

Should Nantucket Pursue The Establishment Of A Fenced-In Dog Park



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ABSTRACT

The goal of this project was to determine the desirability and feasibility of a fenced-in dog park on Nantucket. Dog parks have become increasingly popular in the United States in recent years, due to their many health and educational benefits, but no dog park currently exists on Nantucket. Interviews with key stakeholders and extensive surveys of the public revealed overwhelming support for a dog park on Nantucket among people who do and do not own dogs. We recommended that the Town of Nantucket further pursue the establishment of a fenced-in dog park since it will serve a major role in educating people about dogs, associated environmental and health issues, and responsible dog ownership.

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EXECUTIVE SUMMARY

Background

Forty-six million American households (39%) own at least one dog, and the estimated 78 million dogs produce 10 million tons of waste each year. Increasing concern about the growing number of dogs and associated problems, such as water pollution and dog bites, have led to a growing number of restrictions on dogs and dog owners. Dog lovers have responded by creating “dog parks.”

A dog park is defined as a public park, typically fenced, where people and their dogs can play. As the number of dogs has risen, so has the number of dog parks. Between the years of 2005 to 2010 the number of dog parks in the United States increased by 34%. In fact, dog parks have become the fastest growing segment of city parks, as of 2011. Today, there are approximately 1,200 dog parks in operation in the United States.

Methods

Dogs are especially popular on Nantucket, but there are increasing concerns about the potential adverse impacts on water quality, public health, and wildlife. The goal of this project was to determine the desirability, feasibility, and potential design features of a dog park on Nantucket. In order to meet this goal, we conducted in-depth interviews with key stakeholders and opinion leaders on the island to clarify the nature of concerns about dogs and dog owners, and to assess the feasibility of establishing a dog park on Nantucket. We also conducted a survey of 219 dog owners and 142 non-dog owners to gauge public opinions about and attitudes towards dogs, problems associated with dogs, and the idea of a dog park.

Findings & Analysis

We found that 78% of non-dog owners and 76% of dog owners would be in favor of a fenced-in dog park. Additionally, 47% of non-dog owners on Nantucket are uncomfortable with off-leash dogs. This suggests that a fenced-in area would allow these community members to feel at ease. As over half of Nantucket dog owners agree that hunting season poses a threat to the safety of dogs, it is understandable that they are interested in pursuing a safe, enclosed area.

When asked why dog owners were in favor of a fenced-in dog park, the most popular response was in regards to safety.

Conclusions

After extensive research, we found that:

- Dog parks are becoming increasingly popular in the US in part because of increasing restrictions on dogs and dog owners but also because dog parks serve a variety of social and educational functions, such as:
 - allowing dogs to exercise and socialize safely
 - promoting responsible dog ownership
 - providing an outlet for dog owners to socialize
 - making for a better community by promoting public health and safety
- Dog parks vary in location, size, designs, and management structures depending on the needs and desires of the local community.
- Dogs are a major part of life on Nantucket but there are increasing concerns among various stakeholders and opinion leaders about the potential problems posed by the growing dog population, including impacts on the environment, wildlife, water quality, and public health, and the need for opportunities to socialize and educate dogs and owners.
- General consensus among stakeholders and opinion leaders interviewed that a dog park could have major benefits for Nantucket; **while a park may not directly or substantially affect impacts on the environment and public health, the educational opportunities presented by the park may be substantial.**
- Many of the community members that were interviewed felt a dog park on the island would increase public awareness of the town's dog-related issues and encourage more responsible ownership.
- Surveys reveal that there is overwhelming support for a dog park among both dog owners and non-owners.
- The survey also reveals the key design features that are desired by dog owners.

Recommendations

Based on our comprehensive studies and findings, we recommend the following:

- Recommendation 1: The Town should encourage the creation of a volunteer group or committee to explore further the establishment of a dog park on Nantucket. This group or committee should evaluate the location options, preferred design elements, and alternative management alternatives.
- Recommendation 2: Regarding location, the team recommends the group/committee evaluate potential sites based on the following criteria:
 - 1-2 acres preferred;
 - Up-grade location away from surface waters and sensitive ecological areas;
 - Ease of road access;
 - Proximity to town; and,
 - Proximity of neighboring residences.
- Recommendation 3: Regarding design elements, the team recommends the group/committee explore the desirability and cost of the following key features:
 - Parking;
 - Lighting;
 - Appropriate fencing;
 - Double gate system;
 - Separate fenced-in areas for small and medium/large dogs;
 - Water fountains for dogs/people;
 - Benches;
 - Trees; and,
 - Restrooms.
- Recommendation 4: For the dog park to effectively promote responsible dog ownership, the team recommends the group/committee provide the following:
 - Informational kiosk;
 - Dog waste bag dispensers; and,
 - Trash receptacles.

- Recommendation 5: Regarding management structure, the team recommends the group/committee form a voluntary group (such as a “Friends of the Nantucket Dog Park”) to oversee the park.
- Recommendation 6: Regarding funding options, the team recommends the group/committee explore fundraising events, commemorative items, and donation options.
- Recommendation 7: Regarding operation and maintenance, the team recommends the group/committee explore the best options for:
 - Park construction
 - Installation of design elements
 - Grounds keeping
 - Emptying of trash receptacles
 - General maintenance (fixing fences, etc.)
- Recommendation 8: The team recommends the group/committee further research the specific liabilities and insurance involved in the management model chosen for the dog park.
- Recommendation 9: Regarding park rules and enforcement, the team recommends the group/committee research that of similar dog parks. Specifically, the group/committee should consider the following:
 - Posting rules and regulations at the entrance of the dog park
 - Early enforcement of rules and regulations
 - “Enter at your own risk”
 - Limiting hours of operation
 - Setting age restrictions for both people and dogs
 - Suggesting dogs receive proper vaccinations before entering the park
- Recommendation 10: the team recommends the group/committee visit existing dog parks (such as in Falmouth, Massachusetts) to evaluate design and management issues.

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INTRODUCTION

According to the 2011-2012 National Pet Owners Survey, conducted by the American Pet Products Association (APPA), there are approximately 78.2 million owned dogs in the United States (The Humane Society of the United States, 2012). The growing number of dogs has prompted many state, city, and town governments to enact laws restricting the ways in which dogs can be exercised in public. These laws, including leash and ‘pooper-scooper’ laws, are attempts to ensure the safety of people and other pets.

Although dogs are welcome on Nantucket, there is currently no off-leash area for dogs to play or walk, legally, on the island. Residents and summer visitors will often bring their dogs downtown, to the beaches, and to the island’s conservation lands, yet fail to adhere to Nantucket’s dog laws. As a result, the Nantucket Board of Health has become increasingly concerned about some of the potential adverse impacts of the growing dog population, and dog owners’ failure to comply with regulations and expectations, such as the leash law and disposal of dog waste. These potential impacts include the fouling of public areas and the pollution of aquifers.

The goal of this project was to assess the desirability and feasibility of establishing a dog park on Nantucket. We conducted a variety of surveys with the general public and interviews with key stakeholders in the community. We examined case studies of established dog parks to assess the nature of different design options, as well as the advantages and disadvantages of current parks, and the criteria for determining the location, design, management, and funding possibilities.

Our surveys revealed that 77% of islanders, both dog and non-dog owners, were in favor of a dog park. We concluded that a dog park offers a number of major benefits to the community, including a safe and attractive venue for dogs and their owners to exercise and socialize. A dog park also offers an effective avenue by which to educate the dog-owning community about health and environmental risks, and the duties of responsible dog ownership. Consequently, we recommended that the Board of Health pursue the establishment of a dog park on Nantucket.

The following report is divided into four sections. Chapter 1, the literature review, discusses our background research, and Chapter 2, the methodology section, details our surveying and interviewing approaches. Chapter 3, the findings and analysis portion, discusses

our outcomes, which includes the public's opinion on many dog-related issues. Finally, Chapter 4, the conclusion of our report, relays our final recommendations for the Nantucket Board of Health, based upon our extensive background research and careful assessment of the community's response.

CHAPTER 1: LITERATURE REVIEW

The 2011-2012 National Pet Owners Survey estimates 46.3 million American households own at least one dog (American Pet Products Association, 2012), which is equivalent to about thirty-nine percent of all households in the United States (The Humane Society of the United States, 2011). Thus, dogs have irrefutably become integrated into American society. Today, there are more than just hunting, herding, and sled dogs, but rescue, guide, and police dogs, as well as dogs that can detect drugs, mines, and even cancer (Udell and Wynne, 2008). In the end, perhaps, it is the simple, yet powerful, role that dogs play as human companions, which has led to the steady increases in dog ownership in the United States. According to the same National Pet Owners Survey, approximately 78.2 million dogs are owned by Americans. As the number of dog has risen, so has the number of dog parks. Our literature review explores the reasons for the rising popularity of dog parks, and their diverse forms. Dog parks differ tremendously in location, layout, and design features, as well as in strategies for management, maintenance, and funding. Regardless of their individually unique elements, dog parks possess myriad advantages and disadvantages, which must be considered by any community deliberating about the establishment of a dog park. Thus, this section also delves into the potential benefits of dog parks, the reasons for opposition, and how this information can be applied, specifically, to Nantucket.

THE NATURE OF THE PROBLEM

Although the majority of American society views dog ownership positively, the country's rising dog population has become the source of some concerns. The concerns range from the risk of water pollution, and disease, caused by dog waste to the frequency of dog bites. In response, many town, city, and state governments have issued ordinances to protect the community from these kinds of potential harm.

“Pooper-scooper” laws are a common example of such ordinances. The 78.2 million dogs in the United States (The Humane Society of the United States, 2011) produce 10 million tons of waste annually (Browdie, 2012). Just one gram of this waste contains, on average, 23 million fecal coliform bacteria (“Storm-water pollution prevention & pet waste”, n.d.). Dog waste may

also contain bacteria and parasites such as *E. coli*, *Salmonella*, *Giardia*, *Cryptosporidium*, *Campylobacteriosis*, and roundworms (York, 2009), which can linger in the soil and pose health threats to humans and other animals. Infections from such bacteria and parasites can cause fever, headache, muscle aches, vomiting, and/or diarrhea. People can become infected by walking barefoot, playing sports, gardening, or by other means of contact with affected soil. Children are especially susceptible, since they often play on the ground and place objects near their eyes and in their mouths (DoodyCalls, 2011). Improperly disposed of pet waste has the potential to seep into watersheds or wash into storm drains. Consequently, the waste can pollute local bodies of water, and cause harm to water quality. Depending on the level of pollution, water can become unfit for drinking. Contaminated drinking water has been identified as the source of various health problems. As a result, the levels of certain contaminants in drinking water are federally regulated by the Environmental Protection Agency (EPA, 2012). Individual states are given the opportunity to establish their own water quality standards, as long as they are at least as stringent as those set by the EPA. According to EPA standards, water sources must contain less than 1 coliform/100 ml of water to be suitable for drinking. Similarly, any water that serves recreational purposes is held to a standard of 200 coliforms/100 ml of water (Arendsen, English, Smith, 2010). If coliform levels rise above this national standard, the water is deemed unsafe and the recreational area must close until levels are again within safety limits.

The United States Environmental Protection Agency holds that “pets, particularly dogs, are significant contributors to source water contamination”, and urges owners to walk their pets in “grassy areas, parks, or undeveloped areas”, not near streams, ponds, or lakes (The United States Environmental Protection Agency, 2001). For these reasons, most local authorities can fine dog owners for not properly disposing of their dog’s waste.

Local governments have other concerns regarding health and safety. There exists a “line between the love of man’s best friend and the fear of so-called ‘bad dogs’”, which is often “a source of great anxiety” (Udell and Wynne, 2008). Though dogs are considered “man’s best friend”, they inherently have the capability to injure people and other pets. The United States Centers for Disease Control and Prevention estimates that 4.5 million Americans are bitten by dogs each year (Pelley, 2011). This statistic illustrates why many local governments have enacted leash laws. Leash laws are intended to protect the general public from the dangers and nuisances of roaming dogs, and to protect the dogs, themselves, from the dangers of vehicles

and other animals (“Leash Law”, n.d.). Though these laws create safer environments for communities, they often restrict the ways in which dog owners can exercise their dogs in public areas.

Exacerbating this restriction is the lack of open, public spaces, especially since urban and suburban development has created “increased pressures on remaining open space” (The American Society of Landscape Architects”, 2007). As a result, dog owners, are limited in choices of dog-friendly areas, large enough for their dogs to receive adequate exercise, especially in urban areas. Furthermore, as many people live in close proximity, barking and other behaviors that may be deemed disruptive have caused feuds between neighbors. Valid complaints over such behaviors can result in legal fines. In Massachusetts, for example, a dog owner may be fined up to \$100 for any dog that is deemed a nuisance (Mass General Laws, Chapter 140, Section 157).

To avoid the limitations of living in urbanized areas, dog owners will often seek out large, open areas to exercise their dogs, such as public beaches and parks. Unfortunately, such areas may also be rich in wildlife, which may be disturbed by the presence of dogs. Dogs can directly affect wildlife by killing or injuring birds and other animals, and/or destroying vegetation. Indirectly, dogs can cause stress to wild animals, which may lead to animals expending the energy they need to survive (Chester, 2005). Furthermore, dogs are capable of transmitting viruses to the local wildlife. Muscle cysts, for example, can be transmitted to deer and other ungulates. Many mammals are susceptible to bacterial infections, such as *Leptospirosis*, and parasites passed on from dogs (Chester, 2005). Unfortunately, people will often fail to pick up after their pets when in a more “wild” setting, believing their pet’s waste has no adverse environmental effects. In reality, dog waste can have adverse effects in apparently ‘wild’ or ‘natural’ areas. Though wild animals leave behind fecal matter, their diets are all-natural. Dogs, on the other hand, are fed a mixture of processed food and human food, which is filled with bacteria that is not found in the feces of local wildlife (Chester, 2005). Consequently, their dog feces can introduce a range of bacteria that may cause adverse health effects among wild animals.

Research has shown that dogs allowed to freely roam the trails of a nature park reduced the levels of activity of deer and small mammals. By comparing two areas that allowed off-leash dogs with two areas that prohibited them Length, Knight, and Brennan (2008) found that deer

were less active up to 50 meters from trails allowing only humans, compared with 100 meters from trails where off-leash dogs were allowed. The activities of small mammals followed similar patterns in areas with or without dogs (Length, Knight, & Brennan, 2008).

THE PUBLIC RESPONSE TO RESTRICTIONS & PROBLEMS

The needs of dogs and their owners have been “increasingly compromised by high-density urban settings, environmental concerns, and government legislation” (Lee et al., 2009). This has caused a great number of owners to feel restricted in the activities they can enjoy with their dog companions. As a result, dog owners in many communities have become more organized and vocal, as they search for safe areas they can bring their dogs to exercise and socialize. One solution, which has been increasing in popularity, is the erection of a dog park.

“A dog park is a public park, typically fenced, where people and their dogs can play together. Similarly, a dog run is a smaller fenced area, created for the same use that is often located within an existing park. As the names imply, these places offer dogs off-leash play areas where their owners can enjoy a park-like setting and the chance to socialize with other canines and their owners. Dog parks, which are sometimes managed by park users in conjunction with city or town officials, are being established all over the country and offer a wealth of benefits to dogs, dog owners and the community as a whole.” (American Kennel Club, 2008)

Dog parks have also been simply defined as a place for “dogs...to exercise off leash and socialize with other dogs (American Society for the Prevention of Cruelty to Animals, 2012). The emergence of these parks in the last twenty years has begun to alleviate some dog owners’ frustrations with legal and other restrictions. Not only do they provide a place for dogs to get the exercise that is not possible by being walked on a leash, but they also get a chance to socialize with other people and dogs, which ensures happier, healthier dogs (Sequim Dog Parks, 2010).

The first dog park was created in 1979 in Berkeley, California. It was created on only a half-acre of land and is still in existence under the name Martha Scott Benedict Memorial Park

(Allen, 2007). Currently, Point Isabel Dog Park in Richmond, California claims the title of the largest dog park in the United States (Parks & Recreation, 2011). With over 23 acres, the park is a prime example of just how much dog parks have changed in recent years. In the last five years alone, the number of dog parks in the United States has increased by 34% between 2005 and 2010 (El Nasser, 2011). In fact, dog parks have become the fastest growing segment of city parks, as of 2011. Today, there are approximately 1,200 dog parks in operation in the United States (“Dog Parks in the United States Continue to Be Built”, 2012)

Benefits of Dog Parks

Throughout their approximately 12,000 years of domestication, dogs have served as loyal companions to humans (Davis, 1978). Humans have selectively bred and trained dogs for specific purposes, such as protecting, herding, and hunting (Moser, 2009). Thus, by nature, dogs enjoy a substantive amount of physical, mental, and social activity. More often than not, a dog’s need and desire for such activities can be met at dog parks. The characteristics of dog parks aid, in more than one way, the wellness of its canine and human visitors, as well as the community at large. In a survey distributed by Lee, Shepley, and Huang (2009), at four different locations (Harmony Dog Park, Cattail Dog Park, Danny Jackson Bark Park, and Millie Bush Bark Park) 85.6% of respondents felt it important that communities have a dog park. The American Kennel Club (AKC) identified four key benefits of dog parks, they: 1) allow dogs to exercise and socialize safely, 2) promote responsible dog ownership, 3) provide an outlet for dog owners to socialize, and 4) make for a better community by promoting public health and safety (American Kennel Club, 2008).

Dogs yearn for physical and mental exercise, as well as social activities in order to expend the energy that all dogs possess. A dog parks provides a large, open area for dogs to legally “roam free” and become as physically active as they wish. Dog parks promote physical activity not only for dogs, but for people as well. Dog owners and even senior citizens are encouraged to walk and exercise more if there is a dog park within walking distance of their home (Jackson et al., 1995).

Additionally, a dog park offers undiscovered sights, sounds, and smells to stimulate a dog’s curiosity. As a result, the unfamiliar surroundings will often keep dogs excited and interested, as they investigate their new environment. Keeping their minds active is also another

healthy use of their energy. Thus, dog parks give their dog visitors the opportunity to exercise to the fullest extent, and to do so safely - without such dangers as vehicles.

Furthermore, dog parks provide dogs the opportunity to maintain their social skills with other dogs, as well as people. By visiting the park, they are able to interact with other dogs of different sizes, ages, and energy levels. Moreover, they would be interacting with dogs they are unacquainted with, which gives them good practice in their communication skills and social behavior. Encouraging interactions can abate feelings of dominance or anxiety, thus well-socialized dogs are typically calmer, less aggressive pets.

The community, as a whole, can also benefit from the establishment of a dog park. Studies have shown that exercised dogs are less likely to invest their energy in undesirable behaviors, such as irrepressible barking, digging, and the destruction of property or personal items. "Behavior problems are the number one reason pets are brought to shelters or abandoned" (PetSafe, n.d.). The amount of activity and socialization opportunities a dog park provides have the potential to dramatically reduce a dog's behavioral problems, and consequently the overcrowding of shelters (PetSafe, n.d.).

In addition, dog parks are typically fenced-off from other public areas. This gives the dogs a safe place to run and play off-leash, and prevents them from chasing after, annoying, or frightening people outside the park. Thus, dog parks help dogs avoid infringing on community members' rights (American Kennel Club, 2008). Importantly, dog parks stand as inviting areas for the community to socialize. The parks are inherently geared towards dogs, and because almost anyone can own a dog, the parks appeal to people of every age, and socioeconomic background. They exist as common places for community members to gather, and meet with other members they may or may not know. Lee, Shepley, and Huang, (2009) found almost 77% of their respondents "strongly agreed" or "agreed" that "a dog park provides opportunities to meet neighbors and build a sense of community by socializing with others." Most people who visit dog parks are, naturally, dog-lovers, thus they can frequently bond over this shared passion. The dog owners can enjoy watching or playing with the dogs while they interact with each other, which may bring the community closer together. In a survey done by Denver Parks & Recreation they found that 80% of respondents visit Denver parks with a dog and 28% of these respondents visit the parks daily. Also within these surveys questions were asked about general

aesthetics of the Denver parks, experiences in them, and reasons for visitation (Hickenlooper, 2010).

While together, members of the community can also share advice on caring for their dogs, allowing dog parks to promote good pet ownership in yet another way. Furthermore, bulletin boards in some dog parks serve as a vehicle for educating the public on dog-related topics. They provide a quick, easy way for visitors to become aware of information, such as health and exercise tips, and upcoming events. Therefore, a dog park can encourage further involvement in the community, and foster a greater sense of unity among its members (American Kennel Club, 2008).

Opposition to Dog Parks

While a dog park seems like a fun, positive venture, many dog park proposals around the country have been stifled or hindered by strong opposition. For example, a proposed dog park in Ave Maria Village, North Dakota, was quickly shot down by residents concerned about the noise, traffic, smell, and child safety issues (Rodgers, 2009). Mission Viejo, California experienced similar opposition and the city council ended up approving the dog park in a different location, once the concerns of the opponents had been taken into consideration (Orange County Register, 2009). A house in Olympia, Washington complained about the smell, noise, and parking issues associated with the dog park in their backyard to the point where the city is considering alternative locations. They have considered leasing land until they can finalize a location, as they are looking to appease the disgruntled neighbors, while still retaining the community dog park. New budgets and ideas are on the table, as the city is determined to keep the dog park, regardless of its location (Batcheldor, 2012).

Disadvantages of Dog Parks

Although there are a lot of benefits of a dog park, there are also some potential negatives. Unfortunately, there is always the possibility of injury for both people and dogs at the park, which could be caused by aggressive dogs, mixing small and large dogs, and dog-hazards in the park. Hetts determined 11 different categories to describe aggressive behavior: dominance, possessive, fear, territorial, protective, play, redirected, pain-elicited, maternal,

idiopathic, and predatory (Hetts, 1999). Shyan, Fortune, and King noted in their study that in a given 72 hour span, 28 possibilities for a conflict arose. They recorded no conflict lasting over one minute. Only 9 of the 177 dogs observed were considered to be aggressors. These observations were all recorded at the 2 acre Broadripple Canine Companion Zone. This park has a rule prohibiting dogs under the age of six months, which interestingly enough, turns out to be a protection measure. Almost all of the observed conflicts occurred because an older dog was attacking a younger dog (Shyan et al., 2003). A previous study also calculated that 85% of dog park fights were the fault of an adult dog (Pal, Gosh, and Roy, 1998). As a general observation, aggressive dogs tend to be shunned from dog parks by victims' owners. Because of owner responsibility and supervision, this park has been able to minimize the risk of aggressive dogs (Shyan et al., 2003). Also, health issues can arise from parasites and diseases that dogs can carry. Dog owners may fail to pick up after their dog, leave the dog unattended, or allow the dog to act in an inappropriate way which would negatively affect the other dogs and people at the park (Association of Pet Dog Trainers, n.d.). Some community members may feel that a dog park would be annoying if it meant that it would be a concentrated area with a large number of barking dogs. Also, if there are already areas where people can take their dogs to play off leash, people may think that a new dog park would be unnecessary.

Some other risks involving dog parks also present themselves. In any situation where unfamiliar dogs interact with one another, there exists the potential for injury. Injuries can happen completely unintentionally, such as through too rough of play. They could also happen if one dog feels too uncomfortable or threatened and goes to nip or bite the other. Or, both dogs could become aggressive, and begin to fight. Along with injury to the dogs, it is possible for owners to be harmed. In order to avoid an issue like this it is important to abstain from making eye contact with an unknown dog, refrain from encouraging aggressive behavior, keep your own dog under control, and to get your dog spayed or neutered, which decreases the likelihood of them biting (Pelley, 2011). According to the ASPCA, over 70% of dog bites are caused by unneutered male dogs. Statistically, this makes unneutered males 2.6 times more likely to bite than neutered dogs. Similarly, dogs that are restrained in some way are 2.8 times more likely to bite than unrestrained dogs. However, it is important to note that 78% of dogs involved in bite incidents were kept not as pets, but for protection, fighting, breeding, or image enhancement (ASPCA, 2012).

Dogs are not always friendly toward one another. Therefore, some dogs in dog parks try dominating others, by “bullying” or intimidating them. This can lead to unpleasant interactions, and cause some dogs to start feeling nervous, shy, and easily overwhelmed. Consequently, some experiences may cause adverse effects on a dog’s social behavior. Dogs may also be at risk for certain transmissible illnesses, because of the fact that they will be interacting with so many other dogs in the park. Therefore, it is important that owners make sure their dogs are healthy, and fully vaccinated, before bringing them to one. Finally, just as people can disagree over how to handle children, people can potentially disagree over how to handle dogs. This may sometimes cause disagreements between dog owners in the park, especially when one person feels that another person’s dog is not behaving appropriately.

Funding and Maintenance Options

As with any major project, funding is a primary focus in the establishment and planned maintenance of a dog park. Identifying the best way to pay for the construction and the upkeep of a dog park can be complicated. Many parks receive some assistance from their local governments, specifically with site development and maintenance. In a great number of instances, municipalities have donated public land for the construction of a community dog park. Recently, in 2011, the City of Gloucester, Massachusetts dedicated two acres of an “under-utilized, overgrown section of Stage Fort Park” to the development of a dog park (O’Kennedy, 2012). In other instances, land between communities, or between a community and independent landowner, has been swapped. In Indiana, during the spring of 2012, the Twin Falls City Council approved a land swap of about 3 acres between the city and the Twin Falls County, with plans of turning the land into a community garden and dog park (Davlin, 2012). Though not as common, private land donations can also provide the area needed to build a dog park. However, most local governments now have tight budgets. As a result, park organizers usually make ongoing fund- raising a top priority.

Private funding is often sought out in successfully establishing and maintaining dog parks (Emerson, 2007). Asking local companies has proven to be a valuable way to raise funds. The companies are able to demonstrate support for their community through donations, which are tax deductible (Hakim, 2009). White Rock Lake Dog Park Inc., of Dallas, Texas, raised more than \$20,000 for fencing and maintenance of the city’s first dog park, which opened in 2001.

The group obtained support from local dog-related businesses and corporations, including that of Muenster Milling, a Texas manufacturer of organic dog food that, alone, made \$25,000 contribution to the dog park effort. Melissa Tinning, a Director of Friends of White Rock Lake Dog Park, Inc., stated, “You have to have the private support to make the funds happen - that’s essential” (Emerson, 2007).

Most dog parks have relied not only on donations from businesses, but also from the individual community members, as well. Many dog parks now have their own websites, informing the public about how to make personal donations. Oftentimes, the site will list a mailing address where donations can be sent by mail, and/or provide ways for donating online. Like many others, the website for the Fairbanks Dog Park, in Arkansas, gives its visitors the opportunity to purchase merchandise. The proceeds go towards the continual funding of the park. T-shirts, dog treat cookbooks, and calendars which feature dogs at the Fairbanks Dog Park are a few of the items people can buy to show support. Community members can also “sponsor a fence”, by donating online (Fairbanks Dog Park, 2008).

The internet has also provided dog parks with further opportunity to advertise events. Events are yet another way funds have been raised for the establishment, and maintenance of dog parks. Having just officially opened on September 22, 2012, the Doylestown Dog Park, of Doylestown, Pennsylvania, raised money, in part, by holding events at local businesses and restaurants. In December, a local business gave dog owners the opportunity to get their pets’ pictures taken with Santa, for a \$10 donation to the Doylestown Dog Park Fund. In March, over forty local businesses would post “Good Luck Paw Prints” from customers that made any size donation. In June, a “Pub Crawl” was organized. Members of the community could purchase a wristband for \$10 in advance, or \$15 the day of the event, participating pubs would then give drink and food specials to those members (Doylestown Dog Park, 2012). To further fund maintenance, other, already established dog parks, have hosted events at the parks, themselves. Such events include dog washes, pet competitions, and festivals. Beech Mountain’s Bark Park in North Carolina hosted a dog show, where every dog went home awarded with a title, in categories ranging from “the most spots” to “the longest tail”. The event raised over \$1,000 (Morrison, 2012). Another way to maintain a dog park financially would be to charge membership fees. For example, the Laurel dog park in Maryland, charges a yearly admission of \$30 for residents and \$35 for non-residents (Glenn, 2011). Shamrock Dog Park, in Lafayette,

Indiana, also requires yearly dog park memberships, and asks \$60 for a family of up to 3 dogs, and \$10 for each additional dog. A day pass to the Shamrock Dog Park costs \$5 (Shamrock Dog Park, 2012).

The costs paid for admittance into the dog park fund the building, management, and maintenance of the park. Whether it be a group of volunteers or a hired company the park needs to be maintained or else it could become an unsafe place where dogs and people alike could become injured. Maintenance of the park would consist of emptying trash and pulling weeds. The frequency of maintenance work, though, depends on the size of the park, the number of visitors, and other specific case factors. Some dog parks are managed and maintained by the city. Most dog parks, however, rely on an organized group of volunteers.

Planning and Design

Dog park designs take into account different variables that can add to the success or failure of the park, Table 1 shows some of these variables. The average height of a proper fence is about five feet or higher, and escape-proof. Also, dog parks with different sections tend to have slats in the fence to prevent dogs from being visible to the dogs on the other side of the fence. Depending on budgets, dog parks may have one open area or multiple parks within one. Budgets are a deciding factor for the type of surfacing within a park. Many common flooring options include grass, concrete, crushed rock, turf, and certified engineered wood fiber. Dogs can tear up the ground and dig near fences, which are some of the reasons why surfacing is carefully considered. Drinking water and shaded areas are common elements in dog parks, as they promote physical activity. Many dog parks also have a double-gate system, to avoid dog escapes. More elaborate parks sometimes provide agility equipment, which may include things such as ramps, tunnels, and weave poles to create an interactive environment for dogs and their owners. Seating, for people to rest and socialize, is another design element often considered by communities. There are many types of seating used. For example, aluminum framed benches, which are more resistant to the corrosion due to dog urine. Depending on the hours of operation, lighting must be adequate. Consequently, many parks install outdoor lighting to accommodate longer hours. Also, many dog parks provide restroom facilities for visitors (Tips for Building Successful Dog Parks in Your Community,

2010). There are a multitude of planning and design options upon which communities must decide.

Table 1: Examples of Dog Parks and Their Characteristics

	Harmony	Cattail	Danny Jackson Family Bark Park	Millie Bush Bark Park
Year opened	2003	2004	2004	2003
Park size	±2.3 acres	±1 acres	±2.5 acres	±15 acres
Site context	Amid residential neighborhoods, walkable distance from most of residents' home	Residential area but not adjacent to neighborhoods. Community trail system connected. Part of the 13-acre Cattail Park	Power line easement, close to downtown, adjacent to highway, warehouses, parking buildings, & APTs	Part of the 7800-acre George Bush Park, accessed by only vehicles
Parking availability	No designated parking spaces, on street parking	24 spaces shared with other park users	Large asphalt parking lot: 100 spaces	Large asphalt parking lot: 100 spaces
Dog separation	Big and small dog separate areas, not directly connected	Big and small dog separate areas	Big and small dog separate areas	Big and small dog separate areas
Fence/perimeter & gate	4' high chain link fence with shrub hedge & double gates	6' high chain link fence & double gates	6' high chain link fence with shrub hedge along street & double gates	6' high chain link fence & double gates
Shade structure	Pavilion with 2 benches under it	Pavilion with 2 benches under it	Two canopies with 4 backless benches	Three canopies with 4 backless benches

Table 1 (continued): Examples of Dog Parks and Their Characteristics

	Harmony	Cattail	Danny Jackson Family Bark Park	Millie Bush Bark Park
Seating	Benches are lined up at one side of park; not many seating options	Benches are scattered around park	Benches are located along walking path & entry; backless benches under canopies	Benches are located along walking trails & entry; backless benches under canopies
Play areas	Both small and big dog areas are spacious for dog runs and fetching	Big dog area has open field for dog play but small dog area looks tight	Linear park shape provides dogs and owners with long paths for walk and run	Large open space and walking trails allow exercise and play of dogs and people
Water play area	No designated water play area; 1 water tab without concrete pad, baby pool under the pavilion	Water tab near the pavilion, pea gravel surface with stone edging baby pool	2 swimming pools with concrete edging	3 swimming ponds with concrete edging
Other amenities	Doggie shower, playground between two dog areas. Picnic tables & benches outside the dog park	Restrooms nearby, other park amenities (ball fields, skating park, trails, playground) close by	Doggie shower	Doggie shower, picnic tables & benches outside park

(Lee et al. 2009)

With the increase in the popularity of dog parks on the rise, to the array of features and layouts has also increased (El Nasser, 2011). The Denver Parks and Recreation department has a total of 6 different dog parks with various features (Hickenlooper, 2010).

Table 2 demonstrates the range in the type of dog parks in terms of size, seating, and fencing. Many parks separate dogs by size. Some parks such as Bremerton, WA, decided to only add a separate area for small dogs when the need to arose (Design Elements, n.d.). Atlanta’s Piedmont Park only built a separate area for small dogs after a pit bull terrier killed a miniature pinscher. Many parks allow for two areas to avoid fights and keep smaller dogs safe, should the owner choose to use the small dog section. The predominant type of fencing is chain-link fence, but as seen in Table 2, one park chose to use a post and beam fencing

system, possibly for aesthetics, and another chose natural barriers, most likely based on convenience. The location of the park determines the fencing and size options. Benches are another popular feature commonly found in dog parks, but depending on the park, they may be non-existent. Each park has the same basic principles, however a wide variation exists based on the preference and ability of the community that built it.

Table 2: Denver Parks and Recreation Dog Parks

Off-Leash Area	Fuller	Berkeley	Green Valley Ranch	Greenway	Barnum	Kennedy
Size	1 Acre	2 Acres	1.6 Acres	3 Acres	3 Acres	3 Acres
Surface	Dirt	Dirt	Mixed	Sand	Turf	Mixed
Seating?	No	No	Yes	Yes	No	Yes
Barriers	Metal fencing with double gate	Fencing with double gate	Fencing with double gate	Fencing with double gate	Post and beam fencing	Natural barriers
Other Features	Drinking fountain	None	Trees, drinking fountain, shade structure	Trees, shrubs, drinking fountain, shade structures	None	Natural vegetation

(Hickenlooper, 2010)

A park in Puyallup, WA does not allow children less than sixteen years of age to be in the park unattended or handle the dogs, as a safety precaution (Puyallup Dog Park, n.d.). Other parks, such as Patricia Simonet Laughing Dog Park, also have this rule. Most parks either have a limit to how many dogs are allowed, or advise visitors to only bring a manageable number of dogs. The hope is that people will use their common sense, and not overestimate the number of dogs they can control. For any dog park to be successful, rules and regulations must be in place and firmly enforced. Without these standards, problems arise causing liability issues for the managing organization. The Puyallup Dog Park has rules such as: dogs only,

keep your dog from digging holes, dogs must be legally licensed and vaccinated, no spiked, choke, or pinch collars, no dogs under four months of age, etc. (Puyallup Dog Park, n.d.). The Fairbanks Dog Park has rules such as: owners must clean up after their pets, no aggressive dogs, spayed/neutered dogs are recommended, etc. (Fairbanks Dog Park, n.d.). As described above, a dog park should be a safe and fun place for dogs to be able to play off leash with their owners and other dogs. Rules and regulations can provide for this safe environment. Figure 1 shows an example of the layout of a dog park in Mobile, Alabama.

Figure 1: Dog Park in Medal of Honor Park, Mobile, Alabama



(Wills, 2011)

A master thesis by Laurel Allen of the University of Pennsylvania evaluated 6 different dog parks on such design aspects as size, seating, and surface, among other things (see Table 3). Four out of the six parks had the rules posted, but in reality all parks should post the rules

as it severely limits legal liabilities. All but one park had port-a-potties, if not a permanent restroom facility. From the information given, it appears that water fountains are a must, as only one park did not provide them. Grass was found in over half the parks; however wood chips, gravel, and Stonclad GS (a type of epoxy) were other alternatives that some parks used. The safest, most economical flooring must have been considered before these decisions were made. All six of the parks that were evaluated provided waste disposal bags, as waste is an issue regardless of where the park is located. This is even more imperative on an island, as there are limit resources, and pollution is a real concern. The tendency of the parks that Allen looked into was to provide seating for the constituents and shade by having trees. Four of the parks allowed for nighttime use by adding lights, which significantly improves the safety of the park (Allen, 2007).

Table 3: Dog Park Comparisons

	Camden	Hamilton	Mt. Laurel	Princeton	State College	Battery Park
Posted Rules	Yes	Yes	Yes	No	Yes	No
Ample Seating	Yes	Yes	No	Yes	Yes	Yes
Surface	Grass	Grass & Gravel	Grass	Woodchips	Grass	Stonclad GS
Trees	Yes	Yes	No	Yes	No	Yes
Restroom	Portable	Permanent	Permanent	Portable	Portable	No
Water Fountain	Yes	Yes	Yes	Yes	No	Yes
Lighting	Yes	Yes	No	Yes	No	Yes
Waste Bags	Yes	Yes	Yes	Yes	Yes	Yes

(Allen, 2007)

NATURE OF THE PROBLEM ON NANTUCKET

Nantucket is a dog-friendly destination where dogs are generally seen on the beaches, on the ferries, and even in some restaurants. Although many dogs can be found on the island year-round, the number of dogs on the island increases substantially in the summer months. While Nantucket is very dog-friendly, the town has a leash law, which states: “No person within the confines of the Town shall at any time permit a dog owned or kept by such keeper to run at large beyond the confines of the property of the owner or keeper unless the dog is held firmly on a leash” (Nantucket Dog Walk, n.d.). Various restrictions also exist on certain beaches and conservation lands. While the leash law exists, few owners follow the law and it is seldom enforced.

In addition to the leash law, dog waste bags are provided in many areas that are heavily frequented by dog walkers to encourage responsible dog ownership. For example, poop bags are provided at Tupancy Links, as well as trash receptacles specifically for dog waste (Nantucket Conservation Foundation, n.d.). Nevertheless, there are growing concerns about the possible adverse impacts of dogs on the island, especially with regard to pollution of the surface and ground-water. Ground-water is the sole source of drinking water for Nantucketers, and “the principal source of fresh water for domestic, commercial, and agricultural use” (Nantucket Land Council, Inc., n.d.). Nantucket’s water supply is pumped out from an aquifer that sits below the island. The sand and clay filters the ground water into the water supply (Nantucket Basic Facts, n.d.). This water supply has protection zones; one located in Siasconset, one in mid-island, and one off Polpis Road. The Wannacomet Water Company pumps this water and distributes it to most of the island. The demand for water is growing in Madaket, Cisco, and the Bartlett/Somerset areas due to poor water quality in those areas (Nantucket Master Plan, n.d.). With such a limited supply, it is essential the water supplies on Nantucket remain clean and unpolluted. Improper disposal of dog waste, however, threatens the quality of this water. According to a study done on watershed in the Seattle, Washington area, almost 20 percent of the bacteria found in the water samples were matched to dogs as the host animal (The United States Environmental Protection Agency, 2001). Several conservationists on Nantucket believe that dogs are responsible for 10% of the coliforms in the

Nantucket Harbor. While there have not been sufficient tests to prove this data, it is significantly less than Washington, but still a potential problem.

When pet waste decays it consumes oxygen, and can release ammonia. The health of fish and other aquatic life can be negatively affected by these low levels of oxygen and ammonia. Furthermore, certain nutrients in dog waste can change the makeup of water and promote eutrophication. Water with large amounts of algae and weeds can be both unappealing and unhealthy (Pet Waste Management, n.d.). Dogs are generally not very welcome on most beaches for these reasons. What's more, the bacteria in dog waste can contribute to contamination levels that result in the closure of beaches and shellfish beds (Massachusetts Bureau of Environmental Health, 2012). Closings have occurred several times on Nantucket, specifically with Children's Beach, which had to close at least four times in the summer of 2012 (The Inquirer and Mirror, 2012). Dogs are now prohibited from the grassy areas at Children's Beach.

In addition to human waste, dog waste has the ability to halt fishing efforts in certain shellfish beds. "As a highly seasonal economy with few sources of year-round employment, shellfish provide a way for residents to diversify and supplement their income" (Nantucket Shellfish Management Plan, 2012). The Nantucket Harbormaster issues 1,800 non-commercial shellfish permits, and patrols 100 commercial bay scallop boats for a five month season (Cape and Islands Harbormasters Association, n.d.). The bay scallop fishery on Nantucket is particularly important to the local economy, being the island's highest value fishery. Additionally, as a winter fishery and "a rare and nationally significant piece" of Nantucket's coast, the bay scallop fishery "provides income when the summer economy has subsided" (Nantucket Shellfish Management Plan, 2012). Thus, protection of these shellfish beds is important not only to Nantucket's "coastal heritage", but town economy, as well. Reduction of dog waste contamination in these waters may aid such protection efforts.

Figure 2: Posted Sign Outside of Children’s Beach, Nantucket



In a study done by Paul Webley and Claire Siviter, 59% of dog owners were responsible, meaning they took care of their pets’ waste (Webley & Siviter, 2000). Another study, done in Belfast, Northern Ireland, United Kingdom, at eight different parks, showed that only 53.5% of dog owners cleaned up their pets’ waste (Wells, 2006). Although this research was done in the UK, the statistics offer valuable insight, regarding the degree to which dog owners feel the necessity for disposing their dog’s waste.

Understandably, the officials on Nantucket are becoming more and more concerned with the amount of dog waste that is being left on the beaches. They continue to stress that it is unsafe, as it not only contaminates the water, but can also cause harm to anyone who happens upon it. In San Diego’s Dog Beach the water was closed to swimmers 125 times in the year 2000 alone. The city spent about \$10,000 on trash cans, signs, and plastic bags to avoid these

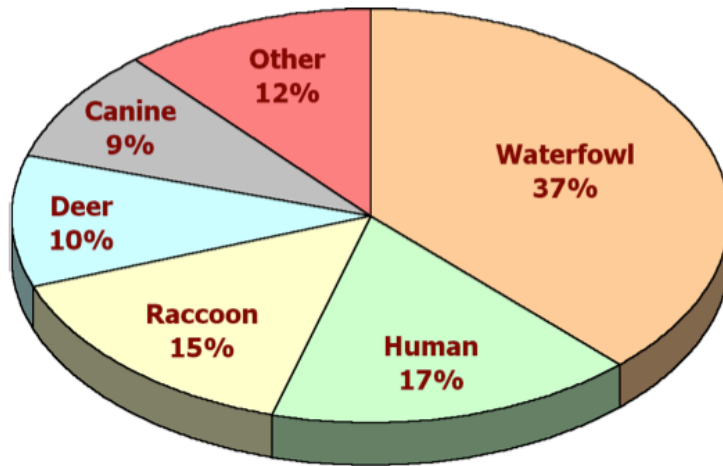
problems with dirty water. Near Atlanta, at the Chattahoochee River National Recreation Area, park officials have given pet owners tickets for not carrying doggie bags with them. Also, due to bacteria levels being so high, so often, the recreation areas website tells swimmers and boaters whether or not the river is safe enough to be in (Watson, 2002).

Other places in which dog waste has polluted the water are Stevenson Creek, in Clearwater, Florida; where dog waste and leaky septic tanks caused high bacteria counts, the Boise River in Boise, Idaho; where the river is unsafe to swim in due to dog and cat feces, and the Four Mile Run in the Arlington and Fairfax counties of Virginia; where an estimated 12,000 dogs living in this watershed deposit more than 5,000 pounds of waste each day. In order to determine the source of non-point fecal coliform in the Four Mile Run watershed, fifty-five water samples were taken and analyzed. From the useable data, researchers found that the human contribution to the *E. coli* fecal coliform samples was 17%, while waterfowl were 37% of the problem, and dogs were the sixth highest contributor at 9% (See Figure 3). It was estimated that 165,000 people lived in the watershed with approximately one dog for every ten people. While dogs were, by no means, the major source of this pollution, their contribution still affected fecal coliform levels in the watershed (Simmons, n.d.). It is important to keep in mind that, in different areas around the country, and even in different watersheds, the relative contributions of different sources are likely to vary. The large variety of wildlife found in different places, as well as the wildlife population, and variations in human activities all contribute to the fecal coliform density breakdown in a given watershed.

While there is a Nantucket bylaw requiring dogs to be on leash at all times, there is no law keeping them off the beaches in the tourist off season. In the summer, however, dogs are only allowed on the lifeguarded beaches before 9a.m. and after 5p.m., and must still be kept on leash (Murray, n.d.). The Parks and Recreation department has put up signs urging people to leave their dogs at home during tourist season, as it is a serious health hazard. The current goal is to keep the number of dogs on the beaches to a minimum, and attempt to educate the public about the dangers of leaving dog waste around the island. Without the means and motivation to clean up after their dogs, the people frequenting the beaches of Nantucket with their canine counterparts are unknowingly polluting the beaches to the point where they could easily be closed down (Graziadei, 2012). Tupancy Links, an area that is commonly used for dog walking, is aware of the feces problem and the dangers associated with it. Consequently, it now

requires that dog owners use the waste disposal bags provided at the entrance (Nantucket Conservation Foundation, n.d.).

Figure 3: Contributions of Fecal Coliform Densities



(Simmons, n.d.)

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Waste pollution is not the only concern regarding dogs on the island. Specifically, Nantucket has been concerned with the protection the island's least terns and piping plovers, two rare and endangered bird species. These particular birds have been under federal protection since the enactment of the Migratory Bird Treaty Act in 1918. The two species have very different yearly cycles, as well as nesting habits. Terns nest in colonies, whereas plovers nest in single pairs. The plovers tend to lay four eggs, approximately the same coloration of the sand. While the color similarity protects the eggs against predators, people in unmarked areas will often not realize when they are near a nest. The Nantucket Conservation Foundation partly attributes the "inadvertent destruction of nests" to "pedestrians" and "unleashed pets". The Foundation also claims that "one dog running through a colony can destroy numerous nests and chicks and distress adults to the point of abandoning their breeding efforts for the year" (Nantucket Conservation Foundation, 2012). Thus, the Foundation urges owners to leave their dogs at home or, at the very least, keep their pets leashed and under close control when around nesting areas, as a protective measure for these endangered birds (Nantucket Conservation Foundation, 2012).

Owners who explore other venues besides the beach may run into other issues such as hunters. Hunting season begins mid-fall in Nantucket, which can potentially pose a safety threat to those who prefer to walk in the woods. To date, the Nantucket Conservation Foundation has closed off certain properties, including The Sanford Farm, Tupancy Links, Ram Pasture, and the Milestone Cranberry Bog, from hunting activities (Nantucket Conservation Foundation, 2007). There are also rules in place to prevent accidents, such as prohibited hunting hours. Hunting is only legally permitted between a half hour before sunrise and a half hour after sunset. Additionally, hunters must have permission if on private land, and must be a certain distance away from any roads, bike paths, and occupied buildings. Per Massachusetts state law, hunting is prohibited on Sundays (Nantucket Conservation Foundation, 2007).

Though these precautions are taken, hunting accidents have occurred on Nantucket in the past. Exceptions can be made to some of the existing restrictions. In 2007, a "by written permission" shotgun hunt was conducted in a section of Ram Pasture, a property that, as aforementioned, is typically closed to hunting. Therefore, walkers should regularly exercise caution during hunting season, and take preventive measures to protect themselves, as well as their pets. In an article by the Nantucket Chronicle, released on the first day of the 2012 Nantucket bow-hunting season, author Peter Brace urged residents that walk their pets to keep

their dogs “leashed and wearing either an orange collar or a vest” to keep them safe (Brace, 2012). Thus, even with present safety measures, hunting season presents some danger to the island dogs, and dog walkers. As a designated space, specifically for recreationally purposes for dogs and dog walkers, a fenced-in dog park may provide the Nantucket community members with a secure location to bring their pets.

A dog park on Nantucket would offer a way to take care of some of these problems. It would provide benefits to not only dog owners but the community at large. These benefits could include reduced water pollution. For the dogs, specifically, a dog park could reduce their exposure to ticks, offer a better opportunity for socialization, and provide a safe, open place for activity during hunting season.

EFFECTS OF A DOG PARK ON NANTUCKET

Building a dog park on Nantucket has great potential. It could provide a place further from the water supply for dogs to go. Also, use of a bulletin board could promote “scooping the poop” and what negative effects dog waste has on local water supplies, which could aid in a cleaner water supply. Although “foot-traffic” around the water supply will not be eliminated a dog park might be able to alleviate some of that.

A major benefit of a dog park would be a safe, tick free place for dogs to play. From 1992-2001, Nantucket was listed as the number one county in terms of the average rate and number of cases of Lyme disease. The Nantucket Tick-Borne Disease Committee recommends keeping grass cut low and avoiding excessive watering of the grass, since it will increase the humidity and provide a better habitat for ticks (MacNab, 2009). A dog park could be a way to alleviate the tick population concern. As long as it was well maintained, meaning that if the park was grassy it would be kept below 3 inches in height and not being watered excessively (MacNab 2009). According to Malcolm MacNab, Chairman of the Nantucket Tick-borne Disease Committee, high shrub areas can contain more immature black-legged ticks than open-grass or shrub free habitats. A way to completely avoid the tick would be to have gravel or concrete as the surfacing of the dog park.

Creation of a place for people of all ages to gather can be good for a strong community. Nantucket currently has places where dogs can go on walks such as Tupancy Links, Sanford

Farm, and the many beaches, just to name a few (Nantucket Dog Walk, n.d.). The problem with these locations is that they may not be as convenient for the older folk to reach. Having a dog park in a convenient location with helpful features could bring a more diverse group of people and possibly get the elderly involved.

CONCLUSION

Dog parks are becoming increasingly popular due to the sheer number of dog-owning households, the perceived benefits of the parks, and in reaction to increasing restrictions on dogs and dog owners, especially in urban areas.. Dog parks come in various guises, from simplistic to extravagant, and offer various advantages and disadvantages. Nantucket has a growing problem with the number of dogs and dog pollution. A fenced-in dog park on the island may offer a solution, but further assessment is needed. Consequently, our project was designed to evaluate the feasibility, desirability, and design of a dog park on Nantucket as a means to provide a safe outlet for people and dogs alike to socialize and exercise. How we conducted the project and what we discovered through surveys and interviews are described in the following chapters.

CHAPTER 2: METHODOLOGY

The goal of this project is to determine the desirability, feasibility, and potential design features of a dog park on Nantucket. The team identified five different objectives necessary to meet this goal. We: (1) Evaluated the growth, purpose, and changing nature of dog parks in the United States; (2) Assessed the perceived need for a dog park on Nantucket; (3) Assessed the perceptions of opinion leaders, regarding dog- specific issues on Nantucket; (4) Evaluated the tradeoffs among various dog park options; (5) Developed a set of recommendations to present to the Nantucket Board of Health.

OBJECTIVE 1: EVALUATE THE GROWTH, PURPOSE, AND CHANGING NATURE OF DOG PARKS IN THE UNITED STATES

As noted in the literature review, dog parks have become increasingly popular in the United States in order to meet the needs of dogs and dog owners. Consequently, we wanted to know the reasoning behind the popularity of dog parks, and how this popularity has changed over time. Thus we conducted an extensive review of related documents before coming to the island. Once we began speaking with key community members, we were pointed to additional sources for our research. This additional review of new documents served as a supplement to our initial background research. The results of our research are summarized in our literature review above.

OBJECTIVE 2: ASSESS THE PERCEIVED NEED FOR A DOG PARK ON NANTUCKET

Although our analysis of case studies provided pertinent information, we could not draw overall conclusions for Nantucket based on these particular cases. In order to determine the need for a dog park on the island, we performed a thorough assessment of the wants and

needs of the people of Nantucket. The large number of dogs on Nantucket significantly rises during the summer, Nantucket's peak tourist season. As a result, there is increasing concern among some community members regarding the adverse impacts such numbers can bring, particularly those caused by failure to dispose of dog waste appropriately. However, there is no indication of the level of concern on the island. To address this issue, we conducted a systematic, anonymous survey of the public to determine the range of opinions about, and the level of support for, a dog park. In order to obtain data the most representative of the Nantucket community, we planned to survey four key audiences: dog owners, families with children, the older members of the community, and the general public. Table 4 illustrates our original plans for surveying.

However, once we began the surveying process we decided to slightly shift our focus to dog owners, non-dog owners, families with children, and the general public. We felt, for analytical purposes, these four groups would best serve our study. Since we did not have a sufficient amount of time or resources to conduct an island-wide mail survey, we developed two different surveys that were administered as either in-person or self-administered surveys at key locations designed to reach the target audiences. In addition, we created an online version to be completed by those we did not have a chance to speak to, but still wanted to give their opinion.

This seemingly complex survey method necessitated the development of two different surveys: one for dog owners and one for non-dog owners. Regardless of location, both surveys were made available to survey participants. We presented these two different surveys in three separate ways: in-person, written, and online. This method for surveying was necessary to enhance the response rates for each target group. We believed dog walkers at Tupancy Links and members of the public at the grocery store were unlikely to answer and return a self-administered survey. By contrast, we felt we would not be able to easily identify and interview, in person, the parents of the public school children. We used our previously developed in-person survey instruments that distinguished between dog owners and non-owners as the template for the self-administered survey. These surveys were distributed to community members in the various locations as indicated in Table 5. These locations were chosen because they offered the greatest potential for reaching our key audiences.

Table 4: Surveying Methods for Target Groups on Nantucket

Target Group	Potential Sampling Location	Survey Type	Administration Method
Dog owners/walkers	Tupancy Links Sanford Farm	Dog owner	In-person
Families with children	Elementary & Middle School	Dog owners Non-owners	Self-administered (backpack survey)
Older people	Bingo Night, etc.	Dog owners Non-owners	Self-administered (with drop box)
General public	Supermarket, Ferries, etc.	Dog owners Non-owners	In-person

Initially we planned to survey dog owners at both Sanford Farm and Tupancy Links, but after a trial period it was clear that the turnover rate at Sanford Farm was too low to yield significant numbers of participants in a reasonable period of time, causing our focus to shift solely on surveying dog owners at Tupancy Links. We had also planned to only survey the guardians of the public elementary and middle school students. Upon reevaluation of our surveying strategy, though, we realized we could obtain additional information by surveying the guardians of the public high school students, as well. Therefore, the families of each public school student were given the opportunity to complete a survey.

Moreover, after becoming more familiar with the town once we were on Nantucket, we found several other means of making our surveys easily accessible to the general public. Thus, in addition to the ferries and the local grocery store, Stop & Shop, we left paper copies of our surveys at the local pet stores, Cold Noses and Geronimo’s, and the town’s veterinarian hospital. Additionally, we digitalized our surveys to provide the community with online access. Links to the surveys were made available on the homepage of the Nantucket town website, Geronimo’s Facebook page, the Nantucket Island Chamber of Commerce’s Member Bulletin email, Nantucket Dog Walk’s Twitter account, and the Nantucket Safe Harbor for Animals’ website.

Table 5 details the locations we surveyed, which audiences were addressed, the type of surveys administered, and the method in which those surveys were administered.

Table 5: Updated Surveying Methods for Target Groups on Nantucket

Target Group	Sampling Location	Administration Method
Dog owners	Tupancy Links, Sanford Farm	In-person
Families with children	Elementary, Middle, & High School	Self-administered (back-pack survey)
General Public	Geronimo’s, Offshore Animal Hospital	Self-administered
General Public	Stop & Shop, Steamship Authority, Tupancy Links, Sanford Farm	In-person
General Public	Various online locations (Town website, Geronimo’s Facebook page, NSHA homepage, Nantucket Island Chamber of Commerce Member Bulletin email)	Self-administered

Developing the Survey Instruments

The first step in conducting our assessment was the development of our draft survey instruments. We created two separate surveys: one for dog-owners and one for non-dog owners. (See Appendices 1 & 2). Richard Ray, Alexandra Welsh, Peter Morrison and our advisor, reviewed these drafts to ensure the surveys were worded appropriately and covered pertinent topics. After their review and approval, we conducted a pilot survey outside of Nantucket’s downtown post office, and received responses from seventeen randomly selected community members. Based on their responses, we reworked parts of both surveys to better suit our needs, which included adding, removing, and rewording various survey questions. After our pilot survey, we determined the best way to solicit this kind of information was a survey instrument which combined multiple choice questions, open-ended questions, and rating scales.

The next step in conducting our assessment was to finalize and format the surveys. We completed two versions of a written survey (see Appendices 1 & 2), which were directed toward dog owners and non-owners, respectively. We formatted our dog owner survey to be one page, double sided to avoid having only part of surveys returned. We formatted our non-dog owner survey, which contains fewer questions, to fit on one side of a single page. The same dog owner and non-dog owner surveys were used for in-person surveys and written surveys. Therefore, dog owners who participated in our in-person surveys were asked the same questions as dog owners who completed written surveys. Similarly, the non-dog owners who participated in our in-person surveys were asked the same questions as the non-dog owners who completed written surveys. We wanted to be able to extrapolate the data to determine whether Nantucketers wanted a dog park, and whether they felt one was needed.

Implementation of Surveys

As it was not feasible for us to mail a survey to all the people on Nantucket; we conducted a convenience sample. To accomplish this task, we read surveys to willing participants who walked by where we were stationed. We administered the in-person survey to people at Tupancy Links and the local grocery store, as well as other locations on the island. The other locations we planned to survey included restaurants, ferries, and the Dreamland Theater, among others; all of which attract the general public (Table 4). However, due to the fact that the first few surveying locations were more than sufficient for reaching our desired sample size, we decided surveying at the Dreamland Theater and restaurants were no longer necessary. We chose to survey at Tupancy Links, Sanford Farm, The Steamship Authority, and Stop & Shop. We screened the respondents by asking whether or not he/she owns a dog. Based on the answer, we administered him/her the appropriate surveys. Tupancy Links and Sanford Farm were meant to help us reach our “dog owner audience”, since these areas are common spots for dog-walking. The ferries and Stop & Shop helped us glean the thoughts of the “general public”. The self-administered surveys left at the veterinarian hospital and local pet stores aided us in gathering the opinions of those who are actively seeking care for their pets. The written version of our survey was also given at the local elementary school, middle school, and high school. As a priority, we wanted to reach a sample size of at least 200 people, in order to make certain the data is representative of the Nantucket population.

Tupancy Links/Sanford Farm: Since Tupancy Links and Sanford Farms are known as popular dog walking areas, we surveyed here in order to learn the opinions of dog owners who regularly exercise their dogs. As these locations are open to the public, we spoke with both dog owners and non-dog owners. We executed this survey as an in-person survey to the willing participants.

Elementary School/Middle School/High School: We obtained the permission of the School Superintendent and the principals of the elementary, middle, and high schools by explaining the purpose and nature of the survey. Initially, we had planned to distribute the high school survey by e-mail at the suggestion of the principal, but the Superintendent felt that this was an inappropriate use of the school e-mail list. Instead, we conducted paper ‘back-pack’ surveys at each of the schools. Surveys were grouped according to the number of students in each class, including both non-dog owner and dog owner surveys as well as sets of instructions for each teacher (see Appendix 5). Upon receiving an email from the elementary school, asking us to accommodate the school’s Hispanic population, we also provided an email copy of our surveys in Spanish, which can be seen in Appendices 3 and 4.

Online: At the suggestion of several town officials, we agreed to put our surveys online as well. After assessing several options, including Survey Monkey and Microsoft InfoPath, we decided that Google Survey would be the most suitable survey tool. Google Survey has several built in, flexible survey formats, is free of charge regardless of the number of questions (unlike Survey Monkey), and collates responses directly into a spreadsheet. We reformatted the paper survey to fit the Google Survey format and posted the link in several places, including the home page of Nantucket Safe Harbor for Animals (NSHA), Geronimo’s Facebook page, and with the help of Jason Bridges we were able to put the surveys on the town website. By proxy, other groups began posting the links on twitter. These pages can be viewed in Appendix 8.

Other: For locations such as the grocery store and ferry we administered the in-person survey. We soon realized that there was a very short window of time in which to speak with ferry goers, and due to the time of year, the number of people present was sparse. After a few

attempts with lackluster results, we decided that our time was best spent elsewhere. We left written versions of the surveys at the veterinary office, Geronimo's, and Cold Noses to be completed while there or brought home and dropped off at a later time. Tables 6 shows the number of complete surveys we received by venue.

As an added measure to gauge community response to our project, Geronimo's offered to set up an informational booth at their store during Christmas Stroll, the first weekend in December when many of the summer residents visit. However, we chose to leave an informational poster describing our project, which included: the basic statistics, the potential benefits, and frequently asked questions.

After speaking with Eric Savetsky of the Land Bank, we were invited to present our findings and background information to the Board of Commissioners at one of their two meetings in November. As the Land Bank was an option for a possible land donor, it was important to introduce their Board to our project. You could say that the interviews show that there is a good degree of consensus among the key stakeholders that a dog park is a good idea for Nantucket, but uncertainties regarding the location, features, and management of the park remain to be resolved.

Community Response

In total, 142 people responded to the non-dog owner survey and 219 people responded to the dog owner survey. The large majority of these surveys were collected from the parents of the Nantucket public school children, 57%, and online venues, 18%. The gender distribution for each version of the survey was relatively similar which can be seen in Figures 4 and 5. For non-dog owners, 128 (90%) of respondents were full-time residents, which, percentagewise, is nearly identical for dog owners with 197 (90%) of respondents being full-time residents. We found that most survey respondents were from the more densely populated areas of the town proper and mid-island. This can be seen below in Figures 6, 7, and 8.

Figure 4: Gender Distribution of Dog Owner Survey Respondents

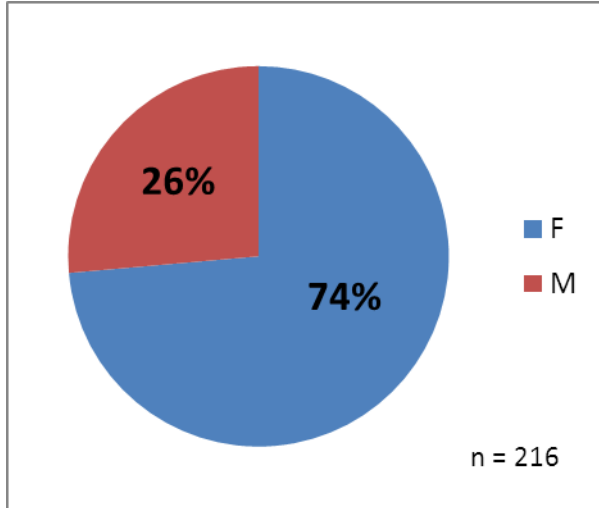


Figure 5: Gender Distribution of Non-Dog Owner Survey Respondents

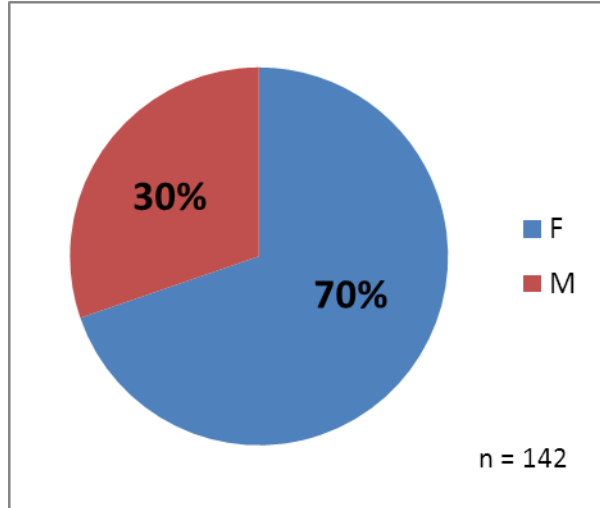


Figure 6: Island Location of Dog Owners

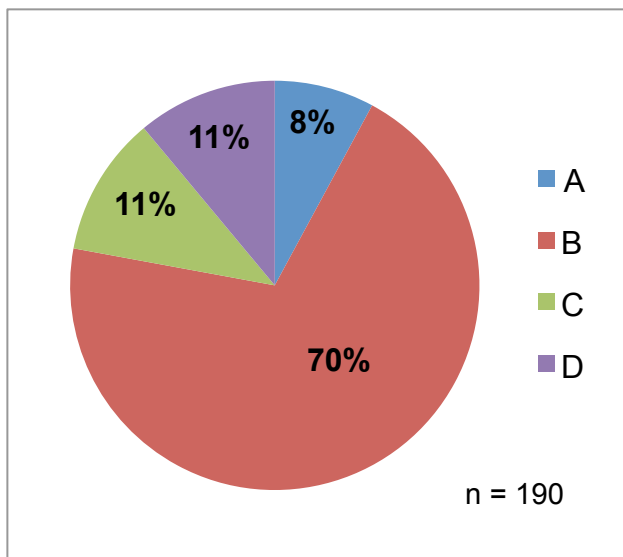


Figure 7: Island Location of Non-Dog Owners

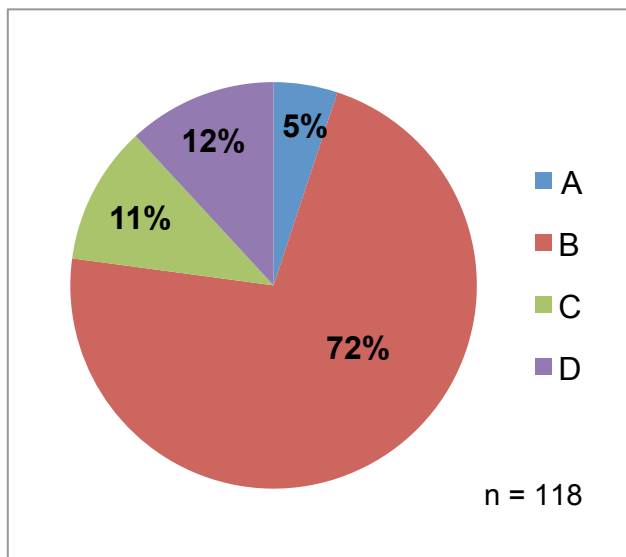


Figure 8: Divided Map of Nantucket



Table 6: Survey Return Distribution

	Dog Owners	Non-Dog Owners	Total
Nantucket Schools	110 (50.2%)	94 (66%)	206 (57.1%)
Online	44 (20.1%)	24 (17%)	68 (18.8%)
Stop & Shop	17 (7.8%)	20 (14%)	37 (10.2%)
Tupancy Links	14 (6.4%)	2 (1%)	16 (4.4%)
Geronimo's	28 (12.8%)	N/A	28 (7.8%)
Steamship Authority	2 (0.9%)	2 (1%)	4 (1.1%)
Animal Hospital	2 (0.9%)	N/A	2 (0.6%)
Sanford Farm	1 (0.5%)	N/A	1 (0.3%)
Miscellaneous	1 (0.5%)	N/A	1 (0.3%)
Total	219 (100%)	142 (100%)	361 (100%)

Data Coding and Entry

After the surveys had been administered and returned, we entered the responses into an Excel spreadsheet for convenient, reliable analysis. We also took the data from our online surveys and moved it to our Excel spreadsheets. With this we were able to analyze our data with ease and create descriptive statistics and graphs, we were able to summarize and portray the trends and patterns. The opinions of dog owners vs. non-dog owners, young vs. old, and other such comparisons (see Chapter 3: Findings and Analysis). As well as this data entry we coded the free response answers by finding the most common responses and placing them in said categories. This showed us the trends in the reasons why the community was in favor or not of a fenced-in dog park on Nantucket.

OBJECTIVE 3: ASSESS THE PERCEPTIONS OF OPINION LEADERS, REGARDING THE NEED FOR A DOG PARK ON NANTUCKET

In addition to surveying various segments of the island population, we also interviewed prominent members of the community, regarding the need for and opinions about a dog park. We used in-depth qualitative interviews to learn the concerns, thoughts, and opinions of these community members. Prior to interviewing each participant, we performed extensive background research on the individuals being interviewed, to ensure we knew their role in the Nantucket community and positions on issues that might be related to dogs. During the course of interviewing, our interviewees suggested numerous other potential interviewees. We inquired as to the interviewee's professional opinion on dog parks, establishing a dog park on Nantucket, and the possible location, design, maintenance, and funding options for such a park. We personalized the interview questions to suit the interviewee's interests and expertise. The interviews were originally intended to include the interviewee, the interviewer (to carry the conversation and ask questions), and a scribe (to take notes for the interviewer). We later decided that it was best if all three of us were present in the interviews to capture all pertinent information. Instead of having a set script for interviews, we came up with at least 10 questions specific to our interviewee prior to the interview. We interviewed a total of 21 individuals (Table 7) covering a wide variety of topics and a broad range of roles in the community.

Table 7: List of Interviews

Name	Position on Nantucket	Topics	Date
Kara Buzanowski,	Department of Public Works Director	how dogs impact the maintenance of roads and town property	10/26/12
Jeff Carlson	Natural Resources Coordinator	effects of dog waste on the Nantucket environment	10/24/12
Maggie Carro	Geronimo's Manager	attitudes and opinions of dog owners	11/08/12
Suzanne Gale	Animal Control Officer	dog control issues on Nantucket	10/25/12
Jan Jaeger	Owner of Cold Noses and Geronimo's	attitudes and opinions of dog owners	11/26/12
Joyce Jaskula	Dog Trainer	professional opinion on various dog behaviors	11/14/12
Jim Lentowski	Executive Director of the Nantucket Conservation Foundation	impacts of dogs on conservation land	11/05/12
Catherine Lepore	Owner of newly adopted shelter dog	opinions of owners of newly adopted dogs	11/29/12
Tim Lepore	Leading Expert on Deer Ticks	dogs and health issues	11/29/12
James Manchester	Department of Public Works	features of dog parks and potential issues of establishing one on Nantucket	11/07/12
Martina Mladenova	Geronimo's Manager	attitudes and opinions of dog owners	11/08/12
Sarah Oktay	UMass Nantucket Field Station Director	impacts of dogs on conservation lands	10/26/12
Edie Ray	Wildlife Advocate	impacts of dogs on endangered bird populations on Nantucket	11/05/12
Eric Savetsky	Executive Director of Nantucket Islands Land Bank	land issues and potential locations for the dog park	11/14/12

Table 7 (continued): List of Interviews

Name	Position on Nantucket	Topics	Date
Barb Schneider	President of The Falmouth Dog Parks, Inc.	process of creating a park from a successful, recently established park	11/28/12
Lori Smith	Volunteer Coordinator of the Nantucket Safe Harbor for Animals	dog socialization and behavior	11/08/12
Jessica Sosebee	Vice President of the Nantucket Safe Harbor for Animals	attitudes and opinions of dog owners	11/26/12
Ernie Steinauer	Sanctuary Director for Mass Audubon	impacts of dogs on the environment and endangered species	11/05/12
Catherine Stover	Town Clerk	ascertain the number of licensed dogs on Nantucket	10/23/12
Stephen St. Pierre	Veterinarian at Offshore Animal Hospital	mental and physical health benefits/concerns for dogs in dog parks	10/25/12
Rhoda Weinman	Attorney	variety of issues associated with establishment of dog park on Nantucket	11/08/12

OBJECTIVE 4: EVALUATE THE TRADEOFFS AMONG VARIOUS DOG PARK OPTIONS

We thoroughly examined the advantages and disadvantages of several types of dog parks, by continuing the research begun in our literature review. We evaluated the differences in size, location, layout design, and specific features, as well as rules and regulations, enforcement, management, maintenance, and funding. Each of these factors plays a significant role in the success or failure of a dog park. The best choices for a particular dog park will often depend on the community's budget, preferences, and the activity of its members. A suitable location is imperative as the distance to a dog park is a major contributor to the frequency of visits from dog owners. If it is too close to residential areas, community members may be

disgruntled by the noise and the traffic caused by the park. Yet if it is too far, dog owners may be less willing to travel to a dog park. Another important aspect when considering building a dog park is size determination. For example, a larger sized facility would allow for more visitors, but it may require more management and maintenance, which in turn could require more funding. Size determination largely depends on the availability of land parcels as well. The size of a dog park on Nantucket would depend upon the number of dogs who live on the island, as well the number of visitors during the summer. We have debated the size range based on the summer dog population, and the likely usage of the local residents. If a dog park is too big, it may be unkempt. Also, it is imperative to ensure that the park is small enough to allow for owner intervention, should the need arise. If it is too small, however, it may be overcrowded. It is essential that any park is well maintained, and does not present an overwhelming grounds keeping task. Thus, it is important to find the appropriate balance between size and amount of visitors.

Different features of parks include: the size and amount of rest and play areas, the need or lack of need for designated areas for selected breed sizes, and the need for specific amenities. Depending on the location and need of the community, there is a range in the sophistication of dog parks. For example, there are very elaborate parks, which may include agility courses, trails, and gardens. However, these types of dog parks require a large amount of frequent maintenance and higher funding. In comparison, other communities have very simple designs, which may only include a fence. Waste disposal bags are a very common feature among all ranges of dog parks. Since pollution from dog waste can become such a serious issue, it is imperative that the public is aware of it and attentive to the issue at hand. While not a staple to every dog park, this feature should be all but imperative. Water features (“bubblers”, ponds, fountains, etc.), benches, picnic tables, pavilions, pet-friendly landscaping (i.e. nothing potentially harmful when consumed) are additional design elements that are commonly found in more moderately designed parks. A community’s budget and park size largely determines the type, and number of features that are included. Therefore, the best options for design vary with communities and their preferences.

Many parks are funded by financial donors, volunteers, and sponsors. Others charge membership and admission fees. A park that has a fee may attract a slightly different crowd than one that is open to the public. Some parks use corporate donations as a source of funding,

which is tax deductible for the corporation. An example of a corporate donor sponsorship form can be viewed in Appendix 5.

By using the advice of the community members that we interviewed, coupled with what we learned in the case studies of other dog parks, we have evaluated which rules and regulations would be necessary to keep everyone safe, as well as prevent liability issues. Many parks keep hours from dawn until dusk, while others install lighting for nighttime use. Lighting provides longer hours of operation, but incurs larger start up and maintenance costs. All dogs at parks should have proper licenses and vaccinations. Some parks choose to have all dogs registered, and others must go by faith.

Other rules and regulations that are established in dog parks include issues such as how many dogs one person is allowed to bring at a time, and if there should be an age limit on how young that person can be. It may be necessary to determine if there should be a minimum age that children must be to enter the dog park, regardless if they are accompanied. Some dog parks do not allow children under the age of sixteen to go to the park unaccompanied (See Literature Review), while others have no minimum age requirement. There are cases where children are not allowed, due to liability issues. However, most parks simply include a clause about adult supervision. Thus, deciding which rules to put in place will depend on the needs of Nantucket.

OBJECTIVE 5: DEVELOP A SET OF RECOMMENDATIONS TO PRESENT TO THE NANTUCKET BOARD OF HEALTH

Based on the interviews, surveys, and the analysis of available options, we have developed a set of feasible options to present to the Board of Health, should they choose to proceed. Our findings showed that a dog park would indeed be beneficial to Nantucket. We presented the Board with the evidence we collected, as well as several design options and locations we determined to be the most fitting for Nantucket. These options take into account layout design, safety, and practicality.

The goal of this project was to determine the desirability, feasibility, and design of a dog park on Nantucket. By evaluating the growth, purpose, and changing nature of dog parks in the United States, we discovered their importance in modern American society. Once we were aware of the need for dog parks, we were more accurately able to assess the need for one on Nantucket

by surveying the public to garner their opinions. By interviewing key opinion leaders we furthered our understanding of the stances that they each took. Each interviewee brought up different issues, concerns, or benefits that had previously gone unnoticed. We began to take into account the dangers of hunting season, the effects dogs and people can have on endangered nesting birds, as well as problems that might arise with the construction of a dog park, such as liability issues or irresponsible owners. We evaluated the tradeoffs of a large array of dog parks and their specific features to understand how they made those decisions, and to learn which features work well in certain areas. Once all of the aforementioned statements came to fruition, we presented our freshly developed set of recommendations for a dog park to the Nantucket Board of Health.

CHAPTER 3: FINDINGS AND ANALYSIS

The goal of this project was to assess the desirability and feasibility of establishing a dog park on Nantucket. We found that there was overwhelming support for a dog park among dog owners and non-dog owners, although there is a diversity of opinion about the relative advantages and disadvantages of a dog park and the various issues that will need to be addressed if the park is to become a reality. In this chapter we present first the findings from our interviews with key stakeholders and then the results from the surveys.

CONCERNS ABOUT ENVIRONMENTAL QUALITY AND HEALTH

Jeff Carlson, the island's Natural Resource Coordinator, was somewhat concerned with potential dangers of dog waste near water supply areas, and how it could negatively affect water quality. While Nantucket has not yet had to deal with such a situation involving dogs, many places along Cape Cod have had to take action to avoid polluted water sources. He mentioned the reason for this type of pollution is not so much the amount of dogs, as it is the owners' neglect to remove dog waste from the beaches and other key areas.

Due to lack of resources, no systematic study has been conducted on Nantucket to determine the origin of the major water pollutants, which include leaching septic systems, runoff containing pesticides and fertilizers, acidic rain, and bird droppings. Consequently, Carlson asserts that "no blame can definitively be placed on dogs". Carlson informed us of a time, though, when chicken and sheep waste in the Polpis area caused serious concern. The area was located near buffer zones, and because Nantucket's harbor is already very nutrient rich, there was worry that any extra amount of excrement would produce an unsafe fecal coliform level. Again, ownership responsibility was found to be the major problem. He affirmed, "Owner responsibility goes a long way."

Dr. Sarah Oktay, the director of the Nantucket Field Station, had similar concerns in regards to dogs and dog waste. She oversees 107 acres of conservation land. In order to help maintain this amount of land, she provides free doggie waste bags for owners to use. Unfortunately, there are some who abuse this privilege and leave full waste bags either in the

woods, or off of the trails. Dr. Oktay collects fecal coliform samples from the bay for various tests. Though she has not yet done antibiotic resistance testing to determine the sources of the fecal coliform, she believes it is an interesting technique the island should pursue. She explained this process is more effective than the usual DNA testing, because many species have similarities in DNA, making identification of a certain species difficult. Examining which antibiotics can kill the coliform, reveals which immunities the coliform possesses, and thus indicates the likely species. Based on similar locations where fecal coliform results have been measured, Dr. Oktay estimates that dogs contribute about 10% of the fecal coliform level in the Nantucket harbor, whereas humans contribute about 60% and seagulls anywhere from 10% to 20%. Though she believes a dog park would have a “relatively small” direct impact on the level of water pollution, it could have a “measurable” effect in time.

Health concerns over undisposed of dog waste are not solely in regards to water pollution, however. James Manchester, the facilities manager for Nantucket’s Department of Public Works, and former Director of town’s Parks and Recreation division (which is now subsumed in the DPW), has extensive experience handling the maintenance of town fields and public areas. He recalled putting up signs at Children’s Beach, shown in Figure 2, indicating “No Dogs Allowed on Grass.” Since many activities happen in this area with small children, the intent was to prevent small children from becoming ill from contact with dog waste.

Dr. Stephen St. Pierre, one Nantucket’s leading veterinarians, explained how dog waste can cause people to develop various rashes and sickness, and stated “it’s not healthy” for people to neglect picking up after their pets. For such reasons, Nantucket posts fines for failure to dispose of dog waste. Officer Suzanne Gale, whose responsibilities include animal cases on Nantucket, stated that the town imposes a \$25 fine for neglecting to pick up dog waste. Second offenses warrant a \$50 fine, and third offenses are given a \$75 fine. However, she noted the difficulty in enforcement, as offenders must be caught in the act in order to be cited.

CONCERNS ABOUT OFF-LEASH DOGS

Officer Gale further explained that Nantucket has a leash law, yet due to the incredible difference in number of dogs and police officers, this law is also difficult to enforce. When asked her thoughts on creating a dog park she stated, “I’m with you on this.” Technically, there is no

legal off-leash area for dogs to exercise and socialize on Nantucket. However, Officer Gale explained that, generally, as long as owners have control of their dogs and are not in town, they will not be penalized for having their dogs off-leash. In town, though, dog owners are expected to adhere to the law. Tupancy Links and Sanford Farms are privately owned properties, and consequently they do not fall under the jurisdiction of Officer Gale.

She explained dog bites mainly occur when at least one dog involved is on a leash and feels trapped. During tourist season, Officer Gale estimates she receives calls about dog bites once or twice a week, a statistic which is dramatically reduced to once every other week during the winter. She says that the most common dog bite cases occur to the owner of the dog. Dogs are typically less aggressive when not leashed, as discussed in the literature review. The study in a two acre dog park, conducted by Shyan, Fortune, and King, showed that no dog-on-dog conflict lasted over one minute. Additionally, only 9 of the 177 dogs observed were considered to be aggressors.

Lori Smith, the Volunteer Coordinator for the Nantucket Safe Harbor for Animals (NSHA), attests that a lot of dog aggression occurs when dogs are on leash, because they feel restricted. “Oddly enough, a lot of dog fighting is just barking and other noise,” she mentioned, though stressed the importance of accurately reading dog behaviors to avoid such instances. However, other problems arise when owners allow their dogs freedom. “The majority of the animals that end up at the shelter are pets that have gotten loose,” remarked Jessica Sosebee, the Vice President of NSHA. The dogs will stay at the shelter until their owners come to claim them. Indeed, Smith commented that many of the dogs the shelter sees are dogs that have strayed too far away from their owner, when let off-leash. Yet, she realizes the difficulty for owners to train their new dogs to stay close, because of the lack of an enclosed area on Nantucket.

Although the island is not heavily urbanized, the danger of vehicles is still present. Dr. St. Pierre stated the Offshore Animal Hospital sees dogs get hit by cars “more often than we should”. Sadly, Dr. St. Pierre has seen cases where dogs have been hit by their owners’ own vehicle while on the beach.

CONCERNS ABOUT WILDLIFE

Ernie Steinauer, the Sanctuary Director of Mass Audubon on Nantucket, worries that even owners walking their dogs off-leash on the beach is dangerous; in this case not for the dogs, but for the wildlife. Particularly, he is concerned for coastal water birds, such as terns, plovers and oyster catchers. “That’s a huge problem – dogs being near birds and chasing them,” Steinauer emphasized. “Plovers are defenseless, and terns will just leave if there is a disturbance. They’ll leave their chicks or eggs.” Dogs are reported to impact nesting areas, not just on the beaches, but on other conservation land, too, and especially when off-leash. Even disruption of the birds’ feeding can be harmful to them, as they need sufficient reserves to survive their migratory journeys. Dogs can be part of a whole series of disturbances, he continued.

In fact, crows and feral cats can “key in to the physical and scent tracks” left by dogs, informed Edie Ray, a prominent conservation activist on the island. Similarly, she feels off-leash dogs are a “huge” disturbance. Both Steinauer and Ray placed full responsibility on the owners. “Summer people and Nantucketers see the conservations lands as sort of ‘free’ or ‘theirs,’ but there are rules on those properties as well,” Ray indicated.

“Enforcement is lacking, effectively lacking,” Steinauer commented. He believes rules requiring dogs to be on leash are oftentimes disregarded by owners because repercussions are so infrequent. Ray has the same belief, but is empathetic. With the large number of dog owners on the island, especially during the summer months, enforcement of such rules is difficult. “My son is a police officer, and there’s basically the same amount of officers year-round,” she said, and indicated she believes Nantucket needs a full time animal control officer. “An unenforced rule is worse than not even having the rule at all,” Ray asserted, believing that a rule’s lack of enforcement translates to its lack of importance for many people.

EDUCATIONAL OPPORTUNITIES

Many of the community members that were interviewed felt a dog park on the island would increase public awareness of the town’s dog-related issues and encourage more responsible ownership. “The real benefit would be education. The hardest thing is community education,” Jeff Carlson said when asked how he thought a dog park would affect the island. He

believes the more education the public has and the more the town gives back to the community, the more willing community members will be to participate with other town efforts in the future. When asked whether or not he would be in favor of a dog park, he responded that he thinks “it’s a great idea” and would like to see one “in the right spot.”

Joyce Jaskula, a dog trainer on Nantucket, has been formally training dogs for about ten years. She believes a dog park would “be a great asset” to the community, especially in regards to education. “The public wants to be educated,” she claimed. “I think people want to be responsible.” She continued by stating a bulletin board with posted information, about such topics as understanding dogs’ body languages, would be very beneficial. “Dog owners want the tools to have successful interactions.”

Lori Smith shares the same belief. Additionally, she believes an informational board could be used to educate the public on fleas and ticks. As Dr. St. Pierre noted, dog owners are unlikely to get a tick from their dog. Rather, people will often get ticks while out walking their dog. Dr. Tim Lepore, a leading tick expert and Nantucket’s general surgeon, supported this claim. He added, though, that most dogs on Nantucket have, or eventually will contract, Lyme disease as a result of a tick bite.

Jim Lentowski, the executive director of the Conservation Foundation, mentioned he had been receiving complaints, in regards to ticks, recently. Currently, at Tupancy Links, the Foundation has been growing out an endangered species of grass in order to properly seed it, which has caused some visitors to worry about an increase in ticks. Dr. Lepore, however, explained that ticks are found in shaded areas, with high humidity, and so the tall grass at Tupancy Links is not very problematic. Though, ticks are oftentimes found in brush. According to Dr. Lepore, “short grass would discourage ticks, guaranteed,” thus a maintained area for dogs and dog owners would be an additional benefit of a dog park.

Jessica Sosebee mentioned that a dog park could also provide the community with opportunities to host events that would promote responsible dog ownership, and help organizations such as the animal shelter raise publicity. Barbara Schneider, President of Falmouth Dog Parks, Inc., has actually implemented this idea at the Falmouth Dog Park, which has been operational for approximately a year and a half. The park has hosted various vaccinations clinics, which were found to be successful.

POSSIBLE FEATURES

Both Joyce Jaskula, a local dog trainer, and Lori Smith, Volunteer Coordinator of the Nantucket Safe Harbor for Animals, believe separate areas for small and large dogs would be desirable in a dog park. This is consistent with our surveys, where 45% of respondents indicated separate areas would be a desirable feature. However, agility equipment was not as popular. Joyce stated “A lot of agility equipment can be dangerous if not used properly,” which could be a possible reason that over 40% of our sample indicated such equipment is less desirable. Maggie Carro, manager of Geronimo’s, thought that lighting “would be appreciated.” As it gets dark on the island very early in the winter, it would be convenient to have a lit dog park for people to bring their dogs after work for a few hours. This however is at the discretion of the town depending on budget and the opinions of surrounding neighbors. Both Officer Suzanne Gale who deals with animal control on the island and Barb Schneider of the Falmouth Dog Park suggested the installation of benches, as it would allow the elderly to visit on a regular basis.

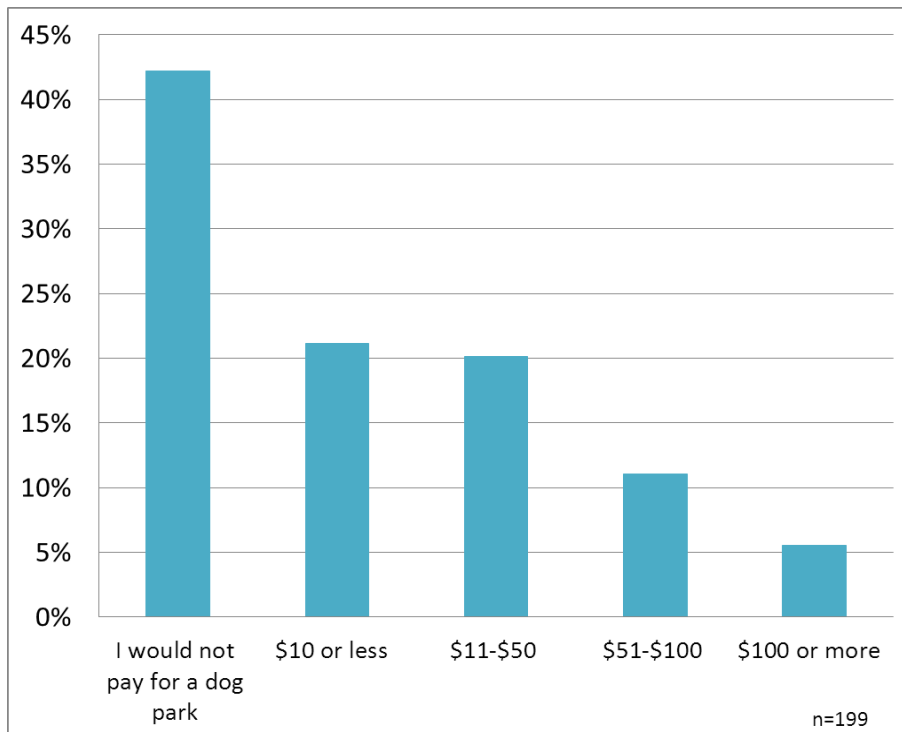
FINANCIAL MANAGEMENT

The cost of a dog park is another pressing issue. Ernie Steinauer of The Conservation Foundation found that trying to accommodate dog owners who frequent Tupancy was quite costly, as the Foundation would provide waste bags and clean out trash receptacles. Although “Friends of Tupancy Links” did not work very well, a similar management model could be a viable option for a fenced-in dog park on island, as its sole purpose would be to accommodate dog owners. Rhoda Weinman, a prominent attorney on the island, believes that raising money for a fenced-in dog park would not be an issue. Ms. Weinman was instrumental in arranging the deal between four Nantucket veterinarians and the MSPCA (Massachusetts Society for the Prevention of Cruelty to Animals) which ultimately saved Nantucket’s animal hospital. She was able to put together a group of investors and raise a substantial amount of money towards the purchase price of the animal hospital. She believes a “Friends of the Nantucket Dog Park” management model, where volunteers help raise funds and/or even take care of some maintenance issues, has the potential to work well.

Whether or not an established dog park should charge membership fees was the topic about which our interviewees differed most. Eric Savetsky, Executive Director of the Nantucket Islands Land Bank, believes establishing a dog park would be “totally feasible”. However, due to the high cost of land on Nantucket, he recommends “almost exclusively” pursuing the Town or Land Bank for the property. The Land Bank is the second largest landowner on the island with 2,800 acres, equating to approximately 6-7% of the island. When asked about a membership fee, he was very adamant that a park remain free to the whole community, strongly believing it should be open to the public and available to the tourists.

Interestingly, the majority of survey respondents, 42% (Figure 9), stated they would not be willing to pay a membership fee to visit a dog park. Edie Ray and James Manchester, however, felt membership fees would be an excellent idea, believing it would spur a sense of responsibility among users. It could be a way to ensure that visitors respect the rules and regulations, as well as a means for self-sustaining funds. Rhoda Weinman agreed with Savetsky, believing that a fee might cause feelings of exclusivity, which could then deter community members from using the park.

Figure 9: Dog Owner Responses: How Much Would You Be Willing to Pay, On an Annual Basis, to Use the Dog Park On the Island?



OTHER MANAGEMENT ISSUES

Another way this group could aid the dog park would be by policing the park. Edie Ray says that “No one reads signs,” if this small group were to make sure people are aware of the signs and posted rules the park could run smoothly. They could be crucial in promoting owner responsibility. Especially in the beginning of the park’s creation, it would be important to have volunteers to “police” guests until those guests learned to watch their dog, pick up after it, and comply with other rules that are posted.

OVERALL RESPONSE

After obtaining the advice of our interviewees, we then asked each person whether or not they personally would be in favor of a fenced-in dog park. The majority of these professionals agreed on some level that it would benefit the community. The vice president of Nantucket Safe Harbor for Animals, Jessica Sosebee, believes that it would be an “amazing resource for a lot of people.” She believes that, with the proper disposal and clean up resources, people would be responsible in picking up after their dog in a park. As far as health concerns go, assuming owners are educated about the issues and their responsibility, she does not believe there would be a problem. “I definitely think [a dog park] would be a popular idea. Even a simple fence would be great.”

Lori Smith, the volunteer coordinator and adoption specialist for the shelter emphasized that she would be a big advocate, as she hears requests for such a park all of the time. Should this park be free to the public, it is important to make sure funds would be manageable. Lori Smith believes that people would donate, and Rhoda Weinman and James Manchester were all but certain that Nantucketers would raise the funds quite quickly and that money would not be a concern.

The biggest concerns came from Steve St. Pierre and Jim Lentowski. Dr. St. Pierre explained that while theoretically a dog park would be great; in practice it can “open a big can of worms for dog owners.” He does not believe all owners would be responsible in this setting. This sentiment was reiterated by Lentowski who emphasized that as long as those who use the park are responsible it should not be a big issue. Ernie Steinauer does not believe that a dog park

would change anything in regards to conservation efforts, but assuming no vegetation had to be removed, he would not be opposed to a fenced-in dog park. Edie Ray, also very concerned with conservation efforts, does not know how beneficial it would be in that regard, but she believes that bringing dog owners together would be the most prominent benefit. Cathy Lepore also mentioned that it would be nice to bring people together and give dogs a chance to run free. Dr. Lepore similarly agreed that it was a great idea and would not be bothersome to the community. James Manchester believes the island would benefit from a dog park assuming it was maintained by the users and not the town, as any form of caring control as helpful. After digesting the idea, Officer Gale believes a dog park could be beneficial, especially for the elder dog owning population. As those without dogs would not have to be around, it may put them at ease as well. Dr. St. Pierre agreed that non-dog owners would appreciate the park as it would cut down on unwanted meetings with dogs.

Margaret Carro, one of the managers of the local pet store, Geronimo's, alluded to the fact that customers often ask about dog parks and which beaches allow dogs. She also believes that it would be a reassurance to people who are afraid their dogs will run off without boundaries. As Nantucket is a popular tourist location, it has the potential to appeal to both the permanent and seasonal masses. Jan Jaeger, the owner of Geronimo's and Cold Noses, as well as a board member for the shelter, thinks "it's a great idea" and would be very much in favor of it. She hopes people would be responsible, and police themselves. While she has never been to a fenced-in dog park, she believes "the simpler the better".

The interviews conducted show a good degree of consensus among the key stakeholders that a dog park is a good idea for Nantucket, but uncertainties regarding the location, features, and management of the park remain to be resolved.

SURVEY RESULTS

We received a total of 361 completed and useable surveys, including 219 from dog owners and 142 from non-dog owners. Overall, 77% of all respondents were in favor of a dog park. For non-dog owners, we found that 78% of respondents were in favor of a dog park on Nantucket, although the level of support varied by age from 79% of the 18-25 year olds, to 86% of the 26-50 year olds, and 62% of respondents 51 year and older. Similarly, 76% of dog owners

were in favor of a dog park on Nantucket, and more specifically 82% of the 18-25 year olds, 80% of the 26-50, and 67% of respondents over 51 years of age. Figures 10 and 11 show the distributions.

Figure 10: Non-Dog Owner Responses by Age Bracket: “Would You Be In Favor of a Fenced-In Dog Park on Nantucket?”

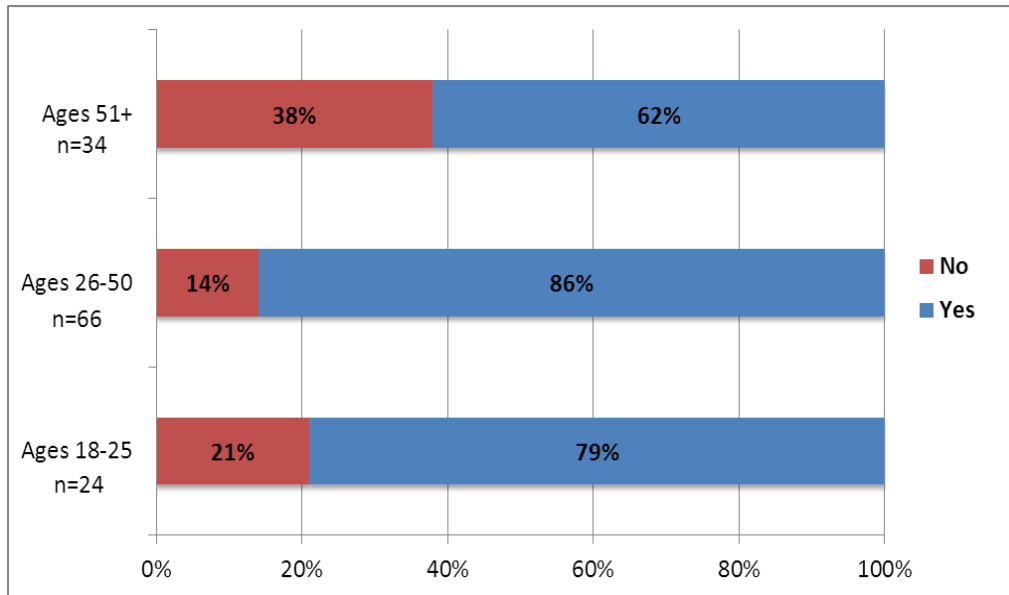
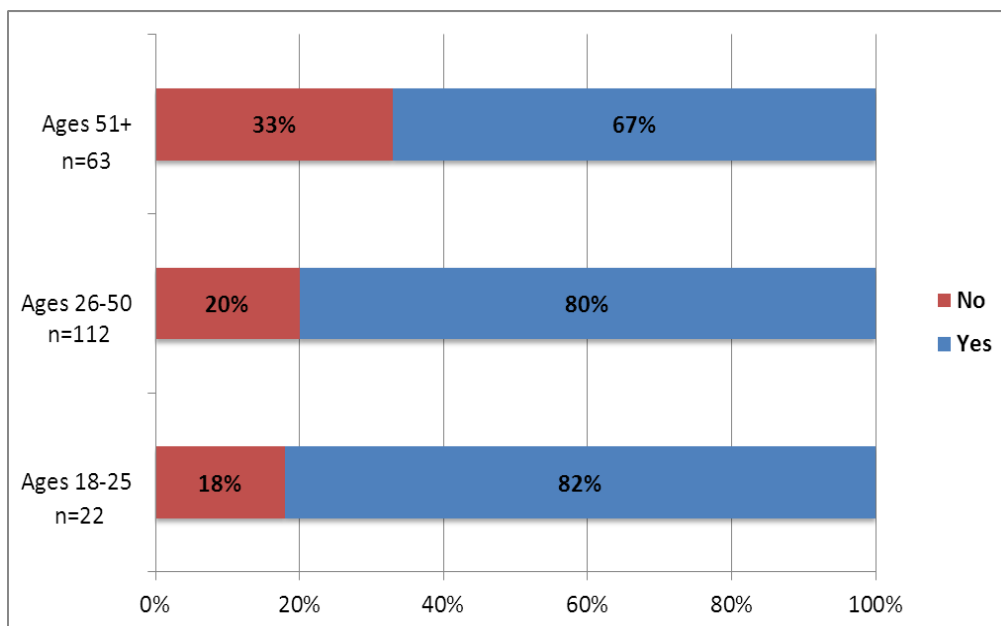
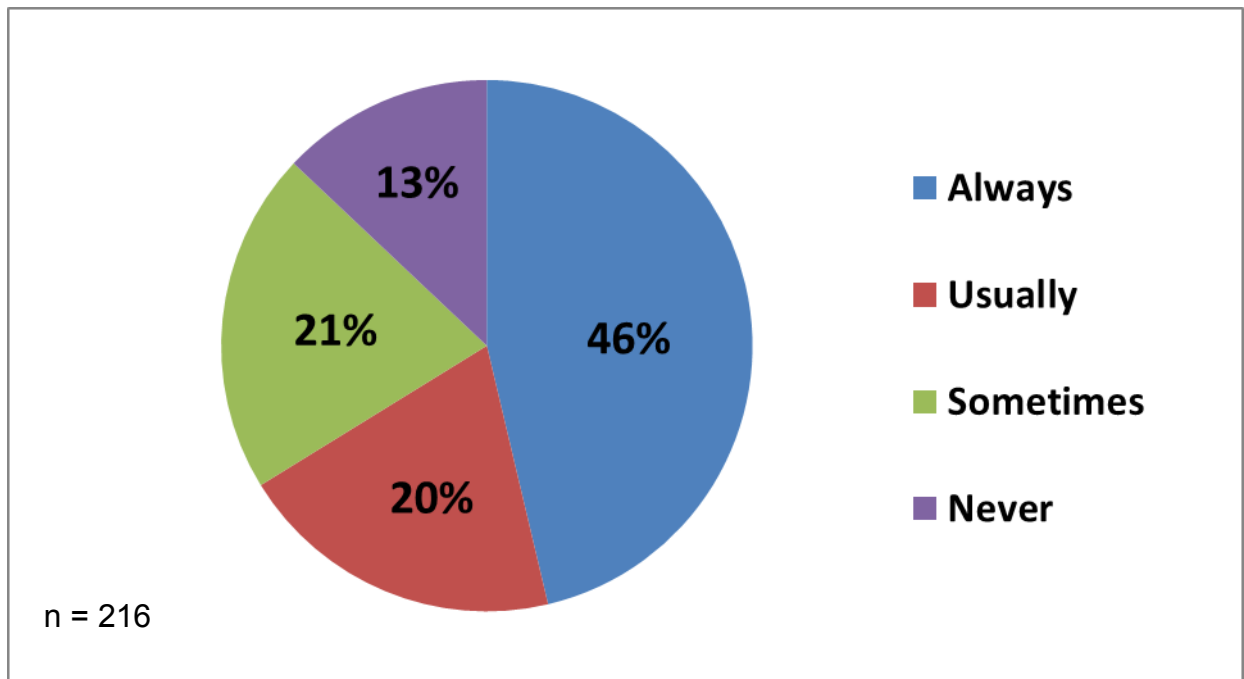


Figure 11: Dog Owner Responses by Age Bracket: “Would You Be In Favor of a Fenced-In Dog Park on Nantucket?”



While 46% of respondents say they always pick up after their pet, there is an astounding 13% who admitted that they never pick up after their pet. In nearly all of these cases, the owners felt it unnecessary, because their dogs would go into heavily wooded or grassy areas away from used paths (Figure 12). Of those without dogs, however, 62% agreed or strongly agreed (4 or 5) with the statement “Failure to dispose of dog waste properly poses a threat to human health.” (Figure 13). Thus, there is a consensus among dog owner and non-dog owners that failure to dispose of dog waste poses a health risk, although slightly more dog owners are neutral and slightly more non-dog owners agree strongly with this statement.

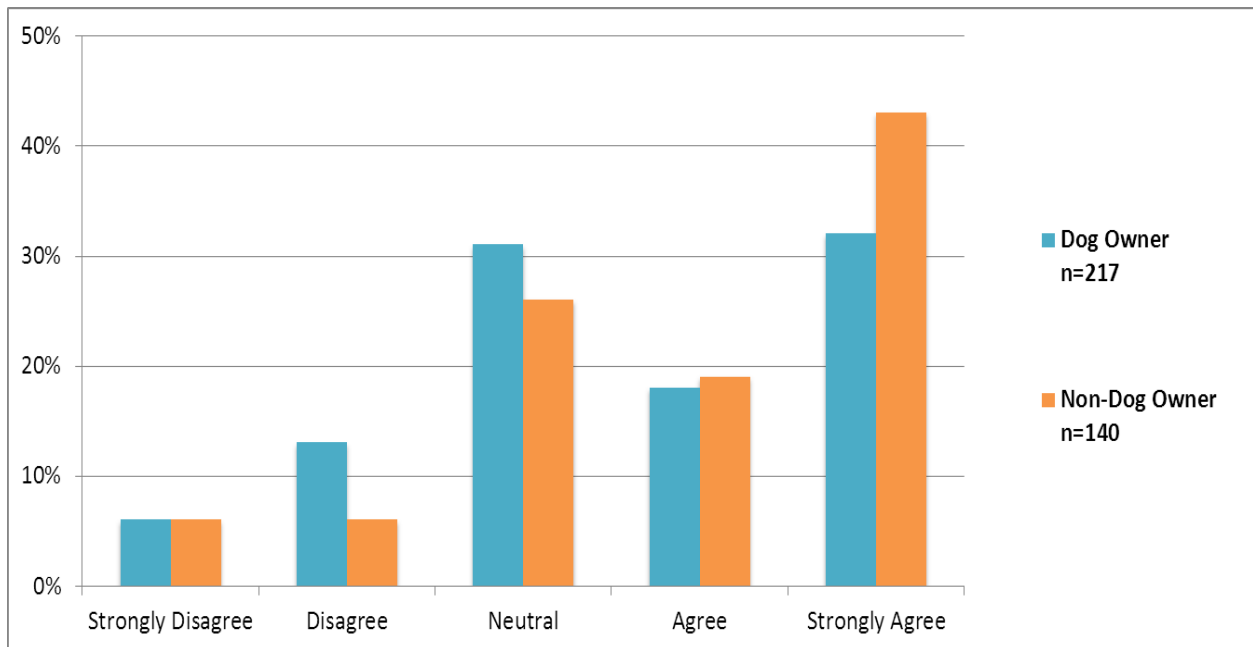
Figure 12: Dog Owner Responses: “How Often Do You Pick Up After Your Dog?”



In order to get a sense of the likely usage of a dog park on Nantucket, we asked dog owners how frequently they would use the park. Figure 14 shows that 70% would plan to visit once a week, with 37% saying they would visit more than once a week. The Town Clerk, Catherine Stover, reported there are 450 dogs currently registered on Nantucket, but that the actual number of dogs on the island would most likely exceed 1,000, more than double the amount registered. Using an estimate of 1,000 dogs, and the statistic indicating 70% of dog owners would visit the park once a week, the park could potentially see 700 dogs per week, or

around 100 dogs a day. The main reasons for dog owners’ support were the safety the park could provide, as well as the freedom and socialization opportunities that could arise both for dogs and their owners.

Figure 13: Community Response to “Failure to Dispose of Dog Waste Properly Poses a Threat to Human Health”



Interestingly enough, the majority of community members, 51% of dog owners and 54% of non-dog owners, disagreed or strongly disagreed that Nantucket places too many restrictions on dogs and dog owners (Figure 16). Figure 15, however, shows, not surprisingly, that non-dog owners are less comfortable with off-leash dogs than are dog owners. While it is understandable that dog owners have an enhanced sense of comfort around canines, it gives a logical response as to why non-dog owners are in favor of a fenced-in dog park.

When asked why non-dog owners would support a dog park, the majority believed it would be a safe place where dogs can play freely and socialize, and dog waste could be more contained on the island. However, those opposed indicated Nantucket is fine the way it is, there are already places to go, a dog park is unnecessary, there are more pressing issues, and that establishing a dog park would be a wasteful use of tax money. Dog owners in opposition to a

park also believed that Nantucket was fine the way it was and did not need an additional area for dogs, as many let their dogs run free anyways.

Figure 14: Dog Owner Responses: “How Frequently Would You Visit the Dog Park?”

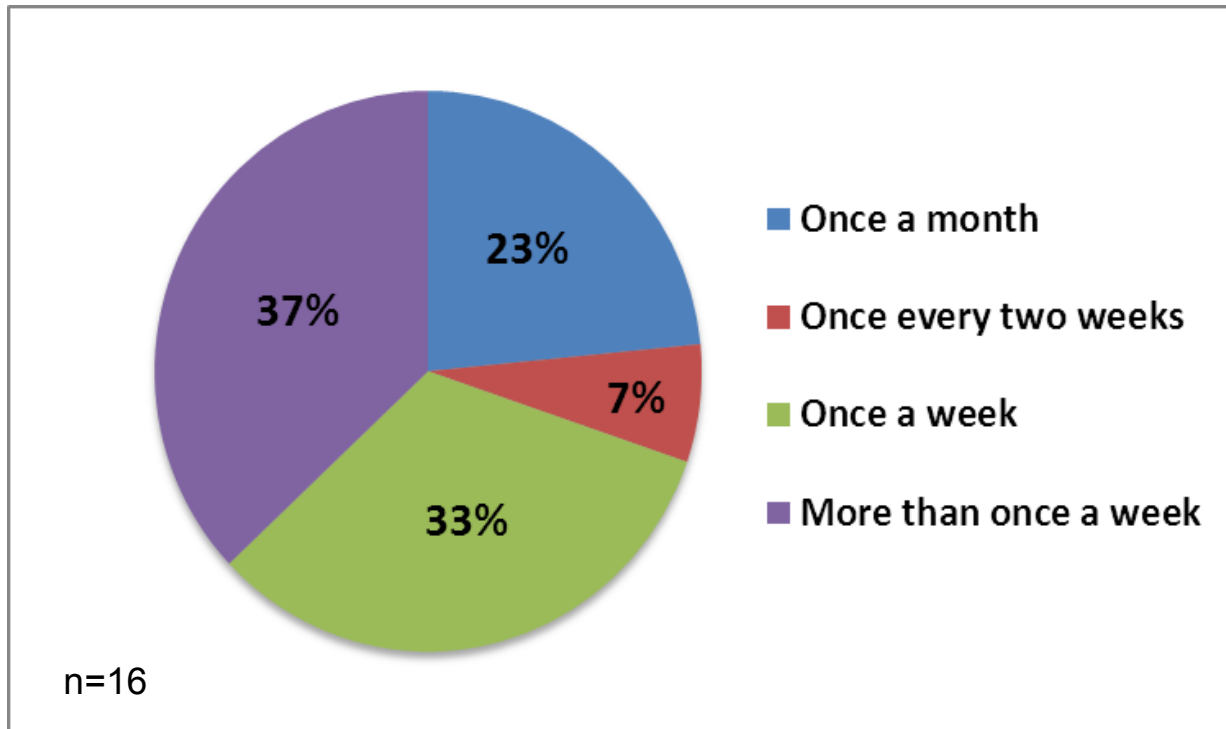


Figure 15: Community Response to “I Am Comfortable With Off-Leash Dogs on Nantucket”

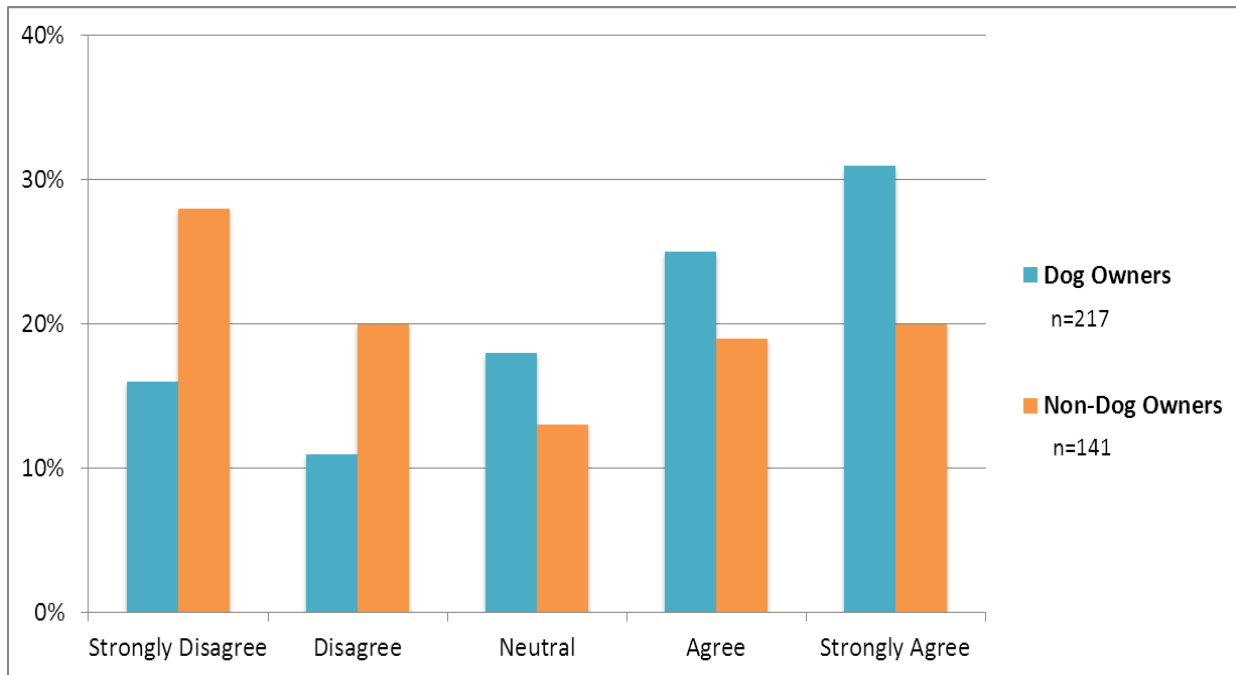
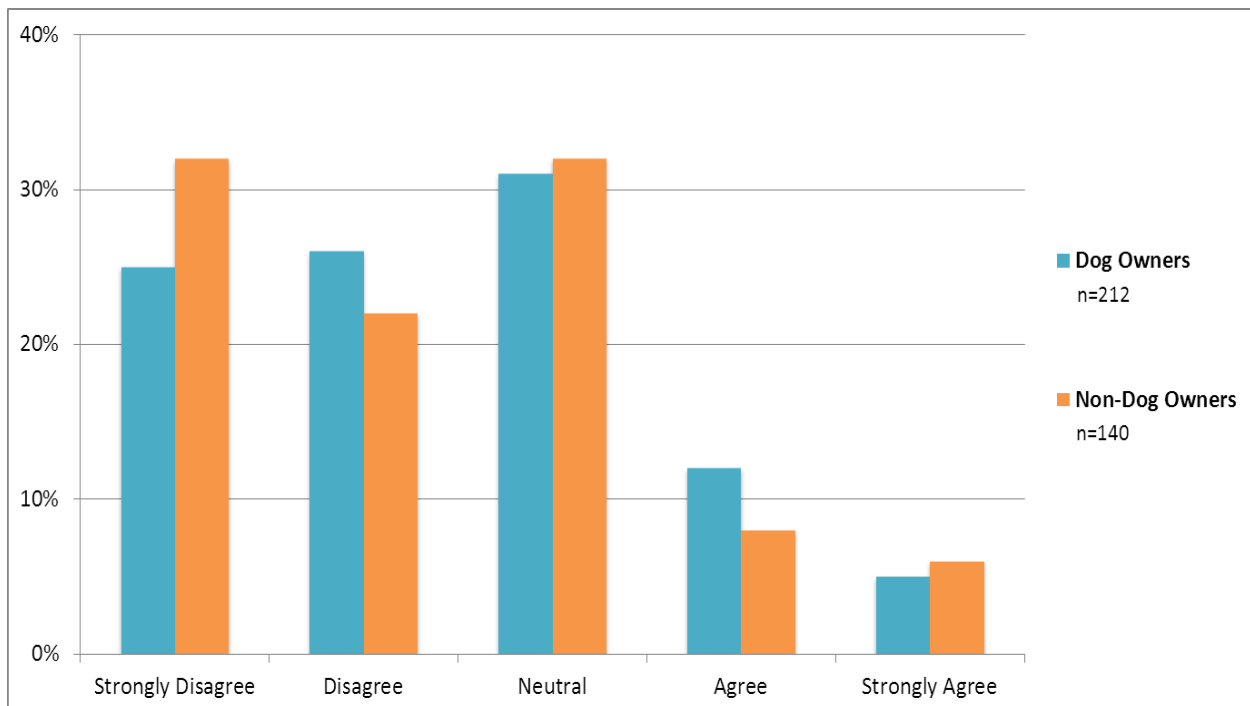
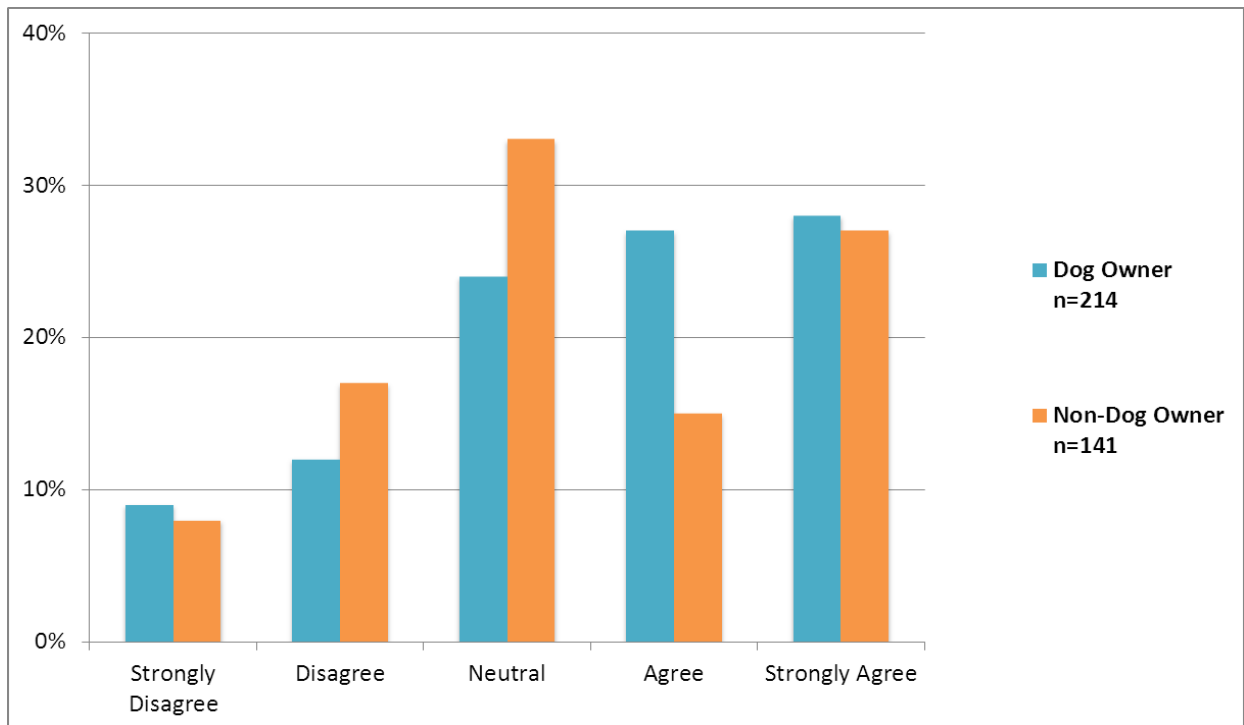


Figure 16: Community Response to “Nantucket Places Too Many Restrictions on Dogs and Dog Owners”



Many owners, again over half of those who responded, feel threatened by hunting season, which could possibly be alleviated by having a specified area for dogs to exercise off-leash (Figure 17). Many non-dog owners are also concerned about the safety of Nantucket’s canines with 42% of our sample in agreement with the statement “Hunting season poses a threat to the safety of dogs.”

Figure 17: Community Response to “Hunting Season Poses a Threat to the Safety of Dogs”



We also asked each dog owner a series of questions regarding their thoughts on certain features that are commonly found in a dog park. In order to design a dog park that meets the needs of Nantucket dog-owners, we asked respondents what kinds of features they would like to see in the park. A parking area had an overwhelming response rate with 88% of the respondents conveying that it was an important feature. Only 8 out of the 199 people who answered this question felt it was not an important feature (Figure 18). Similarly, the installation of benches showed a very prominent response distribution with the vast majority believing it was important or very important to have seating within the park. Trails were also a feature about which respondents felt strongly. However, trails often depend upon the sizes and layouts of dog parks,

so these plans would need to be determined first, before the desire for trails could be met. Figures 19 through 24 show examples of the various design elements commonly found in dog parks.

Figure 18: Dog Owner Responses: Importance of Design Elements

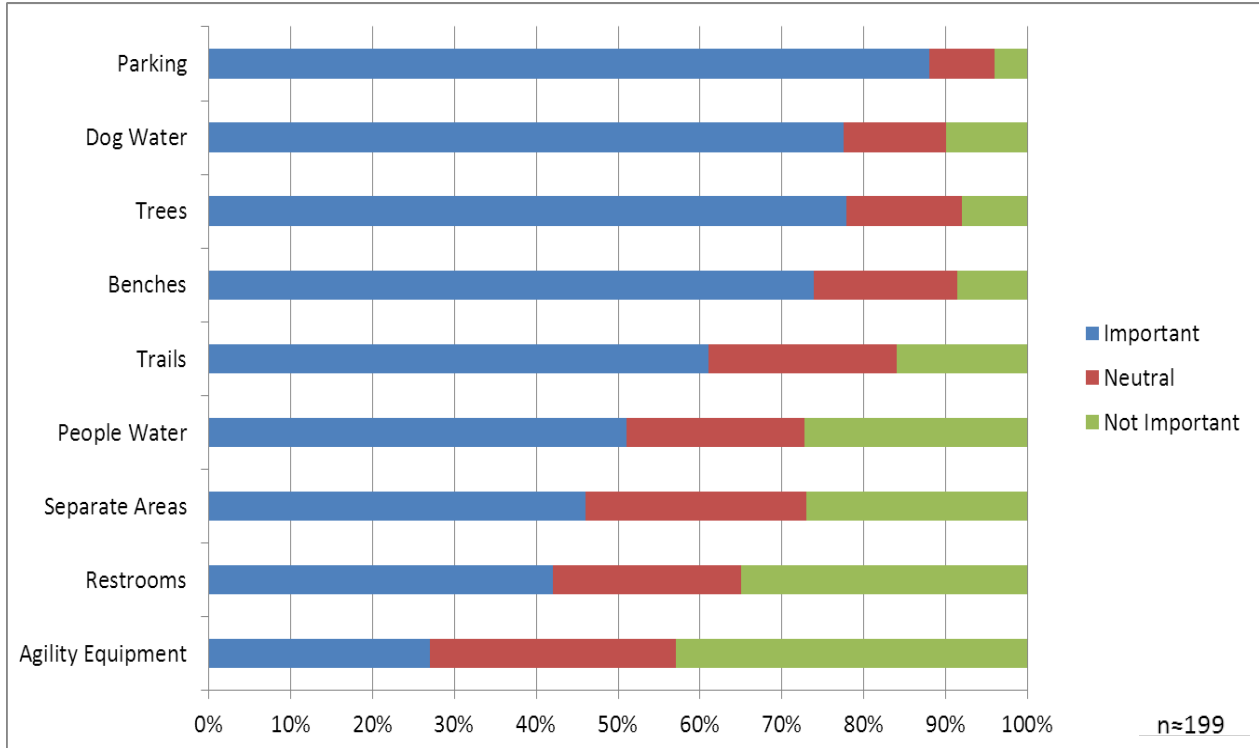


Figure 19: Example of Parking



(Falmouth Dog Park, 2012)

Figure 20: Example of an All Dog Water Fountain



(Falmouth Dog Park, 2012)

Figure 21: Example of Trees and Trails



(Falmouth Dog Park, 2012)

Figure 22: Example of a Small Dog Play Area, a Dog Waste Bag Dispenser and Receptacle



(Falmouth Dog Park, 2012)

Figure 23: Example of Benches



(Falmouth Dog Park, 2012)

Figure 24: Example of an Informational Kiosk



(Falmouth Dog Park, 2012)

CHAPTER 4: CONCLUSIONS & RECOMMENDATIONS

Conclusions

In conclusion, dog parks are becoming increasingly popular in the United States, in part because of increasing restrictions on dogs and dog owners but also because dog parks serve a variety of social and educational functions. Dog parks allow dogs the opportunity to exercise and socialize with each other, and people, while legally off-leash and free. They provide a safe, secure environment for the dogs to play and interact, while preventing them from chasing after, annoying, or frightening people outside the park. Therefore, dog parks can also help dogs respect the rights of all community members.

Studies show that dogs that are exercised regularly are less likely to engage in unfavorable behaviors or activities, such as excessive barking and digging. Furthermore, well-socialized dogs are typically calmer, less aggressive pets. Not only can the dogs socialize with one another, but the dog owners can, as well. People at the park can share their ideas and experiences with training and caring for their pets. Thus, a dog park could promote responsible dog ownership. Informational boards and events at the park could also help educate the community on different topics, thereby additionally promoting public health and safety.

Dog parks vary in location, size, designs, and management structures depending on the needs and desires of the local community. Dogs are a major part of life on Nantucket, but there have been increasing concerns among various stakeholders and opinion leaders about the potential problems posed by the growing dog population. Such concerns include dogs' impacts on the environment, wildlife, water quality, and public health, which lend the need for opportunities to socialize and educate dogs and their owners.

The general consensus among the stakeholders and opinion leaders interviewed was that a dog park could have major benefits for Nantucket. While a park may not directly affect impacts on the environment and public health, the educational opportunities presented by the park may be substantial. Many of those interviewed emphasized the importance of education, and the difficulty in increasing public awareness. They commonly believed a dog park on Nantucket would provide the Town, as well as other organizations, with a unique opportunity to achieve such community outreach.

A community-wide survey revealed that there is strong support for a dog park among both dog owners and non-owners. Of all the survey respondents, 77% were in favor of a fenced-in dog park on Nantucket, whereas 23% were opposed. Additionally, the survey revealed community members' opinions on certain dog-related issues, such as the level of responsibility demonstrated by Nantucket dog owners in picking up after their pets and abiding by the island's leash law. Dog owners also identified the key design features they would like to see, if a dog park were to be established on the island. In all, the findings from the surveys and interviews conducted show strong support for the establishment of a dog park on the island. From such findings, our project team has developed a set of recommendations for groups interested in pursuing the establishment of a dog park on Nantucket.

Recommendations

Based on our extensive research and findings, we recommend the following:

- Recommendation 1: The Town should encourage the creation of a volunteer group or committee to explore further the establishment of a dog park on Nantucket. This group or committee should evaluate the location options, preferred design elements, and alternative management alternatives.
- Recommendation 2: Regarding location, the team recommends the group/committee evaluate potential sites based on the following criteria:
 - 1-2 acres preferred;
 - Up-grade location away from surface waters and sensitive ecological areas;
 - Ease of road access;
 - Proximity to town; and,
 - Proximity of neighboring residences.
- Recommendation 3: Regarding design elements, the team recommends the group/committee explore the desirability and cost of the following key features:
 - Parking;
 - Lighting;
 - Appropriate fencing;
 - Double gate system;
 - Separate fenced-in areas for small and medium/large dogs;

- Water fountains for dogs/people;
 - Benches;
 - Trees; and,
 - Restrooms.
- Recommendation 4: For the dog park to effectively promote responsible dog ownership, the team recommends the group/committee provide the following:
 - Informational kiosk;
 - Dog waste bag dispensers; and,
 - Trash receptacles.
- Recommendation 5: Regarding management structure, the team recommends the group/committee form a voluntary group (such as a “Friends of the Nantucket Dog Park”) to oversee the park.
- Recommendation 6: Regarding funding options, the team recommends the group/committee explore fundraising events, commemorative items, and donation options.
- Recommendation 7: Regarding operation and maintenance, the team recommends the group/committee explore the best options for:
 - Park construction
 - Installation of design elements
 - Grounds keeping
 - Emptying of trash receptacles
 - General maintenance (fixing fences, etc.)
- Recommendation 8: The team recommends the group/committee further research the specific liabilities and insurance involved in the management model chosen for the dog park.
- Recommendation 9: Regarding park rules and enforcement, the team recommends the group/committee research that of similar dog parks. Specifically, the group/committee should consider the following:
 - Posting rules and regulations at the entrance
 - Early enforcement of rules and regulations
 - “Enter at your own risk”

- Limiting hours of operation
- Setting age restrictions for both people and dogs
- Suggesting dog receive proper vaccinations before entering the park
- Recommendation 10: the team recommends the group/committee visit existing dog parks (such as in Falmouth, Massachusetts) to evaluate design and management issues.

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APPENDIX 1: Nantucket Survey for Dog Owners (English)

If you have previously taken this survey, please do not complete this one.

Nantucket Survey for Dog Owners

We are a group of students from Worcester Polytechnic Institute conducting research in collaboration with the Board of Health regarding the desirability of a dog park on Nantucket. A **dog park** is a facility set aside for dogs to exercise and play off-leash in a controlled environment under the supervision of their owners. This is an anonymous survey and no personal identifying information will be collected.

1. Gender (Please check one): Male Female

2. Age (Please check one): 18-25 26-50 51+

3. Which describes you best? (Please check one)

Full-time Nantucket resident Part-time Nantucket resident Island visitor Other: _____

4. If you are a full or part-time resident of Nantucket, in what area do you reside? (Please circle the appropriate letter on map)



5. How many dogs do you currently own? _____

6. What size is/are your dog/dogs? (If you own multiple dogs, please indicate the number of each size dog you own)

- a) _____ Small (0-25 pounds)
- b) _____ Medium (26-60 pounds)
- c) _____ Large (61-109 pounds)
- d) _____ Extra Large (110+ pounds)

7. How often do you walk your dog(s)? (Please check one)

1 or more times a day 4-6 times a week 1-3 times a week Other: _____

8. Where do you usually walk your dog while on Nantucket? (Please check all that apply)

Tupancy Links Sanford Farm the Moors In-town Other: _____

9. When on walks, how often do you pick up after your dog? (Please check one)

Always Usually Sometimes Never

Please indicate on a scale of 1 to 5 how strongly you agree or disagree with the following statements. (1 = "Strongly disagree", 3 = "Neutral", 5 = "Strongly agree")

	strongly disagree				strongly agree
10. Failure to dispose of dog waste properly poses a threat to human health.	1	2	3	4	5
11. Most Nantucket dog owners act responsibly in picking up after their pets.	1	2	3	4	5
12. Most dog owners abide by Nantucket's leash laws.	1	2	3	4	5
13. I am comfortable with off-leash dogs on Nantucket.	1	2	3	4	5

Please turn page over to continue the survey →

14. Hunting season poses a threat to the safety of dogs.	1	2	3	4	5
15. Nantucket places too many restrictions on dogs and dog owners.	1	2	3	4	5
16. A fenced-in dog park would benefit the Nantucket community.	1	2	3	4	5
17. Would you be in favor of a fenced-in dog park on Nantucket? Yes / No Why or why not?					
<hr/>					
<hr/>					
<hr/>					

If Nantucket were to build a dog park...

18. How far would you be willing to travel to the dog park? (Please check one)

- Less than 1 mile 1-3 miles 4-7 miles 8 or more miles I would not visit a dog park

19. Where would you like to see the dog park located? _____

20. How frequently would you visit the dog park? (Please check one)

- Once a month Once every two weeks Once a week More than once a week

21. How much would you be willing to pay, on an annual basis, to use the dog park on the island? (Please check one)

- \$10 or less \$11-\$50 \$51-\$100 \$100 or more I would not pay for a dog park

22. If Nantucket were to build a dog park, please indicate on a scale of 1 ("not at all important") to 5 ("very important") which elements should be included. (Please circle as appropriate)

	not at all important				very important
a) Trails	1	2	3	4	5
b) Dog training/agility equipment	1	2	3	4	5
c) Separate fenced in areas for small and medium/large dogs	1	2	3	4	5
d) Water fountains for dogs	1	2	3	4	5
e) Water fountains for people	1	2	3	4	5
f) Trees	1	2	3	4	5
g) Benches	1	2	3	4	5
h) Restrooms	1	2	3	4	5
i) Parking	1	2	3	4	5

Thank you for your time!

APPENDIX 2: Nantucket Survey for Non-Dog Owners (English)

If you have previously taken this survey, please do not complete this one.

Nantucket Survey for Non Dog Owners

We are a group of students from Worcester Polytechnic Institute conducting research in collaboration with the Board of Health regarding the desirability of a dog park on Nantucket. A **dog park** is a facility set aside for dogs to exercise and play off-leash in a controlled environment under the supervision of their owners. This is an anonymous survey and no personal identifying information will be collected.

1. Gender (Please check one): Male Female
2. Age (Please check one): 18-25 26-50 51+
3. Which describes you best? (Please check one)
- Full-time Nantucket resident Part-time Nantucket resident Island visitor Other: _____

4. If you are a full or part-time resident of Nantucket, in what area do you reside? (Please circle the appropriate letter on map)



5. Have you ever owned a dog? (Please check one)
- Yes No

Please indicate on a scale of 1 to 5 how strongly you agree or disagree with the following statements.
(1 = "Strongly disagree", 3 = "Neutral", 5 = "Strongly agree")

	strongly disagree	1	2	3	4	5	strongly agree
6. Failure to dispose of dog waste properly poses a threat to human health.	1	2	3	4	5		
7. Most Nantucket dog owners act responsibly in picking up after their pets.	1	2	3	4	5		
8. Most dog owners abide by Nantucket's leash laws.	1	2	3	4	5		
9. I am comfortable with off-leash dogs on Nantucket.	1	2	3	4	5		
10. Hunting season poses a threat to the safety of dogs.	1	2	3	4	5		
11. Nantucket places too many restrictions on dogs and dog owners.	1	2	3	4	5		
12. A fenced-in dog park would benefit the Nantucket community.	1	2	3	4	5		

13. Would you be in favor of a fenced-in dog park on Nantucket? Yes / No
Why or why not?

Thank you for your time!

APPENDIX 3: Nantucket Survey for Dog Owners (Spanish)

If you have previously taken this survey, please do not complete this one.

Nantucket Survey for Dog Owners

*We are a group of students from Worcester Polytechnic Institute conducting research in collaboration with the Board of Health regarding the desirability of a dog park on Nantucket. A **dog park** is a facility set aside for dogs to exercise and play off-leash in a controlled environment under the supervision of their owners. This is an anonymous survey and no personal identifying information will be collected.*

1. Gender (Please check one): Male Female

2. Age (Please check one): 18-25 26-50 51+

3. Which describes you best? (Please check one)

Full-time Nantucket resident Part-time Nantucket resident Island visitor Other: _____

4. If you are a full or part-time resident of Nantucket, in what area do you reside? (Please circle the appropriate letter on map)



5. How many dogs do you currently own? _____

6. What size is/are your dog/dogs? (If you own multiple dogs, please indicate the number of each size dog you own)

- a) _____ Small (0-25 pounds)
- b) _____ Medium (26-60 pounds)
- c) _____ Large (61-109 pounds)
- d) _____ Extra Large (110+ pounds)

7. How often do you walk your dog(s)? (Please check one)

1 or more times a day 4-6 times a week 1-3 times a week Other: _____

8. Where do you usually walk your dog while on Nantucket? (Please check all that apply)

Tupancy Links Sanford Farm the Moors In-town Other: _____

9. When on walks, how often do you pick up after your dog? (Please check one)

Always Usually Sometimes Never

Please indicate on a scale of 1 to 5 how strongly you agree or disagree with the following statements. (1 = "Strongly disagree", 3 = "Neutral", 5 = "Strongly agree")

	strongly disagree				strongly agree
10. Failure to dispose of dog waste properly poses a threat to human health.	1	2	3	4	5
11. Most Nantucket dog owners act responsibly in picking up after their pets.	1	2	3	4	5
12. Most dog owners abide by Nantucket's leash laws.	1	2	3	4	5
13. I am comfortable with off-leash dogs on Nantucket.	1	2	3	4	5

Please turn page over to continue the survey →

APPENDIX 4: Nantucket Survey for Non-Dog Owners (Spanish)

Si ha tomado esta encuesta, por favor no complete esta

Encuesta para gente sin perros

Estamos un grupo de estudiantes del Worcester Polytechnic Institute que realizan investigaciones en colaboración con el Consejo de Salud sobre la conveniencia de un parque para perros en Nantucket. Un parque para perros es una facilidad reservada para los perros para hacer ejercicio y jugar sin correa en un ambiente controlado bajo la supervisión de sus dueños. Esta es una encuesta anónima y ninguna información de identificación personal se recopilarán.

1. Sexo (Marque uno): Hombre Mujer

2. Edad (Marque uno): 18-25 26-50 51+

3. ¿Qué te describe mejor? (Marque uno)

Soy residente durante todo el año. Soy residente de verano. turista Otro: _____

4. ¿Si usted es un residente de tiempo completo o parcial, de Nantucket, en qué área vive? (por favor circule la letra correspondiente en el mapa)



5. ¿Alguna vez has tenido un perro? (Marque uno)

Sí No

Por favor, indique en una escala de 1 a 5 la intensidad con usted de acuerdo o en desacuerdo con las siguientes afirmaciones. (1 = "muy en desacuerdo", 3 = "Neutral", 5 = "muy de acuerdo")

Muy en desacuerdo Muy de acuerdo

6. El no disponer de excremento de perro representa una amenaza para la salud humana.

1 2 3 4 5

7. La mayoría de los dueños de perros Nantucket actuar responsablemente en recoger los desechos de sus mascotas.

1 2 3 4 5

8. La mayoría de los dueños de perros cumplir con leyes correa Nantucket.

1 2 3 4 5

9. Me siento cómodo con los perros sin correa en Nantucket.

1 2 3 4 5

10. La temporada de caza plantea una amenaza a la seguridad de los perros.

1 2 3 4 5

11. Nantucket pone demasiadas restricciones sobre los perros y los dueños de perros.

1 2 3 4 5

12. Un parque para perros vallado beneficiaría a la comunidad de Nantucket

1 2 3 4 5

13. ¿Estaría a favor de un perro parque vallado en Nantucket? Sí / No
Por Que?

Gracias!

APPENDIX 5: Example of a Corporate Donor Sponsorship Form

Brunswick Dog Park Corporate Donor Information

CORPORATE SPONSORSHIPS: *All donations are tax-deductible*

\$20,000+ (Benefactor)

- Unique sign at the dog park entrance area with your chosen name.
- Name recognition in all advertisements, media releases and articles
- Recognition in dog park e-newsletters and brochures
- Recognition at all events

\$5000+ (“Best in Show”)

- Prominent placement on park entrance sign
- Mention in all printed materials
- Recognition at all events

\$2500+ (“Best of Group”)

- Prominent placement on park entrance sign
- Recognition at all events

\$1000+ (“Best of Breed”)

- Listing on park entrance sign

Make Checks Payable to: People Plus/Brunswick Dog Park

Mail to:

Brunswick Dog Park
PO BOX 821
Brunswick, ME 04011

Questions? Inquire at brunswickdogpark01@yahoo.com or 207.729.0188

People Plus is a 501(c)(3) non-profit corporation

APPENDIX 6: Instructions for Teachers

Dear Teachers,

We are a group of students from Worcester Polytechnic Institute working with the Nantucket Board of Health. We have developed surveys, regarding the potential establishment of a fenced-in dog park on the island. We are hoping these surveys can be distributed to the children in your class. We have two variations of our surveys, a dog owner version and a non-dog owner version. We kindly ask that you distribute the dog owner version to students whose families own a dog, and the non-dog owner version to students whose families do not. We would appreciate it if you could distribute these on Wednesday, November 7th, for the students to take home and have their parents/guardians complete. Please ask the students to return the surveys back to school by Friday, November 9th. We will come to the school at the end of the day on Friday to collect them. However, we will also come back to the school on Monday and Tuesday to collect any remaining surveys. Thank you so much for your time, and for supporting our project!

Sincerely,

Sarah K. Meehan, Dominique Throop, & Tara Jarobski

Contact info: barkpark@wpi.edu

APPENDIX 7: Various Web Page Locations Giving Access to the Online Surveys



Geronimo's and Cold Noses of Nantucket shared a link.

November 12 

Hello Dog Lovers! Please take a minute and fill out the survey below on the matter of having a dog park on Nantucket. Your opinions are very important and highly valued!

Thank You in advance!

Dog Owner Survey:

<https://docs.google.com/spreadsheets/viewform?formkey=dEtZQzFDcW9ocmpNMkxLMWxrS2tOY2c6MQ>

Non-Dog Owner Survey:

<https://docs.google.com/spreadsheets/viewform?formkey=dGptNHpMS1Q4TmJJVhQ5aTcxeVVMUVE6MQ>



Nantucket Safe Harbor for Animals

is an all volunteer run organization. The working board and many volunteers have been trained and were ready to step in and run the new animal shelter once the MSPCA closed its doors on December 31st, 2011. We have remained in the building as tenants, but in a much smaller space; therefore, relocating many of our cats into foster homes. Our immediate goals are to provide quality care to the animals currently in the shelter, find them homes, and be prepared to accept any stray or unwanted animals in the new year. So far, we are doing just that.



[Donate](#)



Select Language

Powered by [Google Translate](#)

[Check us out on Channel 17!](#)

Vote Here!

Do you think Nantucket should have its own dog park? This would be a fenced-in and maintained park fashioned after [Quiet Waters Dog Park](#) in Maryland. Three students from WPI are on Nantucket for two months surveying our community to see if it's something we want. Let your voice be heard and take this survey. Click [HERE](#) for the map to question 4.

[Dog Owners](#)

[Non Dog Owners](#)



TOWN & COUNTY OF NANTUCKET MASSACHUSETTS

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- Online GIS and Maps
- Tax Collector
- Commission on Disability
- Town Meetings & Elections
- Veteran's Services

Town News & Notices

- WPI Student Dog Park Study**
Posted 11/15/12
- Energy Assessment; Open-house & Demonstration
Posted 11/8/12
- Coastal Management Plan Public Forum
Posted 11/7/12

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WPI Student Dog Park Study
[Printer-Friendly Version](#)

We are a group of students from Worcester Polytechnic Institution conducting research in collaboration with the Board of Health regarding the desirability of a dog park on Nantucket. This is an anonymous survey, and no personal identifying information will be collected.

Click [here](#) for more information about the dog park survey.

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Nantucket Dog Park Study

We are a group of students from Worcester Polytechnic Institution conducting research in collaboration with the Board of Health regarding the desirability of a dog park on Nantucket. This is an anonymous survey, and no personal identifying information will be collected.

Click [here](#) for the survey if you are a dog owner

Click [here](#) for the survey if you are a NON-dog owner

Question #4 on both surveys asks in which area you reside. Please indicate which quadrant you live in based on this map.



APPENDIX 8: Poster for Geronimo's

DOES NANTUCKET NEED A FENCED-IN DOG PARK?

Did You Know?

- The number of dog parks in the United States has increased by 24% between 2000 and 2010 (Petland, 2010)
- 47% of petting owners in Massachusetts use comfortable crates all week long
- Over half of Massachusetts dog owners agree that having leashes prevents a threat to the safety of dogs
- 77% of Massachusetts are in favor of a fenced-in dog park

A dog park is a safe park especially fenced, clean, open & free dogs can play together (NYC 2010)

Potential Features

- Benches
- Fountains for Dogs & People
- Lighting
- Separate Fenced-In Areas
- Trails
- Parking

Potential Benefits

It could...

- reduce the risk of dogs getting ticks
- provide a safe place for dogs to run during hunting season
- reduce the risk of water pollution
- provide a legal off-leash area for dogs to socialize
- create a greater sense of community

Project supported by the Nantucket Historical Association

APPENDIX 9: Poster Hand-Outs for Geronimo's

Did You Know?

The number of dog parks in the United States has increased by 34% between 2005 and 2010. (El Nasser, 2011)

47% of non-dog owners on Nantucket are uncomfortable with off-leash dogs.

Over half of Nantucket dog owners agree that hunting season poses a threat to the safety of dogs.

77% of Nantucketers are in favor of a fenced-in dog park. *

DOES NANTUCKET NEED A FENCED-IN DOG PARK?

*A dog park is a public park, typically fenced, where people & their dogs can play together." (AKC, 2008)

Frequently Asked Questions

Q: What's wrong with Tupancy?
A: Since it is not fenced in, dogs occasionally run into traffic; a properly fenced-in dog park could eliminate the occurrence. Also, the tall grass there increases the likelihood of dogs getting ticks.

Q: Won't this just be more restrictions?
A: No, a dog park allows for safety and proper socialization, but this would not restrict dogs from going elsewhere on the island.

Q: Will this decrease the amount of dog waste left on the streets?
A: Potentially, but above all else it will increase dog owners awareness of the hazards of dog waste and why it should be not be disregarded.

Potential Benefits

It could...

- Reduce dogs' exposure to ticks, as ticks are not often found in low cut grass
- Provide a safe place for dogs to run during hunting season, putting owners at ease, knowing they won't be harmed
- Reduce the risk of water pollution by providing waste bags and trash receptacles
- Provide a legal off-leash area for dogs to socialize, allowing for more freedom to play
- Create a greater sense of community by bringing dog owners together

Are you in favor of a fenced-in dog park on Nantucket?

Response	Percentage
Yes	77%
No	23%

*n=323

Geronimo

85