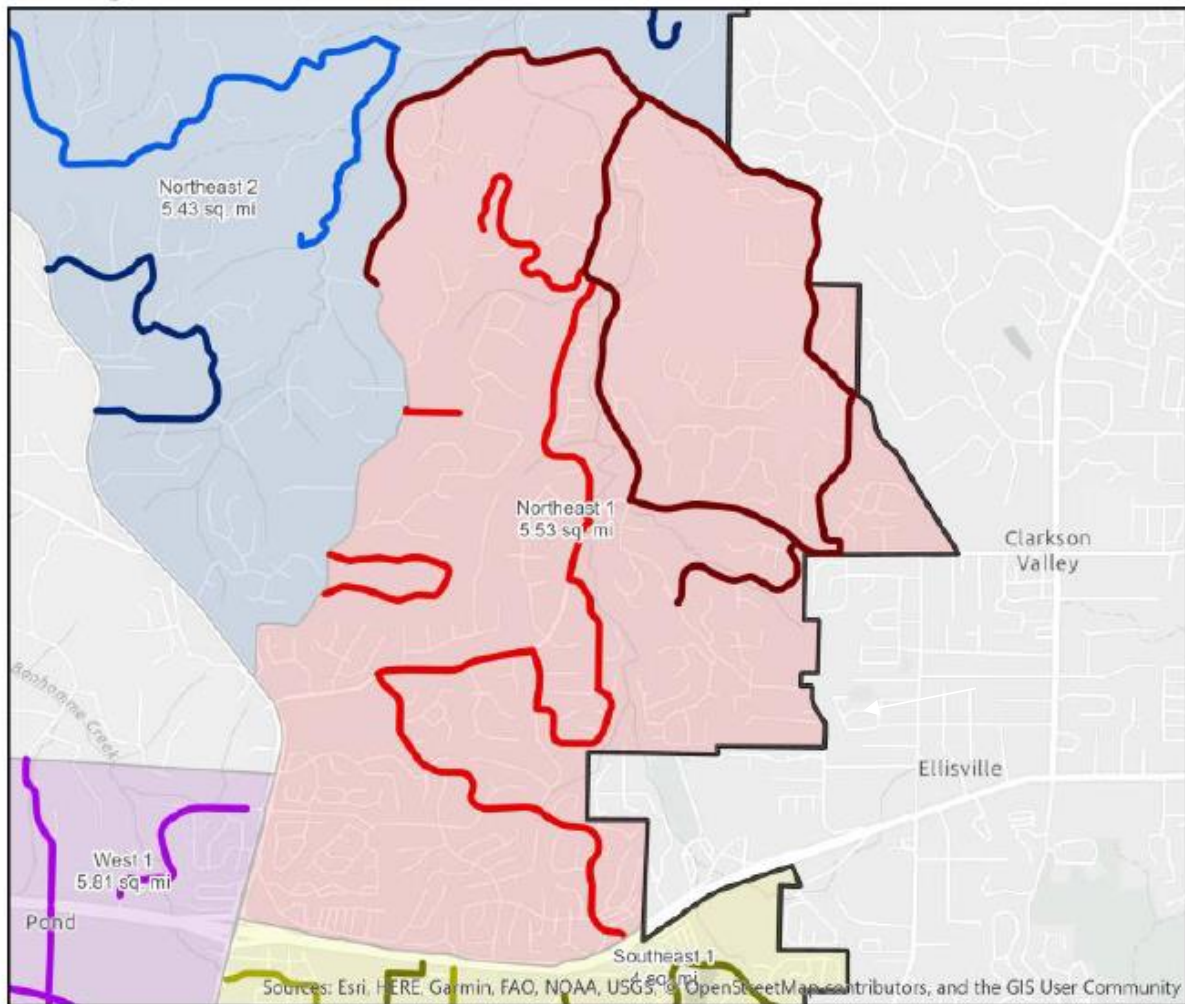
RCB



WILDWOOD

Exhibit A

Region: Northeast 1



- | | | | | | |
|---------|---------|---------|---------|--------|--------|
| — NE 1A | — NE 2A | — SE 1A | — SE 2A | — W 1A | — W 2A |
| — NE 1B | — NE 2B | — SE 1B | — SE 2B | — W 1B | — W 2B |



Exhibit B

Sharpshooting for Managing a Suburban White-Tailed Deer Population

Wildwood, Missouri

25 May 2023

Submitted by

Drs. Jason R. Boulanger and Anthony J. DeNicola

White Buffalo Inc.



Introduction

White-tailed deer (*Odocoileus virginianus*) overabundance and associated conflicts are pervasive throughout the eastern U.S. Alternative management techniques (e.g., controlled hunting, sharpshooting, trap and relocation/euthanasia, fertility control research) have been explored from Georgia to Texas, Minnesota to Maine, and nearly all the states contained therein. Throughout this large geographic region, deer are creating social, public safety, and ecological conflicts in suburban, corporate, and park environments. Many federal, state, and local agencies are struggling to address this ever-increasing problem.

Sharpshooting has been proven to be effective at rapidly reducing local deer populations and maintaining the lower densities long-term. In addition to reducing deer vehicle collisions (DeNicola and Williams 2008), sharpshooting can increase survival of sensitive plants (Abella et al. 2022). Sharpshooting (i.e., use of trained professionals using culling techniques outside of permitted recreational hunting methods) can reduce local deer populations lower than what has been achieved historically, in these challenging environments, using recreational hunters. Professional sharpshooting programs have been implemented throughout the U.S. over the past two decades without a public safety incident.

Site Description

The City of Wildwood is in St. Louis County, Missouri and contains approximately 67 miles². The municipality represents one of the most challenging situations for deer managers. The community is nearing the point of being “built out” (as of 2021 census data, there were 35,255 people, 12,755 households) with most of its land area covered by single family homes interspersed with wooded corridors. This provides excellent deer habitat and at the same time can be restrictive to the implementation of some deer management options. Moreover, there are no non-human predators present that can limit a deer population in Wildwood. Despite archery hunting which has been permitted within the community, the deer population has increased to a level that is incompatible with some local land uses.

The Wildwood herd density was estimated at approximately 73 deer/mi² overall, as determined by the most recent survey conducted by Wildwood Police Department (WWPD) in 2020. However, estimated deer densities were as high as 95 deer/mi² in the northeastern area of Wildwood. The original draft Deer Management (DM) Plan from the DM subcommittee of the Board of Public Safety (BPS) set an initial herd density goal of 40 deer/mi² in a 10-year Phase-1 program. These deer densities have contributed to deer-vehicle collisions (DVCs), along with property and environmental damage, human and pet health, and animal welfare concerns. A



2020 DM Public Opinion survey found that 72.6% of responding residents supported the use of lethal methods to humanely reduce the herd.

Estimated Number of Deer to be Removed

Based on distance sampling conducted by WWPDP for a 2020 report, deer densities were estimated and ranked by severity per Table 1 (below) with associated areas depicted in Figure 1.

Severity	Section	Area/mi ²	Deer/mi ²	Excess deer/mi ²	Removal # goal
1	Northeast 1	6	94	54	297
2	West 1	6	82	42	244
3	Southeast 2	5	77	37	196
4	Northeast 2	5	64	24	130
5	West 2	4	57	17	75
6	Southeast 1	4	40	0	0

Objectives

The goal of this project is to reduce the deer density to approximately 40 deer/mi² from the Wildwood Deer Survey management area Northeast 1 (NE1).

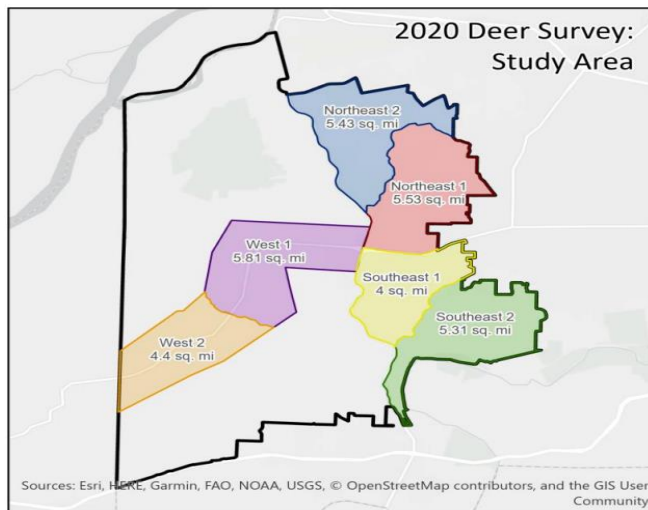


Figure 1. Map of 2020 deer density sampling efforts by survey sections in Wildwood, Missouri, USA.



Field Methods

Planning and Permitting

We will partner with City staff, who will coordinate property access. Private property access throughout the community will be invaluable to the success of this program given the limited amount of public land. It also would be beneficial to have access to all suitable public properties.

We will assist obtaining all necessary permitting from the Missouri Department of Conservation (MDC).

Pre-baiting and Site Selection

Deer will be drawn to select areas using bait. Access is preferably on private property to limit impacts on public land users and minimize disturbances by the public during culling operations.

Baiting should commence at a minimum of 2 weeks in advance of culling efforts. All baiting should be conducted daily for stationary elevated sharpshooting locations or for mobile shooting locations. For mobile operations, baiting should be conducted from the same vehicle at a consistent time in the late afternoon or evening. This acts as positive conditioning for the deer; they recognize the vehicle and person baiting and associate it with the appearance of food. With landowner permission, some vegetation may need to be thinned or pruned to ensure optimal sharpshooting removal conditions.

Population Control Strategy

WBI's strategic approach to urban deer management is specifically designed to address and avoid the most common cause of failure; creating an "educated" residual deer population that is skilled in avoiding deer management activities. Well before the first deer is euthanized, we focus on how to meet the final objective. The defining strategic characteristic of every population control effort is the management team's singular focus on preventing the remaining deer from being educated to avoid humans, even as the population is rapidly reduced. An urban deer management team must remove a high percentage of a population and potentially repeat this process for years into the future, so maintaining the naïveté of the select population is strategically paramount and is the most important means of reducing risk of failure and minimizing long-term costs. For this standard to be met, the team must possess superior technical ability (e.g., to shoot with precision in suboptimal conditions), field intuition (e.g., to determine whether animals encountered should be engaged), and discipline (e.g., to refrain from engaging if conditions are not conducive). In summary, the behavioral characteristics of the deer at low density, and the ability to subsequently harvest them, will be shaped by events unfolding from the first day of the management activities.



WBI's methods are humane and address concerns for animal welfare by following the American Veterinary Medical Association's stringent guidelines for humane euthanasia of animals. We have spent more than 25 years committed to improving both technology and techniques to maximize safety and efficiency for the management of white-tailed deer (i.e., ballistics testing, bullet development, baiting techniques, adaptation of other technologies for use in deer management, including night vision/thermal scopes and suppressors). We have the best available equipment with numerous hours of hands-on use to ensure precise shot placement. This results in safe use of equipment and humane treatment of target animals. We have thoroughly tested and selected bullets, in addition to having developed specialized bullets. As a result of our extensive testing, we have found that no bullet fragments with significant size or inertia exit the target animal, therefore ensuring public safety. We have extensive experience in both lethally removing (>10,000 deer) and capturing deer (>4,000 deer) in a variety of human occupied environments without incident. We have used our discretion in the selection of shooting sites with complete satisfaction of both local/state/Provincial officials and property owners. Finally, we have trained 6 U.S. law enforcement agencies, and one Canadian Provincial law enforcement agency how to professionally sharpshooting deer as part of government authorized deer management programs. In conclusion, although safety is the primary issue to be considered when implementing a program to reduce deer numbers, with the above precautionary measures and the expertise of WBI, it need not be a concern.

In summary, the management of Wildwood's deer will require a comprehensive effort by a very skilled and experienced group of wildlife control professionals. A strategic use of methods will be necessary to ensure that the deer are removed in a timely, safe, and humane manner. Moreover, the plan will have to be adaptive to allow for methodological adjustments as deemed necessary during the project tenure.

Sharpshooting

Deer are to be removed by means of shooting. Deer are to be removed only by those means approved by MDC.

We intend to use suppressed .223 caliber bolt-action rifles for sharpshooting applications. All rifles are match-grade and specially designed for sharpshooting deer. We will shoot from elevated positions to ensure a steep angle of trajectory. All deer will be shot in the center of the brain (~95%) or the cervical spine (~5%). Cervical spine shots are taken only when there is an obstruction between the shooter and the deer's brain, or if CWD testing is required.



We have all the necessary equipment with years of hands-on use including several U.S. Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) registered, suppressed, match-grade firearms (using highly frangible, projectiles), all necessary vehicles (including ATVs), and accessories (e.g., night-vision/thermal optics, spotlights, rangefinders, mobile shooting platforms, etc.).

Subsequent to a decision by Wildwood to implement a controlled deer reduction using WBI the following procedures are used:

- 1) Prior to initiating any field activities the target area/s and surrounding properties are thoroughly surveyed using digital aerial images followed by field confirmation. By knowing the location of every occupied structure and areas of human use we are better able to work safely, discreetly, and efficiently;
- 2) Bait sites are selected with the involvement of Wildwood. Each site is selected based on safety concerns, discretion, and deer activity;
- 3) We try to prioritize field operations during hours of lowest human activity when possible. In addition, during the removal operation we search intensively for people and non-target animals to avoid mishaps;
- 4) Deer of all ages and sexes are harvested, however, adult does are prioritized. Deer are shot over bait from an elevated position with a rifle during the day or at night. Night-vision equipment and suppressed firearms (only in states where they are legal to possess) are used to expedite field procedures and to ensure discreet operations;
- 5) During deer reductions, there will be continuous open communication between Wildwood staff and WBI to keep people well informed regarding field activities to avoid conflicts;
- 6) When in doubt, never shoot;
- 7) All deer carcasses are transported with the highest degree of discretion;
- 8) We collect all pertinent data related to herd health, advancements in management techniques, and other aspects of each removal program which will be included in scientific journals, professional conferences, or written reports submitted to the community/landowner and cooperating agency.



Drop Nets

Drop nets and captive bolt guns may be considered. Deer are to be removed only by those means approved by MDC.

Conclusion

Of primary importance and recognition is that field methods are only as good as the personnel implementing them. This is not an expression of arrogance, but a point of clarity and great significance. It is critical for success to have extensive experience to make day to day decisions and adjustments beyond the established general guidelines and protocols. WBI has been actively involved in wildlife population control programs for over 25 years. With our experience, we are confident that our proposed methods/strategy will provide the greatest likelihood of a successful management program. Our approach will be the safest, most efficient, and humane solution to this management challenge.

Report Submission

We will be responsible for the submission of annual reports to a designated agent of MDC. All data will be made available upon request at any time to authorized agents of the State and/or City of Wildwood. A final report will be submitted to the MDC and the City of Wildwood at the conclusion of the management project.

Principal Contractor

White Buffalo, Inc. is a nonprofit research and management organization that specializes in wildlife population control. White Buffalo, Inc. is recognized nationally for its efforts to resolve wildlife management conflicts and for the development of new techniques and technologies. Ryan Rodts, the Project Manager, has extensive experience in deer population control projects. Additional White Buffalo, Inc. personnel will serve as wildlife biologists and marksmen for this project. White Buffalo, Inc. is at the forefront of deer management techniques, and all projects are thoroughly documented, and data generated are published in professional journals or presented at professional conferences for the benefit of other wildlife management professionals.

Principal Staff

Dr. Jason “Jay” R. Boulanger is President of White Buffalo, Inc., a non-profit research organization dedicated to conserving ecosystems through wildlife population control. He received his Ph.D. in Wildlife Science from Cornell University, M.S. in Wildlife and Fisheries



Sciences from South Dakota State University, and B.S. in Natural Resources from the University of Vermont. His dissertation and post-doctoral research focused on controlling suburban raccoon rabies via a novel bait station and overabundant deer populations via fertility control, respectively. Jay also served as a tenured wildlife professor at the University of North Dakota where he conducted applied research and taught courses on mammalogy, large mammal ecology and management, and human dimensions of wildlife. Jay is a long-standing member of The Wildlife Society and a Certified Wildlife Biologist®.

Dr. Anthony J. DeNicola is CEO of White Buffalo, Inc. He received a M.S. degree from the Yale School of Forestry and Environmental Studies and a Ph.D. from Purdue University. Dr. DeNicola has conducted contraceptive and sterilization projects throughout the United States over the last 25 years. Dr. DeNicola's research interests include ecological approaches to control wildlife damage, control of introduced vertebrate species, and wildlife reproductive control.

Literature Cited

- Abella, S. R., T. A. Schetter, and T. D. Gallaher. 2022. Rapid increase in sensitive indicator plants concurrent with deer management in an oak forest landscape. *Wildlife Society Bulletin* 46:e1377.
- DeNicola, A. J., and S. C. Williams. 2008. Sharpshooting suburban white-tailed deer reduces deer-vehicle collisions. *Human-Wildlife Conflicts* 2:28-33.



White Buffalo Inc.

Budget for pre-baiting, 26 days of culling , deer processing, report, plus travel

						<u>Total</u>
Personnel Costs						
<u>Name</u>	<u>Title</u>	<u>Role</u>	<u>Days</u>	<u>Hours</u>	<u>Rate</u>	
	Project Manager	Travel/Setup	2	12	\$130.00	\$3,120
		Sharpshooting	26	10	\$130.00	\$33,800
		Report Writing	0.5	4	\$130.00	\$260
	Wildlife Biologists (2X)	Travel/Setup	4	12	\$115.00	\$5,520
		Sharpshooting	52	11	\$115.00	\$65,780
	Wildlife Biologist (1x)	Travel/Setup	2	12	\$115.00	\$2,760
		Pre-baiting	14	8	\$115.00	\$12,880
Direct Expenses						
			<u>Deer</u>		<u>Rate</u>	
Sharpshooting						
	Sharpshooting Supplies		300		\$8.00	\$2,400
Other Supplies						
	Corn		790		\$14.49	\$11,447
	Miscellaneous					\$2,000
Mileage						
			<u>Miles</u>		<u>Rate</u>	

	2x WBI vehicles: Mileage to/from project site; mileage during field ops		10000		\$0.655	\$6,550	1120 miles one way x
			<u>Flights</u>		<u>Rate</u>		
Flights			2		\$750.00	\$1,500	
			<u>Days</u>		<u>Rate</u>		
Airport Parking			52		\$25.00	\$1,300	
			<u>Person Days</u>		<u>Rate</u>		
Lodging			96		\$150.00	\$14,400	
Per diem			100		\$64.00	\$6,400	
			<u>Number</u>		<u>Cost</u>		
Carcass Processing			300		\$125.00	\$37,500	
Total Estimated Budget						\$207,617	

Assumptions:

Assume the municipality is providing assistance securing property access.
 Assumes fairly accurate 2020 density estimate. However, we note wide confidence intervals for NE1.

\$692.06 cost per deer
\$567.06 cost per deer minus processing



White Buffalo Inc.

2023 Budget for site visit

Personnel Costs						Total
Name	Title	Role	Days	Hours	Rate	
	Project Manager	Communications, travel, property access and overview	5	10	\$130.00	\$6,500.00
Direct Expenses						
Mileage			Miles		Rate	
	Mileage to/from project site; mileage during visit		1200		\$0.655	\$786.00
			Person Days		Rate	
Lodging			3		\$200.00	\$600.00
Per diem			4		\$64.00	\$256.00

Total Estimated Budget	\$8,142.00
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