

Town of Carver

2010-2015 Open Space & Recreation Plan

*A 5-year Plan to maintain
Carver's rural character,
protect its natural resources, and
provide recreational
opportunities for its citizens.*

Town of Carver Open
Space Committee
108 Main Street
Carver, MA 02330



Buzzards Bay National
Estuary Program
2870 Cranberry Highway
East Wareham, MA 02538



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I. PLAN SUMMARY

Southeastern Massachusetts is the fastest growing region of the state. According to recent predictions, the population of Carver will increase by 50% over the next 20 years, and the population of the town could eventually reach 32,000 or higher. Compounding the problems associated with regional growth pressures, Carver has also been dealing with the downturn in the cranberry industry, the town's primary commercial base, over the past ten years. The presence of the cranberry industry in Carver has buffered the town against past development pressures by maintaining thousands of acres of land in agricultural and associated uses, all while keeping this land from being developed. Although, economic troubles in the industry are not permanently in the past, with the recent up-tick in cranberry prices growers are not under as much extreme pressure to sell their developable land simply to survive as they were since this Open Space and Recreation Plan was last updated in 2004. However, growth in Carver is still inevitable. Since the cranberry industry's success is cyclical in nature, now may be the best time for Carver to acquire some of the unprotected parcels identified in this Plan as protection priorities.

Carver has been generously endowed by nature with wonderful resources: ponds, wetlands, woods, forests, and agricultural lands. Many of our citizens moved to this area to enjoy these resources. In survey after survey, "rural quality" ranks high among people's reasons for choosing Carver. One could agree that Carver's abundant open land is its greatest asset, being the basis for a healthy, high-quality of life for its residents. This land, the very essence of what makes Carver unique, is at risk of being lost forever. Development threatens not only to destroy the rural quality of this town but also its environmental quality. About half of the town is covered by wetlands and surface waters that feed the aquifer and provide drinking water to the town and beyond. Without appropriate development controls, these areas will become increasingly at risk from pollutants as Carver's sandy soils facilitate the transmission of contamination.

Part of the lure of Carver's rural atmosphere is the opportunity to enjoy an active outdoor lifestyle. Many citizens like to swim, hike, hunt, and fish. Many more are involved in organized sports. Ideally, the town would provide generously for all of these interests. The rural quality and beauty of the area would be protected through careful land use decisions. There would be an abundant amount of public open land available for the enjoyment of its citizens with hiking trails, picnic sites, and ample opportunities for fishing, swimming, boating, hunting, and getting close to nature. Also, significant amounts of private land would be protected through conservation restrictions and other means so that the town's wildlife habitats, recharge areas, watersheds, and scenic landscapes would be preserved for future generations. None of this can happen without careful planning.

Preserving open space goes hand-in-hand with controlling population growth and stabilizing town finances. Many studies (some of which are included in this plan) have shown that open space and agriculture are among the most fiscally beneficial land uses for towns like Carver. Protected open space and agriculture keep land out of development and cost almost nothing in town services, whereas residential uses cost significantly more in services than they bring in as taxes dollars. Open land is valuable to the town for what it doesn't have on it, as well as for what it does have.

The town must also acknowledge that cranberry growers are our number-one allies in our fight to preserve the natural environment and slow the rate of population growth. One only has to look at former farming communities all over the state to see what results when a type of farming becomes unviable: closing of farms, wholesale sell-off of farmland, a boom in residential building, a sharp increase in population, and more fiscal strain. The long-term success or failure of the cranberry industry could make a 50% difference in Carver's eventual population size.

This is not to say that cranberry-related practices should be unquestionably embraced; irresponsible practices can be damaging to the environment. And the town takes a risk when it relies completely on the fortunes and decisions of a single industry for the protection of its open space. Private industries, by necessity, have their own needs and agendas. Clearly, the town must have a strategy of its own that should include acquiring more *public* land for the protection of the environment and the enjoyment of its citizens.

In this plan we propose some specific strategies for protecting and enhancing open space and recreation over the next five years. Underlying all these strategies is a call for Carver to become a more *active* protector of its most important resource. Until the very recent past, the town's approach to open space has been decidedly passive: we have seldom actively solicited donations of land, pursued conservation restrictions with landowners, maintained a wish list of desirable land for acquisition, or kept track of grant money that is available for open space enhancement. Now, however, since this plan was up-dated in 2004, that pattern of non-action, or lack of pro-action, has begun to change.

With proposed large-scale developments on the horizon, such as that of the Makepeace lands, we owe it to ourselves to take an even more active role in land protection. We have a wonderful asset in our open land today, but it can be improved, and it cannot be taken for granted. Protecting and enhancing our open space is essential for maintaining our environment, quality of life, tax rate, and future.

Below are the Goals and Objectives of the 2010-2015 Carver Open Space and Recreation Plan:

Goal I: Maintain the rural character and scenic character of Carver.

Objectives:

- 1) Permanently protect open space in Carver.
- 2) Protect the town's historic, cultural and scenic resources.
- 3) Support planning policies that control population growth.
- 4) Modify existing zoning regulations to encourage more open space in residential, commercial, and industrial development to protect open space, the environment, and the scenic character of town.

Goal II: Preserve the quality of Carver's natural resources, including ground and surface waters, wetlands, and wildlife habitat.

Objectives:

- 1) Protect Carver's groundwater resources.
- 2) Preserve and restore water quality in Carver's rivers, streams, and ponds.
- 3) Support protection of wetland resources and areas bordering wetlands throughout Carver.
- 4) Encourage retention of existing cranberry grower-owned lands as wildlife habitats, water recharge areas, etc.
- 5) Preserve critical wildlife habitats.

Goal III: Improve access to and enhance recreational opportunities for all Carver residents

Objectives:

- 1) Develop walking and equestrian trails, bike paths, and picnic areas on public lands.
- 2) Expand and upgrade recreational opportunities on ponds and waterways.
- 3) Expand and upgrade facilities for active recreation.
- 4) Ensure public facilities are accessible to all residents regardless of age or ability.

Goal IV: Develop definitive strategies that will affect change in town policy regarding open space and recreation issues in Carver.

Objectives:

- 1) Establish open space preservation and recreation planning priorities in all town decisions and actions.
- 2) Increase community appreciation of the town's rich resources.
- 3) Develop and continue implementation and funding mechanisms to support open space and recreation needs.

II. INTRODUCTION

A. Statement of Purpose

An Open Space and Recreation Plan is a policy guide, outlining a clear direction for the balanced use of a town's natural resources. The needs addressed in an Open Space Plan include: to maintain environmental quality, to protect and preserve ground and surface water, to provide a balanced recreation plan to meet the needs of a growing population, to preserve and promote natural areas for conservation purposes, and to integrate conservation and recreation areas. Carver's first Open Space Plan was drafted in 1986, updated in 1996 and again in 2004. This 2010-2015 version is the third revision to the original Plan.

Since 1986, the year the original Open Space Plan was written, Carver's economy has been greatly affected by a cranberry industry whose success has been cyclical in nature. Times of economic prosperity in the industry during the eighties and nineties were followed by an economic downturn at the turn of the century. The current recession in the cranberry industry, from which we appear to be emerging, as well as significant budget cuts by the state, combined with a rapidly-growing population, puts a significant strain on the town of Carver's economy. As a result of the tight economy, only some of the open space goals that were cited as priorities in the original 1986 plan, in the 1996 plan, and in the 2004-2009 plan have been implemented, and many of the needs remain the same.

There have, however, been some accomplishments since 2004. The lot adjacent to the new library, that was acquired by the town and is now the Carver Community Playground, continues to be used daily by young and old and in every season. The town's new ball fields on Purchase Street are used so frequently that ball teams vie for this coveted space. In addition, the whole town has been designated a special water protection district in an effort to protect the Plymouth-Carver Aquifer that is vulnerable to contamination. One striking difference between 2004 and 2010 is that roughly 276 acres of protected open space have either been acquired by the town or donated to the town since the Plan was last revised in 2004. The largest of these protected parcels is the 221-acre Cole Property, purchased with state grants and Community Preservation Act funding in 2007. The town overwhelmingly chose in 2006 to adopt the Community Preservation Act, a major land acquisition tool that, at least in the case of the Cole Property, helped prevent the development of 250 Chapter 40B rental units. Efforts are on-going to acquire a 70-acre portion of the Davison property that abuts Sampson's Pond to prevent the development of between 36 and 72 house lots on this Pond and for walking trails, water, habitat, and historical resource protection, and for the creation of a 10-acre active recreation field. The 26-acre parcel of unprotected land behind Savery Avenue, in the Savery Historic District and abutting Conservation Commission land, which had been permitted for an eight-lot subdivision negotiated down to eight from a threatened 44 houses on one-half-acre lots, was finally purchased in February 2011. Not only does its purchase prevent the development of this historic area, protecting the land in perpetuity, but, hopefully, the Town will soon be able to construct new much-needed ball fields on the land's six acres of upland frontage. The Conservation Commission is also working to identify and acquire parcels in the roughly 600-acre Great South Meadow Cedar Swamp for water resource and habitat protection, and protection of the Buzzards Bay Watershed in particular.

There have also been some losses in open space in the last five years. A twenty-two acre parcel on Cranberry Road (formerly belonging to White Springs Cranberry Company), that could have been used as a public drinking water supply protection area but was forfeited for lack of funds in 2003, was bought by a developer, Easecat, Inc., and is now home to a five-house subdivision (three of which are built). Three new subdivisions were proposed, one each on the north and south sides Plymouth Street and one on High Street, by the A. D. Makepeace Company, two of which have been built. While these new subdivisions were permitted as conservation subdivisions, only the one on High Street preserved any significant potentially town-owned open space.

Carver still has a legacy of wealth in undeveloped resources that should be preserved for future generations. The 2010-2015 Open Space and Recreation Plan is an opportunity for the town to re-dedicate itself to the goal of protecting and enhancing its open space so that the current and future needs of the townspeople can be served.

B. Planning Process and Public Participation

This new plan builds on the 2004 version and has been contributed to by many people representing many constituencies. At the request of the town's Conservation Commission, the Buzzards Bay Project National Estuary Program provided technical assistance to create the formidable 2004 document that serves as the foundation of the 2010-2015 Plan.

The Open Space Committee, which was created by the Selectmen in March 2001 and appointed by the Town Administrator, consists of two members of the Conservation Commission, Peg Blackwell and Commission Chair and Committee Chair, Dan Fortier ; three members-at-large: Claire DeLoid, Rosemarie Hanlon, and Betsey Wimperis. Conservation Agent, Sarah Hewins, is our staff. Former committee members who assisted in the planning process in the past were Jim Hoffman, John Murray, and Marty Barrington. Bob "Grumpy" Conway, Larry Cole, and Frank Downing, all now deceased, also served at one time. Committee members all provided input and reviewed drafts of various sections of the plan.

Meetings were held bi-monthly in the Carver Town Hall. All meetings were posted on the Town Hall bulletin board and were open to the public.

To maintain the momentum created by this update, the Conservation Commission established a permanent Open Space and Recreation Plan Update Committee in 2008 that will oversee implementation of the Open Space and Recreation Plan for the next 5 years.

Open Space and Recreation Survey and Community Meeting

In 2010, the public was polled via a scientific survey that was mailed out to 1,959 households in August 2011. Selection was made by mailing to every fifth name on the town's resident list. The survey was developed by the Open Space and Recreation Plan Up-date Committee with the assistance of the Buzzards Bay National Estuary Program and was designed to give basic public input on both conservation and recreation issues. Every effort was made to obtain confidential, unbiased results that accurately represent resident opinion.

Of the 1,959 surveys mailed, over 318 people responded, representing 17% of the sample pool. The results of that survey are incorporated into this report and can be found in Appendix A of this document.

The Committee presented the survey results to the Conservation Commission on April 20, 2011 and again on July 20, 2011 at televised regular public meetings of the Commission. On August 9, 2011, the Open Space and Recreation Plan Update Committee presented its results to the Board of Selectmen at a televised regular public meeting of that Board. In addition, the Open Space and Recreation Plan Update Committee held four public meetings during 2010 and 2011 to discuss revisions to the Open Space and Recreation Plan and to discuss the 2010 Survey results. In an open meeting on July 21, 2011 the results of the survey were officially released by the Open Space and Recreation Plan Update Committee and the 2010-2015 Plan was approved by the Committee. Finally, the survey results were released to the press in the summer of 2011. These newspaper articles and meeting postings can be found in Appendix B.

Release of Draft Plan to the Public

The final Open Space and Recreation Plan was released to town boards and the Southeastern Regional Planning and Economic Development District in the summer of 2011. Letters of comment are located in Appendix B of this document.

III. COMMUNITY SETTING

A. Regional Context

Carver is located in Plymouth County, bordered by Middleborough on the west, Plympton on the east and north, Kingston on the northeast, and Wareham on the south and southeast. The town, which has a total land area of 39.78 square miles (approximately 25,456 acres), is characterized by an abundance of cranberry bogs. In addition, Carver is the home to three major rivers as well as many brooks, ponds, and sizeable swamps. It lies 40 miles southeast of Boston and 39 miles east of Providence, Rhode Island.

The town of Carver is small, with a population of 11,163 (U.S. Census, 2000). Originally part of the town of Plympton, Carver gained its independence in 1790. As was the case from its very inception, two villages, North and South Carver, still characterize the town. Today Carver employs a Town Meeting form of government with five part-time elected selectmen, a town administrator, and various, departments, boards, commissions, and committees.

Historically Carver's development, or more appropriately, lack of development, has been fairly independent of surrounding communities. This is mainly due to the distance of Carver from a major economic center. In its earliest years, Carver was an agricultural community, but by the 1730s the town had become known for the iron ore that could be dug from its swamplands or bogs, and used to make cooking tools. The need for lumber to power the foundries led to the creation of a number of sawmills that were fed by the plentitude of large cedar and pine stands in town. Although the iron foundries no longer exist, handsome mansions built with the money from iron can be seen throughout town.

As the market for iron ore declined in the latter part of the 19th century, Carver identified cranberry farming as a new use for the bogs that dotted the town. Farmers began growing the crop in the 1870s. The agriculture industry flourished with the production of cranberries that prefer a sandy, acidic, low-nutrient soil. In the 1940s, the town of Carver produced more cranberries than any town in the world and today Carver's cranberry bogs still remain an important part of the town. In fact, Decas Cranberries, one of the industry's largest independent processors of both fresh and dried fruit, recently moved its world headquarters to South Carver. Although Carver is now also a suburban commuter community, it remains relatively rural and is one of the few towns in the state with a significant remaining agricultural component as cranberries continue to be a national business.

Although Carver's economy hasn't historically been linked to surrounding communities, it does depend on other towns for many resources. Up until 1993, Carver high school students attended

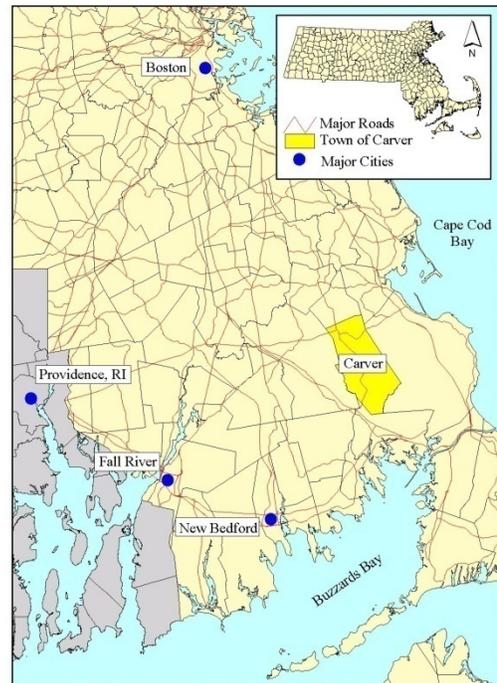


Figure 1. Regional Context Map
(Source: MassGIS and the Buzzards Bay National Estuary Program)

Plymouth Schools. In addition, a lack of many successful commercial enterprises in town makes it necessary for residents to do most of their shopping elsewhere.

There is a link between Carver and other towns in the region regarding trash disposal. In the past, the Carver-Marion-Wareham tri-town Landfill, which is located in Carver, was host to garbage from Marion, Wareham, and Carver. Although the landfill facility has since been closed to the public, private haulers from an average of 61 towns still bring trash to the SEMASS incinerator in Rochester from which ash is then hauled to the landfill. It is estimated that the landfill has sufficient capacity to accommodate 5-10 years of additional ash supplied by the SEMASS plant.

There is currently only limited public water, but only in North Carver, and no sewer anywhere in Carver. Residents of Carver benefit from sandy soils that are good for septic systems, and private wells tap into high-quality groundwater that comes from one of the largest aquifers in the state. This water may someday prove to be an income source for the town as other towns in the region look for new water sources to meet the demands of their own residents. Unfortunately, this groundwater has been threatened in certain locations. At one time, a plume of contamination emanating from the North Carver Landfill spread under a number of homes and affected Muddy Pond. Affected residents had to be hooked up to public water from Middleborough while the cleanup of this site was underway. The site has since been remediated, the landfill capped by the town, and the pond is now clean. However, another plume of contamination was discovered down the road at the privately-owned Ravenbrook Demolition Landfill. This plume has affected one private well on a commercial site in North Carver. While the plume has not yet affected private residential wells, nearby neighbors have also been hooked up to the Middleborough water main as a precaution.

The town of Carver lies predominantly within the Buzzards Bay watershed, with the northern section of town falling within the Taunton River watershed. A watershed is an area of land where all sources of water, including streams, rivers, groundwater, and rain, drain to a common water body. These larger watersheds are broken down into several smaller areas called sub-watersheds that drain to various harbors and coves. All of the land area of Carver lying within the Buzzards Bay watershed eventually drains south from the Weweantic and Wankinco Rivers in Carver to the Weweantic, Wareham, and Sippican Rivers in the town of Wareham. The section of Carver that lies within the Taunton River watershed ultimately drains from the Winnetuxet River in Carver to Mount Hope Bay near the city of Fall River.

Negative impacts to water resources in one area of a watershed can have far-reaching effects on other areas as ground and surface water can transport pollutants far from the original source. The Weweantic, Wareham, and Sippican Rivers already suffer from poor water quality related to residential and agricultural pollutant sources, despite the fact that a majority of the watershed remains undeveloped. Should growth trends continue in Carver and neighboring towns, even greater impacts to water quality are expected to be seen in these river systems.

B. History of Carver

The Wampanoags or Pokonokets, a Native American people who traveled along several trails in southeastern Massachusetts, originally inhabited the area that is now Carver. One of the more common routes used by the Pokonokets was the Nemasket Trail, that traversed Carver from the north to south and on to Rhode Island (now roughly where Route 44 lies). Trails that ran along sections of Purchase and Forest streets, South Meadow Road (the Pilgrim Trail) and the south side of Sampson's Pond where the historic Ridge Road is located were also believed to have been routes used by the Pokonokets. An archaeological dig has suggested that Annasnappet Pond, located in Plympton just north of the Carver town line along the path of the future extension of Route 44, was a central gathering spot for Native people. Also, archaeological artifacts show that the shore of Sampson's Pond was used as a campground for thousands of years.

Later, after European settlers moved into the region, Carver started its roots as a part of the Town of Plympton. The Plymouth Colony administered land grants for the Carver area of Plympton in 1637, and in 1660, the first permanent settlers moved into the Carver meadows. They settled along two Indian trails: the Nemasket Indian Trail and later, along the Pilgrim Trail. From the start, the area that is now Carver was settled in a network of separate villages, most notably Lakenham in the North and South Meadow in the South.

In 1790, after several petitions for separation, Carver, having been named after John Carver, the first Governor of the Plymouth Colony, was granted its independence from Plympton. As was the case in many New England towns, the reason for the town's creation was that many residents lived too far away to attend church in Plympton.

Iron and Lumber Industries

Carver has always been rich in iron swamps, ponds, and fresh meadows containing dissolved sulphuret of iron and iron oxide deposited by glacial drift and lateral alluvial deposition. To the early colonists, the discovery of this native ore was a great boon. Iron implements were so dear they were often bequeathed in wills. As early as 1628, England encouraged settlers to look for mineral wealth and, in 1641, incentives were offered for the discovery and manufacture of iron.

To mine and manufacture this ore actively, there were five major requirements: large quantities of iron ore, forests to provide charcoal for smelting, water, manpower, and know-how. Carver had the ore, wood, and water and, in time, acquired the human elements.

Two of the largest grant holders were Thomas Pope and George Watson. Watson's holdings were in the Rocky Meadow Cove area and Pope's holdings, known as Pope's Point, were located between the Weweantic River and Cove Brook. In 1735, Jonathan Shaw came into possession of Pope's Point, and leased the land and water rights to ten businessmen for the purpose of building an iron works and furnace. This was the birth of an industry that was to flourish in Carver for more than 100 years. The Pope's Point Furnace, the first in Carver, manufactured pots, kettles, cauldrons, pans, and fire dogs, and claims to have made the first American tea kettle.

The peak period of iron production was 1735-1835, during which there were eight furnaces located in the town. One of the most famous iron masters to come out of Carver was Benjamin

Ellis, known as the “Cast Iron Senator” to the Massachusetts legislature. Ellis owned the Benjamin Ellis and Company Foundry in South Carver and sub-contracted and rented other furnaces to make cannonballs for the American Army during the War of 1812.¹ The *U.S.S. Constitution* was armed with Carver shot. At the height of the iron days, Carver enjoyed prosperity. The typical furnace “blast” lasted from one to two months continuously, night and day, with laborers working in shifts and sleeping in company bunkhouses.

Lumbering had a part in this prosperity. To produce a ton of iron, four cords of wood were required. Surrounding farmers made a tidy business supplying charcoal made from cordwood. Through the 1800s and 1900s, much of Carver’s woodland was cut for fuelwood and construction. The North Carver Pine Sawmill, which operated until the 1970s, was the largest white pine mill in the state. Pressure to feed this mill with timber sometimes led to over-harvesting, with the result that there are almost no old-growth forests in the town.

In the mid- to late-nineteenth century, plentiful and high-quality iron ore was discovered in the Great Lakes region, and the iron business in the east declined. From 1850 to 1900, the population of Carver steadily declined. There are relatively few traces of Carver’s early prosperity in the built environment of Carver. Carver’s flirtation with industry was too early and brief to produce the kind of infrastructure and architecture typical of 19th century industrial towns. There is no well-developed Main Street, no rows of fancy factory-owners’ homes. The few remaining architectural traces of this era are scattered about town: the homes of George Bowers and William Savery in the Savery Historic District, for example, and the old Crane Brook Foundry building, which, for years, housed the picturesque Crane Brook Tea Room, now defunct. Savery Avenue is also a legacy of the period: William Savery built this “first divided road in America” as a place for buggy races.

But while Carver’s history of iron manufacturing did not leave many architectural reminders, it made an impact in terms of open space. The excavation of the iron industry is responsible for several of the most scenic ponds in town. And other excavations laid the way for subsequent development of the cranberry industry.

The Growth of the Cranberry Industry

Cranberries (already found growing wild all over Plymouth County) were the natural successor to bog iron. The remnants of excavated meadows and old iron bogs, rich with peat, moisture, and acid soil, made a perfect medium in which to grow cranberries. In 1878 George Bowers, a Carver iron master, and John Russell, a Plymouth banker, reclaimed a derelict bog at Benson’s Pond as Plymouth County’s first large-scale cranberry operation. At the turn of the century, Carver experienced a burst of growth as cranberry cultivation took off. By 1905, the population was up dramatically to 1,410, due largely to a wave of immigrant field workers from Finland and the Cape Verde Islands.

In the late 1950s the cranberry industry suffered a catastrophic setback. Amino triazole, an herbicide rarely used but believed to be safe, was linked to cancer, and the press linked the cranberry industry to amino triazole. The cranberry market crashed, and even though that year’s

¹ Griffith, Henry, History of Carver, E. Anthony and Sons, Inc., 1913 (This work includes history from 1637 to 1910).

crop was found free of residue, the market was ruined for a decade. Again, Carver suffered a grave economic blow. The sixties and early seventies were tough times for the cranberry industry, as low berry prices and rising property taxes forced the sale of a number of large tracts of grower-owned land. Vaughan Estates, for example, one of Carver's largest subdivisions, sits on land that once belonged to a prominent cranberry family.

The industry rebounded and enjoyed unparalleled growth in the nineties. Improved fertilizers and chemicals, sprinkler systems, and better agricultural practices increased yields. Aggressive marketing techniques and the growing demand for fruit and fruit products combined to give growers and the town of Carver success in the face of farm (and farming-town) failures across the nation. However, the growth boon did not last long as cranberry growers across North America faced extreme financial pressure in the late 90's and through the early years of the 2000s. This economic crash was created by the cranberry supply outpacing demand, causing a glut of cranberries that dramatically reduced the price paid to growers for their fruit, well below the cost of production. In the mid to late 2000s, demand started to rise, due in large part to a strong export market, positive advertising and marketing, and the sale of sweetened dried cranberries, resulting in increased prices paid for growers' crops.

At present, Massachusetts is second only to Wisconsin in cranberry production, and Carver has the distinction of being the leader in Massachusetts.

The Cranberry Industry Today

Approximately 12,259 acres, or about 48% of the land in Carver, is kept in an open, agricultural condition by the cranberry industry. According to the Cape Cod Cranberry Growers Association, there were 3,500 acres of cranberry bogs in production in 1996. Today, with a global recession threatening to reduce demand for fruit, the industry must once again brace for a shift in the supply-demand dynamics and a possible decrease in fruit value. Cranberries are a commodity and the challenge for the industry remains the same: to satisfy current consumer demand, grow future demand, provide a stable return for growers' fruit, all while enabling Massachusetts cranberry growers to remain a viable and sustainable agricultural operation for generations to come. No one can predict what the price for cranberries is going to be or how the recession will affect the industry. Hopefully, over time, the economy improves, the demand for cranberries increases, and the growers in Carver are in a good position to satisfy that growth. In order for cranberry growers to survive and thrive, their operations need to be efficient and profitable. In order to remain a viable agricultural producer, many growers will need to reinvest in their farms. This investment may include technology improvements, environmental enhancements, renovation of under-producing bogs to increase their production while enhancing their efficiencies, and the opportunity to grow their operation by developing new cranberry bogs within the town of Carver. Although a more recent exact statistic is unavailable, the Carver Assessors' Office estimates that the number of acres in production today is closer to 4,000. The remaining grower-owned land that is not in production is maintained for buffers, reservoirs, recharge areas, and other agriculture-related uses. There is approximately a 2 to 1 ratio of swamps and woods to actual bog that is highly beneficial to the town because "adjacent" land provides a habitat for a rich diversity of plant and animal species and contributes to the scenic value of the area in a way that cranberry bogs, which are essentially a monoculture, do not. It is this "adjacent" land that is the most vulnerable to development and other non-agriculture related uses, especially during times when the price of cranberries falls very low.

As a result of the recession in the cranberry industry, some growers turned to soil mining as a way of supplementing the income they make from the sale of cranberries. Carver's Earth Removal Bylaw was updated in 2008 and now includes provisions and requirements that distinguish earth removal that is part of normal agricultural activity or that is necessary to create new cranberry bogs versus purely commercial earth removal. Soil mining for profit still continues in town but to a lesser extent than over the past 5 years since the demand for Carver Sand has decreased due to the slow-down of the housing market.

Occasionally, the coexistence of cranberry growing and other town uses is a source of conflict. There is the perennial debate, for instance, about what constitutes a fair tax burden for cranberry land. Many people believe that cranberry growers (especially those receiving real-estate tax reductions under the 61A program) are increasing the town's financial woes because they tie up land that should be taxable at a higher rate and shift the local tax burden to other properties. An analysis shows this assumption to be incorrect. Many studies show that, in terms of revenues versus costs, agricultural and conservation lands are actually slightly better fiscally for the town than retail facilities, and much better than single-family home development. (For more detail, see the article, "*Is Land Conservation Bad for the Tax Base?*" in the appendix.)

There have also been occasional charges that the 61A status enables property owners to stockpile developable land at a low tax rate until the market is right for selling. The *1996 Carver Open Space and Recreation Plan* made mention of the possibility that the sell-off of cranberry land may be inevitable if the value of land gets high enough. The combination of decreasing cranberry prices and sky-rocketing property values that we saw in the past 10 years made this prediction a reality. Beginning in 2008, however, with plummeting home sales and the economy in a national downward spiral, Carver has seen the price of cranberries rise, home sales drop, and earth removal operations (except those that truly are agricultural activities) taper off.

The A.D. Makepeace Company, however, continues forward with plans to construct the largest real estate development ever proposed in New England on land owned by the company in Carver, Wareham, and Plymouth. The proposal would allow the Makepeace Company to develop up to 6,000 houses, 6 million square feet of commercial space, four golf courses, and a hotel/resort center on 6,000 of the Company's 9,700 acres in the three towns combined – densities of up to four times that allowed under current zoning laws. Although the A.D. Makepeace Company withdrew their proposals from Town Meeting Warrants in the three towns during the last revision of this Open Space Plan, there still exists a very real threat that this land will be developed either according to the proposal or into residential subdivisions. The Makepeace Company rejected two proposals made by the Southeastern Massachusetts Conservation Partnership to purchase the land for permanent protection. In fact, since 2004, Makepeace has built or has been permitted to build 4 major subdivisions on over 100 acres in Carver. There is some hope, however, that some of the Makepeace acreage can be protected. In 2009, the state's Department of Fish and Game (DFG) purchased 290 acres of Makepeace Company land and maintains the right to purchase remaining acres.² The Makepeace Company

² The parties also executed two long-term options giving DFG the right to acquire, at DFG's discretion, the restricted fee interest in parcels protected in the future through Conservation Restrictions (CRs) required through either the Natural Heritage and Endangered Species Program or Transfer-of-Development-related permitting. The first

also has proposed to build “smart growth” developments on its remaining acres that abut this Conservation Restricted land when the economy is right again.

There are other problem areas. Real-estate marketers often tout a bog view as an asset in a new home, but the reality is that subdivisions and cranberry bogs are not always ideal neighbors. Night and early-morning pumping, helicopter activities, and dust blown from sand pits can disturb homeowners. Bog owners, in turn, have problems with vandalism, ATV riders, and the complaints of abutters about normal cranberry practices. Growers have also become concerned about the effects of nitrogen flows from large subdivisions, originating from septic systems and lawn fertilizers. This is why it's important for continual communication between agricultural producers and their neighbors. Cranberry bogs are private property and their use should only be allowed with the knowledge and understanding of the landowner. When cranberry operations are in proximity to neighborhoods, all parties involved need to understand each other. Neighbors not accustomed to agriculture especially need to take the time to understand what a grower is doing and why. Effective two-way communication is an essential element of a harmonious working/living situation.

option, with a term of 20 years, pertains to land expected to be protected by Conservation Restrictions associated with Makepeace's River Run development around Halfway Pond and along the Agawam River in Plymouth and Wareham. Since the River Run development has completed Massachusetts Environmental Policy Act (MEPA) review, the likely layout of these parcels is well understood. It is anticipated that Conservation Restrictions will be recorded in many phases, linked directly to the development phases of River Run. DFG's option likewise allows it to purchase the land in phases, once a CR has been recorded on each respective parcel.

C. Population Characteristics

Distribution and Age

According to the 2000 U.S. Census there 11,163 residents in Carver³ The 2010 U. S. Census indicates 11,550 residents in Carver.⁴ A breakdown of age groups in Carver using 2010 Census data is not available as of this writing. The following discussion is, therefore, based on the older data. A closer look at the Census data reveals there are 3,010 family households in Carver, with an average family size of 3.23. The data also found the average age of Carver residents to be 37. Table 1 shows that 25- to 44-year-olds make up the largest segment in Carver. Table 1 also shows that the largest increase in the number of people within a particular age bracket was in the 45 to 64 age group. In fact, the only age groups that didn't decline over the past 10 years were made up of people 45 and older. People are living longer, families are smaller, and the general population is aging, following the national trend.

Table 1. Age Distribution Comparison, 1990-2000

| Age | 1990 | 2000 | % Change |
|----------|--------------------|-------|----------|
| Under 5 | 869 | 726 | -16.5% |
| 5 to 19 | 2,699 ¹ | 2,583 | -4.3% |
| 20 to 24 | 513 ² | 503 | -2% |
| 25 to 44 | 3,677 | 3,157 | -14.1% |
| 45 to 64 | 1,540 | 2,544 | 71.7% |
| 65+ | 1,396 | 1,650 | 18.2% |

1. Because the 1990 U.S. Census reported age data in the category 5 to 17, this figure had to be estimated. An equal distribution of people was assumed for all 13 ages that fell into this category. Thus, 2,339, the number of people in the age bracket 5-17, was multiplied by 2/13 and this number was added to 2,339.

2. Because the 1990 U.S. Census reported age data in the category 18 to 24, this figure had to be estimated. An equal distribution of people was assumed for all 6 ages that fell into this category. Thus, 769, the number of people in the age bracket 18-24, was multiplied by 1/3 and this number was subtracted from 769.

When looking at the age distribution in Carver, it is important to look not only at Carver as a whole, but at the villages of North Carver and South Carver separately from each other. Carver was originally settled in these two villages and today they still possess their own unique characteristics, including the age of their residents. While the two census tracts have roughly equal populations, the group in the south tract is distinctly older. Since all but one of the adult-oriented mobile home parks are located in the south tract, 82% of the town's seniors (60 and up) live there, accounting for 26% of the south tract population. In the north tract, where most of the subdivisions approved in the last 20 years have been located, the population trend is towards younger families. (Only 7% of the north tract is seniors).

Carver's recreational planning must be geared to the needs of these two diverse population groups. Seniors, with their need for more passive forms of recreation, are well served by the abundance of lakes in the area (fishing and swimming), but their opportunities for walking are

³ ³ The Town Clerk's office's "Count of Residents by Ward and Precinct," dated January 29, 2009, shows the number of residents at 11,403. However, U. S. Census data is used for this Open Space Plan update since the change in population since 2000 is up 1.27%. It is not known whether this percent change is statistically significant, but it is a fairly low percentage increase.

⁴ U. S. Census Bureau, 2010.

limited by the lack of sidewalks and trails. Seniors also need recreation facilities with ample benches for seating, and overhead shade from the sun. Some may also need transportation assistance getting to recreation spots.

Families with children, on the other hand, have a need for more active recreational facilities such as ball fields, tot-lots, playgrounds, and swimming pools. Some of that need has been addressed in the last ten years with the construction of soccer fields at Pond Street and ball fields at Purchase Street. In addition, the new Carver Community Playground was built next to the library. Unfortunately, there are only two other playgrounds in town and, because they are located on school property, are only available to the general public for use after school hours.

Both population groups would benefit from a network of bike paths that would make biking safer, as the roads of Carver are rather intimidating for young or casual bikers. Route 58, for instance, which is the most direct route from most homes to school or other activity centers, carries steady traffic moving in excess of 50 mph, with the lined “bike lane” serving as a passing lane. Given the lack of sidewalks and public transportation, a network of paths that would allow safe-bike travel between activity centers in town would be a great addition. The new proposed Route 58 up-grade with sidewalks to be laid from Purchase Street in the north through the center of town to South Meadow Road in south-central Carver is the beginning of a sidewalk project long-needed in Center Carver, particularly in the central village area.

Employment

With growth, the makeup of the population of Carver has shifted from middle-income blue collar to middle-income white-collar workers. The 2000 census shows the following occupational breakdown of Carver residents (Table 2):

Table 2. Employment Characteristics of the Carver Labor Force

| Occupation | Number | Percent |
|---|--------|---------|
| Management/Professional | 1,479 | 26% |
| Service | 879 | 15% |
| Sales and Office | 1,790 | 32% |
| Farming, fishing, & forestry | 7 | 0% |
| Construction, extraction, & maintenance | 720 | 13% |
| Production, transportation, & material moving | 784 | 14% |
| Total | 5,659 | 100% |

The low figures for farming, forestry, and fishing are interesting, considering that cranberry growing is the town’s primary industry. These figures reflect the fact that cranberry labor tends to be imported from out of town. While some long-time cranberry families still live in Carver, most large-scale growers who farm in Carver actually live in neighboring towns, as do many of their permanent employees. In addition, a lot of seasonal work is performed by temporary workers who come from Puerto Rico, Scotland, Cambodia, or elsewhere for a few months, and then return home. Many cranberry growers may also have part-time or full-time jobs to pay the bills or may work for themselves at some other job as well as in farming and may not consider or

report farming as their main job. Carver’s median household income is \$53, 506 and its median family income is \$61,738; the town’s per capita income is \$20,398. ⁵

Carver residents commute an average of 35.7 minutes to work every day. This figure is up 19% from 1990, when the average commute was 30 minutes. The only other town in the SRPEDD region with a higher commute is Pembroke (35.9 minutes). Since there aren’t a lot of jobs in the local area, many residents work closer to Boston yet choose to live in Carver and make the long commute because they like the rural small-town qualities it possesses.

The census shows a total of 1,920 jobs in town. The largest employment sectors are the trade sector (498 jobs) and the government sector (669 jobs). SRPEDD, in their *Southeastern Massachusetts Fact Book* (January, 1993), projected that employment in Carver would roughly triple by 2020, with retail jobs increasing at the fastest rate. Although the number of jobs in Carver is on track to meet this projection, the rate of growth for retail jobs (19%) has not increased as much as that of government (141%). Part of the large increase in government jobs was due to new hiring at Myles Standish State Forest. Table 3 shows the breakdown of jobs in Carver based on the 2000 census.

Table 3. Characteristics of Jobs in Carver

| Sector | Number | Percent |
|--|--------|---------|
| Manufacturing | 38 | 2% |
| Finance, Insurance & Real Estate | 41 | 2% |
| Transportation, Communication & Public Utilities | 107 | 6% |
| Agriculture, Forestry, & Fishing | 134 | 7% |
| Construction | 144 | 7% |
| Services | 289 | 15% |
| Trade | 498 | 26% |
| Government | 669 | 35% |
| Total | 1,920 | 100% |

⁵ See: censtats.census.gov/data/MA/0602502311665.pdf. This U. S. Census data is from 2000. Any available 2010 U. S. Census data are only 2009 estimates; they may be found at factfinder.census.gov/servlet/ACSSAFFacts?_event=&geo_id=06000US2502311665. Estimates for Plymouth County may also be found at http://www.srpedd.org/data%5Cwebsite_data_release_march%202010.pdf, but not final actual figures for 2010.

D. Growth and Development Patterns

Patterns and Trends

Carver is a large, low-density rural town, filled with woods, wetlands, and cranberry bogs. The town's beginning as a network of small, interconnected villages continues to shape its appearance. Unlike many small towns, Carver has no clearly developed commercial center, but instead a series of low-density commercial strips radiating out from the old village sites. In the central area there is the town hall, the library, the fire and police station, and a school. In the north, there is the small, historic North Carver Green area, and a strip of higher-intensity businesses near the future interchange of Route 44. In East Carver there is a small commercial area that contains mostly home occupations and to the south, there is a commercial strip that extends from the intersection of Tremont Street and Route 58 to the town line. In recent years, these commercial districts have been filling in with mini-malls and auto-related businesses. There are also two areas designated for industry.

Until the early 1970s, Carver's population was less than 3,000, and it resided mostly on "Form A" lots on the old town roads. In the late 70s and 80s, however, rising housing prices in and around Boston made Carver, with its attractive rural environment, cheap land, (then) low taxes, and relative proximity to Boston and Route 128, attractive as a bedroom community, retirement community, or "next step" community for people leaving the more congested areas up north. This has resulted in a current population of 11,163 (U.S. Census, 2000), which equates to a density of 297 people per square mile. The population has more than quadrupled since 1970 and, according to the SPREDD Factbook, urban land use increased 169% (from 1,544 acres to 4,157) during the period 1971 to 1999, second only to Rochester in the SRPEDD region. The population increase in Carver has been accommodated in numerous new subdivisions and mobile home parks. The size of Carver's population is not immediately apparent to the visitor passing through town because it lies hidden from view off the main roads. Table 4 shows U.S. Census population data for Carver for the period 1930-2010.

Table 4. Population of Carver: Past, Present and Future

| Year | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 | 2010 | 2020 ¹ |
|------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------------------|
| Population | 1,381 | 1,469 | 1,530 | 1,949 | 2,420 | 6,988 | 10,590 | 11,163 | 11,550 | 13,123 |
| % Change | - | 6.4% | 4.2% | 27.4% | 24.2% | 188.8% | 51.5% | 5.4% | 3.5% | 13.6% |

1. Number for 2020 a SRPEDD projection.

The largest periods of population growth took place in the 1970s and 1980s. The 1990s saw a small rate of growth (5.4%) in comparison to the previous five decades. Estimates of Carver's population for 2010 were originally given by SRPEDD as 12,143, an 8.8% jump over 2000. Interestingly, 2000 to 2010 saw the smallest rate of growth (3.5%) since the 1930s. Figure 2 gives a visual depiction of the data in Table 4.

It is interesting to see how population growth in Carver compares to the other towns in the Buzzards Bay watershed. For the periods 1970-1980 and 1980-1990, Carver ranked 1st out of 14 towns with a growth rate of 188.8% and 51.5%, respectively. However, for the period 1990-2000, Carver ranked 10th out of 14. Only Fairhaven, New Bedford, and Westport had a smaller rate of growth.

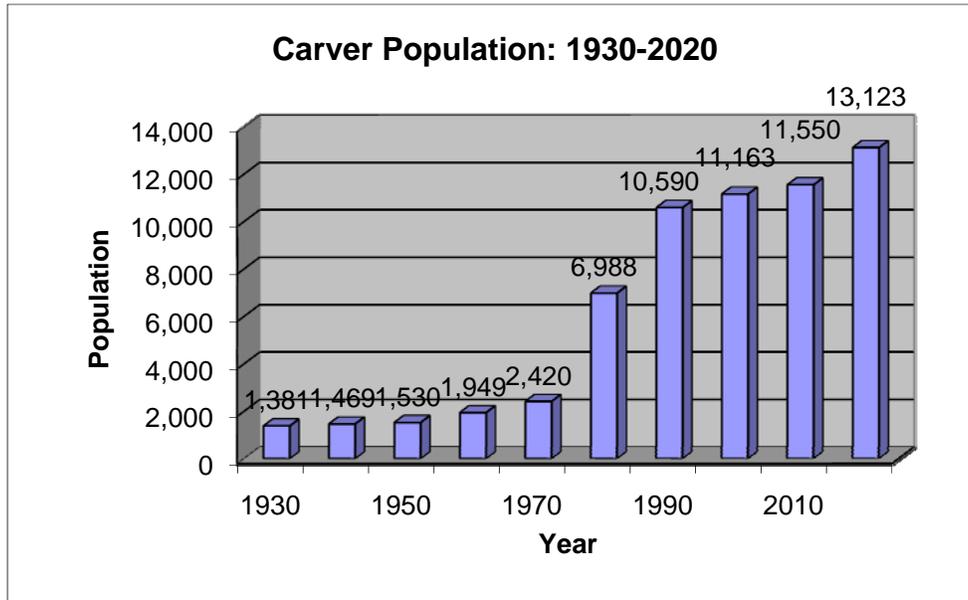


Figure 2. Carver Population: 1930-2020

Environmental Justice Populations

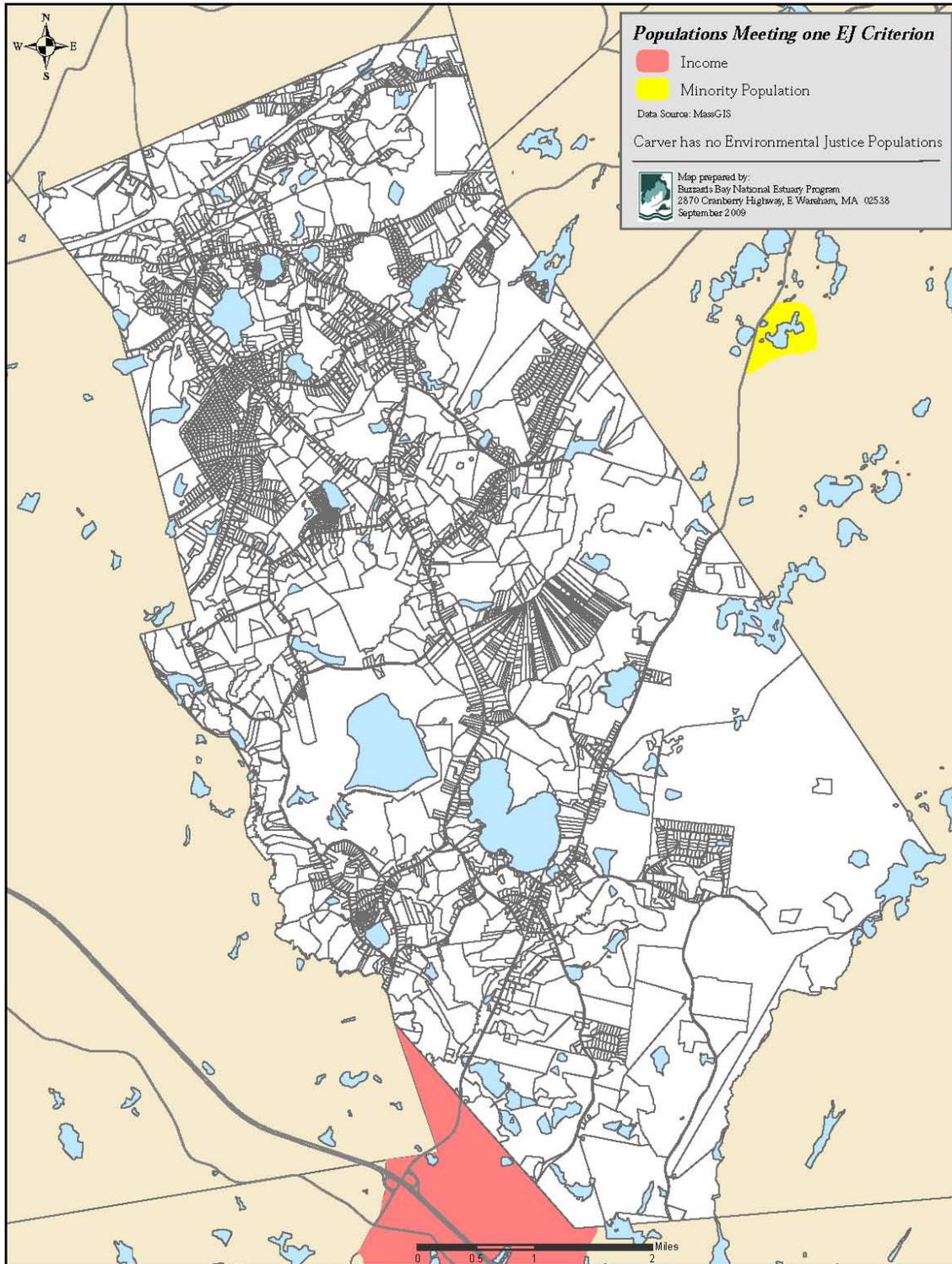


Figure 2A: Environmental Justice Map

Infrastructure

Interstate 495 and Route 3 indirectly serve Carver. Route 58 crosses Carver from north to south and Route 44 crosses the town from east to west. A new extension of Route 44 has also been constructed since 2004 that links Routes 3 and I-495 and has created two off-ramps in Carver. The State completed this 7.5-mile extension, of which 3.1 miles are located in Carver, in December 2005. The new Route 44 is a four-lane, limited-access highway and has full diamond interchanges at Route 58 and Spring Street at the border with Plympton/Kingston. Local water supplies have been protected by the construction of a closed drainage system with siltation and recharge ponds to treat all stormwater runoff from the new highway extension.

In the last twelve to fifteen years, Carver has made great strides in updating some of its infrastructure. A new library was built in 1998 to replace the aging space-metal building that used to be the library. In addition, a new Town Hall was built in 1997 to replace the old Town Hall that needed repair and didn't meet current building standards and Americans with Disabilities Act requirements. Some of the infrastructure in Carver still needs to be updated so that it meets the needs of a town Carver's size. Except for that of the newer subdivisions, Carver's stormwater drainage system is in need of upgrades and retrofitting to meet newer EPA standards. There is a proposed Route 58 up-grade plan in the works to lay a new portion of Route 58, complete with new sidewalks on the north side of Route 58 and storm drain up-grades from Purchase Street south to South Meadow Road. In addition, there are no bus routes (unless one counts the GATRA buses, which are available to serve the elderly community), and no rail service. One change that will probably not happen in the foreseeable future is a switch from an on-call fire department to a more expensive full-time fire department. An on-call fire department is unusual for a town this size and Carver residents are proud of their fire department's ability to perform their duties so professionally and at such minimal cost to the town.

Lacking much of an infrastructure of its own, Carver has always been linked with and dependent upon surrounding towns in the region for many resources. For most of its history, Carver's school system was linked regionally to that of Plymouth, with Carver's high school students attending Plymouth Schools. In 1988, Carver completed its own high school, and in 1993 it dissolved its regional links and began operating on its own. Likewise, Carver citizens have long relied on the businesses of Plymouth and Wareham for their shopping. A mini-boom in commercial building in the late 80s sought to fill this void, and Carver did gain its own supermarket in the process. Unfortunately, many of these new businesses did not fare well, as Carver citizens took much of their business out of town. Since 2004, four eating establishments have come and gone in town as have three other small businesses. On the other hand, almost 20 new businesses have come to Carver to stay since 2004, none of them restaurants.

There are also regional links for sewage and trash. The Carver, Marion, Wareham Regional Refuse District manages solid waste. For years, Carver trash was deposited in the Tri-town Landfill, a facility on Makepeace property in South Carver that was shared with the towns of Wareham and Marion. Since the closing of that facility to the public, private haulers have been taking trash to the SEMASS Incinerator in Rochester that returns the ash to the Tri-town Landfill. It is estimated that the landfill has sufficient capacity to accommodate 5-10 years of additional ash supplied by the SEMASS plant.

There is no public water or sewer service in Carver; the majority of houses have private wells and septic tanks. The Town of Carver is underlain by the Plymouth/Carver Sole Source Aquifer that is generally an excellent source of groundwater for residents. Ninety-four percent of the homes in Carver have septic tanks due to the fact that Carver benefits from a sandy soil (U. S. Geologic Survey soil type “Carver Sand”) that makes an excellent medium for septic systems. Septage from Carver is currently collected by private haulers and taken to Wareham.

Perhaps the most important element of Carver’s infrastructure is the high-quality groundwater. This water, coming from one of the largest aquifers in the state, might someday become a water resource for other communities as well as Carver, and a source of revenue for Carver. There is a tendency among citizens to clamor for public water and sewer. However, it is worth reiterating that the absence of water and sewer has distinct advantages in terms of growth and resource protection. In any case, due to the prohibitive cost of providing town-wide sewer and water, it is unlikely it will ever happen, so it is imperative that the town protect this groundwater resource vigilantly.

One of the challenges to protecting Carver’s water sources is the town’s reputation as a “dumping ground” for refuse from more affluent surrounding towns. Carver is host to the regional dump. In addition, out-of-town dumping at several now-closed landfills has led to pollution of the immediately surrounding aquifer and forced approximately forty residences to be hooked up to the Middleborough water main as a precaution. Clearly, two of Carver’s challenges in the future will be to figure out how to provide an infrastructure appropriate to the mid-sized town it now is, and how to raise its standards so that it becomes more self-protective and no longer gets “dumped on.”

Zoning and Land-Use Controls

Carver has eight major types of zoning districts (see Figure 3): Residential –Agricultural (RA) that comprises the majority of the land area in town; General Business (GB); Highway Commercial (HC); Village District (V); Industrial A (IA) that is geared towards “light” industry and occupies two areas at the far north and south ends of town; Industrial B (IB), a sub-category of the Industrial district that allows all uses included in the industrial district and also asphalt and cement plants; Airport District (AP) that allows for certain aviation-related uses; and Planned Tourism Commercial that encompasses Edaville Railroad and the King Richard’s Faire land.

In addition, there are some other special districts: the Water Resource Protection District, which overlays all other town districts and imposes groundwater protection standards; and three Historic Districts, each of which have special architectural and façade standards.

In addition to designated districts, land use is also controlled via the Site Plan Review process, which gives the town some control over the design of commercial and industrial projects, and the Special Permitting process that further regulates high-impact projects.

In the past, Carver’s zoning bylaws contained many inconsistencies and ambiguities due to the fact that they had been assembled piecemeal over a number of years. A committee was appointed in 1996 to overhaul these bylaws. As a result, the Town Zoning Bylaws were completely updated in 1998; minor revisions have been made to the Zoning Bylaws each year since then. Some of the major changes included an increase in the minimum lot size from

40,000 square feet to 60,000 square feet, and a change in the minimum lot frontage to 150 feet (see Table 5 for lot dimensional requirements).

Table 5. Lot Dimensional Requirements

| REQUIREMENT | RA | HC | GB ¹ | V ¹ | IA | IB | AP |
|--|-----|-----|-----------------|----------------|-----------------|-----------------|-----------------|
| Minimum Lot Size ^{2 3} (X 1,000 ft ²) | 60 | 60 | 40 | 20 | 60 | 60 | 40 |
| Frontage (feet) | 150 | 250 | 200 | 100 | 175 | 175 | 150 |
| Front Setback (feet) ⁴ | 50 | 40 | 40 | 15 | 50 ⁵ | 50 ⁵ | 40 |
| Rear Yard (feet) | 50 | 40 | 25 | 15 | 30 | 30 | 30 |
| Side Yard (feet) | 30 | 40 | 25 | 15 | 30 | 30 | 30 |
| Maximum Building Height (feet) ⁶ | 35 | 40 | 40 | 30 | 40 | 40 | 40 |
| Maximum Building Height (stories) | 2.5 | 3 | 2.5 | 2.5 | 2.5 | 2.5 | -- ⁷ |
| Minimum Lot Width at building line (% frontage in district) | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Maximum % of Lot Covered by Buildings | 30 | 60 | 50 | 70 | 50 | 50 | 50 |

1. Residential uses in commercial districts shall conform to all dimensional requirements for the RA District.
2. At least 70% of the minimum lot size shall be dry land; i.e. not taken up in streams, bogs, wetland, and/or flood plain.
3. Portions of the lot less than 40 feet in width shall not be counted as any part of the minimum lot size.
4. Front setbacks shall be measured from the street layout line.
5. Provided, however, that this requirement shall be 60 feet where the subject property has frontage on the state numbered highway.
6. Provided, however, that chimneys, spires, silos, and unoccupied towers erected on the roof of a principal structure may be erected to a height of 70 feet from the base of the principal structure on which it is erected where no detrimental effects on the surrounding area are caused.
7. In order to prevent the erection of structures which, due to height, would create hazardous obstacles to air navigation in the vicinity of the Plymouth Municipal Airport, the applicable requirements of Chapter Ninety of the General Laws of Massachusetts and the standards of the Federal Aviation Regulations shall be met. No structure shall be erected which exceeds the height limitations of the above regulations unless appropriate authority shall have been issued by the Plymouth Airport Commission or the Federal Aviation Agency.

Zoning Map

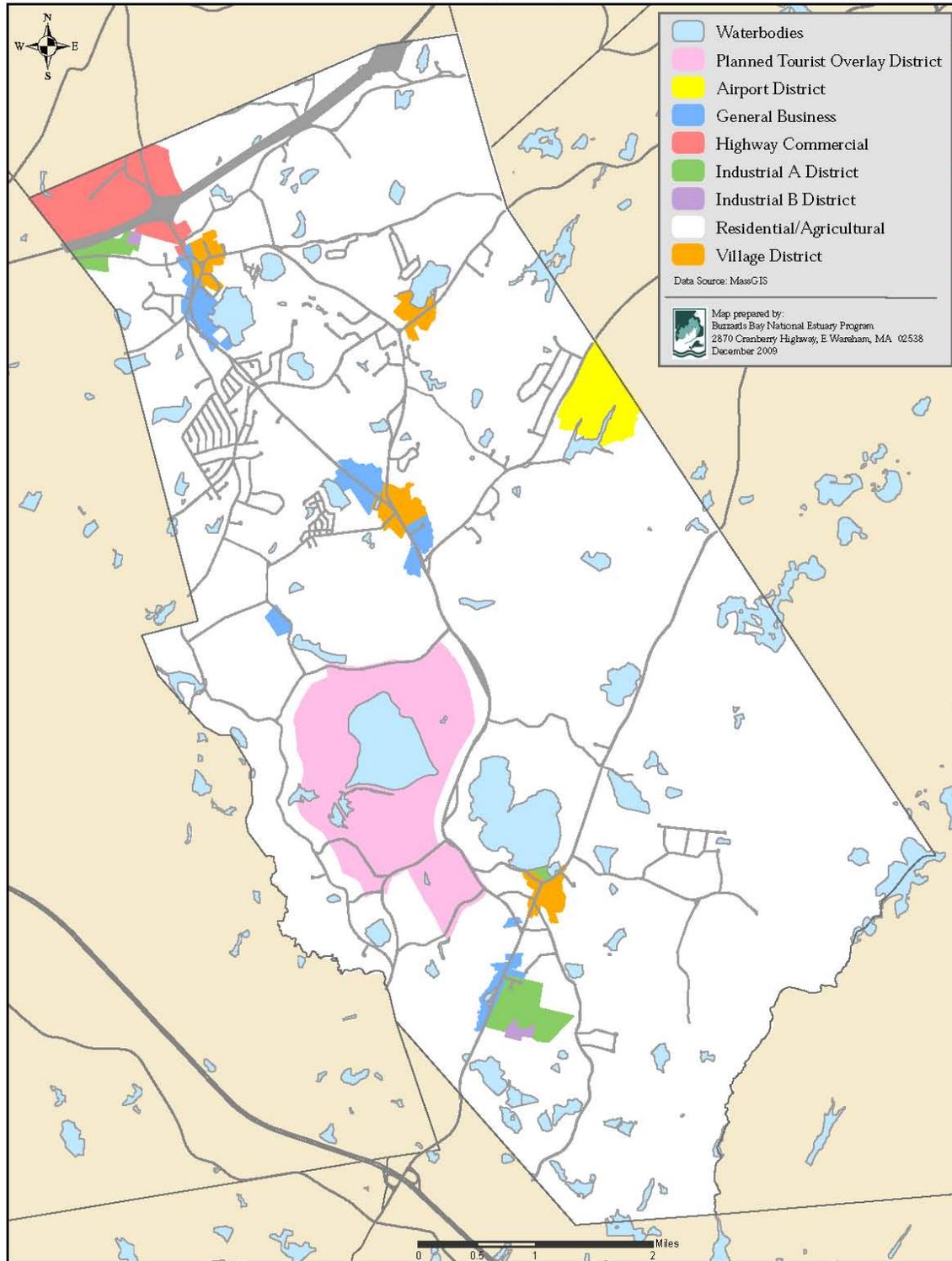


Figure 3. Carver Zoning Districts

Zoning regulations in Carver could go further towards encouraging the protection of open space and natural resources than they currently do. There are a variety of zoning alternatives that can be used to promote open space preservation, including density controls, critical resource protection, and incentive zoning. Following are some strategies recommended in the town's 2009 Master Plan for reducing build-out and the impacts of development:

Priority Preservation Areas and Priority Development Areas

Carver has adopted Priority Development Areas (PDAs) and Priority Preservation Areas (PPAs). Priority development areas are areas within a city or town that are capable of handling more development due to several factors, including good access, available infrastructure (primarily water and sewer), an absence of environmental constraints, and local support. PDAs can range in size from a single lot to many acres. Areas designated under state programs such as Chapter 43D (expedited permitting), Chapter 40R (smart growth zones) or Economic Opportunity Areas can be examples of PDAs. Included in these designations will be the local recommendations for how these sites should be developed. Priority protection areas are areas within a city or town that deserve special protection due to the presence of significant environmental factors and natural features, such as endangered species habitats, areas critical to water supply, scenic vistas, or areas of historic significance. Like PDAs, the protection areas can vary greatly in size. Areas of Critical Environmental Concern (ACECs), aquifer recharge areas, or designated priority habitats are some examples of PPAs. For the purposes of this document, only the priority protection areas will be discussed.⁶

The towns of Carver, Plymouth, Wareham, Bourne, Plympton, Middleborough, and Kingston all depend on the Plymouth-Carver Aquifer as their principal source of water. The 140 square mile Plymouth-Carver aquifer, the second largest aquifer in Massachusetts, was designated a Sole Source Aquifer (SSA) by the Environmental Protection Agency (EPA) in 1990. EPA defines this as an aquifer that supplies 50% or more of the drinking water for an area (US EPA) (Carver Open Space Plan, 2004).

The Plymouth-Carver aquifer contains more than 500 billion gallons of fresh water. However, subsurface wells are threatened from drawdown due to over-pumping and contamination from agricultural, urban, and residential uses. It is imperative that the Town of Carver and the region recognize the critical nature of this resource, and take measures to protect their potable water supply through conservation, education, and land acquisition.

South Meadow Brook and surrounding area (north of Atwood Reservoir): Rich in water resources, this area is recognized in the Carver 5-year Action Plan for protection of rivers, streams and wetlands. Improving access to these waterways is recommended, as the community envisions enhanced recreation opportunities in the area through the creation of a bike path and trails. The rural character of the locale can be maintained through the creation of a greenway that links and protects regional and historic resources. The Pilgrim Trail area, from South Meadow Road, across Main Street, down Savery Avenue, and down to Sampson's Pond was a known Native trail connecting Carver to Middleboro and Plymouth with an east/west and north/south link between South Meadow and Sampson's Pond.

⁶ Excerpts from "Town of Carver Priority Development and Protection Areas," July 2008. Southeastern Regional Planning and Economic Development District. For a more complete discussion of both priority development and priority protection areas, go to www.srpedd.org/commuterrail and click on "ppa-pda reports" and then click on "Town of Carver."

Wankinko River Area (Raccoon Pond/Golden Field Pond): Called *Wankinguoah*, meaning “crooked,” by the area’s native peoples, the Wankinco River is a tributary of the Wareham River, which drains into Buzzards Bay. The river originates at the East Head Reservoir, a pond in the Myles Standish State Forest, and flows southwards through cranberry bogs and various impoundments. The Wankinco serves as a boundary between Carver and Plymouth. This area is a globally-rare example of a Pitch Pine-Scrub Oak Community. Connected to 12,404 acres of the Myles Standish State Forest, it is the largest of its kind in the northeast. The Pitch Pine is a variety of tree that is fire-dependent for reproduction and develops on dry, poor, usually sandy soils. The Natural Heritage and Endangered Species Program (NHESP) has ranked this natural community as S2, due to its level of rarity. There are many other rare types of natural communities located within the area, as well as many rare species. Though the Myles Standish State Forest anchors this area, the majority of this locale remains unprotected.

Great South Meadow Cedar Swamp and surrounding area: This swamp is an example of a Coastal White Cedar Swamp located in Central Carver. These types of swamps are found in acidic, low nutrient basins dominated by Atlantic White Cedar in the over story and a mixture of species in the under story. The Natural Heritage and Endangered Species Program (NHESP) has ranked this natural community as S2, due to its level of rarity in Massachusetts. This community supports the globally-rare Hessel’s Hairstreak butterfly.

Sampson’s Pond and surrounding area: Sampson’s Pond comprises a total of 310 acres and is 14 feet deep. Its shores were once used as a native camp. An iron furnace built in the 1850s on the edge of Sampson’s Pond was an important historical contributor to Carver. The pond supports a variety of popular freshwater fish such as the Bluegill, Chain Pickerel, Largemouth Bass, Pumpkinseed, White Perch, and Yellow Perch. Sampson’s Pond is listed as one of the Great Ponds in Massachusetts. A Chapter 91 permit is required for waterfront construction.

The Cole Property and surrounding area: The “Cole Property” was recently purchased with funds from several different sources including CPA local funding, state matching CPA funding, and two state grants. The 221-acre property contains several rare and endangered species of plants and animals and sits on a high-yield aquifer that is part of the Plymouth-Carver aquifer. This is one of the last remaining new public wellhead locations for the Town of Carver. The Town would like to expand the protection to include a portion of the south side of Route 58.

Federal Pond and surrounding area: Federal Pond is a 129-acre pond in southeast Carver. A small portion of the northeastern shore is in the Myles Standish State Forest. Two unnamed islands lie in the middle of the pond. The only road leading to the pond, Old Federal Road in Carver, is private, and therefore off-limits to public access.

West Carver Corridor: This area encompasses the relatively undeveloped streets of Meadow Street, Cross Street, Pope’s Point Road, France Street, Holmes Street, Rochester Road, and Indian Street. Rich in scenic beauty and expansive vistas, this area is Bio-Map Supporting Natural Landscape and Carver’s last, large undeveloped and relatively un-fragmented tract of land. Sitting on the Plymouth/Carver Sole Source Aquifer and replete with wetlands, rivers, ponds, scenic vistas, a waterfall, and unmatched fall foliage, it is the South Meadow Brook’s final drainage basin into the Weweantic River and on to Buzzards Bay. West Carver also abuts

Middleboro's protected Rocky Gutter Wildlife Management Area.

Muddy Pond Area: Muddy Pond drains out of the north end of the pond into King Phillip's Brook and Muddy Pond Brook (the later also known as Lakenham Brook). Muddy Pond is habitat for one federally-listed threatened species and five state-listed threatened/endangered species. Locals use the pond to catch and release bass.

Fresh Meadow Pond and surrounding area: Fresh Meadow Pond, also known as Bunny's Pond, Fresh Pond, Bartlett's Pond, and Bartlett's Mill Pond is located in East Carver, south of Wenham Road. To reach Fresh Meadow Pond, one must drive on Wenham Road into Plymouth and then turn right onto Bunny's Road and backtrack into Carver. This area has significant water resources, both surface and ground water, and a large undeveloped, but developable, tract of land. Fresh Meadow Pond also straddles the town line with Plymouth making this area a regional priority protection area.

Clear Pond and surrounding area: Clear Pond is located in South Carver, off and east of Wareham Street. About 7 acres of the pond has been protected and is managed by the Carver Conservation Commission. The area is identified by the Natural Heritage and Endangered Species Program as Priority Habitat in the 2008 Atlas.

Encourage/Require Cluster Development

Improvements to the cluster subdivision regulations may help to encourage the use of cluster provisions, as well as ensure that cluster subdivisions are well-designed. Minimum lot sizes and dimensions may be reduced, with allowances for shared septic systems and/or restrictions on the number of bedrooms a unit may have. More stringent requirements for roads and drainage systems for all subdivisions may serve the dual purpose of protecting water resources, enhancing pedestrian mobility, and encouraging the design of cluster subdivisions to reduce infrastructure costs.

Density bonuses for developments that offer greater benefits to the community can provide another incentive for the use of cluster development. Exempting cluster subdivisions from an increase in the minimum lot size offers a built-in bonus for cluster development. Alternatively, bonuses may be conferred upon developments that offer a larger percentage of open space, protect an area of special interest to the community, or provide amenities such as recreational structures. Bonuses may consist of an increase in average density or the addition of a specified number of lots.

Recent state legislation has enabled towns to allow cluster subdivisions by right, instead of requiring a special permit. The requirement of a special permit poses a significant disincentive for developers to choose cluster subdivisions rather than traditional subdivision design. The town would need to change its bylaw in order to allow for cluster subdivisions by right.

Transfer of Development Rights

Carver has recently adopted Transfer of Development Rights. Transfer of Development Rights (TDR) is a zoning tool that allows landowners to sell the development rights of their properties to developers who will use them to increase the number of lots they can develop elsewhere in town. "Sending areas" are areas from which development rights can be sold, while "receiving

areas” are areas where development densities can be increased. In Carver, the Village Center districts would be appropriate receiving areas for development rights transfers. In Carver, however, the current village districts are mostly built out, so it would seem that these districts themselves need to be expanded in order to function as receiving areas. Sending areas could be anywhere else in town, or limited to a specific district. A TDR bylaw should be stated in such a way as to ensure that lands from which the development rights are transferred are permanently protected from development.

Agriculture Preservation Zoning

The Zoning Bylaw can include a variety of measures to protect and support agricultural uses. These include requiring cluster site design to protect agricultural lands, requiring a buffer between residences and agricultural uses, protecting views of agricultural lands, and site plan review. Another option is to allow ancillary uses to agricultural operations, including small businesses, in order to allow farmers to diversify their operations and seek supplemental income.

Agriculture Preservation Zoning may also include design guidelines and site plan review to ensure that landscaping, site design, roads, and drainage systems are consistent with agricultural protection goals.

Nutrient Limiting Regulation

An alternative means of limiting development is to regulate the amount of nutrient loading that can result from development. This approach offers more flexibility than increasing the minimum lot size, while it directly addresses the problem of water resource degradation. The development of appropriate loading standards and a practicable regulatory framework must take into consideration the unique landscape and hydrology of Carver, and will require further study.

Even with innovative zoning tools, the possibility of protecting targeted open space parcels through regulatory means is quite limited. The town also needs to continue using the methodology for evaluating and prioritizing open space parcels currently used by the Open Space and Recreation Plan Update Committee and continue to maintain the various means at hand for acquiring these parcels: the Community Preservation Act funds, the Conservation Trust Fund, state grants, and actively recruiting donations of land.

Existing Land Use

There are approximately 24,749 acres of land in the town of Carver, of which about 16% are developed. Developed land includes private residential and non-residential uses, as well as public uses and utilities. Approximately 78% of the land in Carver is undeveloped, although much of this land cannot be developed because of wetlands or other constraints. The following is a breakdown of existing land use that was taken from the 2001 Carver Master Plan (See Figures 4 & 5 for an illustration):

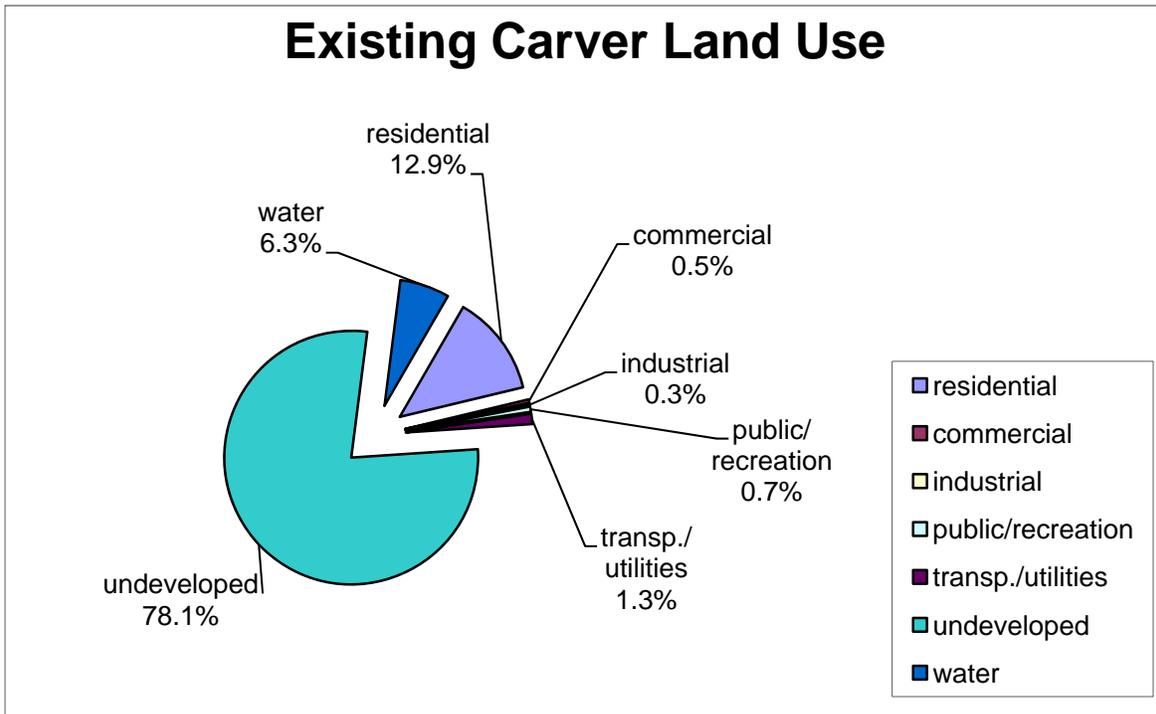


Figure 4. Existing Land Use in Carver by Percentage

Private Residential

About 3,197 acres, or 83% of the developed area of Carver, is in residential use. This includes single family residences as well as multi-family or other types of residences. According to the Master Plan, most of the residential development is of moderate density, with an average lot size of 1.35 acres per single family home. Some of the more densely developed areas are concentrated in subdivisions. In North Carver, these areas include the Great Meadow Drive area and Pine City Road off of Plymouth Street. In Center Carver this includes a subdivision off of West Street known as the Crystal Lake area on Vaughn's Pond. And, in South Carver, these dense areas include South Meadow Village off of South Meadow Road, Pine Tree Village off of Wareham Street, and the Bates Pond area off and including Bates Pond Road. Low-density single family housing is located throughout the town along most existing roadways. There are four multi-family developments located in town: one in the center of town on Chance Court that contains 10 duplex units, one on Meadow Brook Way that contains low-income/subsidized housing units, one on South Meadow Road that contains 10 duplex units, and one in the southern part of town off Wareham Street that contains 44 units.

Private Non-residential

About 176.5 acres, or 4.6% of the developed area falls into this category. This includes all commercial and industrial uses. These uses are concentrated mostly in North Carver near the intersection of Routes 58 and 44. In addition, there are commercial uses in South Carver near the intersection of Route 58 (Main Street) and Route 58/Tremont Street. There are also commercial uses in village centers, as well as a few businesses scattered outside of these centers, mainly along Route 58.

1999 Land Use

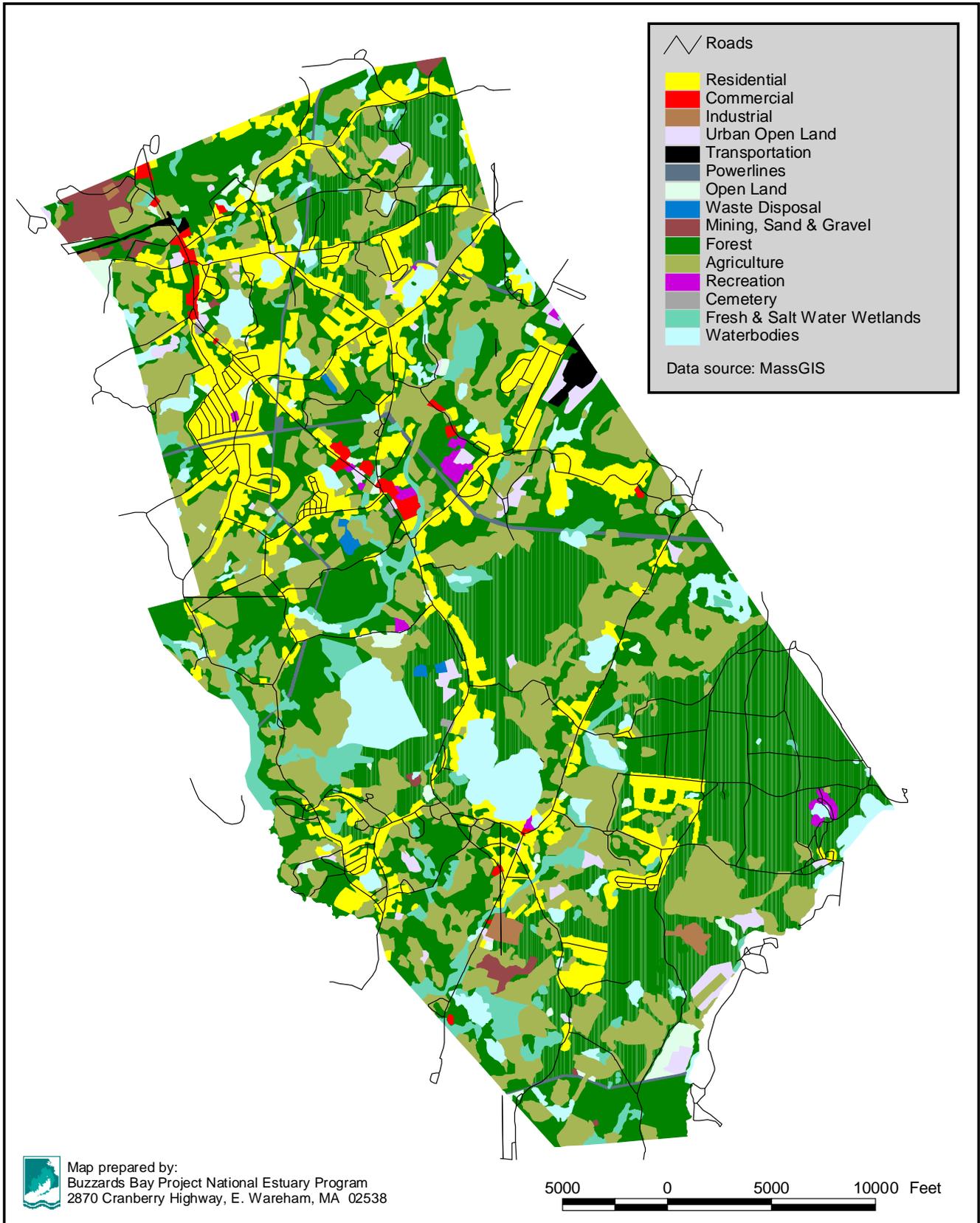


Figure 5. 1999 Land Use Map

2005 Land Use Map

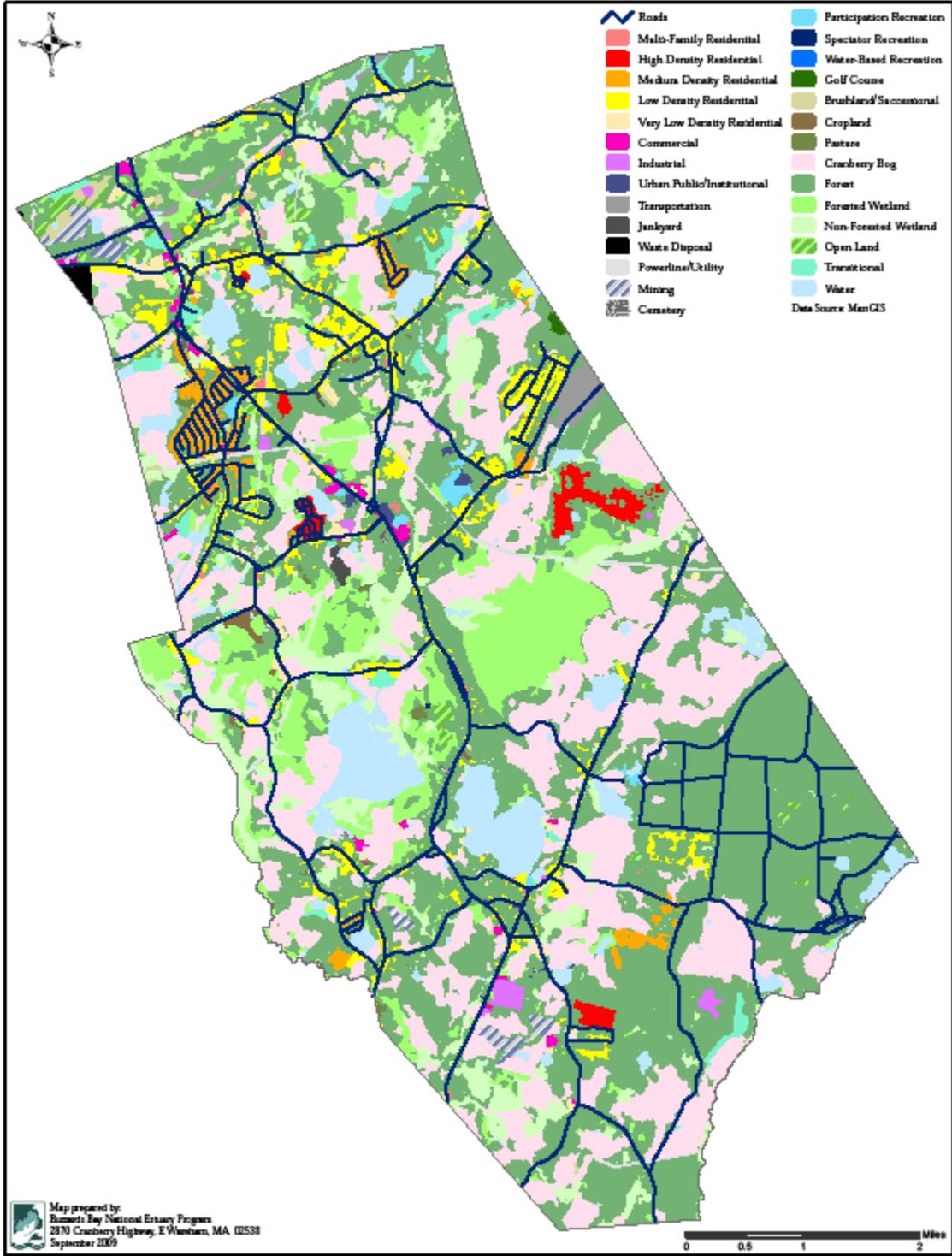


Figure 6. 2005 Land Use Map

Public/Recreation

This category includes land occupied by public facilities, public and private recreation facilities, and lands owned by public agencies (other than for conservation purposes). Land in this category consists of about 166 acres, or 4.3% of the developed area in the town. Public facilities include parks, playgrounds, ball fields, and beaches.

Transportation/Utilities

The Plymouth Municipal Airport and the utility transmission lines that cross the northern part of the town occupy about 325 acres of land in Carver. The area of local and state roads is not accounted for separately, but is included in the area of abutting land uses.

Undeveloped Land

Undeveloped land includes forested uplands, wetlands, agricultural land, and other open lands. The extensiveness of cranberry agriculture in Carver is the most distinguishing feature of the town's landscape. Land that is actively used in cranberry production occupies about 6,890 acres, or 28% of the town's total area. Undeveloped, forested land comprises just over one half of the town's total area. The dominance of undeveloped open space in the town may not be immediately apparent because of development along the roadways. Much of this undeveloped land is connected with cranberry growing activities, although a considerable amount may be developable at a future time, as described in the build-out analysis.

Future Trends - Residential

The relatively slow rate of development in recent years is not caused by intentional changes in the town of Carver's policy with respect to growth, but rather the lack of availability of developable land coupled with the profitability of cranberry agriculture until 1997. Excluding forest, recreation, and cranberry land, most large parcels of good, easily-accessible land have been developed, leaving land that is too wet or hard to reach and therefore expensive to develop. Unfortunately, another decline in agricultural values combined with an increased demand for housing in the region will once again create a perfect climate for development activity. In today's negative economic climate, it may not be evident that this could happen again and happen very quickly. But there is a real risk that if cranberry prices become low again and the value of land becomes high again, agricultural land currently owned by cranberry growers will once again be developed for residential and commercial purposes.

Zoning has actually changed a bit since 2004. The town now requires townhouses to have fifteen percent affordable units, apartments over businesses are now permit-able, and both conventional and conservation subdivisions over five lots must contain fifteen percent affordable units. The construction of multi-family dwellings that include twenty-five percent low-income housing, otherwise known as a 40B project, is often eligible for a comprehensive permit that overrides local density regulations. Mobile home parks are also unlikely to increase at the rate of the early 80s. Current zoning requires a land area of at least 100 acres for a mobile home park. Aside from grower-owned lands, there aren't any tracts large enough for a mobile home park. Future mobile-home growth will probably be limited to infilling and expansions of existing parks.

The population of Carver will continue to grow. The majority of housing that will be developed is single family homes on 60,000 square foot lots. There is still potential for numerous small

projects (typically short cul-de-sac roads with ten or fewer houses) and there are several incomplete subdivisions on the books (see Table 6). In addition, the A.D. Makepeace Company has several subdivisions planned that have not yet been approved by the town of Carver. Makepeace owns a significant amount land in Carver, land that was once thought to be fairly safe from development but, was extremely vulnerable over the past five years because of the economic downturn in the cranberry industry and could become extremely vulnerable again when the housing market begins an up-swing, as it inevitably will. Future development of this land into residential subdivisions could have a major impact on the community. Unfortunately, not only do these homes serve only a fraction of the population that might seek to buy homes in Carver, they are the most costly type of development for the town to absorb in terms of fiscal impacts.

Table 6. Currently Approved Residential Subdivisions

| Subdivision | Lots Approved | Lots Left |
|---|---------------|-----------|
| Residences at Sampson’s Pond (Pine Ridge Way) ¹ | 29 | 21 |
| Kingsbury Hollow | 21 | 16 |
| Toffeetree Commons | 19 | 0 |
| Godfrey Woods | 7 | 3 |
| Chance Court ¹ | 10 | 0 |
| Copper Lantern Lane | 44 | 0 |
| Whistleberry Glen | 14 | 14 |
| Total | 144 | 54 |

1. Both Chance Court and Copper Lantern Lane are townhouse developments.

Build-out Analysis

What can we expect the maximum population of Carver to be? As part of its Community Preservation Initiative, the Executive Office of Environmental Affairs recently performed build-out analyses for all towns in Massachusetts. Each analysis starts with available land in each zoning district and makes projections of additional housing units and commercial/industrial space according to each district’s minimum lot size and other regulations. The projections only account for as-of-right development and do not include development by special or comprehensive permit that may increase the amount of development. These build-out projections were combined with 2000 Census and other data to create a profile of each community at build-out according to its current zoning.

According to the projections for Carver, if build-out were to be reached under current zoning, the town could expect to have an additional 21,574 residents, which would create a total town population of 32,737. Along with these new residents would come 7,641 additional housing units and 4,044 additional children entering the school system. The new residential growth would increase the demand for water by 1,618,073 gallons per day.

According to the study, commercial and industrial growth would consume another 431 acres and

require 1,439,122 additional gallons of water per day. Municipal solid waste issues would also be of concern. At build-out, 11,067 additional tons per year of non-recyclable solid waste would be produced, as well as 7,875 tons per year of recyclable solid wastes. All of this new growth would require a total of 124 more miles of roadways throughout the town.

Additional growth will put increased pressure on the remaining open spaces and historic sites in the town. In an effort to alleviate some of the growth pressures being experienced in many Massachusetts communities, the Community Preservation Act (CPA) was enacted by the state in 2000. This legislation allows Massachusetts communities to adopt by referendum a 1%-3% surcharge on property taxes that go into a community preservation fund. Of the money raised from this surcharge, 10% must be set aside to buy open space, 10% to create affordable housing, and 10% to do historic preservation work. The remaining 70% can be used on any of the three categories and on recreation projects on land bought with CPA funds. Through the efforts of many individuals over the years, Carver finally passed the Community Preservation Act in 2006 at the 3% surcharge by an overwhelming two-thirds majority vote. This, and some state grant money, made possible the acquisition of the 221-acre Cole Property in North Carver—for conservation and passive recreation and for drinking water supply protection and to prevent environmentally-detrimental and tax-negative development.

Matching state funds are also being made available to communities that have adopted CPA from money collected from a surcharge on documents recorded at the Registry of Deeds and Land Court Offices. These surcharges could generate approximately \$30 million every year. However, with the current national economy in a recession and the housing market at a low point, this source of funding for the state's matching CPA funds may not be enough to enable the state to stay at its 100% match level in the near future. Since Carver adopted the 3% CPA surcharge, the town was one of a very few towns to receive the 100% matching funds in 2009.

Future Trends - Business and Industry

There is a lack of stable businesses in Carver. Although the Industrial Development Committee is working on attracting new businesses and filling the large amount of empty store fronts in town, attracting appropriate industrial and commercial development to Carver has proven to be a difficult task for a variety of reasons.

With one of the smallest economic bases in the region, the town is heavily dependent upon State aid and the existing commercial businesses, including agriculture, for its revenues. Commercial, industrial, and personal property (CIP) contribute 31% of the funds raised by local taxes. In fiscal year 2000, Carver had the second highest CIP and percentage of State Aid among 10 neighboring towns. It also had the second highest shift in the commercial tax rate.

Carver has two areas designated for industry that are reasonably appropriate for industrial development. Both are in relatively unpopulated areas near major highways and rigorous new zoning bylaws and the provisions of the Water Resource Protection District protect both. Unfortunately, neither tract has the kind of improvements that would make them truly "ready to develop." There are no roads or services, and no public water and sewer, all of which are deemed essential by most industries. All of the above factors limit the interest of the local business community to expand in town. The acquisition and preservation of the Cole Property in North Carver, the development of a municipal well on the eastern portion of that property, and

the establishment of the North Carver Water District will hopefully spur some positive economic growth in the North Carver area that will benefit the town as a whole while allowing other areas of town where development may not be as appropriate to remain undeveloped.

In the early 1990s, a developer built a regional septic plant in the front portion of the North Carver industrial park with a promise to develop a road and services for other industries on the back acreage. This property is now known as the Whitworth Property. The back of the Whitworth Property industrial park is still vacant. For years, the site has been contaminated with pollutants (some known, others suspected) and potential commercial/industrial developers for the site have balked at the potential long-term costs and management concerns of a hazardous waste site. Recently, the town has been awarded an Environmental Protection Agency (EPA) Targeted Brownfields Assessment Grant to assess any potential and actual contamination of the site. If the site assessment results show no additional serious contamination other than what is being monitored and treated on-site by the Air Force, and if the town is able to undertake clean-up of the site through another EPA Brownfields grant, the town should only then seriously consider buying the land and creating a town-owned industrial park, so that it can have more control over the way the area is developed.

The Whitworth Property and other North Carver Water District parcels and the second industrially-zoned area in South Carver are the two areas in town that should be zoned to provide as-of-right siting of renewable or alternative energy research and development (R & D) facilities or renewable or alternative energy manufacturing facilities in designated locations and expedited permitting for these sitings. Instituting this type of as-of-right green zoning is one of the five criteria that the town must achieve in order to qualify as a “green community” under the Green Communities Act of 2008. The Green Communities Division of the Executive Office of Energy and Environmental Affairs’ Department of Energy Resources (DOER) establishes green communities grant programs and disperses funding to communities that have met these “green” criteria.

Other Long-term Development Trends

It is worth noting here the economic development strategies recommended by SRPEDD for Carver, in the *Small Town Economic Development Project* report. These strategies include:

1. Country-style tourism: capitalizing on the natural, scenic, and historic resources of the town via active and passive recreation activities including farmers’ markets, antique shops, orchards, vineyards and wineries, festivals, museums, historical sites, farmhouse bed and breakfasts, country inns, quaint restaurants, horseback riding, ballooning, canoeing, boating, fishing, hiking/nature trails, golfing, camping, and swimming.

2. Agriculture: encouraging the retention of and expansion opportunities for existing agriculture and natural resource-oriented business.

3. Agricultural parks and agricultural processing: encouraging businesses that add value to locally-grown products before they are exported out of the region. This could be a facility to sort, clean, and store cranberries or a manufacturing plant to process the raw berries into final product. Two businesses of this type are located in Carver. One is the Decas facility on Route 58/Tremont Street, where all Decas’s independent growers’ cranberries are brought to be

prepared for export. In 2005, Decas Cranberries moved its world headquarters to Carver and has since expanded this facility several times. The other is the former Hiller facility, now owned by Clement-Pappas, located on Pond Street.)

4. Forestry, wood, and lumber processing: expanding the low-profile forestry-related businesses in town with more logging, sawmill operations, and millwork. Business should be conducted in conjunction with long-range forestry management planning.

5. Industrial parks: making or encouraging the significant investment that is needed before industrially-zoned land can be considered "ready to develop." This may have to include providing public utilities. The development of a municipal water supply on the town-owned Cole Property and the streamlined permitting process mandated by the town's adoption of M. G. L. Chapter 43D for specific industrial/commercial parcels in North Carver may significantly encourage future commercial development in this area of town.

6. Town and village centers: modifying the town's zoning to strengthen our existing town center and "satellite centers," by promoting compact, high-density development with easy pedestrian circulation. These activity centers would be the focus of town government and community life, and would also contain a mix of residential, commercial, and business uses.

7. Commercial corridors: reducing the amount of highway frontage zoned for commercial use so that business can be directed to new, more compact, commercial nodes and to village and town centers.

8. Home occupations: increasing the opportunity for residents to start and operate businesses in their homes.

Successful implementation of these strategies (especially #1, 2, 3, 4, 5 and 7) would mean increased economic development and protection of open space and the rural quality of the town.

IV. ENVIRONMENTAL INVENTORY AND ANALYSIS

A. Geology, Soils, Groundwater, and Topography

Carver's surface drainage, ground water, geological resources, vegetation, and climate are all interrelated and provide a favorable setting for the dominant land use of today, cranberry agriculture. Many of these natural characteristics are the product of the Pleistocene Ice Age, a period of continental glaciation that ended about 12,000 years ago.

Groundwater resources, for example, are almost entirely derived from a thick saturated layer of unconsolidated glacial material deposited over the underlying bedrock. This layer, composed of materials carried from the face of the glacier by melt water streams, varies from silt to coarse gravel, but is predominantly coarse sand. The layer is thickest, and the corresponding water supply the greatest, over pre-glacial valleys that are eroded into the buried bedrock surface. There are two large bedrock valleys in Carver: the largest starts under Pope's Point Road in West Central Carver and runs southeast under Sampson's Pond and Cranberry Road towards Onset, with glacial deposits ranging from 50 to 15 feet in thickness. The second large bedrock valley starts in North Central Carver, near John's Pond, and runs northeast to Plymouth Center, approximately under Silva Street and Wenham Road, with glacial deposits of over a hundred feet in thickness. While the bedrock is too dense to yield significant supplies of water, there is an ample supply in the glacial deposit layer.

Thus Carver, along with areas from adjacent towns, contains the second largest aquifer in Massachusetts. Known as the Plymouth-Carver Aquifer, it is estimated to hold 540 billion gallons of water and is constantly recharged through groundwater sources. Wells in this southern part, over the "Wareham Outwash Plain," have potential yields of over 300 gallons per minute (GPM). Wells in the northern half of Carver over the "Carver Outwash Plain", can be expected to yield between 100 and 300 GPM.

The Plymouth-Carver Aquifer has been frequently studied as a potential water source for adjoining areas including Brockton and Boston. However, there is a strong need to ensure that local water supply needs are protected to serve anticipated population growth in the region. In the summer of 2002, selectmen from the town of Wareham sent letters to the selectmen in Plymouth and Carver to encourage the signing of a memorandum of understanding that would allow the three towns to comment on applications for development that would affect the Wankinko and Agawam River watersheds. This represents the first step towards the creation of a watershed advisory board that would work to protect these rivers and the Plymouth-Carver Aquifer. In the winter of 2003, Southeastern Regional Planning and Economic District (SRPEDD) facilitated the formation of the Plymouth-Carver Aquifer Advisory Committee (PCAAC) composed of members from each of the seven towns in the aquifer.

In the 80s, the town designated an area in the southeast corner of town adjacent to Miles Standish State Forest as a future source of public water. If tapping into this resource is to remain a possibility, great care must be taken to protect it.

Carver's sand and gravel are also valuable resources derived from the glacial period. They are used extensively as a soil treatment in cranberry bog cultivation and as aggregate and fill by the

construction industry.

While generous water supply, soils, and topography associated with these geological conditions have been ideal for the development of the cranberry industry, they have placed severe limits on other types of land use. Much of Carver lies beneath pond and swamp. According to the *Soils Interpretive Report* by the Soil Conservation Service of 1972, much of Carver has a water table near or at the ground surface nine months of the year. Of the roughly 24,000 acres of land in Carver, the sand-muck soils of cranberry bogs comprise 3,540 acres or 14% of the area. Marsh muck and peat total 3,136 acres or 13% of the area. In addition, 15% is open water, and 5% is adjacent shores. An additional 5% of the town has a slope greater than 15%. In all, the Soil Conservation Service has estimated that about 40% of Carver has severe limitations for home-site development due to wetness or severe slopes.

Of the remaining land, almost half, or 11,489 acres, of the town's surface area consists of a coarse sandy soil type called "Carver." Water infiltrates into this soil quite rapidly and seasonal water tables are deep. There are only slight to moderate limitations for residential, commercial, or industrial development with this soil type. On the other hand, because infiltration happens so easily with this soil type, special care must be taken to avoid spillage that might lead to groundwater contamination. This overall soil profile for Carver serves as a natural protector of open space.

Below is a description of soil types shown in Figure 6 on the following page. This information was provided by the USDA Natural Resources Conservation Services, West Wareham Office.

General Soil Types in Carver

Birchwood-Poquonock-Mattapoisett – Very deep, nearly level to moderately steep, well drained to poorly drained soils formed in sandy mantled underlain by loamy firm to friable glacial till in areas of ground moraines and uplands.

Freetown-Swansea-Scarboro – Very deep, nearly level, very poorly drained soils formed in very deep to shallow freshwater organic deposits, underlain by glacial fluvial deposits in swamps and depressions.

Hinckley-Windsor-Deerfield – Very deep, nearly level to steep, excessively to moderately well drained soils formed in glacial fluvial deposits on outwash plains, deltas, kames, and ice contact deposits.

Plymouth-Carver – Gently sloping to steep, excessively drained soils formed in loose sandy ice contact and glacial outwash deposits on moraines and outwash plains.

Carver – Nearly level to steep, very deep, excessively drained sandy soils formed in glacial outwash and ice-contact deposits, on outwash plains and kames.

Raynham-Scio-Birdsall – Very deep, nearly level to gently sloping, moderately well to very poorly drained soils formed in silty lacustrine deposits.

General Soils Map

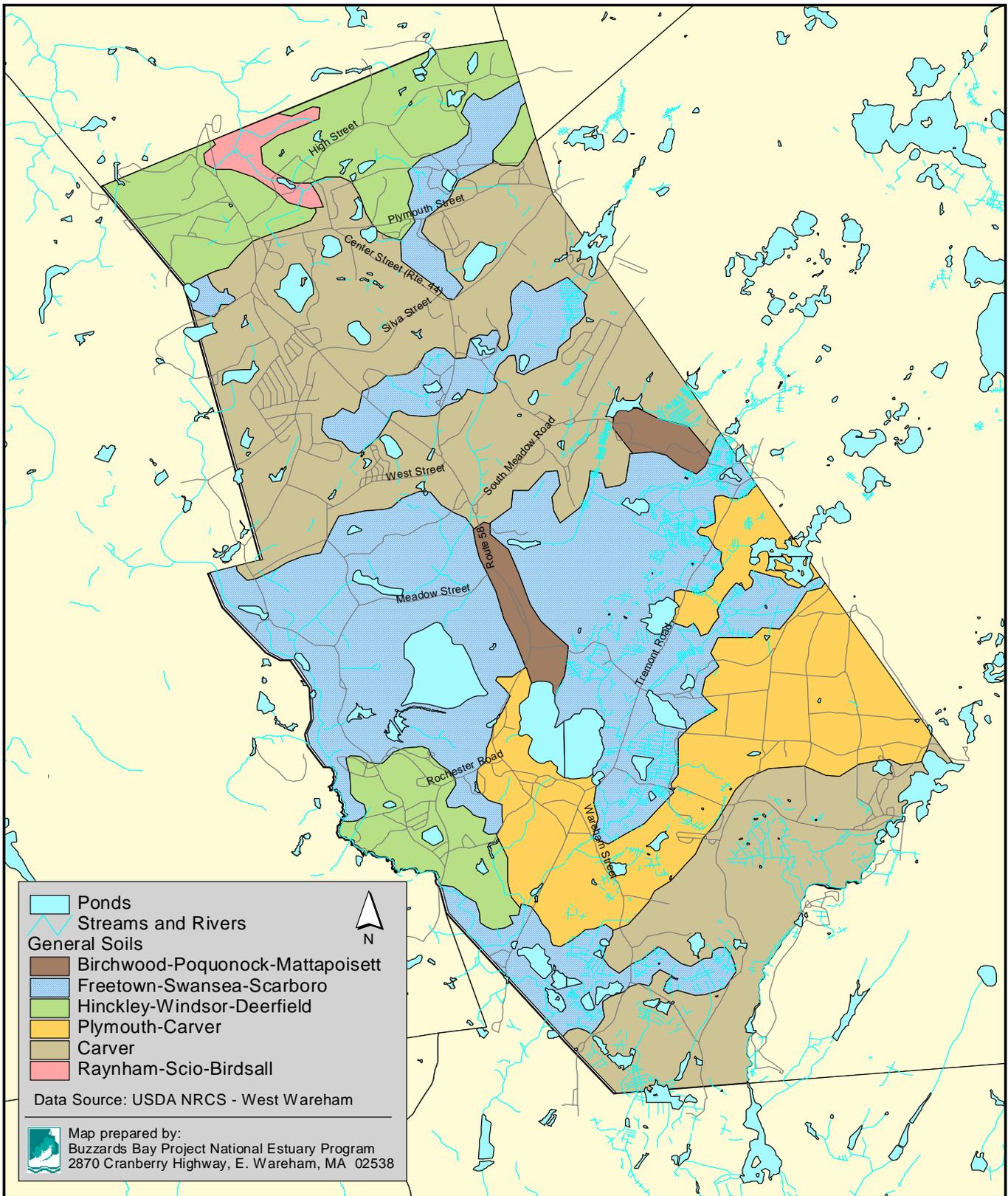


Figure 7. General Soils Map of Carver

B. Landscape Characteristics

Carver's visual character, created by cranberry bogs, tall Eastern white pines, and sparkling ponds, is worth protecting. In many surveys over the years, citizens have cited "rural quality" as one of the main reasons for moving to Carver. Although this rural quality is under siege, it still persists. While the landscape view along the main roads is being encroached upon by typical suburban sprawl, a turn down some of Carver's less-developed roads reveals quite a different picture: there Carver still has the gentle rural quality that attracted so many residents, with vistas of woods, bogs, ponds, old farmhouses, and newer homes. The town looks especially scenic during harvest season, or when covered with snow.

Some of the most popular views in town are Sampson's Pond as seen from Lakeview Street, and the scenery provided by bogs, ponds, and woods on Wenham Road, Federal Road, Cranberry Road, Wareham Street, Tremont Street, Mayflower Road, Indian Street, Rochester Road, Meadow Street, Pond Street, Holmes Street, Cross Street, Pope's Point Road, Plymouth Street, and High Street. Carver's cranberry views are especially popular during harvest season, when the red berries and bright foliage attract tourists from around the world. Savery Avenue, with its tunnel of 100-year-old pines, is also a favorite spot for its peaceful beauty and historical significance. The historic North Carver Green and Union Church are also views that exemplify the history and rural setting of Carver.

Some problems that continue to plague the character of Carver are the presence of visual clutter, landscapes stripped of their vegetation and soil, and ugly or abandoned buildings on main roads in town, particularly in the commercial areas. Community leaders recognize these problems exist and how they can affect the town, both in terms of aesthetics and the fact that they could deter potential new businesses and impact the town's bottom line.

Some zoning modifications have been instituted in the past to address the problems. The Site Plan Review Bylaw, which allows the town some oversight on new commercial and industrial projects, is a start, but for it to be fully effective, there needs to be more of a consensus as to what type and degree of architectural control is appropriate for Carver. Another bylaw, the Earth Removal Bylaw, was passed to address the issue of lots being stripped of their vegetation, gravel, and topsoil and then left in torn-up condition (with resulting erosion, dust, and unsightliness) for years on end. Unfortunately, for years this bylaw was not being enforced properly. Changes needed to be made in terms of how earth removal was managed by whom what oversight was required for differing amounts of removal, and what, if any, fees could be instituted to compensate the town for road repairs necessitated by earth removal. In 2008, a subcommittee was formed to address these outstanding earth removal issues and town meeting passed a revised bylaw that includes more oversight and monitoring than the original.

As Carver continues to court industry, it needs to consider how that industry will affect the visual flavor of town. Unlike many surrounding towns, Carver does not have a town-owned industrial park, located down a long driveway and hidden by trees. New industry in Carver will most likely be highly visible, especially in South Carver. Lots with frontage along the main road will be in especially high demand. Without some forethought, the push for economic development could lead to the further degradation of the Carver landscape.

C. Water Resources

Surface Water and Wetlands

Carver has no large rivers, but it has three small rivers and many brooks and small streams. The headwaters of most streams and rivers are either within the boundaries of the town, or a mile or two into Plymouth. The main drainage basins in Carver are along the Winnetuxet River, that flows north; South Meadow Brook and Crane Brook, that flow Southwest; the Weweantic River, that flows south-southeast along the town's southwestern boundary; and the Wankinco River, that flows south-southwest along the town's southeastern boundary.

Average stream flows are highest in late fall and in winter and spring and lowest in the summer and early fall. The rapid infiltration rates of the glacial deposits, a moderate, evenly-distributed level of rainfall, and the presence of numerous ponds and swamps combine to moderate stream flow. Nevertheless, minor flooding along streams occurs almost every year, caused by rapid snowmelt, or by a series of low pressure storms with high rainfall. Water quality is generally good, although a number of streams do exceed the recommended limits for iron, manganese, and color. The water is acidic and in places corrosive to metal.

Within each drainage basin is a complex pattern of wetlands and cranberry bogs. The largest areas of wetlands are concentrated in the central and extreme northern and extreme southern parts of the town. The Great Cedar Swamp in the center of town covers over 600 acres. These wetlands are important to the town as wildlife habitat, for groundwater recharge, and to reduce flooding in developed areas downstream. Figure 7 on the following page shows just how much of the town is made up of wetland and water resources.

Carver's Wetland Protection Bylaw is intended to protect wetlands, water resources, and adjoining land from adverse impacts. Activity within these areas, including removing, filling, dredging, building upon, or otherwise altering the land, requires the approval of the Conservation Commission. The definition of resource areas and their buffer requirements are not clearly stated within the bylaw. Wetland resources are defined as any wetlands, marsh, swamps, bogs, beaches, meadows, ponds or lakes, rivers and streams, land under water, and land within the 100-year floodplain. To date, these resources have not been adequately mapped. According to the bylaw, no development may take place within 65 feet of any wetland or water resource without a permit and a variance from the Conservation Commission. Buffer areas of 200 feet are required for rivers and streams, while buffers of 100 feet are required for all other resource areas. A permit is required from the Commission to alter these buffer zones as well.

Water quality in the three town swimming ponds is regularly tested for coliform bacteria. There is no testing done for pesticides and other agricultural chemicals in the swimming ponds, although occasional testing may be advisable.⁷

⁷ A report was published in 2008 by SEA Consultants, Inc., for the Wareham Fire District Board of Water Commissioners entitled, "Wellhead Protection Monitoring Program, Annual Report: Fall 2007-Spring 2008." The District "has been monitoring the aquifer that supplies its drinking water wells for unregulated pesticides and other contaminants" since 2001 (p. iii). The report concludes that "All detected levels of contaminants are far below any Massachusetts or federal drinking water standards or guidelines" (p. 4-1). These results may not hold true for every area in Southeastern Massachusetts, but it is an encouraging result from a thoroughly conducted longitudinal study.

Surface Water and Core Wetland Resources

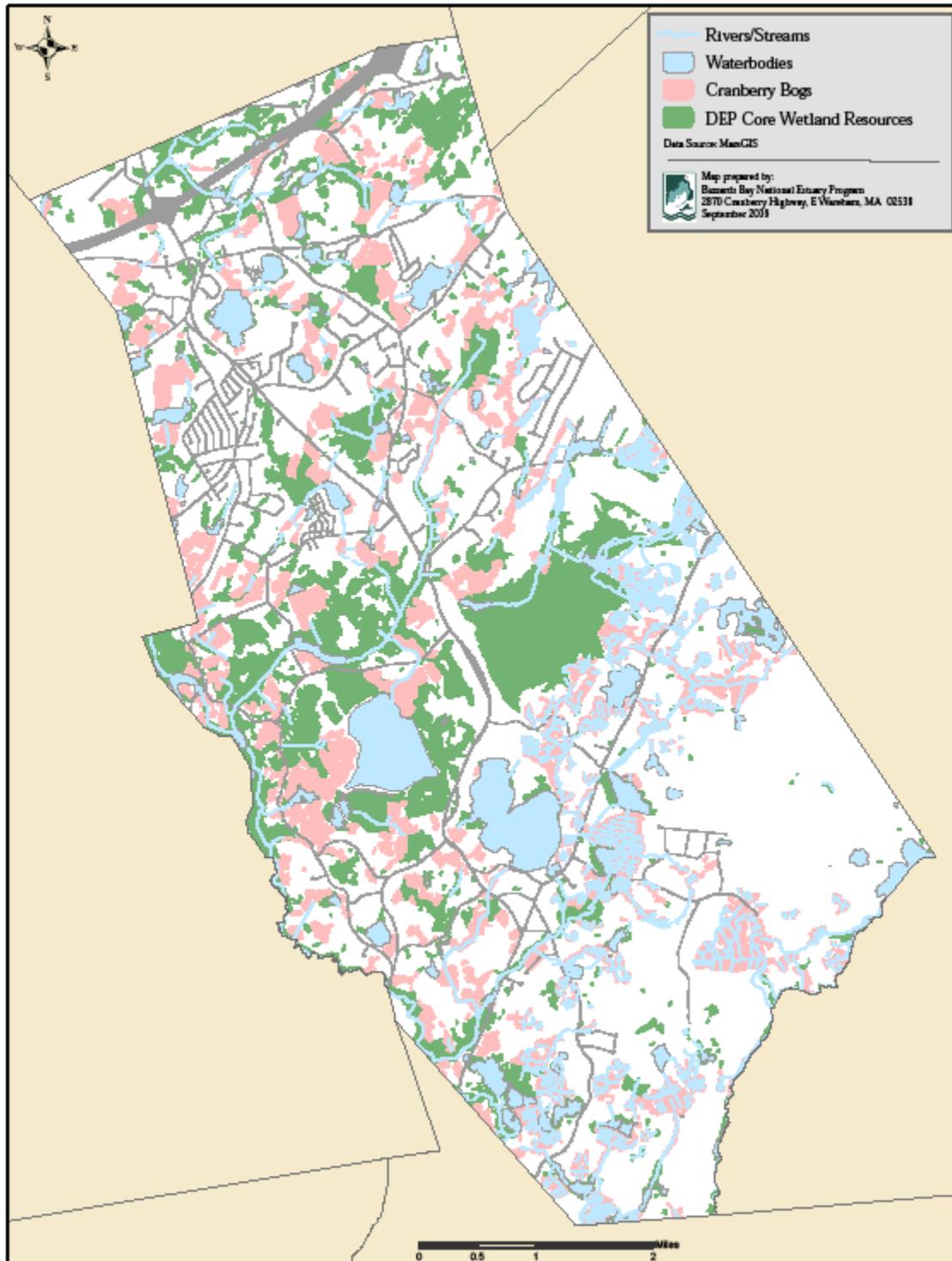


Figure 8. Surface Water and Core Wetland Resources in Carver

Carver's ponds, rivers and wetlands are treasures and account for much of the appeal of the area. Besides providing beauty and a habitat for a rich array of plants and animals, they provide opportunities for hunting, swimming, boating, water skiing, skating, and fishing.

Inevitably, with such popular resources, there are conflicting views about their best use. There are some town residents who feel the use of motorized watercraft on the ponds, such as jet skis and motor boats, are inappropriate due to the threats their use poses to public safety. Other complaints have emerged about oil and gas fouling pond waters, and about boaters from out of town bringing in alien weeds that proliferate and choke the sandy beaches. A Pond Study Committee was formed to address these issues. Actually, the town's ability to control these conditions is somewhat limited by state law, which sets speed limits for great ponds, and requires that ponds of greater than 20 acres be accessible to everyone, not just townspeople. In addition, policing water sports is not easy. Current police efforts have been pretty much limited to ticketing non-resident parking in the very limited town-owned lots by the beaches and boat docks.

The town should make a high priority of expanding and improving its holdings on the ponds and rivers wherever possible. The town land overlooking Muddy Pond would make a first-rate recreational area now that the state-mandated landfill cleanup is complete. (If contamination is limited to volatile organics, the water should restore itself rather quickly.)

There are thirty-nine ponds and reservoirs in Carver, adding up to a total of about 1,339 acres of water. Those of ten acres or more are listed in Table 7.

Table 7. Ponds in Carver

| Pond | Type | Number of Acres |
|-------------------------------|------------|-----------------|
| Sampson Pond | Natural | 310* |
| Atwood Reservoir | Artificial | 280 |
| Federal Furnace Pond | Artificial | 129 |
| Muddy Pond | Artificial | 64** |
| Wenham Pond | Enhanced | 50* |
| Dunham Pond | Natural. | 45* |
| Crane Brook Bog Pond | Backwater | 37 |
| Benson Pond | Artificial | 26 |
| South Meadow Brook Pond | Artificial | 25 |
| North Rocky Meadow Brook Pond | Artificial | 24 |
| Cooper's Pond | Natural | 23* |
| Vaughan's Pond (Crystal Lake) | Enhanced | 22* |
| Fuller St. Pond | Artificial | 21 |
| John's Pond | Natural | 21* |
| Bates Pond | Natural | 20* |
| Large Gibbs Bog Pond | Artificial | 17 |
| South Meadow Pond | Artificial | 17 |
| Golden Field Pond | Natural | 16 |
| Barrett's Pond | Natural | 16 |
| Southwest Atwood Bog Pond | Artificial | 14 |
| High Street Pond | Artificial | 14 |
| Cedar Pond | Natural | 12 |
| North Center St. Pond | Artificial | 12 |
| Clear Pond | Natural | 11 |
| Ricketts Pond | Natural | 11 |
| Rocky Meadow Brook Pond | Artificial | 11 |
| Village Cedar Swamp Pond | Artificial | 10 |

*Natural great ponds under the control of the state

**Under the control of the Division of Fisheries and Wildlife

Flood Hazard Areas

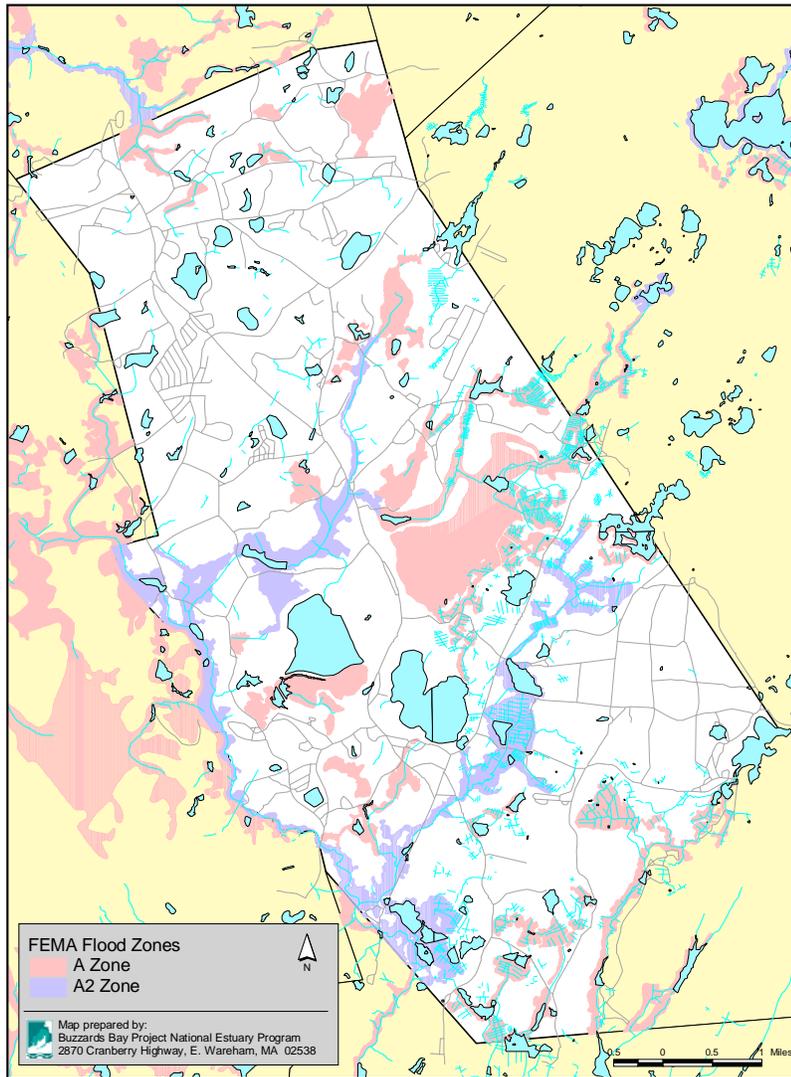


Figure 9 FEMA Flood Zone Map

that would be greatly impacted in a 100- year flood (A Zone) are shown in Figure 8.

Floodplains are areas that flood from a water level rise in a boarding waterway or waterbody during peak flows. Floodplains provide temporary storage for floodwaters that overtop the main channel of a creek, river or stream.

Flood risk data is compiled for the town of Carver by the Federal Emergency Management Agency (FEMA) for use in both insurance rating and floodplain management. Both the Carver Conservation Commission and Building Department use FEMA's Flood Insurance Rate Maps to administer floodplain management regulations.

Base flood elevations for a 100-year storm event (A2 Zone) have been established for the Weweantic River, South Meadow Brook, Rocky Meadow Brook, and Crane Brook. Additionally, approximate limits for flooding for the remaining waterways and waterbodies

Aquifer Recharge Area

The Plymouth-Carver Aquifer is the second largest aquifer in aerial extent in Massachusetts. It underlies an area of 199 square miles and contains more than 500 billion gallons of fresh water. The aquifer is located under the towns of Carver and Plymouth, and parts of Bourne, Kingston, Middleboro, Plympton, and Wareham. (see Figure 9). The quality of the aquifer's water is rated as good to excellent and the towns in the area are fortunate to have such an abundant supply of high-quality drinking water. In fact, Carver, Plymouth, two districts in Bourne, and most of Wareham rely exclusively on the Plymouth-Carver Aquifer for their drinking needs.

In 1990 the Plymouth-Carver Aquifer was designated a Sole Source Aquifer by the Environmental Protection Agency (EPA). A Sole Source Aquifer (SSA) is an aquifer designated by EPA as the "sole or principal source" of drinking water for a given aquifer service area; that is, an aquifer that is needed to supply 50% or more of the drinking water for an area (US Environmental Protection Agency).

Geologically, the Plymouth-Carver Aquifer is an unconfined aquifer made up of sand and gravel deposited about 15,000 years ago by a retreating glacier. As the glacier melted, broad areas known as outwash plains formed. Wells in the southern part of town, known as the "Wareham Outwash Plain", have potential yields of over 300 gallons per minute (GPM). Wells in the northern half of Carver over the "Carver Outwash Plain," can be expected to yield between 100 and 300 GPM. These outwash plains make excellent aquifers as the sandy soil allows water from precipitation and snowmelt to readily percolate and "recharge" the aquifer. However, this characteristic of the soil also makes the groundwater supply susceptible to pollution. If the soil is contaminated from spilled oil, septic effluent, a leaking underground storage tank, or run-off from agricultural enterprises and paved areas, the contaminant easily moves through the soil along with the natural recharge waters. Carver's Water Resources Protection District, which overlays the entire town, provides some protection to the Plymouth-Carver Aquifer. The Water Resources Protection Bylaw prohibits solid waste disposal facilities (including landfills and salvage yards), storage of large amounts of hazardous wastes, disposal of hazardous wastes, and disposal of snow containing de-icing chemicals within the Water Resources Protection District. Certain other uses, such as storage of road salt or petroleum, service stations or garages, or rendering more than 10,000 square feet of any lot as impervious (except for roadways), are only allowed by special permit.

Southeastern Massachusetts is the fastest growing area in the state. Rapid growth and development leads to increased population that translates to greater groundwater withdrawals and increased risks of pollution of the aquifer. Since the water supply is underground and hidden by nature, it is often more susceptible to pollution and misuse than a visible supply. As Carver continues to experience greater development pressures it will be important to implement well planned, long-term programs that address drinking water supply issues. In the summer of 2002, the town of Wareham initiated discussions with the towns of Carver and Plymouth to encourage the signing of a memorandum of understanding that would allow the three towns to comment on applications for development that would affect the Wankinko and Agawam River watersheds and the creation of a watershed advisory board that would work to protect the rivers and the Plymouth-Carver Aquifer. In the winter of 2003, SRPEDD facilitated the formation of the Plymouth-Carver Aquifer Advisory Committee that meets regularly to address concerns about this irreplaceable natural resource. The committee was attended by many interested residents, by

a SRPEDD representative, and by representatives from non-profit land protection groups. In FY 2007, the legislature enacted legislation so that the seven towns would appoint one voting delegate and one alternate delegate to this committee. In FY 2007 and again in FY 2008, the state senate and legislature earmarked \$100,000 in funds to support three goals of the PCAAC: to create a Plymouth/Carver Aquifer Protection Plan; to review bylaws of the seven towns within the Plymouth/Carver Aquifer that might affect impacts to the aquifer and propose model bylaws for the towns' consideration; and to develop educational tools to promote aquifer awareness and protective actions. The Executive Office of Environmental Affairs hired consultants to develop these products. The Plymouth/Carver Aquifer Action Plan was produced in 2007 and the Plymouth/Carver Sole Source Aquifer Regional Open Space Plan was produced in 2008.⁸ Since that funding dried up in FY 2008, the PCAAC delegates and alternates, interested citizens, SPREDD, a Cape Cod Cranberry Growers' Association representative, and non-profit land protection organizations continue to meet every second Thursday of each month at the Carver Town Hall to discuss ways to inform the general public and local officials about the importance of this aquifer and how to protect it. The regional Plymouth/Carver Sole Source Aquifer Advisory Committee is a unified body working to help our communities plan for the protection and preservation of our shared natural and cultural resources. This includes working cooperatively and providing mutual support, particularly in matters such as preserving habitat integrity and connectivity, without parochial concern for municipal boundaries. Without cooperation, the region flounders and important resources are squandered and lost. By thinking beyond town boundaries and recognizing regional ties, together, towns can work toward a shared vision on a regional scale incorporating strong, distinct towns, protected water resources, working and natural landscapes, and biological diversity.

In Massachusetts, the land area contributing to or recharging a well is divided into specific zones that are given different levels of protection. Zone I is located closest to the well and is typically a circular area with a 100- to 400-foot radius, depending on the pumping rate of the well. Land use in this area is restricted to water supply-related activities only.

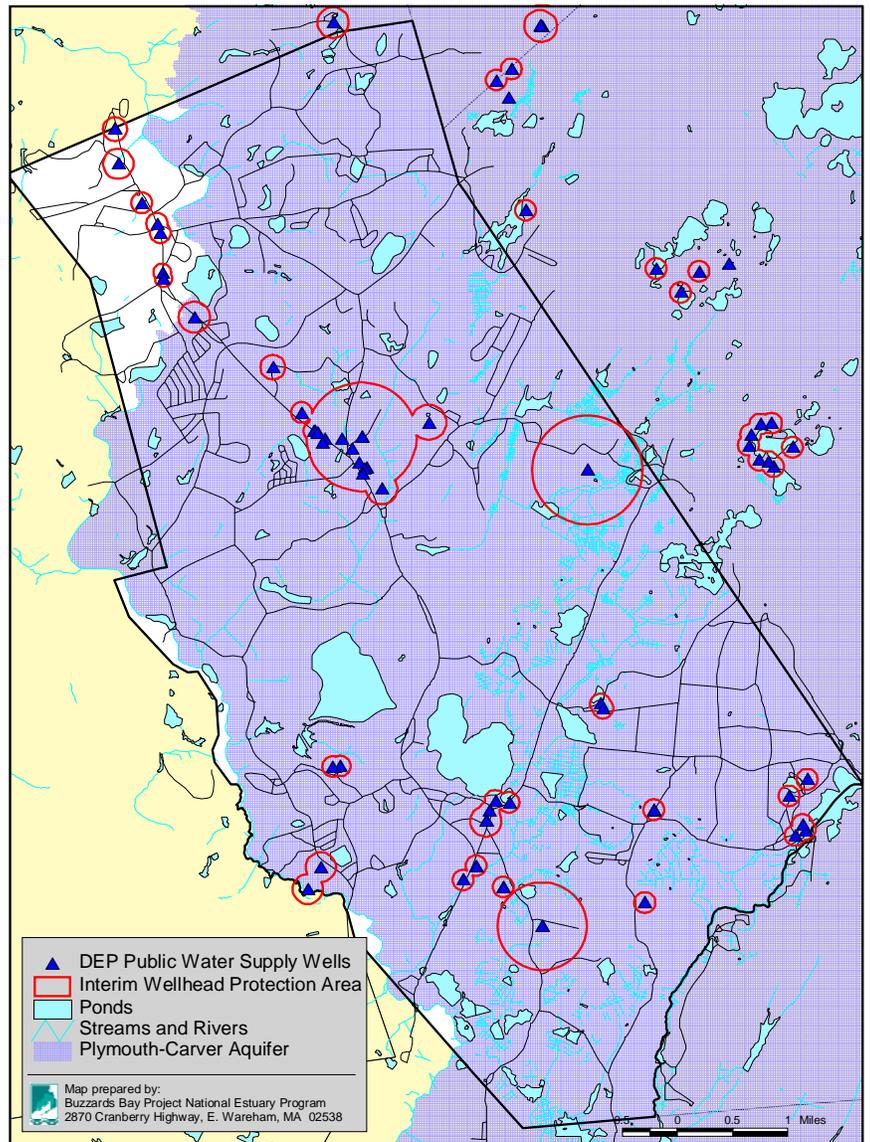
The Zone II is a recharge area around a well that is determined by means of hydrogeologic modeling studies. Zone II boundary delineations must be approved by the Department of Environmental Protection (DEP). In cases where hydrogeologic modeling has not been done and there is no approved Zone II, as is the case in Carver, an Interim Wellhead Protection Area (IWPA) is established to cover an area around a public well. The area is defined by a radius, ranging from 400 feet to one half mile, depending on the pumping rate of the well. (*Making Wellhead Protection Work in Massachusetts, DEP*) Figure 9 shows the Plymouth-Carver Sole Source Aquifer and the town's DEP approved public water supply wells and their IWPA's.

In the 1980s the town designated an area in the southeast corner of town adjacent to Myles Standish State Forest as a future source of public water. If tapping into this resource is to remain a possibility, great care must be taken to protect it. Besides this location, other potential well sites for future public water supply need to be identified and steps taken to protect their

⁸ See www.srpedd.org/environmental/reportaugust.pdf and www.srpedd.org/environmental/plymouthcarversourceplan.pdf for these two complete documents respectively.

contributing recharge areas as soon as possible.

Figure 10. Plymouth/Carver Sole Source Aquifer



Buzzards Bay and Taunton River Watersheds

The town of Carver lies predominantly within the Buzzards Bay watershed, with the northern section of town falling within the Taunton River watershed. A watershed is an area of land where all sources of water, including streams, rivers, groundwater, and rain, drain to a common water body. These larger watersheds are broken down into several smaller areas called sub-watersheds that drain to various harbors and coves. All of the land area of Carver lying within the Buzzards Bay watershed eventually drains south to the Wareham, Weweantic, and Sippican Rivers in the town of Wareham. The section of Carver that lies within the Taunton River watershed ultimately drains to Mount Hope Bay near the city of Fall River.

Negative impacts to water resources in one area of a watershed can have far-reaching effects on other areas as ground and surface water can transport pollutants far from the original source.

Carver's Weweantic River, and the Wareham and Sippican Rivers in Wareham, already suffer from poor water quality related to residential and agricultural pollutant sources, despite the fact that a majority of the watershed remains undeveloped. Should growth trends continue in Carver and in neighboring towns, even greater impacts to water quality are expected to be seen in these river systems.

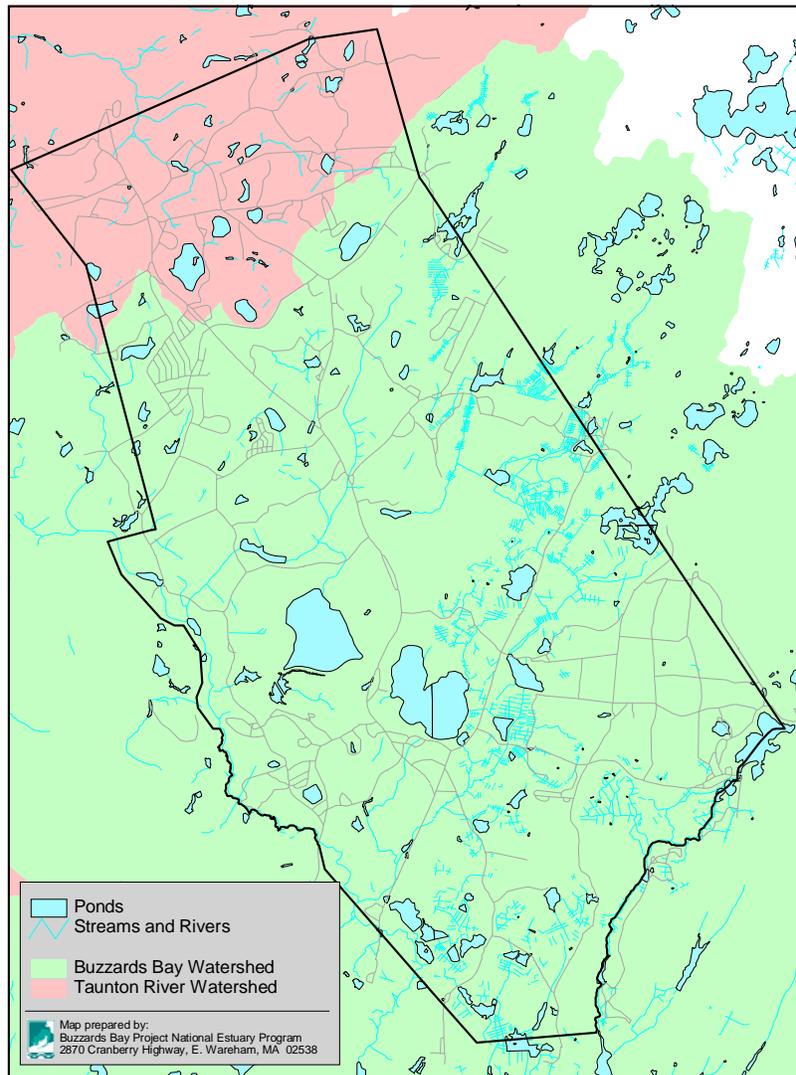


Figure 11. Buzzards Bay and Taunton River Watersheds

D. Vegetation, Fisheries and Wildlife

Much of Carver is private woodland that provides a habitat for numerous species of animals and birds as well as recreational opportunities for those who have access. This woodland consists of dry upland sites, mesic sites⁹, and wooded swamp. The sandy-gravelly upland consists primarily of eastern white pine (*Pinus strobes*) with some black, white, and scarlet oak (*Quercus velutina*, *alba*, and *coccinea*). In the southeastern part of town these sites also support pitch-pine/scrub oak barrens,—a unique habitat according to the Natural Heritage and Endangered Species Program. Ground vegetation in the upland areas consists of huckleberry species and blueberry.

Carver's public shade trees grow in the road lay-outs in all but the very commercial section of North Carver (north of Forest and North Main Streets and west and north of High Street). The rest of North Carver and all of West Carver, East Carver, Center Carver, and South Carver enjoys streets lined with eastern white pine and black, white, and scarlet oaks. Red maple (*Acer rubrum*) and silver maple (*Acer saccharinum*) also grow in abundance in wetter public rights-of-way. White ash (*Fraxinus Americana*) and black ash (*Fraxinus nigra*) line a large portion of the western part of High Street in North Carver. Pitch pine (*Pinus rigida*), although not much of a "shade" tree, does grow along some of the streets in South Carver, particularly in the Myles Standish State Forest. In some areas of town, especially along streets with wetter lay-out areas, sassafras (*Sassafras albidum*), black tupelo (*Nyssa sylvatica*), and swamp white oak (*Quercus bicolor*) can be found. Occasionally, one will find northern red oak (*Quercus rubra*), northern catalpa (*Catalpa speciosa*), pin oak (*Quercus palustris*), and post oak (*Quercus stellata*) along public ways. There are also isolated stands of very old non-native Norway spruce (*Picea abies*) here and there along Main Street and black cherry (*Prunus serotina*) and black locust (*Robinia pseudoacacia*). Finally, although not native to New England, the invasive Norway maple (*Acer platanoides*) also serves as a shade tree here.

On the mesic sites, which lie more to the center of town, one finds eastern white pine, black tupelo, black oak, red oak, white oak, red maple, sassafras, and occasionally beech, birch, and hemlock. Trees prosper in the mesic areas because of the good combination of soil and moisture. Understory plants consist of sweet pepperbush, viburnum species, blueberry, huckleberry, and others. The wooded swamps consist primarily of red maple and Atlantic white cedar. Understory plants consist of greenbriar, silver briar, sweet pepperbush, highbush blueberry, and others. In some of the wetter areas along streams and other water bodies, one can find fresh meadow swamps vegetated primarily with clumps of grasses and sedges. In the open upland surrounding cranberry bogs there are grasses and low shrubs.

The fresh water ponds and streams support a number of fish species. Carver has some of the best large-mouth bass fishing in the state; this has drawn fishermen to the town for years - especially on Sampson's Pond, where there is a boat ramp. However, a town sticker is needed to park at the boat ramp. Other fish species include chain pickerel, black crappie, pumpkinseed sunfish, bluegill sunfish, golden shiner, horned pout, American eel, yellow perch, and white perch. The Winnetuxet and Wankinko Rivers support trout that are primarily stocked. Some other lesser species, such as minnows, also inhabit Carver.

⁹ Characterized by, or adapted to, a moderately moist habitat.

Many wildlife species, both game and non-game, inhabit or pass through the town on migratory routes. The rural character of the town along with large wetland areas provides ample food and opportunity to forage and travel for both large and small mammals. An extensive list of bird, mammal, amphibians, and reptile species occurring in Carver can be found in the Appendix of this Plan.

Vernal Pools

The town of Carver has numerous vernal pools and potential vernal pools. Vernal pools consist of small, shallow temporary pools that are most evident in the springtime. These pools often dry up in the summer and are, therefore, unable to support fish communities. However, vernal pools are critical to the survival of a variety of wildlife species, including some salamanders that breed exclusively in these pools. These salamanders travel in mass migrations during the spring to return and breed in the vernal pool in which they were born. A few organisms, such as fairy shrimp, need to spend their entire life cycle within a single vernal pool and are unable to live anywhere else. They lay drought-resistant eggs that hatch when the pool fills with water in the spring. Other wildlife species are attracted to vernal pools because of the abundant prey available. Some of these species include wood turtles, spotted turtles, Blanding's turtles, great blue heron, green heron, and garter snakes.

Potential Vernal Pools



Figure 12. Potential Vernal Pools in Carver

The Natural Heritage and Endangered Species Program (NHESP), a division of the Massachusetts Division of Fisheries and Wildlife, documents and certifies vernal pools. Certified vernal pools are provided protection under several state and federal laws, such as the Massachusetts Wetlands Protection Act, Title 5, Section 401 of the Federal Clean Water Act, and the Massachusetts Forest Cutting Practices Act. In an effort to increase the number of certified vernal pools, the NHESP recently released data on potential vernal pools sites in southeastern Massachusetts. Using color infrared photos, the NHESP identified areas with the highest potential for supporting vernal pools (see Figure 11). All of these sites must now be field-checked to find out if vernal pools actually exist at the potential sites. Due to the large land area that must be covered, the NHESP will be relying heavily on volunteer efforts to help identify vernal pools and begin the certification process. In 2004, only two vernal pools had been certified in town. To date, eighteen vernal pools have now been certified in Carver.

BioMap

The Natural Heritage and Endangered Species Program is currently working on a biodiversity mapping project that identifies areas of the state with the most viable habitats for rare species and natural communities in Massachusetts. These areas, referred to as the BioMap habitat areas (see Figure 12), are the most important to protect in order to maintain biodiversity. Carver contains several of these important habitats. The southeastern section of the town, including the Myles Standish State Forest and an expansive region of wetland and cranberry bog complexes, falls within a BioMap core habitat area, making the southern extent of Carver a good focus area for land protection efforts.

Dispersed throughout the central and northern extents of the town are several other BioMap core areas. The western edge of town is buffered by a large expanse of Supporting Natural Landscape (SNL), defined by the NHESP as buffer areas to the BioMap habitats. The NHESP recommends connecting pieces of the SNL with other protected open space and the BioMap habitat areas to ensure that the biodiversity of the town is maintained.

Rare, Threatened, and Endangered Species

According to the Massachusetts Natural Heritage and Endangered Species Program, Carver has several types of habitats important for rare species, several of which are uncommon statewide. Particularly of note are the pitch pine-scrub oak communities located in the Myles Standish State Forest area. Many rare state-protected species of moth occur in such habitats. Carver also is home to globally-restricted Coastal Plain Pond communities that support populations of many rare species; and large Atlantic white cedar swamps that are uncommon and are imperiled in the northeast.

The most recently documented observations of species monitored by the Natural Heritage and Endangered Species Program was a spotting of New England blazing star and a red-bellied cooter (formerly called red-bellied turtle) in 2001, and Plymouth gentian in 2000. Table 8 documents reported occurrences of rare species in town. It should be noted that the NHESP database is constantly being expanded and updated and Carver should make a concerted effort to help document rare species in town.

BioMap and Priority Habitat

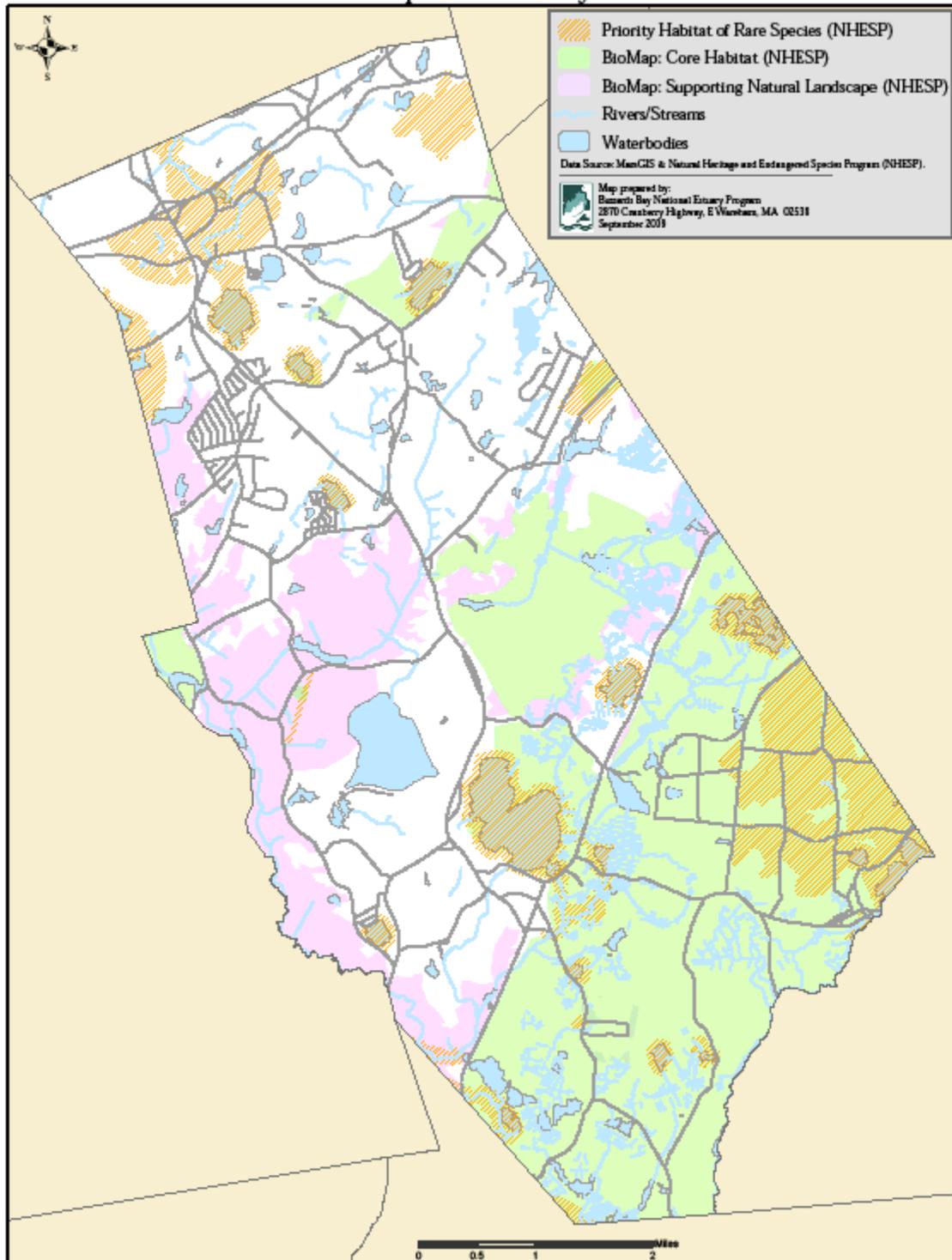


Figure 13. Carver BioMap

Table 8. Rare Species in the Town of Carver

| Scientific Name | Common Name | Year | Status |
|---|--------------------------|-------------|---------------|
| Vertebrates | | | |
| <i>Terrapene carolina</i> | Eastern box turtle | 1995 | SC |
| <i>Pseudemys rubriventris</i> | red-bellied cooter | 2000 | E |
| <i>Notropis bifrenatus</i> | bridle shiner | 1993 | SC |
| <i>Clemmys insculpta</i> | wood turtle | 1990 | SC |
| Invertebrates | | | |
| <i>Callophrys hesseli</i> | Hessel's hairstreak | 1987 | SC |
| <i>Enallagma recurvatum</i> | pine barrens bluet | 1993 | T |
| <i>Leptodea ochracea</i> | tidewater mucket | | SC |
| <i>Ligumia nasuta</i> | Eastern pondmussel | | SC |
| <i>Papaipema sulphurata</i> | water-willow stem borer | 1994 | T |
| Plants | | | |
| <i>Carex striata</i> var. <i>brevis</i> | Walter's sedge | 1990 | E |
| <i>Panicum longifolium</i> | long-leaved panic-grass | 1988 | T |
| <i>Liatris scariosa</i> var. <i>novae-angliae</i> | New England blazing star | 2001 | SC |
| <i>Rhynchospora inundata</i> | inundated horned-sedge | 1994 | T |
| <i>Sabatia kennedyana</i> | Plymouth gentian | 2000 | SC |
| <i>Sagittaria teres</i> | terete arrowhead | 1988 | SC |

Key to State Status:

- E = Endangered. Any reproductively viable native species of wildlife or wild plant that has been documented by biological research and inventory to be in danger of extirpation from the Commonwealth.
- T = Threatened. Any reproductively viable native species of wildlife or wild plant that has been documented by biological research and inventory to be rare or declining within the Commonwealth and that is likely to become endangered in the Commonwealth in the foreseeable future.
- SC = Special Concern. Any native wildlife or wild plant species that has been documented by biological research and inventory to be suffering a decline that could threaten the species in the Commonwealth if allowed to continue unchecked, or that occurs in such small numbers or with such restricted distribution or specialized habitat requirements that it could easily become threatened.

E. Historic Sites, Scenic Resources, and Unique Environments

Prehistoric Sites

Dating back as far as 10,000 years to the Archaic Period, Carver's unique natural environment of rivers, streams, and wetlands attracted some of the earliest nomadic peoples in this region. People passed through during the spring and fall seasons on their travels to and from Plymouth, the Cape, and Rhode Island. The Nemasket Trail, running east to west roughly along the present path of Route 44, was an important byway for Native Americans living in the area as well as early white settlers. Another Native American path was the Pilgrim Trail that ran along the present route of South Meadow Road and continued south along what is now Route 58.

Historic Sites

Iron Furnaces and Lumber Mills

Early historic sites include the various lumber mills and iron furnaces established in the area primarily during the 18th century. Few of these industrial structures are still standing. One of the most important contributors to Carver's industrial history was Cole's Mill in North Carver. The grist, saw mills, and dam built at the site off High Street were key contributors to the early development of the Lakenham area, now North Carver. As the mill expanded in the 19th century, it provided the industrial focus for the area. The gristmill was a place for farmers to have their grain milled, while the saw mill provided lumber for houses in the village center. The family-run business made shoe-shipping boxes in the 1850s, supporting a local cottage industry, and began making cranberry shipping barrels in the 1890s to support the burgeoning cranberry business in the town. In the 1950s, the mill moved into production of gift-sized cranberry boxes when plastic barrels took the place of the traditional wooden ones.

Another historically-important contributor to local industry was Charlotte Furnace; this furnace was so important to the development of South Carver that until the 1850s it was called Furnace Village. Bartlett Murdock built the first iron furnace in South Carver on the edge of Sampson's Pond and built a house nearby for himself. The Murdock-Atwood house, which dates back to about 1760, is currently a private residence and still stands at 48 Lakeview Street. In 1986, the Massachusetts Historical Commission suggested that South Carver could be a historic district because of the various landmarks in the immediate area related to the furnace. These landmarks include the Benjamin Ellis School, Mt. Carmel Church, the Murdock-Atwood House, and the Crane Brook Tea Room.

Historic Homes

While Carver was the site of many business ventures, few grand houses were built by the entrepreneurs who worked here to establish their legacy. Still, a number of important houses dating from the 18th and 19th centuries can be found in town. Among them are what is currently called the Marcus Atwood House¹⁰ in South Carver, built in 1845, the Bartlett Murdock House¹¹ and the Benjamin Ward House. The George Bowers Home and Savery Avenue Homestead, both on Route 58 near South Carver Village, are also from this era. Each of these houses was built by local people who had prominent roles in the local iron or cranberry businesses. In the latter half

¹⁰ This house was historically known as the Murdock Atwood House since it was built by Jesse Murdock and later became the dwelling of Marcus Atwood.

¹¹ This house is across from the Crane Brook Tea Room in South Carver.

of the 19th century, the Greek revival style of architecture was enormously popular; many older houses, including the Atwood and Murdock houses, were renovated to display this style. Unfortunately, there are few surviving Colonial era houses in Carver.

Churches

Between the 1840s and 1870s, there was great economic prosperity in Carver, so that in addition to many houses, several schools and churches were built. The churches included the Methodist, Episcopal, Union, Congregational, and Advent churches. A number of additional historic sites have also been located.

Cemeteries

Carver has several historical cemeteries, including Lakenham Cemetery on Forest Street in North Carver; Center Cemetery on Cranberry Road in South Carver; Wenham Cemetery; and the picturesque Union Cemetery next to Union Church on Route 58. Lakenham Cemetery contains the gravestones of many of the earliest settlers of the community.

Cranberry Industry

The site now used by Edaville Railroad, off Rochester Road in South Carver, was formerly the Ellis Atwood Company that built rent-free housing for 50 year-round employees who worked in Atwood's cranberry bogs. The 8-mile narrow-gauge railroad that later drew tourists to the area was originally built as a hobby of Atwood's. This railroad has since been reduced to two and a half miles by the current owner of Edaville Railroad but is still in operation for tourists to the area.

Other important locations in the development of the cranberry industry include the Wankinco bogs near Cranberry Road and Federal Road that were built in 1879 by Abel D. Makepeace of West Barnstable. This became the largest bog tract in the state. Also of importance were the East Head Bogs near the Plymouth town line; built in 1878 by George Bowers. The success of these bogs led to the industry's expansion in the town.

Historic Districts

There are two officially-designated Historic Districts in town: the Savery Historic District and the Lakenham (North Carver) Historic District. The Savery Historic District, built by William Savery, has the distinction of having the first divided road in America, Savery Avenue, and in the past was a place for buggy races. Both historic districts are managed by the town's Historic District Commission; however, no design standards have been adopted for these districts. The Historic District Commission currently has some oversight on new commercial and industrial projects; however, the Master Plan recommends that the Site Plan Review Bylaw be modified to include the review of historic preservation issues in site plan review, Earth Removal By-law, Subdivision review, and Special Permit review. To date, the committee has limited volunteer support for taking on new responsibilities.

The town also has a Historic Commission that is concerned with the general issue of historic preservation and public education. Currently this committee does not participate in the review of proposed projects. The town is currently considering establishing a third historic district, the South Carver Furnace Historic District, encompassing the Charlotte Furnace area and many of

the homes currently in the South Carver Village District, including the Murdock-Atwood House.

Scenic Roads

The town's landscape of bogs, ponds, and rivers and the dominant agricultural activity of cranberry production have given the town its infrastructure of narrow, winding roads whose primary purpose was to permit farmers to access and bring their products to market. Without proper planning these beautiful roads are at risk of losing their rural nature in the name of progress.

Massachusetts General Law Section 15C, Chapter 40 was created to protect the character, scenery, and history of roads by allowing towns to designate certain roads as scenic (see Appendix). Scenic Roads bylaws are an effective, although limited, method of maintaining the rural character of scenic roads. A Scenic Roads designation provides limited protection from actions resulting from the repair, maintenance, reconstruction, or paving of the road that would involve the cutting or removal of trees or tearing down, destruction or alteration of stonewalls, or portions of stonewalls, within the public right of way. On a Scenic Road, such actions are subject to a public hearing and approval by the Planning Board.

A town may designate any road as scenic other than a numbered route or state highway. A numbered route may be designated only if its entire length is contained within the town's boundaries and the Commonwealth maintains no part of the route. Recommendations for the designation of Scenic Roads may come from the Planning Board, Conservation Commission, or Historical Commission. The process involves a petition to the Planning Board, coordination with the Highway Department, a public hearing, and placing of the bylaw on the Warrant for a Town Meeting to obtain voter approval. This plan recommends in its Action Plan that a scenic roads bylaw be investigated for its feasibility to protect some of Carver's more beautiful roadways.

The following are considered scenic roads in town: Beaver Dam Road, Bunny's Road/Old Place Road, Center Street, Cranberry Road, Crescent Street, Cross Street, Federal Road, Fosdick Road, France Street, Fuller Street, Gate Street, Green Street, Hammond Street, High Street, Holmes Street, Indian Street, Jabez Bridge Road, Lakeview Street, Linden Street, Mayflower Road, Meadow Street, Old Center Street, Pleasant Street, Plymouth Street, Pond Street, Pope's Point Road, Purchase Street, Savery Avenue, Shaw Road, Snappitt Street, Tremont Street, Wareham Street, and Wenham Road. An article is being placed on the town warrant to have these roads officially designated as scenic by the 2010 Town Meeting.

Unique Environments

Carver's unique environments include the pine barrens that inhabit the southeast part of town, the "coastal plain ponds" that dot the town, Federal Pond (where the endangered red-bellied cooter lives), the large cedar swamps (especially the Great South Meadow Cedar Swamp) the river corridors, and some of the areas that have older-growth tree species. The pine barrens and the coastal plain pondshores are considered "imperiled" and/or "critically imperiled" natural communities by the Natural Heritage and Endangered Species Program; pine barrens are also a globally-rare environment. Cranberry bogs also provide a unique environment for many different species of animals and plants.

Scenic Resources & Unique Environments



Figure 14. Scenic Resources and Unique Environments

F. Environmental Problems

The biggest environmental threat in Carver is contamination of the town's ground and surface water resources. Ground and surface waters are closely related, and both are threatened by the same potential sources of pollutants. Contamination threats come from both "point sources" and "non-point sources." Aside from producing contaminants, development may physically upset the ecological and hydrologic systems that give form to the town's water resources. The impact from development may not appear for several years after contamination has begun because of the time it takes for water to travel through the ground.

Point Source Contamination

Point sources of contamination in Carver come primarily from specific sites where polluting land uses have occurred. Within Carver, the Department of Environmental Protection has recorded 32 contaminated sites (see Table 9), the most notorious of which has been the closed North Carver Landfill, where a plume of contamination has spread under a number of homes and affected Muddy Pond. Affected residents had to be hooked up to public water from Middleborough while the cleanup of this site was underway. This site has been remediated, and has been capped by the town, at a cost of approximately \$3-4 million (funded with a State Revolving Fund loan). Approximately 25 acres will become available for recreation, an animal shelter, or other such use, or alternatively an industrial site with access off Route 58.

Additionally, down the road at the Ravenbrook Demolition Landfill on Plymouth Street, another plume of contamination exists, caused apparently by dumping by the state of polymer-concrete landing-strip materials from Otis Air Force Base in the 1970s. While this plume has not yet affected any housing, nearby neighbors have been hooked up to the Middleborough water main as a precaution. This landfill has been capped and monitoring wells were installed. Since the capping, the plume from the Ravenbrook Landfill has travelled under Plymouth Street and Route 44 and has reached the Whitworth Property north of the new Route 44.

Carver needs to protect the quality of its water resources from contamination from existing and future waste disposal facilities. Despite the prohibitions under local regulations, Carver is host to both the regional dump and a regional septic processing plant. In addition, out-of-town dumping at several now-closed landfills has led to pollution of the immediately surrounding aquifer. Waste disposal is an environmental problem that every community has had to deal with. Carver does not operate its own recycling program; however, to address this need, a regional recycling center was created for use by town residents on Route 28 in Rochester. One of Carver's challenges in the future will be to figure out how to provide needed infrastructure while maintaining high standards to protect its groundwater resources.

Non-Point Source Contamination

The two greatest non-point source threats to ground and surface waters are septic systems and stormwater runoff.

Carver has no municipal sewer system and residents rely on individual septic systems for waste disposal. Due to the town's sandy soils, which allow rapid flow of water through the ground, the potential for contamination from untreated wastewater is magnified. Vigilance about updating old septic systems is critical considering the importance of the town's aquifer. For instance,

several converted cottage colonies, where dozens of houses are located on lots of less than 5000 sq. ft., have already contaminated each other's wells. At present there are no town laws requiring inspection and replacement of old septic systems. The decision to do this rests with the homeowner. However, Title 5 requires septic systems to be upgraded when a home is sold. The Board of Health oversees any such changes and is responsible for inspection and approval of new systems. Carver should consider adopting a septic management plan similar to the town of Yarmouth. Locations of high nitrogen in the ground water would be monitored. Septic systems would be pumped and treated on a regular basis, with the remainder of the town being monitored on a less frequent basis. Septic system replacement, if needed, would be carried out by the town with the homeowner charged a betterment fee requiring a payback over a period of 10-20 years.

Development threatens to alter upland and near-wetland habitats permanently and to destroy the character of our rural town. Excessive development also has an impact on the quality of both ground and surface water. Increased impervious cover in the form of roads, driveways, and buildings has the potential to reduce the amount of water being recharged to the groundwater. Stormwater runoff associated with development in the watershed can also serve as a pollutant transport.

Stormwater runoff has been identified as one of the most pervasive sources of contamination to surface and groundwater resources. Contamination from stormwater might include solid particles, bacteria and viruses, metals, volatile organic compounds, and nutrients. These contaminants may leach through the soils or they may be deposited into surface water through runoff or discharge pipes. Such pollutants can affect drinking water quality, productivity of agricultural uses, and the ecological function of wetlands, ponds, and streams. To reduce impacts from stormwater, natural hydrologic functions of a site should be maintained through retaining natural contours and vegetation to the maximum extent possible. The amount of impervious area is a fair measure of the impact that development will have on environmental resources. Flexible zoning and subdivision regulations can be targeted toward minimizing the impervious surface coverage and/or relating the extent of infrastructure requirements to development thresholds. Subdivision regulations can be changed to reduce required road widths on local service roads and require drainage systems such as constructed wetlands that provide stormwater treatment.

In the recent past, the town's Subdivision, Zoning, and Board of Health regulations did not adequately address septic systems and stormwater runoff. The subdivision regulations, for example, used to direct stormwater to be deposited untreated into the "nearest open stream channel." This violates the state's updated standards for stormwater management. Given the reliance on individual wells to provide drinking water for the town's residents, it was essential that protection extend to the entire town. In 2004, it was recommended that regulations released by the Massachusetts Department of Environmental Protection (DEP) regarding stormwater management be closely adhered to for projects involving wetlands permitting and that the Planning Board should also closely control stormwater in subdivisions and commercial development not covered by the DEP regulations. In 2003, the Board of Health adopted new stormwater regulations specifically for this purpose. In 2008, the Planning Board also adopted new stormwater regulations that meet the state's new standards for stormwater management.

Hazardous Waste Sites

The Department of Environmental Protection (DEP) maintains a list of sites, referred to as “21E” sites¹², where reported discharges of oil or hazardous materials have occurred. As of July 2002, there were thirty-two 21E sites in Carver. As of April 2009, there are 41 reported separate releases of hazardous materials at thirty-seven locations in Carver. (For a more recent list of locations and types of hazardous materials’ releases in Carver, please go to the Department of Environmental Protection’s website, www.mass.gov/dep/cleanup/sites/search.asp, and click on “Carver.”) Sites are usually Tier Classified using the Numerical Ranking System (NRS) that scores sites on a point system based on a variety of factors. These include the site’s complexity, the type of contamination, and the potential for human or environmental exposure to the contamination. These sites are then assigned by DEP to the categories listed in the table below. Tier 1 is DEP’s highest priority ranking. In some cases sites are automatically classified as Tier 1 if they pose an imminent hazard, affect public water supplies, or miss regulatory deadlines. In 2002, Carver had eight Tier 1 sites; as of April 2009, Carver has four Tier 1 sites.

Table 9. DEP 21E Sites in Carver

| Category | Number of sites in Carver |
|---|---------------------------|
| <p>Tier 1A: A site/release receiving a total Numerical Ranking System (NRS) score equal to or greater than 550. These sites/releases require a permit and the person undertaking response actions must do so under direct DEP supervision.</p> <p><u>Sites:</u> North Carver Landfill – Off Route 58 North [oil & hazardous material, 4/3/1987]</p> | 1 |
| <p>Tier 1B: A site/release receiving a total Numerical Ranking System (NRS) score of less than 550 and equal to or greater than 450. These sites/releases also require a permit, but response actions may be performed under the supervision of a Licensed Site Professional without prior DEP approval.</p> <p><u>Sites:</u> Edaville Railroad – 7 Eda Ave [Hazardous Material, 1/5/2001]</p> | 1 |
| <p>DEF Tier 1B (Default Tier 1B): A site/release where the responsible party fails to provide a required submittal to DEP by a specified deadline.</p> <p><u>Sites:</u> <u>None.</u></p> | 0 |
| <p>Tier 1C: A site/release receiving a total Numerical Ranking System (NRS) score of less than 450 and equal to or greater than 350. A site/release receiving a total NRS score of less than 350 but which meets any of the Tier 1 Inclusionary Criteria specified in 310 CMR 40.0520(2)(a), is also classified a Tier 1C. These sites/releases also require a permit, but response actions may be performed under the supervision of a Licensed Site Professional without prior DEP approval.</p> <p><u>Sites:</u> Town of Carver: - 99 Main Street [Oil, 7/15/1991] Cumberland Farms – 90 North Main Street [Oil, 3/20/2002]</p> | 2 |

¹² Massachusetts General Law Chapter 21E is the Massachusetts Oil and Hazardous Material Release Prevention and Response Act.

Table 9. DEP 21E Sites in Carver (Continued)

| Category | Number of sites in Carver |
|--|---------------------------|
| <p>Tier 2: A site/release receiving a total Numerical Ranking System (NRS) score of less than 350, unless the site meets any of the Tier 1 Inclusionary Criteria. Permits are not required at Tier 2 sites/releases and response actions may be performed under the supervision of a Licensed Site Professional (LSP) without prior DEP approval. All pre-1993 transition sites that have accepted waivers are categorically Tier 2 sites.</p> <p><u>Sites:</u> Holman & Sons BP Station – Tremont St/Rte 58 [1/15/1991] Ferreira’s Used Cars and Parts, Inc. – 30 West Street [Oil, 2/9/2004] Former 44 Gravel & Sand, Inc. – 1 Park Ave. [Hazardous Material, 5/17/2005]</p> | 3 |
| <p>RAO (Response Action Outcome): A site/release where an RAO Statement was submitted. An RAO Statement asserts that response actions were sufficient to achieve a level of no significant risk or at least ensure that all substantial hazards are eliminated.</p> <p><u>Sites:</u> CMW Landfill – Federal Road [Oil, 8/1/1998] Facility No. 135 – Rte 58 [Hazardous Material, 3/15/1996] Lot 255 – 61 Cedar Drive [Oil, 6/2/1994] No location aid – Rte 44 & Rte 58 [Oil, 10/3/1993] No location aid – 68 Main Street [Oil, 7/11/1994] No location aid – High St & Snappit St [7/8/1996] No location aid – 12 David Rd [Oil, 2/12/1997] No location aid – 90 North Main St [Oil, 12/15/2001] Roby’s Gas – Rte 58 [Oil, 11/11/1993] Rte 58 – 67 Main St [Oil, 11/2/1996] Tom’s Texaco Station – No. Main St/Rte 58 & 44 [Oil, 7/11/1986] US Post Office – 171 Plymouth St [Oil, 9/29/1995] Lopes Construction [Oil, 8/8/2007] No location aid – 5 Bisbee Drive [Oil, 2/4/2002] Near #60 Federal Road – Federal Road [1/18/2004] Route 58 – 131 Main Street [Oil and Hazardous Material, 9/8/1997] 44 Gravel and Sand – Montello Street [Hazardous Material, 12/8/2003] Cumberland Farms – 90 North Main Street [Oil, 2/27/2003] Frm Simeone Property – Off Plymouth Street [Oil and Hazardous Material, 5/18/2006] Simeone Asphalt Plant – Plympton [Plymouth] Street [Oil, 4/15/1991] Cranberry Bogs – Pond Street [Oil, 5/21/2007] Residence/Cranberry Bog – 9 Rochester Road [Oil, 9/12/2007] Right of Way (ROW) #322 – South Meadow Road [Oil, 6/7/2008] Off Cranberry Road – 155 Tihonet Road [Oil, 4/3/2003] Delta Gas – 303 Tremont Street [Hazardous Material, 10/22/1999] Delta Gas – 303 Tremont Street [Oil, 5/18/2005] No location aid – 344 Tremont Street [Hazardous Material, 6/7/2002] Pine Tree Village, Inc. – 15 William Street [Hazardous Material, 3/19/2007]</p> | 28 |
| <p>RTN (Release Tracking Number): Closed: Future response actions addressing the release associated with the Release Tracking Number (RTN) will be conducted as part of the response actions planned for the site under another “primary” RTN.</p> <p><u>Sites:</u></p> | 10 |

| | |
|--|---|
| <p>Carmichael’s Mobil, Fmr – 118 Main Street [Oil, 3/8/1995] Edaville Railroad – 7 Eda Ave [Hazardous Material, 12/26/2001] Edaville Railroad – 7 Eda Avenue [Oil, 9/26/2002] Monitoring Well – Off Montello Street [Hazardous Material, 12/27/2000] Ravenbrook Landfill – Plymouth Rd [Hazardous Material, 5/3/2001] Aggregate Asphalt Batching Facility – Plymouth Street [Hazardous Material, 10/22/2004] Eagle Gas Station – 131 Main Street [Oil, 5/16/2003] No location aid – 132 Main Street [Hazardous Material, 2/14/1997] Cumberland Farms – 90 North Main Street [Hazardous Material, 7/17/2007] No location aid – 90 North Main Street [Oil, 3/26/2003]</p> | |
| <p>DEPNFA (Downgraded Property Status Terminated): DEP No Further Action means that response actions were conducted and DEP determined that no further action was needed at the site.</p> <p><u>Sites:</u> Lakeville Redi Mix – Tremont Street [oil, 1/15/1987] Woody’s Texaco Station – Tremont St [5/9/1986]</p> | 2 |
| <p>Unclassified: A release that has not reached its Tier Classification deadline (usually one year after it was reported), and where an RAO statement, DPS Submittal, or Tier Classification Submittal has not been received by DEP.</p> <p><u>Sites:</u> Cumberland – 90 North Main [oil, 3/20/2002] No location aid - 5 Bisbee Dr [oil, 2/4/2002] No location aid – 344 Tremont Street [hazardous material, 6/7/2002]</p> | 3 |
| <p>REMOPS (Remedy Operation Status): A site where a remedial system that relies on Active Operation and Maintenance is being operated for the purpose of achieving a Permanent Solution.</p> <p><u>Sites:</u> Ravenbrook Landfill – Plymouth Street [Hazardous Material, 10/15/1990] Service Station Fmr – Rte 44 & Rte 58 [Oil, 1/7/1987] Eagle Gas Station – 131 Main Street [Oil, 1/21/2003] Carmichael’s Mobil – Main Street (Rte 58) [Hazardous Material, 1/15, 1989]</p> | 4 |

Environmental Challenges

Erosion and Sedimentation

Erosion and sedimentation could be more of a challenge in Carver than they currently are, but the Carver Conservation Commission is very proactive in ensuring that any new projects within their jurisdiction install adequate erosion control measures. When unexpected runoff does occur, the town’s Department of Public Works is quick to make sure the sediment does not enter the town’s storm drains. In addition, the Earth Removal Committee has a strict policy and by-law provisions that ensure re-vegetation of phased projects prior to the beginning of each new phase. Those projects that go to the Earth Removal Committee for review as well as to the Conservation Commission usually have very similar, strict, and consistent conditions regarding erosion and sedimentation placed on the issuance of permits. Some sites in town for which developers sought and gained approval by the Planning Board for commercial development were then left undeveloped during the economic downturn of 2008/2009. There is a local zoning provision called “Environmental Controls”¹³ that prohibits clear-stripping of vegetation without specific conditions stating that “runoff will be controlled, erosion avoided, and either a constructed

¹³ Town of Carver Zoning By-Laws, Section 3600, June 2009.

surface or cover vegetation will be provided” or that the site will be given a “temporary cover of winter rye or similar plant material.”¹⁴ The Planning Board should consider enforcing this by-law more consistently,

Chronic Flooding

“The Town of Carver has been a participant in the National Flood Insurance Program NFIP since 1985. Participating in the National Flood Insurance Program has three basic aspects.” The first is “flood plain identification and mapping: Since NFIP participation requires community adoption of flood maps, the Town of Carver’s current floodplain maps were adopted and became effective on December 31, 2009. Mapping flood hazards creates broad-based awareness of the flood hazards and provides the data needed for our community to effectively administer a floodplain management program. The flood maps can be viewed by the public and are located in the Conservation Department located at the Carver Town Hall. Maps can also be accessed from FEMA’s website at <http://msc.fema.gov/>.” The second aspect of the Program is “floodplain management: Floodplain management can be defined as a community program of corrective and preventative measures for reducing flood damage. The program is lead by the Town’s Conservation Agent. These measures take a variety of forms and generally include requirements for zoning, subdivision or building, and special-purpose floodplain bylaw. In Massachusetts a majority of the required regulations are covered under state laws that are enforced locally. Those regulations are

- Massachusetts State Building Code: 780 CMR 3107.0, ‘Flood Resistant Construction’
- Wetlands Protection Regulations: 310 CMR 10.00
- Inland Wetlands Regulations: 302 CMR 6.00
- Coastal Wetlands Regulations: 302 CMR 4.00
- Minimum Requirements for Subsurface Disposal of Sanitary Sewage 310 CMR 15, Title 5

“Carver’s local floodplain management bylaw ¹⁵ enforces minimum floodplain management regulations on new or improved structures and provides additional protection to natural resource areas and buffer zones. Carver passed this floodplain zoning at Town Meeting on May 19, 2009. The table below indicates that in Carver there are only a few structures in the NFIP program and no repetitive loss structures.”

| Carver and the National Flood Insurance Program (NFIP) | | | | | |
|---|------------------------------------|--------------------------------|--------------------------|--|---|
| Policies in Force (#) | Property Value Insured (\$) | Total # Losses Paid Out | Total Losses (\$) | Total Repetitive Loss Structures (Two or more Claims) | Total Repetitive Loss Claims Paid (\$) |
| 5 | 1,470,000 | 9 | 24,692.08 | 0 | 0 |

The third important aspect of the Program is “insurance. Since Carver participates in the NFIP, property owners and renters residing anywhere in the community (not only in a special flood

¹⁴Op. cit., p. 66.

¹⁵ Carver Zoning Bylaws, Section 3700.

hazard area) are able to purchase insurance as a protection against flood losses.”¹⁶ “In general Carver is a wet town – with swamps, bogs, ponds, streams, and rivers. Flooding can be an issue and can be exacerbated when natural vegetation debris collects in the many miles of connected waterways in the town. However, flooding of drainage basins, or retention ponds, is more likely to occur in neighborhoods with high water tables than is flooding of Carver’s natural waterways”¹⁷ or in man-made drainage basins in other areas of town.

“The state Hazard Mitigation Plan of 2007 records flooding as the number one hazard faced within the state.¹⁸ This is not surprising given that a number of natural hazards can cause flooding including: hurricanes, Nor’easters, thunderstorms, and winter storms. Carver has only a few flooding problems with the hundred-year floodplain although flooding after a hurricane or a 100-year storm event may be more severe. Homes built in areas of high groundwater or too close to wetlands have, and will continue to have, losses due to basement flooding or private water well flooding. Building houses where there is already high groundwater is a special recipe for disaster. We saw this in the spring of 2010 when, after two 100-year storms hit Carver, basements, private water wells, and public drainage areas remained flooded for weeks in a neighborhood built on extremely high groundwater. Some of this neighborhood had originally, before it was filled 40 years ago, been home to many isolated wetlands as well the riverfront area to a brook. Much of this flooding could have been prevented years ago had attention been paid to the functions of wetlands and the elevations of groundwater, and had the neighborhood been built somewhere more suitable. The growth of Carver has meant that pervious land has become impervious, increasing the amount of stormwater and road runoff from normal precipitation.”¹⁹ Fortunately, the Carver Planning Board and the Carver Conservation Commission have both adopted the requirement that applicants use the “Cornell Atlas of Precipitation Extremes for the Northeastern United States and Southeastern Canada”²⁰ when calculating stormwater runoff and the requirements for stormwater basins since there are simply more “extreme participation events and more rainfall”²¹ now than in 1961²² when the original ‘Rainfall Frequency Atlas of the United States’²³ was published. The confluence of high groundwater and extreme rain events can also cause damage to local bridges and to water control structures.²⁴ There is also some evidence that extreme fluctuations between opposite types of conditions (for example, between

¹⁶ The above quotations in the “Chronic Flooding” section are from the Town of Carver Pre-Disaster Mitigation Plan, 2011, pp. 13-14.

¹⁷ *Ibid.*, p. 16.

¹⁸ See http://www.mass.gov/Eeops/docs/mema/disaster_recovery/state_plan_2007_rvn4.pdf, for the Commonwealth of Massachusetts State Hazard Mitigation Plan, 2007, prepared by the Massachusetts Emergency Management Agency (MEMA) and the Department of Conservation and Recreation (DCR).

¹⁹ *Op. cit.*, p. 17.

²⁰ Wilks, D. S. and R. P. Cember, Northeast Regional Climate Center, Cornell University, 1993, Ithaca, NY, Publication No. RR 93-5.

²¹ *Ibid.*, pp. 1, 22.

²² This is supported by data from other parts of the country as well. See also Faiers, G. E. and B. D. Keim, 1997, p. 2, “Rainfall Frequency/Magnitude Atlas for the South-Central United States,” Southern Regional Climate Center Technical Report 97-1, Louisiana State University, Baton Rouge, LA, and Huff, F. A. and J. Angel, 1992, p. 49, “Rainfall Frequency Atlas of the Midwest,” Midwestern Climate Center, Champaign, IL: Illinois Water Survey, Illinois Dept. of Energy and Natural Resources, RR 92-03.

²³ Hershfield, D. M., 1961, p. 56, “Rainfall Frequency Atlas of the United States,” U. S. Department of Commerce, Weather Bureau Technical Paper 40.

²⁴ This occurred in Carver in the spring of 2010 when the France Street bridge collapsed during the above-referenced storm events.

flooding and drought) may become increasingly likely to occur.”²⁵ ²⁶ Some areas of West Carver—France Street, Cross Street, Pope’s Point Road, Beaver Dam Road, and Holmes Street in particular—have been subject to seasonal flooding, particularly in the spring. These are floodplain areas sparsely-built on many years ago. Two of those streets, France Street and Beaver Dam Road, have been repaired and raised, respectively, to correct flooding problems. One area in the north of town, the Great Meadow area, as mentioned above, was built-out in the 1970s in a riverine floodplain. It is a heavily-populated area and was heavily flooded in the spring of 2010. Little mitigation is available for that area of town, other than FEMA assistance. Carver has learned that building in its “great meadows”—or wet meadows as they are sometimes called—has its consequences.

Forestry

There are few forestry issues in the Town of Carver. Many landowners, particularly those who own large acreage have Forest Cutting Plans on file with the state. Over the years, these landowners, who are usually cranberry growers as well, have submitted a copy of their Forest Cutting Plans to the Conservation Commission when the proposed cutting takes place near or in wetlands. Some forest cutting has probably taken place without an official Plan, but by and large, that is not the case. A landowner must file a Forest Cutting Plan only if he/she is cutting down more than 25,000 board-feet or 25 cord of firewood.²⁷ The largest forestry “issue” has been with individual residential landowners who believe that their residential neighbors shouldn’t be cutting trees on their own property or who don’t realize that they need to contact the Conservation Department before they remove trees within 100 feet of wetlands and ponds. Incidents of neighbors calling the Conservation Department because they don’t like what their neighbors are doing on the neighbors’ property are rare, however. Incidents of tree removal next to wetlands and ponds without Conservation approval have been reduced since several of the tree removal companies that do business in town have been notified that they should call Conservation first.

Environmental Equity

The protected open space and passive recreation parcels in the Town of Carver are distributed fairly evenly throughout town. The active recreation lands are less so.

The largest protected open space and passive recreation lands in Carver are a) the 221-acre Larry S. and Ruth J. Cole Conservation Land, locally called the Cole Property, located in the northern-most part of town; b) the 54-acre Savery Avenue Conservation Land, located in the south/central part of town; c) about 200 acres of the +/- 600-acre Great South Meadow Cedar Swamp, also located in the south/central part of town; and d) 2020-acre the Myles Standish State Forest, located in the southeastern-most part of Carver. These parcels, however were not chosen to protect due to their locations. Rather, they were protected because of their unique qualities; the distribution of their locations was largely serendipitous. Happily, the protection of the Cole Property also protects the Winnetuxet River corridor, which is part of our Open Space Protection Strategy (see Section V), and protection of the Savery Avenue Conservation Land and the Great

²⁵ http://www.colorado.edu/hazards/o/archives/2010/sep_observerweb.pdf

²⁶ Town of Carver Pre-Disaster Mitigation Plan 2011, pp. 17-18.

²⁷ See Massachusetts General Laws Chapter 132 for the forest cutting law and Section 44 of that same chapter for the exemptions to this law.

South Meadow Cedar Swamp also serves to protect and at least partially connect the corridor of land sweeping from the Myles Standish State Forest northwest across south central Carver towards the Rocky Gutter Wildlife Management area in Middleboro—also part of our Open Space Protection Strategy. Although a conscious attempt may be made (and many conscious attempts have been made in the past) to acquire parcels adjacent to these larger parcels to provide connectivity and large-acreage protection, at times the town simply must work with what it is offered. Smaller tax possession parcels, for example, or parcels that are donated by citizens, are not gift horses we can look in the mouth; they are as important to our resource protection as well as those about which we strategize. With the exception of the Great South Meadow Cedar Swamp, the three large protected parcels mentioned above are open to the public, have adequate parking, and are easily-accessible from a main road.

With the exception of the ball fields, tennis courts, and basketball court at the Middle/High School, our active recreation land is located primarily in North and Center Carver. The Purchase Street Recreation Area and the (undeveloped) Forest Street Field are both located in North Carver while the remainder of our ball fields is located behind the Town Hall. Although it has not yet been developed into an active recreational field, fortunately, the 6-acre piece of upland next to the remainder of the Savery Avenue Conservation Land is in south-central Carver. The difficulty is not the lack of will to distribute active recreational land more evenly around town, but rather the lack of available land, the funds with which to purchase it, and landowners willing to sell it to the Town for active recreational fields. The siting of our Community Playground, next to the Public Library, was chosen precisely because it is centrally-located. The logic was that, if the Town could only have one Community Playground—which is all we have been able to afford—then it should be located not in any one particular neighborhood, but rather where other municipal structures were, particularly the library, to encourage parents and their children to use the play facilities while on town business (or to visit town facilities while on playground business) and to encourage walking in the center of town and a more village-like atmosphere in Center Carver. A small park/playground is being developed in South Carver, Buckman’s Park, but that happened with Community Preservation Act money at the request of the Bates Pond neighborhood in which it is located. Small “tot-lots” may be needed in various other neighborhoods around town to further a neighborhood’s sense of community spirit. The general sentiment is, however, that ball fields need to be better-distributed throughout town, but that the single large Community Playground in the center of town has its own equity simply because it is not “owned” by any one particular neighborhood and is accessible to all in a “common” area.

V. OPEN SPACE PROTECTION STRATEGY AND PARCEL INVENTORY

According to the open space vision established in the town’s Master Plan, Carver will...

...protect its rich natural heritage of unique, endangered, and abundant ponds, rivers, wetlands, woods, forests, and agricultural lands in a manner to continue to offer residents diverse opportunities for an active outdoor lifestyle of swimming, hiking, hunting, fishing, and bike riding in an inter-connected network of resource areas and parks and a rural lifestyle of scenic views, open lands, and agricultural activity. New residential growth will be focused into existing village areas and new centers for planned growth where adequate infrastructure can be provided. Major resource areas including Myles Standish State Forest, Sampson’s Pond, Edaville Railroad, and Rocky Gutter Wildlife Management Area will be linked in a regional system of trails and bogs which will extend north connecting the Great Cedar Swamp

to South Meadow Brook, local ponds, and the Winnetuxit [sic] Riverway. Important secondary water resource areas, which about this regional pathway, will be protected, as will the adjacent bogs.

The Open Space Protection Strategy map shown in Figure 14 begins the task of looking at the linkages between environmentally-sensitive private lands and town-owned lands and their relationship to other natural features. This map is a compilation of protection strategies found in the 1996 and 2004 Open Space and Recreation Plans and the 2001 and 2009 Carver Master Plans, and it loosely indicates corridors, or greenbelts, in which the preservation of natural conditions would be particularly desirable. These corridors have been assigned three levels of priority according to their function. The highest priority is to link local and regional open space assets. These primary corridors connect critical regional open space parcels such as Myles Standish State Forest, the Great South Meadow Cedar Swamp, and the Edaville area, as well as town-owned land. The second priority is to protect adjacent, secondary water and resource areas and views. These corridors link many of the town's wetlands, floodplains, ponds, streams, and wildlife habitat areas. The third priority, Buffer Bogs, seeks to retain important agricultural bogs and resources. This corridor encompasses the town's larger contiguous agricultural parcels.

Primary Corridor Features:

- 1) South Meadow Brook drainage area
- 2) Sampson's Pond area
- 3) Muddy Pond area
- 4) John's Pond and Public Beach
- 5) Great Cedar Swamp
- 6) Rocky Gutter Wildlife Management Area (Middleborough)
- 7) Myles Standish State Forest
- 8) Carver Sportsman's Club
- 9) Edaville area
- 10) King Richard's Faire
- 11) Savery Avenue
- 12) Shurtleff Park
- 13) Town Hall property
- 14) Carver High School lands

Carver Open Space Protection Strategy

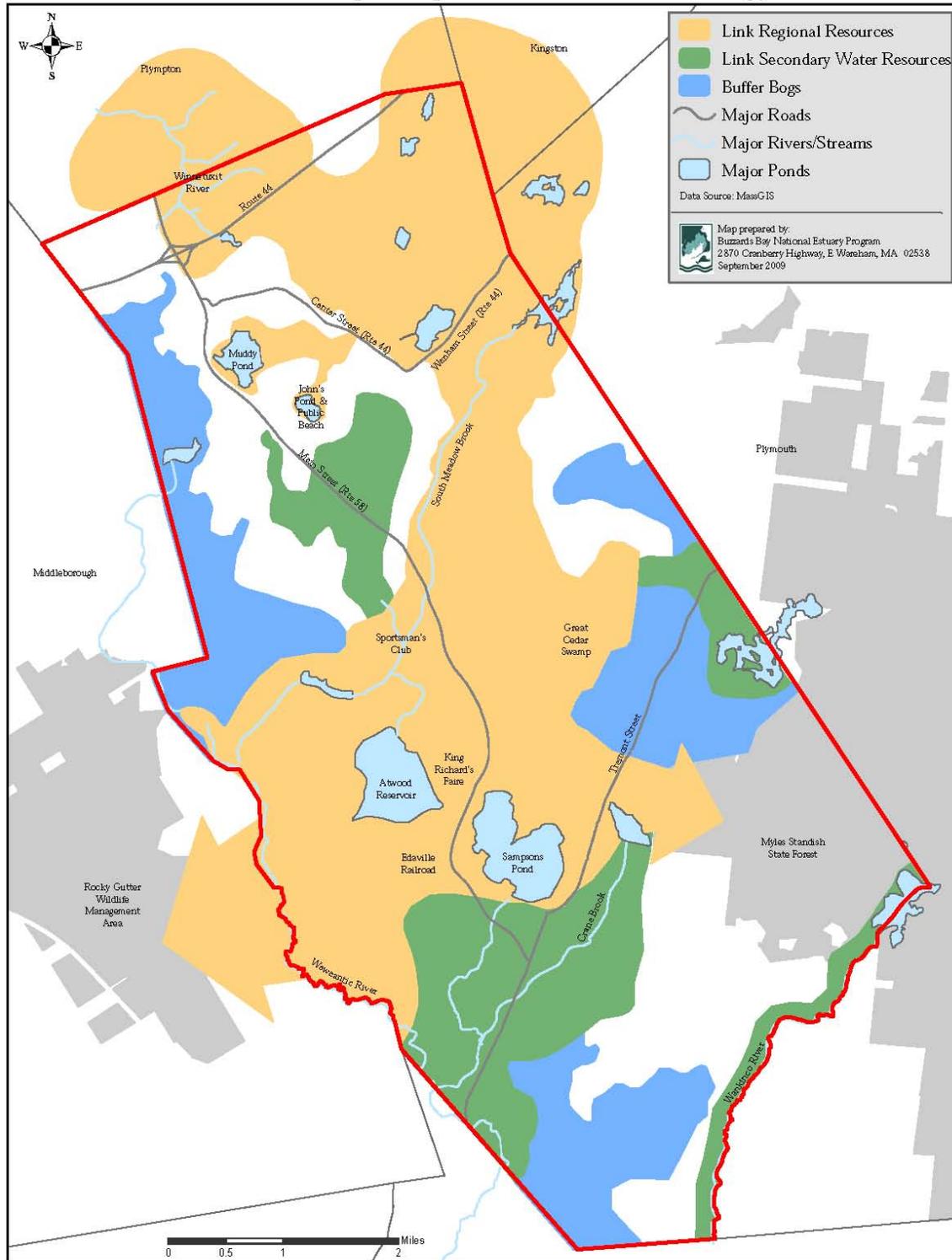


Figure 15. Carver Open Space Protection Strategy

Secondary Corridor Features:

- 15) Weweantic, South Meadow Brook and Crane Brook Riverways
- 16) Winnetuxet Riverway
- 17) Wankinko Riverway
- 18) Protection of ponds and wetlands

Buffer Corridor Features:

- 19) Contiguous agricultural (cranberry bogs) and pond areas

Ranking of Individual Parcels for Protection

Open spaces can be thought of as any undeveloped land areas that have the potential to be used for conservation or recreation purposes. This land may be in the form of watershed protection areas, recreational land, conservation areas, agricultural lands, and other undeveloped, privately-held parcels. However, many of Carver's open spaces have no protection against future development and, as the community continues to grow and change, these areas are becoming increasingly more at risk.

Approximately 78% of the total land in Carver is unprotected open space, with the greatest of that being cranberry land. Most of this land is enrolled in the 61A Program. Other big contributors to the town's current open space picture are approximately 2,300 acres of potentially-developable residential land, and about 1,300 acres of potentially-developable, privately-owned forestry and recreation land. When the 2004 Open Space Plan was revised, the only protected land in town consisted of 1,833 acres of land in the Myles Standish State Forest and Carver State Forest, and some random parcels of land that have been deeded to the Conservation Commission over the years, most of which lie in the Great South Meadow Cedar Swamp. As of 2009, almost 280 new acres have been permanently protected in Carver, either by gift to the Conservation Commission or by purchase by the town with help from the Conservation Commission's Conservation Trust Fund and local adoption of the Community Preservation Act.

Unfortunately, the lack of a local land trust organization and limited town funds have had a negative effect on the protection of open space in Carver over the years. However, in 2001, town meeting voted to establish a Conservation Trust Fund solely for land acquisition and associated costs and provided \$20,000 in seed money to start the fund. Although it was an idea whose time had come, this initial funding did not go far towards any substantial purchase or associated costs. In 2002, town meeting voted to petition the Legislature to allow rollback taxes from Chapter 61, 61A, and 61B land to be deposited into the Conservation Trust Fund, again for the sole purpose of land acquisition and associated costs. Finally, after many years of struggle by dedicated citizens, Carver adopted the Community Preservation Act in 2006. Adopting the Act has provided a source of much-needed funding to protect critical open spaces from development. The town needs to remain vigilant, however, in protecting both its Conservation Trust Fund from being co-opted by short-term budget needs and in protecting the status of the Community Preservation Act in Carver. The Conservation Trust Fund has been used for outright payments on small parcels and for appraisals, legal deed reviews, and down payments on larger parcels that would otherwise have been lost to the town due to timing constraints. The Community Preservation Fund surcharge in Carver was adopted in 2006 at 3% and, as a result, its funds have

been matched, until very recently, by the state at the full 100% match; even today, Carver still receives fairly high state matches because of our 3% surcharge. Any reduction in this surcharge proposed for a town meeting vote would result in an automatic reduction in state matching funds for the town. Carver has also used CPA funds to purchase land for active recreation. CPA funds were used to build new tennis courts and a basketball court at the Carver High School. Most recently, in 2011, with the purchase of the Savery Meadows property, the front six acres of this property has been designated as an area for future ball fields. Voting to abolish the Community Preservation Fund completely in Carver would result in the devastating loss of Carver's ability to purchase land for active recreation and to preserve its larger unprotected open spaces and the resources they protect and to prevent these properties from being developed as tax-negative single-family housing.

The town's Master Plan recommends that Carver acquire 160-300 acres for active recreation purposes and secure the protection of an additional 2,500-5,000 acres for conservation and resource protection. Open space protection will provide economic, environmental, and recreational benefits to the town, as well as helping to preserve the town's rural character. Land can be protected through regulatory means such as cluster development or wetlands protection bylaws, private donations or purchase by a land trust organization, or acquisition by the town with help from state grants, from the Conservation Trust Fund, and from Community Preservation Act funds. None of these methods alone can succeed in achieving all of the town's open space protection goals. A combined strategy can effectively target limited funding to sites with the greatest open space value while taking advantage of opportunities to protect as much land as feasible.

When considering parcels for permanent protection, a ranking method is often helpful for determining the importance of a particular piece of land. The following values can be used to compare the merits of individual land protection projects:

Protects/Enhances Town Character

- Historically significant property
- Enhances scenic vistas on streets or trails
- Protects familiar, valued open parcels
- Provides active/passive recreation

Protects Natural/Agricultural Resources

- River, lake, stream frontage
- Well site recharge areas
- Unique ecosystems (rare/endangered species habitat)
- Other habitats: vernal pools, pine barrens, etc.
- Agricultural protection
- Multiple use areas

Connects New and Existing Open Space

- Links to existing and future open space
- Improves public access to existing open space
- Makes regional trail connections
- Makes local trail/sidewalk connections

Economic Impact

- High-risk liability or contamination
- High build-out potential

An aggressive open space acquisition strategy may pay off for local taxpayers, even in the short run, by reducing the cost of services the town must provide to new residents. Acquisition is also the most equitable and effective means of protecting the town's valuable natural resources. For every 100 acres of developable land that is protected, the build-out is reduced by about 58 homes under the existing zoning.

Agriculture, even more so than other commercial uses, is helping to keep Carver's tax rates down. For each \$1.00 of revenue raised by agricultural land uses, it costs the town \$0.31 to provide services to agricultural uses, compared with \$0.38/\$1.00 revenue to provide services to commercial/industrial uses and \$1.14 to provide services to residences. Agricultural uses currently comprise about 11% of the town's tax base, while commercial uses are about 8% (See Appendix, *Open Space Fiscal Impacts Analysis*).

Conservation Restrictions

Massachusetts General Laws chapter 184, sections 31-33, established conservation restrictions as a legal method of preserving open space. A conservation restriction is an enforceable agreement between landowners and a government body by which the owners agree to keep their land in the same state as it is at the time of agreement, reserving the right to conduct farming, forestry, or other designated uses. The restriction runs with the land, binding subsequent owners, and is enforceable in perpetuity. The title to the property remains with the owner and the public gains no rights to enter the property without permission. Conservation restrictions are recorded with the deed in a public restriction tract index in the Registry of Deeds and are subject to approval by the local selectmen and the Secretary of Energy and Environmental Affairs through the Division

of Conservation Services. Since the land is encumbered, the full and fair market value of the property is reduced.

Farmland, wetlands, forestland, golf courses, and campgrounds, qualify for conservation restrictions under the state guidelines. By restricting the use of their land, owners forfeit the right to develop house lots. The community benefits by preserving open space without the expenses of purchase, insurance, or maintenance, or outright loss of all tax revenue. When asked if the town should set aside and protect land for conservation and open space purposes, 90% of survey respondents said “Yes”. When asked what method of conservation they preferred, 36% said conservation restrictions or encouraging donations of land. Currently, there are only three recorded conservation restrictions in the town of Carver, one of which is only a 30-year restriction.

A. Open Space Inventory

An inventory of all parcels in Carver that were considered to have conservation or recreation value was performed in the winter and spring of 2009. This inventory has been divided into two sections: Protected Lands and Unprotected Lands. Protected Lands includes only those parcels that are protected in perpetuity. Unprotected Lands includes unrestricted public and private recreation areas, and parcels in the Chapter 61 programs.

Protected Lands

Land is considered protected if it falls into one or more of the following categories:

- ◆ State land purchased with the use of federal funds, therefore covered by PL88-578
- ◆ State land owned by a state conservation agency, therefore covered by Article 97 of the Massachusetts Constitution
- ◆ Town land owned by or under the jurisdiction of:
 - a. Conservation Commission
 - b. Water Department
 - c. Any town department if dedicated to open space/conservation by a permanent deed restriction
- ◆ Private land:
 - a. Owned by a non-profit organization dedicated to land conservation (i.e. land trust)
 - b. Protected in perpetuity by a conservation or deed restriction
 - c. Protected by the Agricultural Preservation Restriction (APR) program
 - d. Protected by a conservation restriction under the DEP's Wetland Restriction Program

Protected Public Parcels

Myles Standish State Forest

Acreage: 2020.05 acres

Ownership: Commonwealth of MA

Location: SE corner of Carver

Managing Agency: DCR

Public Access: Yes

Degree of Protection: Perpetuity

Zoning: Residential/Agricultural

Use: Heavy

Condition: Excellent

Recreational Potential: Interpretive Signage

Grant Used to Purchase: N/A

Comments: The State Forest contains approximately 2020 acres of land in the town of Carver and an additional 12,000 acres in Plymouth²⁸. It is a major recreational facility with over 450 individual campsites and three camping areas: Barrett's Pond, Fearing Pond, and Charge Pond. The Barrett's Pond site is the only camping site in Carver. Picnic areas and swimming beaches with parking are available at College Pond and Fearing Pond. Canoeing is allowed at these ponds and several others. There are 20 miles of bridal paths, 38 miles of recreational trails (hiking, cross-country skiing, and snowmobiling), and 15 miles of hard-topped bicycle trails in the park. According to the 2004 Open Space Survey, 72% of respondents use the State Park for some form of recreational activity.

²⁸ (See www.mass.gov/dcr/parks/mssf.htm)

Muddy Pond

Acreage: 71.63 acres (1.5 acres of upland) Ownership: Commonwealth of MA
Location: North Carver Managing Agency: DFW
Public Access: Yes Degree of Protection: Perpetuity
Zoning: Residential/Agricultural Use: Low Condition: Good
Recreational Potential: Canoe/Kayak/Boat Launch Grant Used to Purchase: N/A

Comments: Muddy Pond is the property of the Commonwealth of Massachusetts' Division of Fisheries & Wildlife. It has been contaminated by volatile organics seeping from the adjacent closed landfill. However, it is still used by locals for catch-and-release bass fishing. A canoe launch area has been built on the pond, but access is difficult since the town keeps the access road locked. Perhaps the town could work on an access policy that allows access for eight months of the year and daytime-only access during the summer months.

Carver State Forest

Acreage: 5 acres Ownership: Plymouth Municipal Airport
Location: South Meadow Road Managing Agency: Plymouth Municipal Airport
Public Access: Limited. Degree of Protection: Perpetuity
 Access only by prior arrangement
Zoning: Residential/Agricultural Use: Very Low Condition: Unknown
Recreational Potential: Unknown Grant Used to Purchase: N/A

Comments: See the Appendix to this Plan for comments entitled, "Former State-Owned Land, South Meadow Road," 2009, by Tom Maher, Airport Manager, Plymouth Municipal Airport.

Savery Avenue Conservation Area

Acreage: 54 acres Ownership: Conservation Commission (48 acres)/Town of Carver Board of Selectmen (6 acres)
Location: Savery Avenue and surrounding acreage Managing Agency: Conservation Commission Public Access: Yes Degree of Protection: Perpetuity
Zoning: Residential/Agricultural Use: High Condition: Very Good
Recreational Potential: Interpretive Signage; ADA picnic bench; Trails
Grant Used to Purchase: EOEA Self-Help Grant; Community Preservation Act Funds



Savery Avenue Conservation Area, 2010. (Photo courtesy © 2010 James F. Nauen.)

Comments: The Conservation Commission owns approximately 48 acres of land off Savery Avenue within the Savery Avenue Historic District, the first divided highway in the United States. This property is adjacent to the recreation lands of the King Richard’s Faire and Edaville Railroad.

Portions of the Great South Meadow Cedar Swamp

| | |
|--|--|
| Acreage: approx. 200 acres | Ownership: Conservation Commission |
| Location: Eastern/Central Carver | Managing Agency: Conservation Commission |
| Public Access: Limited, very wet | Degree of Protection: Perpetuity |
| Zoning: Residential/Agricultural | Use: Low Condition: Very Good |
| Recreational Potential: Access; Interpretive Signage; Trails | |
| Grant Used to Purchase: N/A | |

Comments: Within the Great South Meadow Cedar Swamp, the Conservation Commission owns many parcels totaling approximately about 200 acres. While this large wetland area is afforded some protection under the provisions of the Massachusetts Wetlands Protection Act, there is no formal protection given to lands in the swamp not owned by the Conservation Commission. There are several different owners of land within the swamp and many are unknown. Dan Fortier, the Conservation Commission’s Chair, has finished working on the onerous task of clarifying ownership within the Swamp. Definitive ownership information on many of these Great Cedar Swamp parcels is now available: Mr. Fortier has published a book entitled, “Reference Manual for the Great South Meadow Cedar Swamp.” This book can be found at the Conservation Commission office at Town Hall and in the Reference Room at the Carver Public Library.

Comments: The Clear Pond Conservation Area was acquired in 2006 as a gift from Buz Artiano, a local developer and resident who built the abutting Copper Lantern Lane townhouses. The area consists of pond frontage covering approximately half of the southeastern portion of Clear Pond.

Beaver Dam Brook Conservation Area

Acreage: 19,165 square feet Ownership: Conservation Commission
Location: Off Crystal Lake Drive abutting Beaver Dam Brook
Public Access: Yes Managing Agency: Conservation Commission
Zoning: Residential/Agricultural Degree of Protection: Perpetuity
Use: Low Condition: Left natural as riverfront protection
Recreational Potential: Interpretive Signage; Benches Grant Used to Purchase: N/A
Comments: Two of these small parcels were acquired in 2006 as a gift from Paul Mazzilli, a life-long Carver resident. The third (and middle) parcel was acquired in 2010 from Janice Boyd with monies from the Conservation Trust Fund. Parking is on the street.

Lawrence S. and Ruth J. Cole Conservation Land (the “Cole Property”)

Acreage: 220.9 acres Ownership: Town of Carver
Location: Off Pleasant Street Managing Agency: Conservation Commission, Agricultural Commission, and North Carver Water District Commission
Public Access: Yes Degree of Protection: Perpetuity; Conservation Restriction held by Massachusetts Audubon Society
Zoning: Residential/Agricultural Condition: Good to Excellent
Use: Moderate to High
Recreational Potential: Interpretive Signage; Benches Grant Used to Purchase: \$1,000,000 in Community Preservation Act funds; \$500,000 EOEAA Self-Help Program Grant; \$500,000 DEP Drinking Water Supply Protection Grant. \$10,000 down payment deposit paid for by the Commission’s Conservation Trust Fund; \$2,000 and \$1,200 Taunton River Coalition grants for construction of and materials for Handicapped-Accessible Trail.



Reservoir/Pond on the Cole Property.
(Photo courtesy © 2007 Donald Schall.)



Volunteers dry-harvest cranberries on the Cole Property, 2010. (Photo courtesy © 2010 Sarah Hewins.)

Comments: The Cole Property parcel was acquired in 2007 with monies from the Conservation Trust Fund, and with Community Preservation Act funds, a state Self-Help Grant from the EOE, and a state Drinking Water Supply Protection Grant from the DEP. The site contains rare species, two perennial rivers, 3.5 acres of cranberry bogs, and almost 5.5 miles of hiking trails. Three trails are marked; maps are available at the Conservation Commission office. Public access is off Pleasant Street; emergency access only is off Cole’s Mill Road off High Street. No motorized vehicles (other than town-authorized) are allowed on the property. Hunting and fishing are allowed. The Conservation Commission manages the land stewardship of the entire property and its trails. The North Carver Water District Commission manages the drinking water supply well and its appurtenant structures. The Agricultural Commission manages the cranberry bogs and their appurtenant structures.

Wenham Road Conservation Area

| | |
|----------------------------------|--|
| Acreage: 10 acres | Ownership: Conservation Commission |
| Location: Off Wenham Road | Managing Agency: Conservation Commission |
| Public Access: Yes | Degree of Protection: Perpetuity |
| Zoning: Residential/Agricultural | |
| Use: Low | Condition: Currently in natural state |

Recreational Potential: Better Access; Trail; Benches Grant Used to Purchase: N/A

Comments: This parcel was acquired in 2008 as a gift from Thomas DiPlacido, a local developer and cranberry bog owner in Carver. Access is available, but difficult currently and only available to foot traffic.

Meadow Street Conservation Area

Acreage: 33.4 acres

Location: Off Meadow Street

Public Access: Yes

Zoning: Residential/Agricultural

Use: Low

Recreational Potential: Better Access; Trail; Benches

Comments: This property was acquired through transferring from tax possession to the Conservation Commission at Town Meeting. Access is difficult and only available to foot traffic. A considerable amount of wetlands are on this property.

Ownership: Conservation Commission

Managing Agency: Conservation Commission

Degree of Protection: Perpetuity

Condition: Currently in natural state

Grant Used to Purchase: N/A

Woodhaven Road Conservation Area

Acreage: 12.67 acres

Location: Off Woodhaven Road

Public Access: Yes

Zoning: Residential/Agricultural

Use: Low

Recreational Potential: Better Access; Trail; Benches

Comments: This property was acquired through transferring from tax possession to the Conservation Commission at Town Meeting. Access is between two single-family homes and is limited to foot traffic. A considerable amount of wetlands and a power-line easement are on this property.

Ownership: Conservation Commission

Managing Agency: Conservation Commission

Degree of Protection: Perpetuity

Condition: Currently in natural state

Grant Used to Purchase: N/A

Unprotected Lands

The inventory of Unprotected Lands includes recreational areas in town, such as parks, beaches, and greens, and other lands that are under the jurisdiction of the Park Department, DPW, or School Department, cemeteries (that are often used for walking), private recreational areas, and private lands in the Chapter 61, 61A or 61B programs.

Land is considered unprotected if it falls into one or more of the following categories:

- ◆ Unrestricted federal land
- ◆ Unrestricted state land
- ◆ Town land:
 - a. Not owned by the Conservation Commission or otherwise restricted
 - b. Tax title properties
 - c. M.G.L. Chapter 61, 61A, and 61B lands
 - d. Selected unrestricted privately-owned open space

In addition to the town-owned and private recreational facilities listed in this inventory, there are also several set-aside lots in various subdivisions for playgrounds. These lots are privately owned by the developer and/or the residents. However, some have been taken by the town for non-payment of taxes. Carver's in-house Town-Owned Parcels Committee is carefully looking at each tax title parcel to assess whether these parcels have potential for conservation land, public water supply, or recreation, or could potentially be sold to abutters or other individuals to increase the town's tax base.

Chapter 61, 61A & 61B

Chapter 61 (Forestland Taxation Act) is administered by the Department of Conservation and Recreation (DCR) for properties of contiguous forestland of ten acres or more. It is designed to give favorable tax treatment to a landowner interested in keeping forestland undeveloped and in wood production. Land that is certified under Chapter 61 is assessed at 5% of fair market value or at \$10 per acre, whichever is greater. An 8% wood products tax is paid at the time of harvest. Chapter 61 defers payment of a portion of the property taxes until timber is cut and income is realized. Landowners wishing to qualify for the program must have a 10-year DCR-approved forestry management plan, which may include activities such as harvesting or timber stand improvements. The town of Carver currently has 337.66²⁹ acres of land enrolled in Chapter 61.

Chapter 61A (Farmland Assessment Act) is designed primarily for lands used for agricultural or horticultural purposes, and can cover both agricultural lands and woodlands of a single farmer. The property owner must have at least 5 acres of land in agricultural use, and must demonstrate minimum yearly gross sales of farm products, based on the number of acres requested for application. Required annual sales must be \$500 for the first 5 acres, and for each acre above the first five: \$5 for farmland and \$.50 for woodland. There is usually an 80% reduction in assessed value under the Chapter 61A program. In 2009, there are 11,986.85³⁰ acres enrolled in Chapter 61A in Carver, the majority of which are cranberry bogs and necessary and related uplands. It is these necessary and related uplands that are most at risk of being lost to development when the economy revives and home construction begins again.

Chapter 61B (Open Space/Recreation Act) is designed to preserve open space and promote recreational uses, such as golf courses and hunting clubs. Property owners must have at least 5 contiguous acres to qualify and the land must be maintained in one of the following ways: 1) the land must be kept in a natural, wild, or open condition and does not have to be open to the public or 2) it must be used for recreational purposes and must be open to the public or to the members of a nonprofit organization. The tax on the land is based on the commercial tax rate for that fiscal year applied to the value of the land for recreational purposes, rather than its fair market value. Parcels open to the public may be used for hiking, camping, or nature study. Carver has 332.01³¹ acres of land enrolled in Chapter 61B.

All of the Chapter 61 statutes allow landowners to withdraw their property from classification at the end of the 10-year period. However, if removal is done before the end of the 10 year period or, if during the ten year period, the land is not maintained as it was classified, the landowner must either pay a conveyance tax or a rollback tax for that time period, whichever is higher. It also grants the town the right of first refusal on lands being sold for residential, commercial, or industrial purposes. The town must match a *bona fide* offer for conversion of the property from its forest, agricultural, or recreational use.

In 1986 and 1987, all the Chapter 61 laws were amended to allow towns to assign their right of first refusal option to nonprofit conservation organizations. Involvement of a land trust organization and/or tapping into the Conservation Trust Fund provide the town with greater

²⁹ Source: Carver Assessors' Office, September 2009.

³⁰ *Op. cit.*

³¹ *Op. cit.*

flexibility to protect critical lands when town funds are not available or action needs to be taken quickly. Such a transfer of right of first refusal options requires a public meeting of the Board of Selectmen and the approval of the Board of Selectmen.

While it is not feasible to place any large portion of this land under protection, the town should be identifying parcels of particular importance due to size, beauty, endangered species habitat, or proximity to ponds, rivers, or recreational areas, and keeping alert to preservation opportunities. The town should also be looking at the connections between these parcels. Tracts of open land that are geographically linked are more effective at preserving habitat and protecting groundwater than isolated parcels. Lands that preserve these linkages should be given special priority; likewise, development that destroys linkages should be avoided when possible.

Public Unprotected Parcels

Shurtleff Park

Acreage: 6.33 acres

Location: Main St., Carver Center

Public Access: Yes

Zoning: Village District

Comments: This park is used for general town-wide use, especially concerts and Old Home Day. The park has toilets and a bandstand.

Ownership: Town of Carver

Managing Agency: DPW

Degree of Protection: None

Savery Avenue

Acreage: 8.7 acres

Location: Savery Avenue

Public Access: Yes

Zoning: Residential/Agricultural

Comments: This is an unprotected parcel abutting the Conservation Commission land on Savery Avenue within the Savery Avenue Historic District. It should be transferred to the jurisdiction of the Conservation Commission to afford it the same protection as the contiguous Savery Avenue parcels.

Ownership: Town of Carver

Managing Agency: Board of Selectmen

Degree of Protection: None

King Property (Town Hall Recreation Area)

Acreage: 10 acres

Location: Main St, behind DPW/police

Public Access: Yes

Zoning: Village District

Comments: This property contains two little league fields and two adult softball fields with dugouts, two tennis courts, a basketball court, concession stand, field house, and bathrooms. One of the bathrooms was recently updated, new lighting and fencing were installed, and new nets were put on the tennis courts.

Ownership: Town of Carver

Managing Agency: Recreation Comm. & DPW

Degree of Protection: None

Forest Street Recreation Site (Shaw Street Field)

Acreage: 3.3 acres

Location: Forest Street

Public Access: Yes

Zoning: Residential/Agricultural

Comments: This site consists of two dirt practice fields (with no bleachers) for little league and girls softball. It is in extremely poor condition and needs a complete overhaul. Parking is limited, causing neighborhood complaints. It would also benefit from the installation of a tot lot with playground equipment, bike racks, storage sheds and picnic areas.

Ownership: Town of Carver

Managing Agency: Recreation Committee

Degree of Protection: None

Carver Community Playground (former Roby Hardware property)

Acreage: 1.5 acres

Location: Next to Library
in center of town

Public Access: Yes

Zoning: Village District

Ownership: Town of Carver

Managing Agency: DPW and Buildings and Grounds Dept.

Degree of Protection: None

Comments: This site contains a handicapped-accessible playground, picnic tables (one accessible), and a ¼ mile partially wooded trail.

North Carver/Lakenham Green

Acreage: 0.46 acres Ownership: Town of Carver
Location: North Carver Managing Agency: DPW and Lakenham Green Committee
Public Access: Yes Degree of Protection: None
Zoning: Village District

Comments: Located at the intersection of Plymouth Road, Center Street and Main Street. This small-town green contains a few benches and a memorial. The Lakenham Green Committee is currently working on plans to modify the design of this green so that it becomes more functional while keeping its essential qualities.

Governor John Carver Elementary School

Acreage: 22 acres Ownership: Town of Carver
Location: Main Street Managing Agency: School Department
Public Access: Yes, outdoor areas Degree of Protection: None
Zoning: General Business

Comments: The elementary school has 2 gymnasiums (indoor basketball), 4 basketball courts (2 full courts, 2 half courts), 3 baseball fields (one in poor condition), and a playground with wooden climbing structures, slides, swings, and seesaws. A small outdoor playground was recently added. The indoor facilities are used only during the school year by students. The outdoor facilities are open to the public when school is not in session.

Benjamin Ellis Elementary School

Acreage: 0.8 acres Ownership: Town of Carver
Location: Tremont Street Managing Agency: Carver Redevelopment Authority
Public Access: None Degree of Protection: None
Zoning: Village District

Comments: The Ellis School has 1 basketball court, 1 swing set, 1 sea-saw, and monkey bars—all non-accessible. This site is fenced in and locked. It is not available for public use.

Carver High School

Acreage: 125 acres Ownership: Town of Carver
Location: South Meadow Road Managing Agency: School Department
Public Access: Yes – outdoor areas Degree of Protection: None
Zoning: Residential/Agricultural

Comments: The High School has 1 varsity softball field, 1 junior varsity softball field, 1 varsity baseball field, 1 junior varsity baseball field, 1 football field (also used for soccer and field hockey), 1 field hockey field, 1 soccer practice field, 5 new tennis courts, a new basketball court, and a track. All fields are used for youth and adult sports when they don't interfere with school activities. The tennis courts are open to the public, and the track is supposed to be available to the public on off hours.

Pond Street Recreation Site (adjacent to High School)

Acreage: approx. 6 acres Ownership: Town of Carver

Location: Pond St., behind HS Managing Agency: School Department
Public Access: Yes, by permission Degree of Protection: None
Zoning: Residential/Agricultural
Comments: This site was developed by the Youth Soccer League and has 2 soccer fields. It is available for public use with permission from the High School Athletic Director.

Lakeview Street Boat Ramp & Beach (McFarlin Parkway)

Acreage: 0.4 acres Ownership: Town of Carver
Location: Lakeview Street Managing Agency: DPW
Public Access: Yes, by permit Degree of Protection: None
Zoning: Residential/Agricultural
Comments: This site consists of a boat ramp and a very small beach of about 50 feet. Parking is very limited (about 9 cars) and restricted to residents or non-residents with purchased permits.

Atwood House and Sampson's Pond Beach

Acreage: 4.9 acres Ownership: Town of Carver
Location: Lakeview Street Managing Agency: Council on Aging & DPW
Access: Yes Children's swimming lessons only: Recreation Committee
Zoning: Residential/Agricultural Degree of Protection: None
Comments: The Atwood House is used by the elderly as a recreation/social/nutrition center. There is a small beach with parking, summer swimming lessons (no lifeguard), and a tennis court. Parking is limited and restricted to residents or non-residents with purchased permits. The beach is small for Craver's size (200 feet of pond frontage) and should be expanded where possible. The tennis court is completely overgrown and needs repair. In the past, it has been difficult to maintain nets because of vandalism.

John's Pond Public Beach

Acreage: 0.6 acres Ownership: Town of Carver
Location: Silva Street Managing Agency: DPW
Public Access: Yes Degree of Protection: None
Zoning: Residential/Agricultural
Comments: This is a small beach (116 feet of frontage) with limited parking. It has a lifeguard and a lifeguard chair. The beach and swimming area should be expanded. There is often garbage on the beach that needs to be cleaned regularly.

Dunham Pond Right-of-Way and Boat Ramp

Acreage: Ownership: Plymouth County Commissioners
Location: Tremont Street Managing Agency: DPW
Public Access: Yes Degree of Protection: None
Zoning: Residential/Agricultural
Comments: This boat ramp has parking for about five cars and is owned by the Plymouth County Commissioners. It is used frequently and has a trash barrel.

Plymouth Municipal Airport

Acreage: 23.6 acres

Ownership: Town of Plymouth

Location: South Meadow Road

Managing Agency: Airport Commission

Public Access: Yes

Degree of Protection: None

Zoning: Airport District

Comments: The airport, while primarily in Plymouth, extends into Carver on the west. There is private recreational flying and lessons in flying and gliding, as well as plane rides.

North Main Street – adjacent to Muddy Pond

Acreage: 21.7 acres

Ownership: Town of Carver

Location: Muddy Pond

Managing Agency: Board of Selectman

Public Access: Not at present,

but there are plans to make a boat launch area at the site.

Zoning: General Business

Degree of Protection: None

Comments: This 21.7-acre parcel is besides the North Carver Fire Station and adjacent to the state-owned Muddy Pond. This is the old capped North Carver Landfill and will need careful review if it to be developed as a recreational area in the future.

Lakenham Cemetery

Acreage: 4 acres

Ownership: Town of Carver

Location: Forest & Main Streets

Managing Agency: DPW

Public Access: Yes

Degree of Protection: None

Zoning: Residential/Agricultural

Comments:

Union Cemetery

Acreage: 5.4 acres

Ownership: Town of Carver

Location: Main Street

Managing Agency: DPW

Public Access: Yes

Degree of Protection: None

Zoning: Planned Tourism Commercial District

Comments:

Central Cemetery

Acreage: 4.5 acres

Ownership: Town of Carver

Location: Main Street

Managing Agency: DPW

Public Access: Yes

Degree of Protection: None

Zoning: Village District

Comments:

Buckman Park

Acreage: 31,798 sq. ft.

Ownership: Town of Carver

Location: Bates Pond Road

Managing Agency: Unknown

Public Access: Yes

Degree of Protection: None

Zoning: Residential/Agricultural

Comments: One lot is now owned by the town and the town is designing a new access and potential recreation area and drainage management for this lot and its abutting beach-front lot.

This design was funded by Community Preservation Act funds. In the near future, the town will be asked to fund its construction with CPA funds as well.

Private Protected Parcels

Acreage: 38 acres Clark Griffith/Griffith Cranberry Co., Inc.

Location: Indian Street, Main Street, and off Lakeview Street

Managing Agency: The Wildlands Trust

Public Access: Unknown Degree of Protection: Perpetuity (Conservation Restriction)

Zoning: Residential/Agricultural

Comments: Four parcels of land, totaling 38 acres, were protected by Mr. Clark Griffith, owner of Griffith Cranberry Company, Inc., by placing these parcels in a permanent Conservation Restriction with The Wildlands Trust in 2008. One of these parcels is located on Indian Street in South Carver, abutting the Town-owned Conservation land known as Camden Trail. This parcel further serves to protect Indian Brook by including a large portion of Indian Brook within its boundaries. Two parcels are located on Main Street off Indian Street and the fourth is located off Sampson's Pond between Lakeview and Church Streets.

Private Unprotected Parcels

Edaville Railroad

Acreage: 1,080 acres

Ownership: Ellis D. Atwood Corporation

Location: off Rochester Road

Managing Agency: N/A

Public Access: Yes

Degree of Protection: None

Zoning: Planned Tourist Commercial Overlay District

Comments: Edaville Railroad is a popular tourist attraction. The park contains a train ride, museum, snack bar, amusement rides, picnicking, a swimming beach, and paddleboats. The park is also used for numerous special events, such as a Cranberry Harvest Festival, old car weekends, etc.

King Richard's Faire

Acreage: 70 acres

Ownership: Alphonse A. D'Amico, Sr., TTEE

Location: Route 58

Managing Agency: N/A

Public Access: Yes

Degree of Protection: None

Zoning: Planned Tourist Commercial Overlay District

Comments: King Richard's Faire is an amusement and entertainment area open for a limited time to the public (for a fee) in the early fall.

Carver Sportsman's Club

Acreage: 215.7 acres

Ownership: Club members

Location: off Main Street

Managing Agency: N/A

Public Access: Members only

Degree of Protection: None

Zoning: Residential/Agricultural

Comments: This site includes a fishing pond and target practicing. It also contains a large wetland area and frontage on the South Meadow Brook. It is currently enrolled in Chapter 61B. In the Club's bylaws it states that the land will be donated to the Division of Fisheries and Wildlife should the Club go out of business.

Shady Acres

Acreage: 71.5 acres

Ownership: Joseph Soares

Location: Main Street

Managing Agency: N/A

Public Access: Yes

Degree of Protection: None

Zoning: Residential/Agricultural

Comments: Shady Acres is adjacent to Myles Standish State Forest and includes 150 campsites, an 8-acre pond for swimming, boating, and fishing, and hiking areas. The site is currently enrolled in Chapter 61B.

Pinewood Way

Acreage: 46.6 acres

Ownership: Paul Williams

Location: Across from Clear Pond

Managing Agency: N/A

Public Access: Yes

Degree of Protection: None

Zoning: Residential/Agricultural

Comments: Private campground with 80 campsites.

Permanently Protected Lands

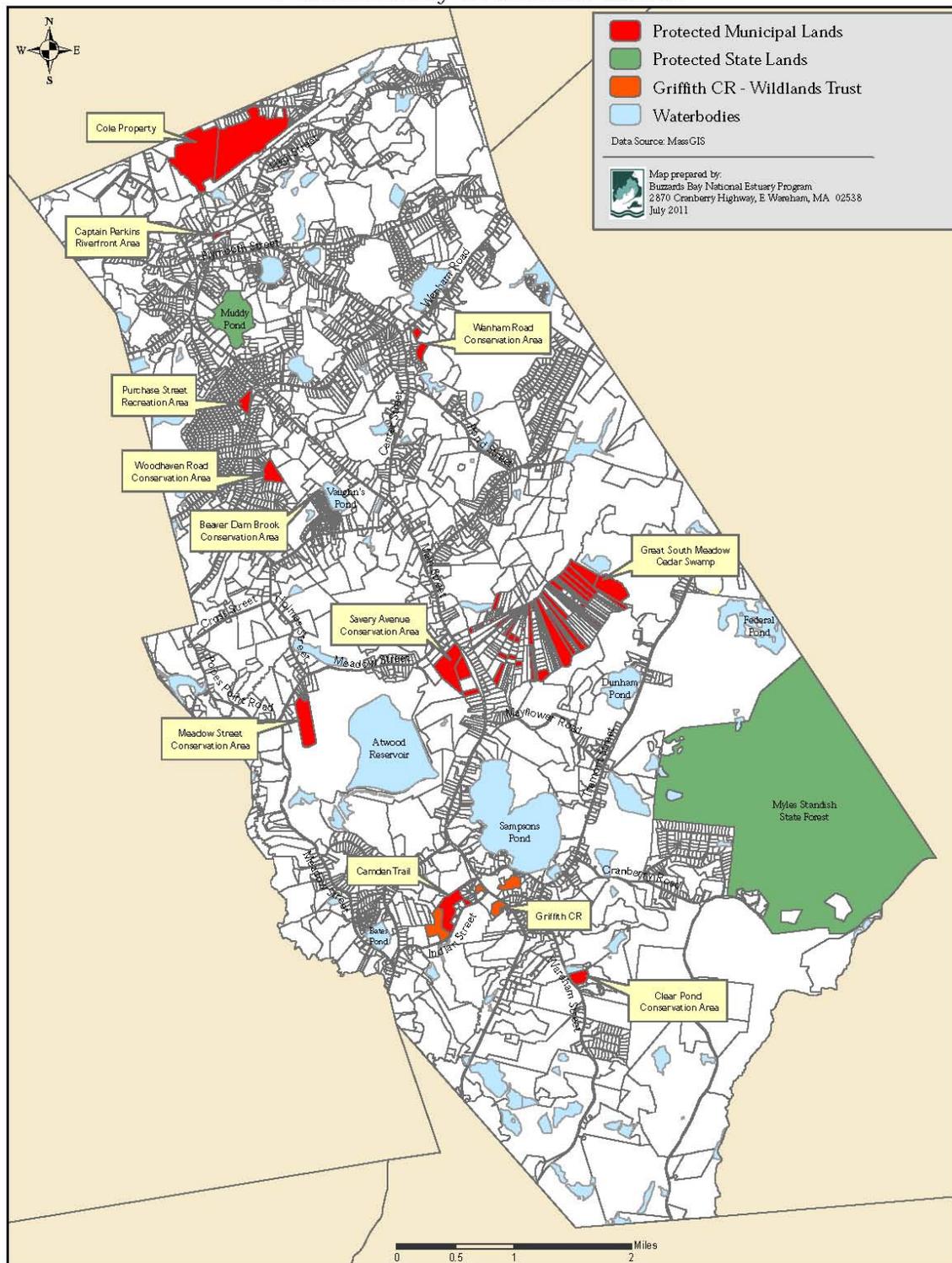


Figure 16: Open Space and Recreational Lands in Carver

VI. COMMUNITY VISION AND NEEDS

A. Resource Protection Vision and Needs

Throughout this open space planning process there has been a strong focus on the community's desire to maintain its rural character. Roughly seventy-four percent of the Carver residents who responded to a scientific open space survey for the 2010-2015 Open Space and Recreation Plan stated that it is extremely important to them that the rural character of Carver is preserved. An essential component in the preservation of a community's rural character is the protection of its resources. The following statements illustrate Carver's vision and needs as identified by the Open Space and Recreation Plan Committee through the use of this survey and public meetings during the preparation of the 2010-2015 Plan.

Access to rivers, ponds, and streams, well fields and water supply areas, and wildlife habitat need to be protected

In response to the community survey conducted during the revision process of the Carver Open Space and Recreation Plan for the 2010-2015 Plan, citizens of Carver expressed concern about a range of environmental issues. Foremost of these concerns was the protection of "protection of rivers, ponds, and streams," "well fields and water supply areas," and "wildlife habitat." Seventy-nine percent of respondents feel the protection of all three of these items is an issue that needs to be a high priority for the town. This sentiment reflects the very real threat that faces Carver's drinking water supply. Physical characteristics of the aquifer combined with the development pressure Carver was experiencing and will experience again make it essential that the town continue to implement well-planned, long-term programs, such as the regional aquifer advisory board, known as the Plymouth/Carver Aquifer Advisory Committee, that addresses drinking water and groundwater supply and quality issues. In addition, protection strategies such as land acquisition, conservation restrictions, and adopting appropriate zoning regulations are important methods to continue to pursue. The addition of "access to rivers, ponds, and streams" and "wildlife habitat" to the issue of "well fields and water supply areas" as top priorities may reflect the population's renewed awareness of these growth pressures on the environment as well as on the human need for drinking water.

Carver needs to pursue the acquisition of conservation restrictions and conservation lands in order to protect areas of environmental importance

Other than twenty-one acres of land on Savery Avenue and random parcels in the Great Cedar Swamp that the Conservation Commission owns, as of 2004, Carver had no other town-owned protected open space. Although the Town owns almost 300 acres of protected land as of 2010, the Open Space survey shows that citizens are concerned about the lack of public open space, with 77% of survey respondents rating "loss of natural habitats" a high priority. "Pollution from road runoff" (79%), "loss of rural qualities of town" (69%), "pollution from septic systems" (67%), and "loss of agricultural land" (66%), were also top issues of concern for survey respondents. Pollution from road runoff and from septic systems is perceived as correlated to an increase in population that causes the loss of our town's rural qualities as embodied in its agricultural land being lost to residential development. It was suggested in the town's 2001 Master Plan that 2,500-5,000 acres of land be acquired for conservation and resource protection. An Open Space Protection Strategy has been developed that looks at the importance of linking environmentally-sensitive lands with existing open space and buffering the town's agricultural

land to create greenbelts throughout the town. This strategy seeks to protect open spaces of regional significance, important water resources, and agricultural lands. The next step is to develop a methodology by which individual parcels can be evaluated for their open space value and then implement protection methods such as outright purchase, adoption of conservation restrictions, use of Community Preservation Funds, use of Conservation Trust Funds, and encouraging land donations. To make sure this need continues to be addressed, serious efforts should be made to ensure that the Community Preservation Act and the Conservation Trust Fund each remain viable sources of funding for the town in the future.

Agricultural land, especially cranberry acreage, needs to be protected

Cranberry production is one of Carver's major industries. Land used for cranberry agriculture represents a substantial portion of the town's unprotected open space and accounts largely for the town's rural character. In FY 2009, there were approximately 11,987 acres enrolled in Chapter 61A, under approximately 80 different owners. Much of the forested upland owned by cranberry growers is developable land.

The recent recession in the cranberry industry caused some growers to sell off excess land. Increasing land values and a growing market for development in the region was also a significant impetus behind the trend to sell off land. According to the 2001 Master Plan, the amount of adjacent land per 1 acre of cranberry land had substantially declined from 3 acres to 2 acres. In addition, agricultural land wasn't being used solely for agricultural purposes even though activities such as soil mining sometimes fell under the guise of agriculture. New bogs were being created despite the decline in the cranberry industry for the purpose of selling the soil that was excavated. The sandy soil was in high demand because it is useful for commercial, residential, and industrial development, but mainly because it makes an excellent medium for septic systems. This soil mining has left unsightly scars in the Carver landscape. Although the national downturn in the economy has slowed development regionally, and the cranberry industry has recently experienced a positive rebound, efforts still need to be made not only to ensure land stays in agriculture but also to ensure that the land is used for legitimate agricultural purposes. The best way to do this is to make sure agriculture remains a viable economic activity. Local efforts to encourage cooperation among farmers and to minimize the negative impacts to farmers from environmental regulations while still protecting the environment are examples of the type of needed effort. In addition, clearer regulations on soil mining have recently been developed in Carver to help ensure that mining is regulated as a commercial enterprise not under the guise of agriculture. Protecting Carver's agricultural land equates to preservation of the town's rural character.

B. Community Vision and Needs

This section has several purposes:

1. to evaluate the amount of recreation land and facilities present in Carver,
2. to identify areas where needs exist today
3. to project needs for the year 2020 based on estimated population growth and changing demographics, and
4. to compare Carver's current and future resources and needs with those for the Southeastern Massachusetts region as a whole, as described in the Statewide Comprehensive Outdoor Recreation Plan.

It is important to note that the analysis that follows uses a combination of methods for determining need. First, existing and proposed recreation facilities were compared with quantitative standards based on population levels. Although this method is broad and subject to criticism because it doesn't reflect local preferences or budgets, it does provide a sense of how Carver's facility inventory compares with generally-accepted averages for communities of similar sizes. Second, the surveys distributed by the Open Space Committee for the 2010-2015 Plan measured perceived need in the general population. Finally, the Open Space Committee through its own deliberations, a Community Meeting, and through work with the Buzzards Bay National Estuary Program, developed its own understanding of the town's current and future needs. When pulled together, these three approaches produced an assessment of need that the Committee feels is subjective enough to reflect Carver's local preferences while being objective enough to give the town a clear sense of whether it is providing services that will keep the town within, or ahead, of service levels expected of municipalities in 2020.

Quantitative Assessment

According to the 2010 Census data, the current population in Carver is 11,550 people. The cap for residential building permits on newly created lots in Carver is 30. Assuming 2.7 persons per household and 30 units per year growth rate, Carver's population will climb to 13,269 by the year 2020. Given the current demand for housing and population trends, this level is within the scope of the population projections presented in the Population Characteristics section of this plan, and in all likelihood will become a reality.

In terms of long-term growth a build-out analysis of the town performed in the spring of 2000 by the Executive Office of Environmental Affairs (EOEA) indicated that there are 11,441 acres remaining of buildable land and the possibility of 7,641 residential units. This translates into an additional 21,574 people when the town reaches build-out, for a total population of 32,737.

For the purposes of this plan, the figure of 13,269 residents will be used for determining needs into the next decade.

Regional Recreation and Open Space Vision and Needs

The Massachusetts Statewide Comprehensive Outdoor Recreation Plan (SCORP), which was written in 1988 and updated in 1993, 2000, and again in 2006, looked at open space and recreation needs all across Massachusetts and determined that the six major policies of most importance were:

1. Resource Protection,
2. Planning and Enhancement,
3. Environmental Education and Information,
4. Partnerships,
5. Funding, and
6. Access and Maintenance

The 2006 SCORP added three new policies: a) Urban Focus on Resource Protection, Stewardship, Restoration, and Enhancement; b) Innovative Tools for Land Protection; and c) Long-Distance Trail Protection, Development, and Issue Resolution.³² The SCORP also identified the following perceived needs for the southeastern Massachusetts region:

1. Acquisition, access to, and/or maintenance of golf courses, neighborhood parks, and playgrounds and tot lots,
2. Acquisition and protection of agricultural lands,
3. Protection of rivers and streams
4. Maintaining and restoring existing recreational facilities
5. Acquiring, maintaining and/or protecting forests and wetlands, and
6. Acquiring, maintaining and/or enhancing bikeways and coastal beaches.³³

When reviewing the recreational needs for this region and comparing them with Carver's own needs, one can see that they are strikingly similar, although not necessarily ranked in the same order. In fact, all of the above regional needs—with the exception of golf courses—were identified throughout this open space and recreation planning process and survey as areas in which Carver needs improvement. The following section, Summary of Recreational Needs, discusses these needs as well as others that were identified as the result of a scientific survey, a public meeting, and regular Open Space Committee meetings.

Summary of Recreational Needs

The National Recreation and Park Association (NRPA) has established a set of standards for assessing how communities compare in providing recreational opportunities to their citizens (see Table 10). According to these standards, Carver's largest deficiencies are in bicycle paths, nature/hiking trails, playgrounds, and volleyball and basketball courts. In addition, NRPA recommends that a town of Carver's size have an ice arena, which it does not. It is important to note that Myles Standish State Park provides the majority of equestrian, hiking, and bicycle trails located in Carver. The majority of the trails in Myles Standish are located in Plymouth but Table 10 lists only those trails, or portions of, that lie in Carver.

According to the 2010 Open Space and Recreation Survey results, the activities Carver residents participate most in are walking (67%), playground activities (48%), bird watching (47%), swimming (45%), and fishing (40%). Therefore, it makes sense that residents of Carver perceive a need for more trails and opportunities for passive, nature-based recreation. In a question asking residents to comment on which recreational facilities the town needs more of, permanently-protected open space with public access, and bike paths/trails received the most

³² See the 2006 SCORP at <http://www.mass.gov/Eoeeea/docs/eea/dcs/massoutdoor2006.pdf>, p. 138.

³³ Ibid., pp. 95-100.

votes (54% and 46% respectively). Forty-four percent asked for more nature/hiking/equestrian trails, 43% felt the town needed more wildlife habitat, and 41% mentioned the need for a teen recreation center.

The town's Master Plan addressed the need for a system of bicycle trails by identifying alternatives for improving bicycle facilities in Carver. These alternatives include designating bicycle routes and bicycle paths, installing storage facilities in key locations, and disseminating information to the community through mapping and signage. The Historical and Open Space sections of the Master Plan developed a possible town-wide bicycle network of trails based on the needs of both recreational bicyclists and commuters. See Figure 15 for an illustration of this potential network. The town should address this issue by creating a trail committee to investigate the creation of both paved and unpaved multi-purpose pathways for walking, hiking, biking, equestrian, and roller-blading. The town is currently studying the need for a teen recreation center and is working with the Plymouth Boys and Girls Club to create a possible satellite branch of this organization in Carver.

Proposed Bicycle Routes

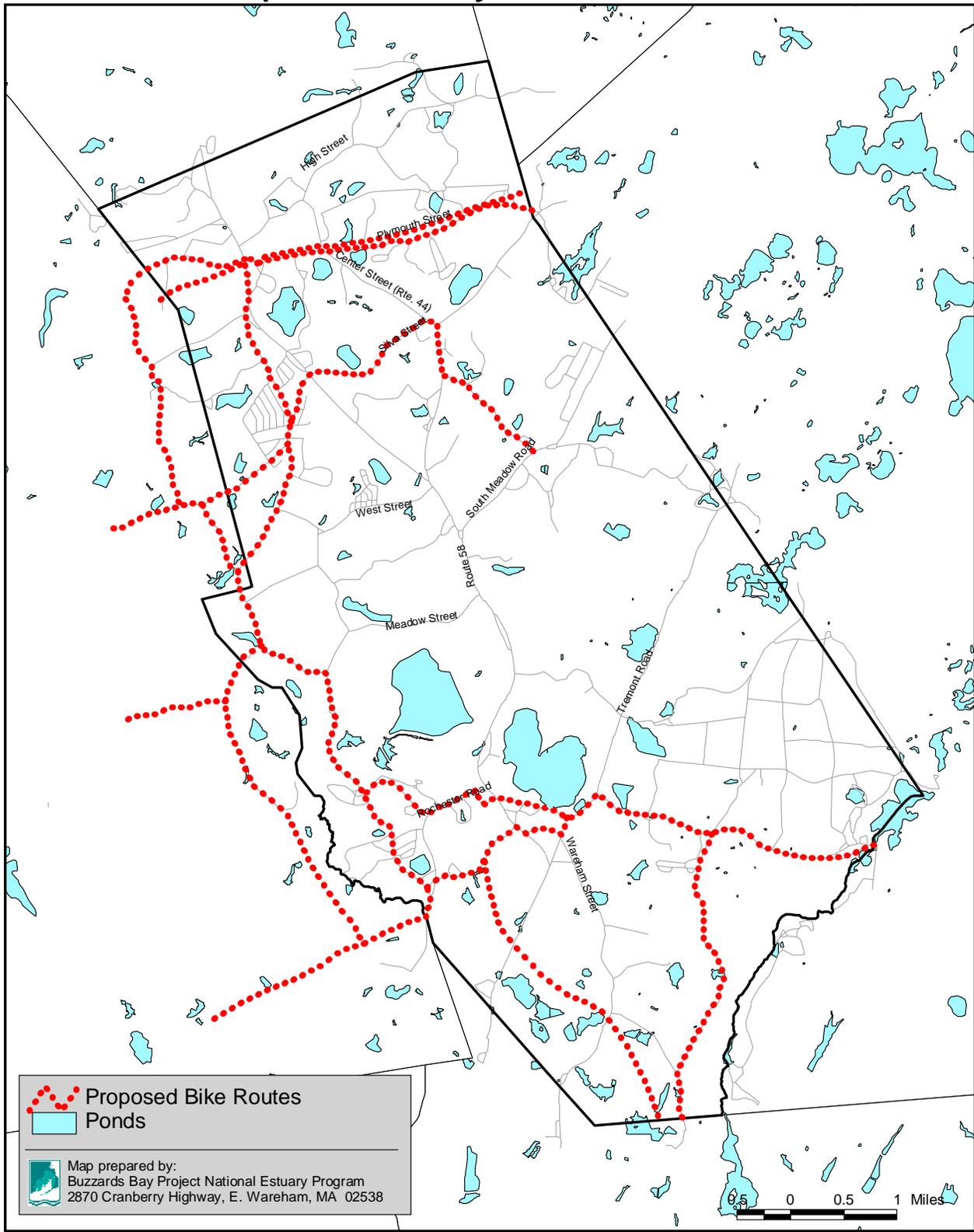


Figure 17. Proposed Bike Routes in Carver.

Survey results indicate there is a need for more access to beaches. Sixty-one percent of survey respondents feel access to rivers, streams, and ponds should be acquired. In addition, ADA accessibility and fishing access are also considered important by survey respondents at 28% and 27% respectively. Carver has only approximately 300 feet of usable beach shoreline. The majority of beaches in Carver are private; however there are two small public beaches in town. The main reason respondents gave for not using the beaches was the condition of the public beaches. However, the conditions of these beaches have not changed very much at all since the 2004 survey was conducted; they are generally not trash-littered and people tend to use the trash receptacles provided. In fact, Sampson's Pond now also has wheelchair accessibility. Perhaps the perceived poor beach condition is a result of a comparison made by newer residents with beaches in more urbanized towns where food and non-Porta-Pottie toilet facilities are often available. In addition, there was a significant number of respondents who noted that poor water quality was the reason they didn't use the beaches. The Board of Health regularly tests both Sampson's Pond and John's pond. The Board of Health has recently addressed public perceptions about water quality through signs posted at the beaches and plans to address these perceptions further with information on water testing posted in the local paper during summer months. According to the NRPA, a town should have a pool for every 20,000 residents. The nearest pool to Carver is at the Middleboro Y, which is approximately 20 minutes away. Although Carver's population isn't close to this number yet, some residents expressed a desire for a town pool when responding to the survey.

The strong desire for bike trails, hiking/nature/equestrian trails, and wildlife habitat among Carver residents is interesting considering Myles Standish State Forest is well-supplied with these facilities. Although 39%, 34%, and 33% of respondents indicated that they walked, swam, and hiked out of town and, presumably some of these respondents do so in Myles Standish State Forest, it appears residents would prefer to have their own bike trails, hiking/nature/equestrian trails, and wildlife areas directly in Carver and closer to home. Myles Standish State Forest contains about 1,828 acres of land in Carver and approximately 12,404 acres in Plymouth. Myles Standish is located in South Carver and even driving across town may be perceived to be too far to travel for some people who just want to go out for a quick stroll or bike ride and don't feel like driving to a location first. The town should consider developing the existing network of ancient roads through open land into a marked trail system for walking and mountain biking. Carver's small pond beaches should be expanded by careful land acquisition. As proposed in the 2004 Open Space Plan, the land at Savery Avenue has, since 2004, been developed into a park with hiking trails and picnic tables.

| FACILITY | NRP ASSOC. STANDARD | PUBLIC SUPPLY | PRIVATE SUPPLY | DEMAND 2010 (pop 11,550) | DEMAND 2020 (est. pop. 13,269) | COMMENTS |
|-----------------|----------------------------|----------------------|-----------------------|---------------------------------|---------------------------------------|-----------------|
| <i>Trails</i> | | (miles) | (miles) | (miles) | (miles) | |
| FACILITY | NRP ASSOC. STANDARD | PUBLIC SUPPLY | PRIVATE SUPPLY | DEMAND 2010 (pop 11,550) | DEMAND 2020 (est. pop. 13,269) | COMMENTS |

| | | | | | | |
|-----------------------|------------------------|-------------------|-------------------|-------------------|-------------------|---|
| Nature/Hiking | 1 per 2,500 | 5.15 | 0 | 5.0 | 5.3 | Myles Standish State Forest (.9) Carver Community Playground (.25) Cole Property (3.0) Indian St./Camden Trail (1) |
| Equestrian | 1 per 6,250 | 2.5 | 0 | 1.8 | 2.1 | Myles Standish State Forest |
| Bicycle | 1 per 2000 | 3.9 | 0 | 5.6 | 6.3 | Myles Standish State Forest |
| <i>Family Play</i> | <i>(areas)</i> | <i>(areas)</i> | <i>(areas)</i> | <i>(areas)</i> | <i>(areas)</i> | |
| Playgrounds, Tot Lots | 1 per 1,000 | 2 | 0 | 12 | 13.1 | Gov John Carver School (1) ² Carver Community Playground (1) |
| Skateboarding | No standards available | 0 | 0 | N/A | N/A | |
| Rollerblading | No standards available | 0 | 0 | N/A | N/A | |
| Picnic Areas | 1 table per 300 | 4 | 0 | 41.7 | 44.2 | Carver Community Playground (2) Savery Avenue (2) |
| <i>Court Games</i> | <i>(courts)</i> | <i>(courts)</i> | <i>(courts)</i> | <i>(courts)</i> | <i>(courts)</i> | |
| Tennis | 1 per 1,500 | 7 | | 8.3 | 8.8 | King Property (2) Carver High School (5) |
| Basketball | 1 per 1,000 | 6 | | 12.5 | 13.2 | King Property (1) Gov John Carver School (4) ⁴ Carver High School (1) |
| Volleyball | 1 per 3,000 | 0 | 0 | 4.17 | 4.4 | |
| <i>Diamond Sports</i> | <i>(fields)</i> | <i>(fields)</i> | <i>(fields)</i> | <i>(fields)</i> | <i>(fields)</i> | |
| Baseball, Softball | 1 per 3,000 | 11 | | 4.17 | 4.4 | King Property (3) Shaw/Forest Street Field (1) ³⁴ Gov John Carver School (2) ² Carver High School (4) Purchase Street (1) |
| <i>Ice Arena</i> | <i>1 per 10,000</i> | <i>0</i> | <i>0</i> | <i>1</i> | <i>1</i> | |
| <i>Field Sports</i> | <i>(fields)</i> | <i>(fields)</i> | <i>(fields)</i> | <i>(fields)</i> | <i>(fields)</i> | |
| Soccer | 1 per 10,000 | 4 | | 1 | 1.3 | Purchase Street (1) ⁵ Carver High School (3) ⁵ |
| Football | 1 per 20,000 | 2 | | N/A | N/A | Carver High School (1) ⁵ Purchase Street (1) ⁵ |
| Field Hockey | N/A | 1 | | | | Carver High School (1) ⁵ |
| <i>Golf Course</i> | <i>(holes)</i> | <i>(holes)</i> | <i>(holes)</i> | <i>(holes)</i> | <i>(holes)</i> | |
| NPS Standard | 18 per 12,500 | 0 | 0 | N/A | N/A | |
| <i>Swimming</i> | <i>(facility)</i> | <i>(facility)</i> | <i>(facility)</i> | <i>(facility)</i> | <i>(facility)</i> | |
| Pools | 1 per 20,000 | 0 | 0 | N/A | N/A | |

Table 10. Carver Recreation Facilities, Needs, and Supply

The National Recreation and Park Association suggests that a town like Carver, with a

³⁴ The Shaw Street field, usually referred to as the Forest Street field, is a sub-standard cinder-surfaced, old stump dump, with no regulation shape, size, or lay-out.

population of around 11,000, should have somewhere between 70 and 115 acres of *developed* park land, divided into units of varying sizes and distances from residences, equipped with playgrounds, playing fields, trails, beaches, etc. The town currently has about 39 acres for this purpose.

Figures shown on Table 10 are for trails or portions of trails in Carver's section of Myles Standish. Facilities are only open to the public at the Governor John School and at the High School when school is not in session. More importantly, the numbers in the above table are deceptive because the playing fields available for baseball, softball, soccer, football, and field hockey are all the same fields. For example, the two fields used for football are the same fields used for baseball, softball, soccer, and field hockey. In addition, with the exception of field hockey that is just played by girls, all the same fields are used by both boys and girls and by men's and women's leagues in all of these same sports. Many of the men's and women's recreation leagues also have non-resident members. Thus, when examining Carver's active recreational needs, one should not add up the total number of fields listed in the "public supply" column, but instead realize that there are only 11 fields in the entire town of Carver—one of which is sub-standard and 6 of which are only available after school hours or during school vacations—for all of these uses together and for all populations. This means that, on average, Carver has only 4 available fields for its 11,550 population, whereas 6 fields are the standard recommended required.

Field sports are very close to Carver's heart: about 98% of Carver's families are involved in some kind of team sport. The fields in Carver are barely able to accommodate the games and practices of the youth and adult sports teams, even with a great deal of juggling. It is clear that more fields will be needed soon, especially considering that within the last ten years two soccer fields, a baseball field, and a football field that had been used for 25 years by Carver residents were lost when the private property owner who had allowed the town use of the fields sold the property. Although the town continues to work on replacing them on town-owned land, it currently lacks the money and land does not become available often. In 2011, with the help of Community Preservation Act money, the Town acquired a 33-acre property, known as Savery Meadows, containing about 6 acres of upland that, hopefully, will be used in the near future to develop into active recreational ball fields.

Despite the apparent need for more playing fields to accommodate the popularity of organized sports teams, the moderately high percentage of survey respondents indicated that they were satisfied with the number of soccer, baseball, and softball fields (42%, 29%, and 37% respectively). Residents seem to be more concerned about the poor condition of facilities. When asked to characterize the needs of Carver's existing facilities, upgrading existing beach access prevailed at 21%, while the next most important upgrades were felt to be needed to tennis courts and basketball courts (10%), baseball fields and bike trails (9%), boat ramps, hiking trails, playgrounds, and ADA-accessibility to recreation areas (8%), and picnic areas and soccer fields (7%) whereas "more fields" didn't make the top ten list. The town needs to focus on taking care of its existing facilities before it starts taking on more maintenance responsibilities. For example, tennis courts and basketball courts have fallen victim to vandalism. Nets are ripped off soon after they are put up. These facilities need to be watched more closely by the appropriate authorities to discourage vandals from destroying them.

As to playgrounds and tot-lots: currently Carver, with a 2011 population of 610 pre-schoolers and approximately 1,048³⁵ children enrolled in grades K-6, has only 2 playgrounds, of which one is not available to the public during school hours. National standards state that a town of Carver's size should have thirteen playgrounds. The town has made strides in this department with the construction of the new playground next to the library. However, playgrounds need to be strategically-located in different areas of town so that everyone can benefit from their existence. Again, despite the fact that Carver is significantly deficient in the *number* of playgrounds it has according to NRPA, 133, or 45% of survey respondents indicated they were *satisfied* with the playgrounds—the highest percentage of satisfaction with any of the town's recreational facilities!--as opposed to the 65 (22%) people who felt more are needed and the 25 (8%) people who indicated the playgrounds need upgrading. These numbers may be indicative of the fact that 63% of the survey respondents don't have any children under 18 and of the 37% who do, only a little more than half would be of playground age. If your children (or grandchildren) don't use the playgrounds you probably wouldn't see a need for more playgrounds. The satisfaction rating may also indicate that playground users recognize the quality of our Community Playground.

The town already has many natural areas for outdoor skating (on the ponds and bogs), but weather patterns make them usable only a few days a year. The nearest indoor rinks are about twenty minutes away in Bourne and Plymouth. There are residents in town who feel there is a need for the reliability and safety of a man-made rink for hockey and recreational skating.

There are several golf courses in the region, and tennis courts in South Carver and at the high school. (Several respondents urged the town to maintain the tennis courts in South Carver better than the town has been).

In a survey question asking residents to list the most important recreation issues facing Carver, the creation of a teen recreation center or a family-based facility with supervision that would give teenagers and other children a place to go after school was identified by 24% of respondents. It actually ranked a close fourth, when asked what the town needed more of, behind the creation of more trails for, biking, for hiking and equestrian riding, and of more wildlife habitat (at 46%, 44%, 43%, and 41% respectively). There is a feeling that, besides organized sports, there isn't a lot for children, especially teenagers, to do in Carver. The town needs to explore the idea of developing a community center that would provide recreational and organized activities for children and teenagers, and provide them with a meeting place after school and on the weekends.

Special User Needs

As of the 2000 U.S. Census, Carver is reported as having 903 persons with a physical disability living in town, which when compared to the town population in 2000, represented 8% of the population. Of those people with a physical disability, 416 are age 65 and over.³⁶

³⁵ Carver Superintendent of Schools, in an e-mail dated 7/11/2011. This figure is as of October 2010.

³⁶ U. S. Census data on numbers or percentages of people with disabilities in the Town of Carver are unavailable. See <http://www.factfinder.census.gov/servlet/> under "Carver town, Plymouth County, Massachusetts, 2005-2009 American Community Survey 5-Year Estimates – what's this?"

In 1990 the Americans with Disabilities Act (ADA) was federally adopted, placing strict regulations on schools, businesses, industry and government to meet compliance guidelines set forth to ensure that no person shall be discriminated against based on a physical disability. As part of the process to create this Plan, each and every town conservation or recreation facility has undergone an evaluation for accessibility according to the guidelines set forth by ADA. The results of this evaluation can be found in Section V of this plan.

The Carver Community Playground, which was constructed in 2001 adjacent to the library, is in complete compliance with ADA Section 504 requirements. One of the two town beaches, John's Pond Beach, does not meet ADA regulations. Since the 2004 Open Space & Recreation Plan was written, a handicapped-accessible ramp has been installed by Boy Scouts at Sampson's Pond, the town's other town beach.

C. Management Vision and Needs and Potential Change of Use

The following boards and committees are currently involved in protecting open spaces and providing recreational opportunities to residents:

- Open Space Committee (that has prepared this report). This committee was established after the 2004 Open Space and Recreation Plan, fulfilling Goal IV, Objective III of that Plan.
-
- Conservation Commission (that oversees wetlands protection and the acquisition and permanent protection of open space)
- Board of Health (that grants site assignments and sets septic standards)
- Planning Board (that recommends zoning changes and administers the Water Resource Protection bylaw)
- Master Plan Committee (that developed an overall vision for the town)
- Recreation Committee (that oversees the scheduling for organized sports),
- Department of Public Works (that maintains the parks, cemeteries, and some recreational facilities)
- Buildings and Grounds Department (that maintains most town recreational facilities)
- Historic District Commission (that protects historic areas)
- Zoning Board of Appeals (that administers special permits for private recreational projects like golf courses and campgrounds)
- School Department (that oversees the school recreational facilities).

Open Space Acquisition Committee

The above loosely-organized, decentralized system works pretty well to an extent. However, what is missing from this array of groups is an entity whose *primary mission* is to acquire and enhance open space, such as an open space acquisition committee. The absence of such a group is one reason Carver has had a lack of publicly-owned open space. However, since the adoption of the Community Preservation Act, the Conservation Commission and the Community Preservation Committee have acted hand-in-hand to protect two large parcels of land: the 221-acre Cole Property in 2007 and the 33-acre Savery Meadows Property in 2010. The Conservation Commission has also begun taking a more active role in land preservation by researching and contacting owners of land in the Great South Meadow Cedar Swamp and

encouraging these owners to donate their parcels to the town. The Town-Owned Properties Committee, an in-house group of five or six department heads, has also recently formed to discuss the disposition of tax-title and tax-possession properties. The proposed dispositions include market re-sale, auction, active recreation land, cemetery land, and conservation/passive recreation land.

Funding Mechanism

Probably the main reason Carver has had a lack of publicly-owned land in the past is because there was no funding mechanism in place to support open space and recreation needs. Adoption of the Community Preservation Act in 2006 has now generated funds that have recently been used to help purchase and protect open space. The creation of the Conservation Land Trust in 2002 has also played a supporting role in the details of accompanying land acquisitions costs and services. However, not much of that recently-protected open space has been viable for active recreational purposes. There is still a need to use Community Preservation Act funds to acquire more open space both for conservation and passive recreation and for active recreational fields, courts, and playground and park acreage. There is also still a need to continue funding the Conservation Trust Fund to provide back-up funding for costs associated with any land purchases. The extreme usefulness of both funding sources cannot be underestimated because both CPA and the Conservation Trust Fund help to address the long-term goals of the town that no municipal budget, within the constraints of municipal finance law, can ever address. .

Full-Time Grant Writer

The town does not currently employ a full-time grant writer. An outside grant writer is currently hired on an as-needed basis through the Board of Selectmen. The Conservation Agent and the Town Planner also both have grant-writing skills and both have written and received grants for the town. Although it is part of the Conservation Agent's job to write grants for open space acquisition, both the Agent's and Planner's jobs involve more than only writing grants for the town. In addition, the Agent's and Planner's focus is not to function as writers for all town grants. Since the Conservation Agent has been made full-time, the Agent is now able to devote some time to grant writing for conservation, land acquisition, active recreation land and recreational trails. When development pressures are upon us and grants for open space acquisition are most needed, more access to a full-time grant writer would improve the Agent's ability to coordinate land acquisition projects.

VII. COMMUNITY VISION: GOALS AND OBJECTIVES

Short-term vs. Long-term Objectives

In the short run, money, or the lack thereof, will largely determine Carver's course of action. Bluntly put, the town is strapped and doesn't have a budget for land acquisitions. However, the Community Preservation Act, which was adopted on September 14, 2000 by then Governor Cellucci, and adopted by Carver in 2006, does offer Carver the ability to raise funds for open space protection and is probably the best chance Carver has for raising money. Under the Community Preservation Act, the town has established a Community Preservation Fund through a ballot referendum, from which a portion is dedicated to open space preservation, historic preservation, construction of new recreational facilities, and community housing. As an incentive, the State provides matching funds of between 5% and 100%. For the first two years after its adoption in Carver, the State continued to match the funds raise at the local level at 100%. Even if the State's matching funds dwindle in the near future due to the economic downturn, the amount Carver's own CPA fund will raise for open space preservation will still go a long way towards funding land acquisition. Hopefully, in the future, Carver residents will continue to realize the advantages of this funding opportunity. **It is important to reiterate that the unparalleled usefulness of both CPA and the Town's Conservation Trust Fund cannot be underestimated because both CPA and the Conservation Trust Fund help to address the long-term goals of the town that no municipal budget, within the constraints of municipal finance law, can ever address.**

In the meantime, a shortage of money doesn't mean that nothing can be done. We can start by looking at strategies that don't require much money, such as enacting zoning policies that protect open space and pursuing donations and conservation restrictions from landowners. At the same time, we should be keeping in mind long-term objectives and actions that can be taken when the money situation improves, either from an upswing in the town's, State's, and nation's financial health.

Both short-term and long-term lines of action are important. If we fail to look at low-cost short-term options, we are admitting that we will be doing nothing for the foreseeable future. And if we fail to have a long-range strategy, we will not be in a position to act if and when money becomes available.

Goal I: Maintain the rural character and scenic atmosphere of Carver.

Objective 1: Permanently protect open space in Carver.

- a. Continue to re-adopt the Community Preservation Act (if challenged) in order to generate funds that can be used for open space and recreation acquisition.
- b. Re-direct rollback tax funds into the Conservation Land Trust rather than into the General Fund
- c. Continue to prioritize land for open space protection, especially in the priority sensitive

areas.

- d. Continue to encourage land donation, adoption of conservation restrictions, tax title taking, and occasional purchase of critical lands.

- e. Continue to acquire and protect distinctive areas of town that are critical to maintaining Carver's rural charm.
- f. Continue to enforce existing regulations that protect open space, the environment, and the scenic character of the town.

Objective 2: Protect the town's historic, cultural and scenic resources.

- a. Develop tools to protect recently-identified historic sites and cultural and scenic resources.
- b. Investigate the idea of creating a scenic roads by-law and the feasibility of designating certain roads as scenic roads.

Objective 3: Support planning policies that control population growth:

- a. Develop town water and/or sewer only in limited areas such as industrial zones and village centers.

Objective 4: Modify existing zoning regulations to encourage open space in residential, commercial, and industrial development to protect open space, the environment and the scenic character of town.

- a. Allow for cluster subdivision by right rather than by special permit.
- b. Increase the minimum amount of contiguous open space required (currently 20%) for lots in conservation (cluster) subdivisions.
- c. Continue to designate "sending" and "receiving" areas, and expand designated receiving areas, and allow the sale of development rights from parcels in sensitive areas to increase the allowable density elsewhere. (Transfer of Development Rights)
- d. Designate critical resource areas
- f. Continue to enforce clear regulations on soil mining

Goal II: Preserve the quality of Carver’s natural resources, including ground and surface waters, wetlands, and wildlife habitat.

Objective 1: Protect Carver’s groundwater resources.

- a. Continue to work with the towns of Bourne, Kingston, Middleborough, Plymouth, Plympton, and Wareham to protect the Plymouth-Carver Aquifer by continuing to participate in the Plymouth/Carver Aquifer Advisory Committee in recommending ways to protect our sole source aquifer.
- b. Protect land (especially land over the Plymouth/Carver aquifer) by purchase or conservation restrictions, using CPA funds and state and federal funds whenever possible and assistance from land conservation organizations.
- c. Identify and protect sites designated as potential sources of public water.
- d. Pursue clean-up of MGL 21E sites that are potentially contaminating groundwater resources.

Objective 2: Preserve and restore water quality in Carver’s rivers, streams, and ponds.

- a. Establish a monitoring program of major town water bodies to identify problem areas and oversee the correction of them by appropriate town agencies.
- b. Encourage use of landscaping and agricultural practices that minimize erosion and nutrients from fertilizers entering surface and groundwater.
- c. Pursue clean-up of MGL 21E sites that are potentially contaminating surface water resources

Objective 3: Support protection of wetland resources and areas bordering wetlands throughout Carver.

- a. Work with the school system and other interested groups to document and inventory vernal pools and other wildlife habitat in Carver.
- b. Maintain zoning by-law to require a minimum upland area on new lots created in town to limit encroachment on wetlands.
- c. Pursue clean-up of MGL 21E sites that are potentially contaminating wetland resources

Objective 4: Encourage retention of existing cranberry grower-owned lands as wildlife habitats, water recharge areas, etc.

- a. Encourage tax policies, such as a tiered tax, that will support the financial viability of the cranberry industry and tax each grower at the proper rate.
- b. Encourage State and Federally supported programs that help growers maintain their own land as wildlife habitat, water recharge areas, etc.
- d. Encourage discussions with the cranberry industry to find ways to keep farms in viable agriculture and natural habitat.
- e. Encourage cranberry growers to use and keep up-to-date with Best Management Practices

Objective 5: Preserve critical wildlife habitats.

- a. Protect lands identified by the Natural Heritage and Endangered Species Program as critical habitat for rare and endangered species.

Goal III: Improve access to and enhance recreational opportunities for all Carver residents

Objective 1: Develop walking and equestrian trails, bike paths, and picnic areas on public lands.

- a. Establish a non-motorized Trail Advisory Committee to research and study the feasibility of creating a multi-purpose pathway throughout town, and possibly connecting it to neighboring towns.
- b. Develop plan for location and design of a multi-purpose pathway.
- c. Create trails and/or picnic areas on existing town properties.

Objective 2. Expand and upgrade recreational opportunities on ponds and waterways.

- a. Improve public access to ponds; acquiring land if available.
- b. Improve the condition of the beaches and expand beach parking.
- c. Acquire land that gives the public access to the Weweantic and Winnetuxet Rivers and South Meadow Brook; develop fishing spots and canoe passages.

Objective 3: Expand and upgrade facilities for active recreation.

- a. Complete improvements to existing town recreational properties.
- b. Identify areas of town that are lacking playgrounds and parks and develop more facilities in these locations.
- c. Develop mechanisms for maintaining properties and preventing vandalism.
- d. Develop rules and regulations, to be posted at town properties, informing the public on allowed and prohibited uses.
- e. Work towards attracting recreational business enterprises such as sport complexes, skating rinks, etc.
- f. Develop a teen recreation center and other teen-related facilities, such as a skate park or basketball courts.

Objective 4: Ensure public facilities are accessible to all residents regardless of age or ability

- a. Improve access to all town facilities that are not currently in complete compliance with the Americans with Disabilities Act.

Goal IV: Develop definitive strategies that will affect change in town policy regarding open space and recreation issues in Carver.

Objective 1: Establish open space preservation and recreation planning priorities in all town decisions and actions.

- a. Continue to increase community awareness of positive effects of CPA funding on preserving our town's environment, water quality, quality of life, tax rate, and future.
- b. Ensure continued support by voters for CPA as we approach its six-year adoption point.
 - c. Provide each town office and department with reference copies of the Open Space and Recreation Plan, specifically this Action Plan.
 - d. Require all major town decisions and actions to be consistent with the Open Space and Recreation Plan.
 - e. Mandate that all town offices and departments keep others informed of decisions/actions taken that impact the overall effectiveness of the plan.
 - f. Educate town boards and officials concerning open space policies, practices, tools, resources, etc.

Objective 2: Increase community appreciation of the town's rich resources.

- a. Provide uniform signage throughout the town noting town boundaries, scenic roads and vistas, historic sites, town parks, stream crossings, etc.
- b. Use all available media, including speakers, for informing residents of open space, wildlife, and natural resources and recreational features in town.
- c. Continue to have an public informational Open Space/Conservation booth at Old Home Day.

Objective 3: Develop implementation and funding mechanisms to support open space and recreation needs.

- a. Explore the possibility of dedicating money received from the sale of tax title lands to the fund.
- b. Encourage and promote agricultural and natural resource-based tourism in town.
- c. Make maximum use of state and federal funding and other programs to match town spending and protect open space.

Seven-Year Action Plan

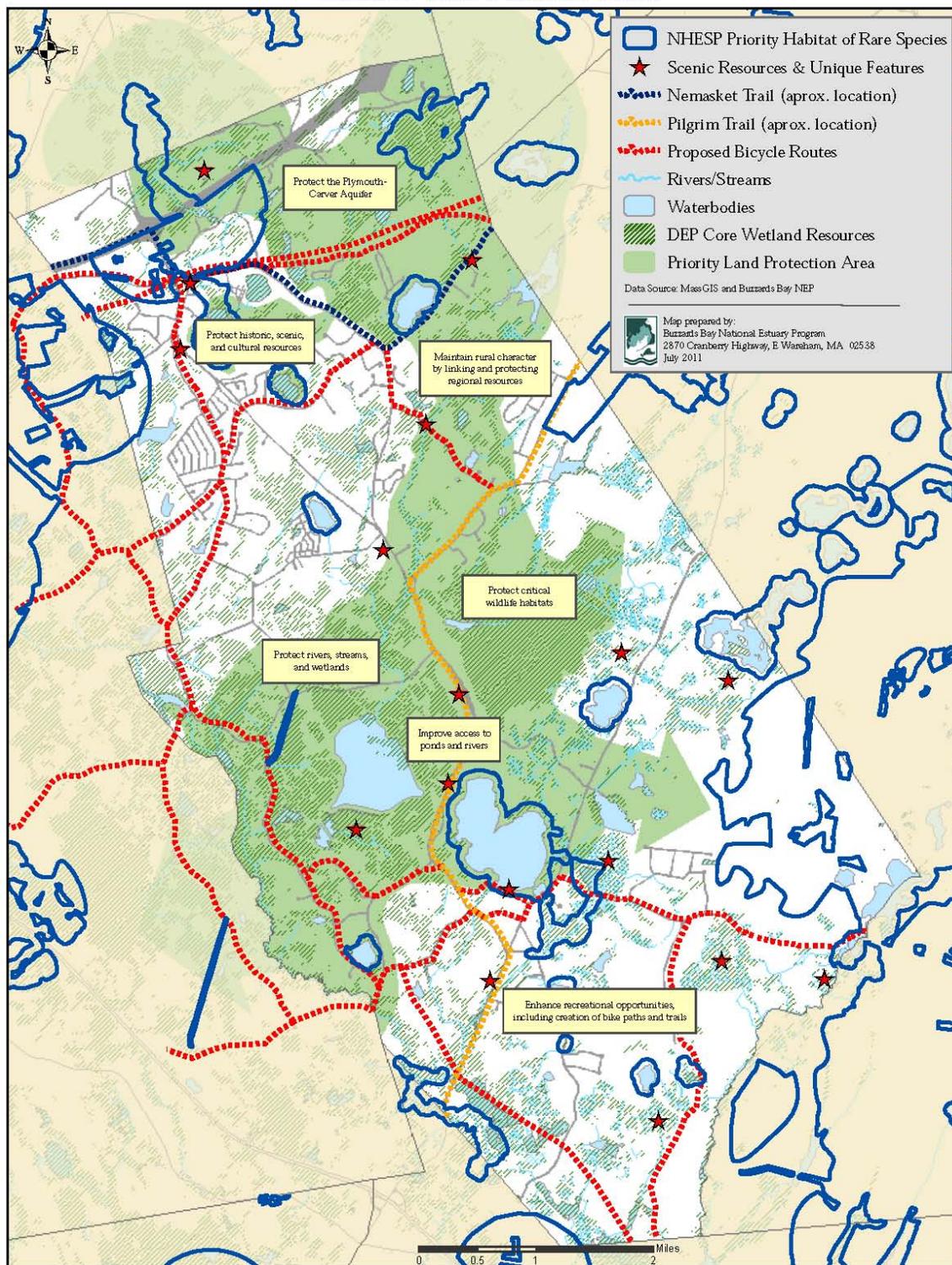


Figure 18. 7-Year Action Plan Map

OPEN SPACE & RECREATION PLAN: ACCOMPLISHMENTS SINCE THE 2004 5-YEAR ACTION PLAN

Accomplished Since 2004:

Not Accomplished as of 2010:

| Goal One: <i>Maintain rural character and scenic atmosphere of Carver:</i> | |
|--|--|
| <ol style="list-style-type: none"> 1. Adopted Community Preservation Act (CPA) 2. Prioritize land for protection 3. Encourage land donations/CRs, etc. 4. Acquire distinctive areas to protect 5. Enforce environmental regulations to protect land 6. Identify historic/cultural/scenic sites 7. Develop town water in limited areas 8. Impose regulations on soil mining 9. Continue to develop TDR areas and bylaw 10. Designate critical resource areas 11. Acquired 2 distinctive areas to protect | <ol style="list-style-type: none"> 1. Form non-profit land trust [NO LONGER A GOAL] 2. Develop policy to transfer right of 1st refusal on Chapter lands to non-profit 3. Create scenic roads bylaw 4. Allow conservation sub-divisions by right: detail %/type of open space 5. Increase % open space in conservation subdivisions 6. |
| Goal Two: <i>Preserve quality of Carver's natural resources (ground/surface water, wetlands, and wildlife habitat:</i> | |
| <ol style="list-style-type: none"> 12. Work with area towns to protect Plymouth / Carver Sole Source Aquifer 13. Protect land over Aquifer 14. Pass stormwater management bylaws 15. Improve BMPs (Agriculture & residents) 16. Work with schools re: VPs/Biodiversity days 17. Minimum upland area on new lots | <ol style="list-style-type: none"> 7. Establish water body monitoring 8. Protect land over Aquifer 9. Encourage tax policies to protect agricultural viability 10. Help Agriculture retain land as habitat, recharge areas, and open space |
| Goal Three: <i>Improve access to/enhance recreational opportunities for all Carver residences:</i> | |
| <ol style="list-style-type: none"> 18. Establish "Trail Committee" 19. Create trails/picnic areas on Town land 20. Improve public access to ponds (at Sampson's Pond) | <ol style="list-style-type: none"> 11. Improve public access to ponds (at John's Pond) 12. Improve beaches & beach parking 13. Improve public access to rivers 14. Improve public area at N. Carver landfill 15. Attract natural resource-based tourism and recreational businesses 16. Teen recreation center/skate park/etc. 17. Improve existing recreation properties 18. Identify needed recreational areas 19. Land for playgrounds in subdivisions 20. ADA access to all town recreational facilities |

OPEN SPACE & RECREATION PLAN: ACCOMPLISHMENTS SINCE THE 2004 5-YEAR ACTION PLAN (cont'd.)

Accomplished Since 2004:

Not Accomplished as of 2010:

| Goal Four: <i>Develop strategies to change Town policy re: open space and recreation issues:</i> | |
|--|--|
| <ul style="list-style-type: none"> 21. Use CPA to create “land bank”: this is the 10% set-aside of funds that must be used on open space every year whether a purchase is made or not 22. Promote agriculture and natural resource-based tourism 23. Use state and federal funding to protect open space 24. Create permanent Open Space Committee | <ul style="list-style-type: none"> 21. Increase minimum lot size to 2 acres [NO LONGER A GOAL] 22. Increase minimum lot size to 3 acres in designated critical resource areas [NO LONGER A GOAL] |

2010 Carver Open Space and Recreation Plan Seven-Year Action Plan

Goal One: Maintain the rural character and scenic atmosphere of Carver.

| Objective 1: Permanently protect open space in Carver. | | | |
|--|---|---|----------------------------|
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 1-1a. Work to re-adopt the Community Preservation Act (if rescinded) in order to generate funds that can be used for open space acquisition. | Conservation Comm., Planning Board, Historic District Comm., Housing Authority, Open Space Committee | CPA 3% tax bill surcharge | 2011 (not rescinded) |
| 1-1c. Prioritize land for open space protection, especially in the priority sensitive areas. | Open Space Comm., Conservation Comm., Planning Board, Historic District Comm., Assessors' Office | N/A (In-kind: Volunteers & Conservation staff) | 2010-2017 |
| 1-1d. Encourage land donations, adoption of conservation restrictions, tax title taking, and occasional purchase of critical lands. | All town boards | Conservation Trust Fund for legal costs (In-kind: Conservation staff & other staff) | 2010-2017 |
| 1-1e. Acquire and protect distinctive areas of town that are critical to maintaining Carver's rural charm. | Board of Selectmen, Open Space Comm., Conservation Comm., Planning Board, Land Conservation Organizations | CPA funding, Conservation Trust Fund; LAND grants, PARC grants, CDAG grants, etc. | 2010-2017 |
| 1-1f. Continue to fund the Conservation Trust Fund with roll-back taxes in order to continue this safety-net source of funding for land acquisition and costs associated with land acquisition in times when the town is unable to act otherwise due to time constraints.. | Conservation Comm., Board of Selectmen, Town Meeting | Special Legislation provided for Chapter 61, 61A, & 61B roll-back taxes to fund | 2014 |

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|--|--|---|----------------------------|
| 1-1g. Continue to enforce existing regulations that protect open space, the environment, and the scenic character of the town | Planning Board, Earth Removal Committee, Conservation Commission, Board of Selectmen | N/A (In-kind: town staff) | 2010-2017 |
| Objective 2: Protect the town's historic, cultural, and scenic resources. | | | |
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 1-2a. Continue to identify historic sites and cultural and scenic resources and develop tools to protect them. | Historic District Commission, Planning Board | N/A (In-kind: town staff) | 2011-2017 |
| 1-2b. Investigate the idea of creating a scenic roads by-law and the feasibility of designating certain roads as scenic roads. | Planning Board, Con Comm., Historic District Comm. | N/A (In-kind: town staff) | 2012 |
| Objective 3: Support planning policies that control population growth. | | | |
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 1-3a. Develop town water and/or sewer only in limited areas such as Industrial zones and Village centers. | Department of Public Works, Board of Health, Planning Board, Board of Selectmen | DEP Drinking Water Supply Protection Grant & USDA Rural Development Grant | Will be complete in 2012 |
| Objective 4: Modify existing zoning regulations to encourage open space in residential, commercial, and industrial development to protect open space, the environment and the scenic character of town. | | | |
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 1-4b. Allow for cluster subdivision by right rather than by special permit. | Planning Board | N/A: Town Meeting | 2012 |

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|---|--|--|-----------|
| 1-4c. Increase the minimum amount of contiguous open space required (currently 20%) for parcels within a conservation (cluster) subdivision. | Planning Board, | N/A: Town Meeting | 2012 |
| 1-4d. Expand and increase the allowable density in “receiving areas” when implementing Transfer of Development Rights. | Planning Board, | N/A: Town Meeting | 2012 |
| 1-4e. Designate critical resource areas and steer development away from these areas and away from Priority Preservation Areas.. | Conservation Comm., Planning Board, Open Space Comm. | N/A: Town Meeting | 2012 |
| 1-4f. Continue to impose consistent enforcement of soil mining and regulate mining that is a commercial enterprise while providing aquifer protection as recommended by the Plymouth/Carver Aquifer Advisory Committee. | Earth Removal Committee | N/A: Town Meeting (In-kind: Town Staff) | 2010-2017 |

Goal Two: Preserve the quality of Carver’s natural resources, including ground and surface waters, wetlands, and wildlife habitat.

| Objective 1: Protect Carver’s groundwater resources. | | | |
|--|---|--|----------------------------|
| Actions | Responsible Parties | Potential Funding Sources | Implementation Year |
| 2-1a. Continue work with Bourne, Kingston, Middleboro, Plymouth, Plympton, and Wareham to protect the Plymouth/Carver Aquifer by continued participation in Plymouth/Carver Aquifer Advisory Committee | Board of Selectmen regional Plymouth/Carver Aquifer Advisory Committee, Conservation Commission, Planning Board, Open Space Committee | Potential grants to SRPEDD from the Sheehan Family Foundation, the Island Foundation, and others for regional aquifer public education | 2010-2017 |
| 2-1b. Protect land (especially land over the Plymouth-Carver Aquifer) by purchase or conservation restrictions, using state and federal funds whenever possible and assistance from local land conservation organizations. | Board of Selectmen, Open Space Comm., Conservation Comm., Land Conservation Organizations | CPA funds; EOEEA LAND and/or PARC grants; Conservation Trust Fund | 2010-2017 |
| 2-1c. Identify and protect sites designated as potential sources of public water. | Conservation Comm., Board of Selectmen, Planning Board, Board of Health | DEP Drinking Water Supply Protection Grants; CPA | 2010-2017 |
| Objective 2: Preserve and restore water quality in Carver’s rivers, streams, and ponds. | | | |
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 2-2a. Establish a monitoring program of major town water bodies to identify problem areas and oversee the correction of them. | Board of Selectmen, Conservation Commission, Board of Health | Unknown; possibly Taunton River Coalition grant or Buzzards Bay National Estuary Program Mini-Grant | 2010-2017 |

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|--|---|--|----------------------------|
| 2-2b. Regulate and enforce stormwater management through the cooperative efforts of various town officials and boards. | Planning Board, Dept. of Public Works, Conservation Comm., Board of Health | MGL Chapter 90 funds; town meeting appropriation (In-kind: town staff) | 2010-2017 |
| 2-2c. Require the use of landscaping and agricultural practices that minimize erosion and nutrients from fertilizers entering surface water, groundwater, and aquifer. | Planning Board, Conservation Commission, Board of Health, Agricultural Commission | N/A (Private developers to implement; town staff to enforce) | 2010-2017 |
| Objective 3: Support protection of wetland resources and areas bordering wetlands throughout Carver. | | | |
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 2-3a. Work with the school system and other interested groups to document and inventory vernal pools and other wildlife habitat in Carver. | School Department, Conservation Commission | N/A (In-kind: Conservation Agent staff time) | 2010-2017 |
| 2-3b. Maintain zoning by-law to require a minimum upland area on new lots created in town to limit encroachment on wetlands. | Planning Board, Conservation Commission | N/A: Town Meeting | 2010-2017 |

| | | | |
|---|--|---|----------------------------|
| Objective 4: Encourage retention of existing cranberry grower-owned lands as wildlife habitats, water recharge areas, etc. | | | |
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 2-4a. Encourage tax policies, such as a tiered tax, that will support the financial viability of the cranberry industry and tax each grower at the proper rate. | Board of Selectmen, Assessors' Office, Agricultural Commission | N/A | 2012 |
| 2-4b. Encourage State and Federally supported programs and use of land conservation organizations that help growers maintain their land as wildlife habitat, water recharge areas, etc. | Conservation Commission, Agricultural Commission | N/A: (USDA/NRCS to help) | 2010-2017 |
| 2-4c. Encourage discussions with the cranberry industry to find ways to keep farms in viable agriculture and natural habitat. | Agricultural Commission and Conservation Commission. | CPA funds; LAND grants; USDA Agricultural Reserve Program | 2010-2017 |

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|--|---|---|----------------------------|
| 2-4d. Encourage cranberry growers to use and keep up-to-date with Best Management Practices | Agricultural Commission; town staff | DEP 604(b) grant | 2010-2017 |
| Objective 5: Preserve critical wildlife habitats. | | | |
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 2-5a. Protect lands identified by the Natural Heritage and Endangered Species Program as critical habitat for rare and endangered species. | Conservation Comm., Open Space Committee, Land Conservation Organizations | CPA funds; Conservation Trust Fund; LAND grants | 2010-2017 |

Goal Three: Improve access to and enhance recreational opportunities for all Carver residents.

| Objective 1: Develop walking and equestrian trails, bike paths, and picnic areas on public lands. | | | |
|---|--|--|----------------------------|
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 3-1a. Establish a Non-Motorized Trail Advisory Committee to research and study the feasibility of creating a multipurpose pathway throughout town, and possibly connecting it to neighboring towns. | Conservation Commission | N/A (In-kind: Volunteers and town staff) | 2012 |
| 3-1b. Develop a plan for location and design of a multi-purpose pathway. | Conservation Commission, Trail Advisory Committee, Recreation Committee, Dept. of Public Works | CPA funds; MGL Chapter 90 funds; | 2013 |
| 3-1c. Create trails and/or picnic areas on existing town properties. | Conservation Commission, Trail Advisory Committee, Recreation Committee, Dept. of Public Works | CPA funds; Taunton River Coalition grants. (and In-Kind: town staff; Scouts; volunteers) | 2014 |
| Objective 2: Expand and upgrade recreational opportunities on ponds and waterways. | | | |
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 3-2a. Improve public access to ponds; acquiring land if available. | Recreation Committee, DPW, Conservation Commission, Planning Board, Board of Selectmen | CPA; LAND Grants; Taunton River Coalition grants; possible private grants; Conservation Trust Fund | 2012-2017 |
| 3-2b. Improve the condition of the beaches and expand beach parking. | Dept. of Public Works, Conservation Commission, Recreation Committee | N/A (In-kind: town staff; volunteers; Scouts) | 2012 |
| 3-2c. Acquire land that gives the public access to the Weweantic and Winnetuxet Rivers and South Meadow Brook; develop fishing spots and canoe passages. | Conservation Commission, Open Space Committee, Board of Selectmen, Land Conservation Organizations | CPA; LAND Grants; Taunton River Coalition grants; possible private grants; Conservation Trust Fund | 2010-2017 |

| Objective 3: Expand and upgrade facilities for active recreation. | | | |
|---|--|--|----------------------------|
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 3-3a. Complete improvements to and maintain existing town recreational properties. | Dept. of Public Works, Buildings and Grounds Dept., Recreation Committee | CPA; PARC grants (In-kind: town staff) | 2010-2017 |
| 3-3b. Identify areas of town that are lacking playgrounds and parks and develop more facilities in these locations. | Recreation Committee, Planning Board, Open Space Committee | N/A (In-kind: town staff) | 2012-2013 |
| 3-3d. Develop mechanisms for maintaining properties and preventing vandalism. | Dept. of Public Works, Conservation Commission, Open Space Committee | N/A (in-kind: town staff) | 2012-2014 |
| 3-3e. Develop rules and regulations, to be posted at town properties, informing the public on allowed and prohibited uses. | Dept. of Public Works, Recreation Committee, Pond Committee, Conservation Commission | N/A (In-kind: town staff) | 2012 |
| 3-3f. Work towards attracting recreational business enterprises such as sports complexes, skating rinks, etc. | Industrial Development Commission, Recreation Committee | N/A (In-kind: Volunteers and town staff) | 2012-2015 |
| 3-3g. Develop a teen recreation center and other teen-related facilities, such as a skate park or basketball courts. | Recreation Committee, Board of Selectmen, School Department | CPA funds; town meeting; PARC grant; unknown funds | 2011-2014 |
| Objective 4: Ensure public facilities are accessible to all residents regardless of age or ability. | | | |
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 3-4a. Improve access to all town facilities that are not currently in complete compliance with the Americans with Disabilities Act. | Dept. of Public Works, Board of Selectmen, Recreation Committee | CPA funds; MGL Chapter 90 (In-kind: town staff) | 2012-2017 |

Goal Four: Develop definitive strategies that will affect change in town policy regarding open space and recreation issues in Carver.

| Objective 1: Establish open space preservation and recreation planning priorities in all town decisions and actions. | | | |
|---|---|---|----------------------------|
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 4-1b. Provide each town office and department with reference copies of the Open Space and Recreation Plan, specifically this Action Plan. | Open Space Committee, Conservation Commission | N/A (In-kind: town staff) | 2011 |
| 4-1c. Require all major town decisions and actions to be consistent with the Open Space and Recreation Plan. | All town boards | N/A (In-kind: town staff; volunteers) | 2010-2015 |
| 4-1d. Mandate that all town offices and departments keep others informed of decisions/actions taken that impact the overall effectiveness of the plan. | Board of Selectmen, Town Administrator | N/A (In-kind: town staff) | 2011 |
| 4-1e. Educate town boards and officials concerning open space policies, practices, tools, resources, etc. | Conservation Commission, Open Space Committee, Planning Board | N/A (In-kind: town staff) | 2010-2017 |
| 4-1f. Continue to increase community awareness of positive effects of CPA funding on preserving our town's environment, water quality, quality of life, tax rate, and future. | Conservation Commission, Planning Board, Board of Health, Recreation Committee, CPA Committee, Board of Selectmen | N/A (In-kind: town staff) | 2010-2017 |
| Objective 2: Increase community appreciation of the town's rich resources. | | | |
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 4-2a. Provide uniform signage throughout the town noting town boundaries, scenic roads and vistas, historic sites, town parks, stream crossings, etc. | Dept. of Public Works, Historic District Comm., Planning Board, Conservation Commission, Open Space Committee | CPA funds and Conservation Trust Fund (where appropriate); private grants | 2012 |

| | | | |
|--|---|---|----------------------------|
| 4-2b. Use all available media, including speakers, for informing residents of open space, wildlife, and natural resources and recreational features in town. | Conservation Commission, Open Space Committee, Recreation Committee | N/A: town staff; or Conservation Trust Fund if speaker fees | 2010-2017 |
| 4-2c. Continue to have an Open Space and Conservation booth at Old Home Day and at Farmer's Market. | Conservation Commission, Open Space Committee, Agricultural Commission | N/A (In-kind: town staff) | 2010-2017 |
| Objective 3: Develop implementation and funding mechanisms to support open space and recreation needs. | | | |
| Actions | Responsible Parties | Potential Funding Source | Implementation Year |
| 4-3a. Open Space Committee to continue to oversee implementation of the Carver Open Space and Recreation Plan for the next 7 years. | Town Administrator, Conservation Commission | N/A (In-kind: Volunteers and town staff) | 2010-2017 |
| 4-3d. Continue to employ a full-time Conservation Agent. | Town Administrator, Board of Selectmen, Conservation Commission | Town Meeting | 2010-2017 |
| 4-3e. Encourage and promote agriculture- and natural resource-based tourism in town | Board of Selectmen, Agricultural Commission, Conservation Commission, Planning Board, Industrial Development Commission, Arts, Culture, and Tourism Committee | N/A (enlist help of Cape Cod Cranberry Growers Assn. and SEMAP) | 2010-2017 |
| 4-3f. Make maximum use of state and federal funding and other programs to match town spending and protect open space. | Community Preservation Committee, Conservation Commission, Open Space Committee | N/A (In-kind: town staff) | 2010-2017 |

XI. LETTERS OF SUPPORT

X. REFERENCES

Acushnet Open Space and Recreation Plan: Town of Acushnet, Massachusetts. February 2001. Open Space & Recreation Committee and the Buzzards Bay Project National Estuary Program.

Buzzards Bay Embayment Subwatershed Evaluation: Establishing Priorities for Nitrogen Management Action. May 3, 1994. Buzzards Bay Project, Massachusetts Coastal Zone Management.

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XI. APPENDIX

- ◆ Americans with Disabilities Act, Section 504 Self-Evaluation.
- ◆ Open Space and Recreation Survey and Introductory Letter. August 2010.

Scientific Sample of Town Residents – Carver Open Space and Recreation Plan Survey Results, 22 July 2011.

- ◆ The Community Preservation Act : A Guide to Implementation and Answers to Frequently Asked Questions. December 2002.
- ◆ Biodiversity Days 2002 – Species List for Carver
- ◆ Letter and information from the Natural Heritage and Endangered Species Program. June 10, 2002.
- ◆ Letter and information from the Natural Heritage and Endangered Species Program. December 31, 2010.
- ◆ Public Land Protection: Massachusetts Constitution, Article 97 – Opinion of the Attorney General 1973.
- ◆ General Laws of Massachusetts - Chapter 40: Section 15C. Designation and improvement of scenic roads.
- ◆ Article: *Is Land Conservation Bad for the Tax Base?* 1993.
- ◆ Brochure: *Conservation Is A Community Investment: The Cost of Community Services in Middleborough, Massachusetts.*
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- ◆ Newspaper articles announcing the release of the Carver Open Space Survey Results. The and Carver Reporter, August 2011
- ◆ Newspaper Article: *Towns are wise to organize to protect water.* The Standard-Times. August 27, 2002.

Town of Carver

Americans with Disabilities Act (ADA) Section 504 Self-Evaluation

In 1990, the Americans with Disabilities Act (ADA) was federally adopted, placing strict regulations on schools, businesses, industry and government to meet compliance guidelines set forth to ensure that no person shall be discriminated against based on a physical disability. As part of the process to create this Plan, each and every town conservation or recreation facility has been assessed according to the guidelines set forth by the ADA. Inspections were performed in 2004 by Dan Fortier, Chairman of the Open Space Committee, Tom Lee from Butlee's Handicapped Outdoor Adventures, and Thomas Dodd and Mike Guilbault from the New England Chapter of Paralyzed Veterans of America. Inspections were performed again in 2009 by Betsey Wimperis, member of the Open Space Committee.

Carver has one relatively new, completely-accessible playground: the Carver Community Playground next to the library in Carver Center. The remaining recreation areas will all require some work to make them ADA compliant. Transition Plans for these facilities can be found in the following section.

The majority of land owned by the Conservation Commission exists in the Great South Meadow Cedar Swamp in a natural undeveloped state, as either forestland or wetlands. No facilities of any kind exist on any of these parcels. In fact, the exact locations of most of these parcels have only recently been determined. It is the intent of the Conservation Commission to preserve these areas in their natural condition; therefore, evaluations for the Great South Meadow Cedar Swamp have been omitted.

The following Self-Evaluation includes details on administrative requirements, programs, and employment practices, in addition to a site-by-site inventory of all town-owned playgrounds, beaches, and public landings. It is the recommendation of the Open Space Committee that each of these site be brought into compliance as soon as the town has the ability to finance such projects. Grant funding is available to communities to meet the ADA regulations and should be sought by the town immediately.

Part I Administrative Requirements:

1. Designation of 504 Coordinator

The Carver Board of Selectmen designated Mr. Michael Mendoza, Building Commissioner, as the Town's 504 Coordinator on January 31, 2000.

2. Grievance Procedure

Attachment I includes copies of employee grievance procedures for both union and non-union employees, as well as procedures for the general public.

3. Public Notice Requirements

Attachment II is a written sample of a recruitment notice. These notices are publicized both on the Town Hall bulletin board and in local newspapers. In addition, if any potential candidate for a position is visually impaired, the staff of the Selectmen's Office will read the recruitment notice to the individual. The town does not have the capability of publishing documents in Braille. Vacancies on various committees, commissions and boards are announced at the Selectmen's meetings (televised on local cable TV) and in written form on agendas for meetings. All registered voters of the town are eligible to serve on committees, boards, commissions, etc.

4. Participation of Individuals with Disabilities or Organizations Representing the Disabled Community (2004)

Three persons representing the disabled community assisted with this Self-Evaluation:

Tom Lee - Butlee's Handicap [sic] Outdoor Adventures

Thomas Dodd - New England Chapter of Paralyzed Veterans of America

Mike Guilbault - New England Chapter of Paralyzed Veterans of America

Part II Program Accessibility

Transition Plan

The purpose of the Transition Plan is to identify those physical obstacles that inhibit the ability of the disabled citizen to use public facilities to their fullest intended capacity, and to suggest ways to correct such problems. A Transition Plan is presented below for each site in non-compliance.

King Property

The King Property is a 10-acre town recreational area containing little league and softball fields, tennis courts, basketball courts, a concession stand, field house, and bathrooms.

Bathrooms: The bathrooms are not at all handicapped -accessible. They will need to be completely re-done. There is a handicapped-sized Port-A-Potty on site.

Responsible Party: Recreation Committee/Selectmen

Concession Stand: No changes have been made to this area. The concession stand window is too high. The stand needs a 3-foot wide by 6-inch high ramp in front of the window to make it accessible. Also, a gutter should be installed over the window.

Responsible Party: DPW/Recreation Committee

Gates: Not all gates are in compliance.

Responsible Party: DPW

Pathway: There is an existing solid pathway from the basketball court to the tennis court. The area in front of the concession stand has been improved by the installation of cement pavers. The sand and mulch around the picnic tables and a path to the basketball court still needs to be replaced with a material that will pack down, such as stone dust.

Responsible Party: DPW

Picnic Table: Two picnic tables still need to be extended to allow wheelchairs to fit underneath.

Responsible Party: DPW/Recreation Committee

Scorekeeper Stands: Scorekeeper stands each still need to have a ramp built to get to the doors and the doors need to be wider.

Responsible Party: Recreation Committee/Selectmen

Purchase Street Recreation Site

This 9-acre recreation site contains a soccer field, football field, and parking.

Parking: Designated handicapped parking spaces have been established. The wooden curb still should be lowered in two areas or a permanent ramp (at least 3 feet wide) should to be built on both sides of the curb to allow wheelchair access. All stones still should be removed from handicapped parking area and pathways to ramps.

Completion date: 2004

Responsible Party: DPW

Port-a-Potty: There is now a handicapped-accessible Port-A-Potty on site, but it is inside of the wooden curb.

Responsible Party: Recreation Committee

Sampson's Pond

Sampson's Pond recreation area consists of a small beach with limited parking.

Beach access: Wooden ramp from the parking lot down to the water has been installed.

Responsible Party: Recreation Committee

Completion date: 2009. Constructed by Eagle Scout.

Fishing access: In the future, the town still should consider putting a dock at the boat ramp that is handicapped-accessible. A Chapter 91 permit is required to build this dock.

Parking: A handicapped-parking space has been designated.

Responsible Party: DPW

Port-a-Potty: A handicapped-accessible port-a-potty has been added to this site.

Responsible Party: Recreation Committee

Savery Avenue

Savery Avenue is a 54-acre (48 Conservation-owned; 6 Town of Carver-owned) parcel located within the Savery Avenue Historic District. It contains the country's first divided highway. The parcel is wooded with the old divided highway running through the middle of it. It also has two picnic tables and a DPW trash receptacle. There are no other facilities.

Picnic Tables: At least one picnic table needs to be extended six inches to allow a wheelchair to fit under it.

Responsible Party: Conservation Commission/DPW

Forest Street Recreation Site

This 3.3 acre property consists of two dirt practice fields. It is in extremely poor condition and there are no actual facilities on site. Should the town decide to rehabilitate this property, any new facilities should be made handicapped-accessible.

Responsible Party: DPW

Cole Property

This 221-acre parcel off Pleasant Street at the Plympton town line has parking for ten cars. The entrance is gated, since no motorized vehicles are allowed on the property. To the left of the gate, boulders have been placed to deter off-road vehicle use of the property. Between the gate and the boulders, a wheelchair-sized space has been provided for wheelchair access (as well as horseback riders). About 300 feet into the property, where the walking path begins a slightly steep slope, a 300-foot handicapped-accessible path was begun in 2009 to allow for wheelchair passage up the hill. When the path is completed with a surfacing of crushed stone dust, the path will be handicapped-accessible for about one-half mile, providing a way for the physically-challenged to appreciate this significant and beautiful site. There are no restrooms or any other facilities on the site.

Responsible Party: Conservation Commission

Part III Employment Practices

1. Recruitment

All job announcements include a non-discrimination statement. Announcements are made on town hall bulletin boards that are in accessible areas. Staff at the Town Administrator's/Selectmen's Office will read all job announcements to the visually-impaired either in person or by telephone. Hearing-impaired individuals can contact the department with their specialized phone equipment, or receive by mail the recruitment notice.

2. Personnel Actions

The town of Carver does not discriminate in the recruitment, selection, promotion, hiring, or upgrading of employees.

3. Leave Administration

The town does not discriminate in regard to leave administration. The town follows all state and federal laws in addition to having policies for granting leave in its written policies and agreements.

4. Training

All training provided by the town allows for equal participation by qualified employees with disabilities.

5. Tests

All tests administered by the town measure job skills and qualifications needed for a particular job opening.

6. Medical Examinations/Questionnaires

Medical examinations (if required) are only performed after pre-employment offer. The town does not have a medical history questionnaire in its employment applications unless required by statute.

7. Social/Recreational Programs

Any social or recreational programs sponsored by the town are made accessible to employees with disabilities.

8. Fringe Benefits

All employees regardless of disabilities receive the same fringe benefits as all other employees.

9. Collective Bargaining Agreements

Qualified employees with disabilities may participate in Collective Bargaining and there are no specific provisions for those with disabilities.

10. Wage and Salary Administration

Employees with disabilities receive the same rate of compensation as those employees without disabilities for the same position.

Trail work on Cole Property

By Anonymous

[GateHouse News Service](#)

Posted Apr 24, 2010 @ 01:00 PM



CARVER —

The Carver Conservation Commission is conducting trail maintenance work on the Cole Property at 9 a.m. Saturday, May 1. You may choose to help or just walk with us. Join us in the parking lot off Pleasant Street.

Directions: Take Route 58 North towards North Carver. Take a right onto Pleasant Street after you cross the Plympton town line. The Cole Property parking lot is almost one mile down Pleasant Street on the right and is marked with a green street sign that says “Cole Bog.” Park in the designated area.

Take your own water, snack, boots and insect repellent. Maps are available at the Conservation Commission office showing the location. Call the Conservation Commission at 508-866-3482 or the selectmen’s office at 508-866-3401 for more information. The rain date will be Sunday, May 2.

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Read more: [Trail work on Cole Property - Carver, MA - Wicked Local Carver](http://www.wickedlocal.com/carver/archive/x932353186/Trail-work-on-Cole-Property#ixzz1Sm3wnmrX)
<http://www.wickedlocal.com/carver/archive/x932353186/Trail-work-on-Cole-Property#ixzz1Sm3wnmrX>

Carver Open Space and Recreation Committee need to hear from you

By Frank Mand

[GateHouse News Service](#)

Posted Aug 10, 2010 @ 06:29 AM



CARVER —

You may already have won!

That's the caption that is often slapped in big, bold print on the front of the sweepstakes forms you receive, unsolicited, in the mail.

So most of us have learned to either toss these bulky, glossy come-ons directly into the trash or to put them aside for disposal later.

That's why the response rate for most solicitations, good or bad, honest or otherwise, is so low.

But do yourself a favor: if you are lucky enough to be one of the town residents who has been scientifically selected to receive the survey from the Carver Open Space and Recreation Committee, don't toss it out.

You are, believe it or not, already a winner.

Your answers to the questions posed on this questionnaire will have a direct effect on the quality of life in your community.

You will help decide what new ball fields, if any, are built in town.

You will help decide whether the town spends its time, energy and scarce funds on the acquisition of open space, the creation of green belts, bike paths, protection of the aquifer and any or all of the above.

And just by participating – and returning the form – you will help to qualify the town for state grants that will supplement those scarce funds.

It is, from any perspective, a no-brainer.

And it requires, the committee claims, just about 10 minutes of your time.

The questions are simple and straightforward but require a little patience.

For example, Question 2 asks, “Which of the following do you feel should be protected or acquired,” and then provides a long list of items.

You are supposed to select as many as you want, but, as you do this, consider seriously the merits of each because the next question asks you to name your top five.

The top five are, in a sense, the “fundable” five: the ones that might get the most attention in time and money.

Do you believe the town needs to build more ball fields? Are you concerned that wildlife is disappearing from this once rural community? Are you more concerned with historical buildings than the preservation of wetlands or wildlife?

Question 3 looks to you to create the town’s open space priorities for the next five to 10 years.

If it is determined that there is indeed a desire to see more of the town’s open space utilized for active, outdoor recreation, the survey goes on to ask you to get specific as to what kinds of recreational activities you enjoy and which of those you would like to see more of.

Take your pick from an eclectic assortment of activities, from bird watching to boating, skateboarding to sailing, camping to canoeing. But again, be prepared to choose your top five.

The survey also asks participants to evaluate the town’s beaches, name what kind of businesses should be encouraged to locate in Carver and to name the top three open space issues facing the town today.

Want to have a new ball field, park, or historic overlook named in your honor? Think that the town already has enough green to go around? Well, this is the first step: participation. The town needs to have a minimum number of responses to be able to apply the results of the survey to the town as a whole.

So when you see that survey, fight the instinct to head to the shredder and instead put it someplace where you can read it over at your leisure and respond thoughtfully.

Believe it not, the only thing they’re selling is democracy.

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Read more: [Carver Open Space and Recreation Committee need to hear from you - Carver, MA - Wicked Local Carver http://www.wickedlocal.com/carver/archive/x84686367/Carver-Open-Space-and-Recreation-Committee-need-to-hear-from-you#ixzz1SlxdxtNO](http://www.wickedlocal.com/carver/archive/x84686367/Carver-Open-Space-and-Recreation-Committee-need-to-hear-from-you#ixzz1SlxdxtNO)

FOOTNOTES: Exploring the Cole bogs

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Photos



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Wicked Local Photo/Frank Mand

The bogs on the historic Cole property in Carver are intimately sized, especially compared to today's larger cranberry operations.





« »

By Frank Mand

[GateHouse News Service](#)

Posted Aug 12, 2010 @ 12:37 PM



CARVER —

You can't get there from here, which, in the case of the Cole Bogs, is – trust me – a good thing.

It's ironic that one of the things that may have prompted the longtime owners to sell this historic property to the town was that the state built Route 44. The new highway cut off the bogs, and most of the property, from the main part of Carver.

Now the only reasonable way to access the property is off Pleasant Street in Plympton.

Head down Route 58, over the Plympton line, then take a right on Pleasant Street.

When the road takes a sharp turn to the left, the entrance to the walks, bogs, and Carver's new water plant is on the right.

There's a gate. Even though it may be open, you are supposed to park and walk in. Yeah, yeah, I know: you prefer to use the drive-thru.

Don't worry, though, it's an easy walk down a gravel road and over a small tributary of the Winnetuxet, and in about five or so minutes, you come to an intersection of sorts.

You might have noticed a trail before that, or least the beginning of a trail on the left of the road. That's a special trail for people with mobility issues; or rather, it will be.

The Taunton River Alliance gave the town a grant to construct a trail that will be specially graded and surfaced to allow people unable to traverse most wildland trails to enjoy the natural beauty of this area.

Besides this special trail, there are four color-coded trails you can follow through the Cole property.

The blue, white, orange and green trails are listed here in order of their length and difficulty.

Actually the green has yet to be fully mapped, and on the day we walked the property, we didn't have time to visit each trail, so we went directly to the old bogs.

We took a right at that first intersection (noting the signage that speaks of a hard-hat area) and followed that through another intersection. At that point you'll see the nearly complete municipal water plant if you look to your left.

To the right is a road that follows the new water main out to Route 58 near the Plympton/Carver line.

Directly ahead, though, is the path to the historic bogs.

We headed to the bogs, noting a variety of feathers in our way (hawks, turkeys, other?). When we came down a small hill on to the main bog, a grayish blue shadow suddenly rose up above us.

A great blue heron, long and angular – at moments like a knife. But as it stroked the air with its wings, it was both ungainly and elegant at the same time.

The bogs themselves are a surprise.

Cared for by volunteers, they are remarkably well groomed and lushly green despite the brutal heat they have experienced this summer. They are also a perfect size to take in at a glance (not the massive, oftentimes geometric expanses that modern agro-economics demand).

Once at the bogs, you will be inclined to turn right and circumnavigate the bogs, but first consider walking a short distance to your left and up to the small wooden pump shed you will see there.

Behind that gray shed is a small and lovely reservoir that, on this day, harbored yet another great blue heron.

We were surprised again, and before I could snap its photograph, it rose up and disappeared over the trees that crowd in closely.

Another heron, perhaps the first we had seen, returned to the far side of the bogs a moment later.

I tried to get its picture in flight but was not quick enough. Instead, I snapped a shot or two of it standing in the short grass near the woods on the far side.

The next time I visit, I will know to sneak up on these bogs.

Or perhaps I will arrive in the early morning and set up my camera for photographs of the herons as they arrive: surprise them instead.

Along the periphery of these bogs, volunteers have erected bluebird houses.

It is hard to believe that where we stood, we were just a few hundred yards from the “new 44.”

There is a path that you can follow out to the highway, and if the weather has been dry, you can continue to follow it under the highway and into North Carver. But it is not a route to count on.

There are two posts where the path leaves the woods that will soon become a gate that will block access to all but foot traffic. Dirt bikes are still a problem in this area, and they have torn up the paths in some spots and created ruts in the dirt.

I spent hardly more than an hour on the Cole property during this visit, and, to be honest, I rushed around a bit. But I made plans to come back.

In the fall I hope to be part of the volunteers that dry-harvest the bogs' berries. But any time I have an hour to spare and a need for the quiet and cool of the woods, I plan to stop by.

And lucky you, when I do I'll (like the joke about how many Californians it takes to screw in a light bulb: one to screw it in and four to..) share the experience.

The Cole property: right there at the edge of two towns, a stone's throw from the highway and yet wonderfully removed from the everyday.

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Read more: [FOOTNOTES: Exploring the Cole bogs - Carver, MA - Wicked Local Carver
http://www.wickedlocal.com/carver/archive/x905707123/FOOTNOTES-Exploring-the-Cole-bogs#ixzz1SlxB7227](http://www.wickedlocal.com/carver/archive/x905707123/FOOTNOTES-Exploring-the-Cole-bogs#ixzz1SlxB7227)

Cole Bog harvesting this weekend!

Learn about dry harvesting cranberries at the historic bog



By Anonymous

[GateHouse News Service](#)

Posted Sep 13, 2010 @ 11:58 AM



CARVER —

The Carver Agricultural Commission invites all members of the community to help harvest the historic Cole Property cranberry bogs on Saturday September 18 and Sunday September 19, 2010.

Volunteers will meet at 9:30 a.m. on both days at the Cole Property parking lot on Pleasant Street at the Carver/Plympton town line and proceed to the cranberry bogs where a member of the Agricultural Commission will explain Good Agricultural Practices (GAP) before the harvesting begins.

To get to the bog area, take Route 58 North from Route 44 into Plympton, make the first right in Plympton at Pleasant Street, go roughly $\frac{3}{4}$ of a mile, and the parking for Cole Bog Road is on your right at the Carver/Plympton town line, directly after 92 Pleasant St. (a blue farm house also on the right).

Please dress for the weather and the work and bring your own water. Park in the designated areas only.

For questions or information, please call 508.866.3482 during office hours, or 781.361.5425 evenings and on the weekend.

Come enjoy the fall weather, see this historic bog, and learn first hand what dry harvesting cranberries is all about. Pizza will be available for volunteers at lunchtime.
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Read more: [Cole Bog harvesting this weekend! - Carver, MA - Wicked Local Carver](#)
<http://www.wickedlocal.com/carver/archive/x2125235227/Cole-Bog-harvesting-this-weekend#ixzz1SlwmZpXg>

Forums to focus on health of Plymouth/Carver Aquifer

[Zoom](#)

Photos



This map shows the boundaries of the Plymouth/Carver Aquifer

By Brittany Burrows

[Wicked Local Carver](#)

Posted Mar 24, 2011 @ 10:36 AM

Last update Mar 24, 2011 @ 10:38 AM



CARVER —

The Plymouth/Carver Aquifer Advisory Committee will hold the first of four forums at 7 p.m. Wednesday, March 30, in the Selectmen's Meeting Room at Carver Town Hall.

The first forum, “The Water Beneath Us: Our Hidden Resource,” will feature a number of speakers from both Plymouth and Carver.

“This forum is basically just an introduction on what the aquifer is and how it is formed,” Carver Conservation Agent Sarah Hewins said. “I think there are going to be interesting speakers, good slideshows and an opportunity for lots of questions.”

Sam Tyler, of Tyler Well and Pump, will speak about residential wells during the forum and how homeowners can keep their wells safe from contamination.

“We feel it's very important for homeowners to learn more about the aquifer and how they can keep it safe,” Tyler said. “The aquifer is a precious resource, and the more people learn about it, the more protection it can have. We are looking to teach homeowners about how they can keep their well systems safe.”

Guests will also hear from David Gould, environmental resources manager in Plymouth, about municipal wells and his work in Plymouth.

“There is going to be a little bit of an explanation on why it is important to realize that just because you have town water, it doesn't mean you don't have to be careful what you put down the drain or in your front lawn,” Hewins said.

Environmental chemist Bob Bentley will also be giving a general overview on what an aquifer is and why it should be protected.

“I think it is just an opportunity to learn,” Hewins said. “I have to admit, it wasn't too long ago that I didn't know what an aquifer was. It is just something that we may take for granted. I think it will be fun.”

The Plymouth/Carver Aquifer Advisory Committee serves as an advisory committee to the seven towns that are part of the aquifer.

“We are not in any way a regulatory committee,” Hewins said. “It is a committee made up of one delegate from each of the seven towns that are in the aquifer, and each of the seven towns also has an alternate who can only vote if the delegate is absent.”

The committee writes comment letters, reviews projects and helps develop protection plans for the preservation of the aquifer.

The Plymouth/Carver Aquifer contains 500 billion gallons of fresh water and provides clean drinking water for the towns of Bourne, Carver, Kingston, Middleborough, Plymouth, Plympton and Wareham.

“Ninety-seven percent of the world's water is salty and otherwise undrinkable, and another 2 percent is locked up in the ice caps and glaciers, so that leaves just 1 percent of all the water that can suit our needs,” Hewins said. “Fresh water is a pretty rare commodity.”

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Read more: [Forums to focus on health of Plymouth/Carver Aquifer - Carver, MA - Wicked Local Carver http://www.wickedlocal.com/carver/archive/x698071894/Forums-to-focus-on-health-of-Plymouth-Carver-Aquifer#ixzz1SlvqqU9i](http://www.wickedlocal.com/carver/archive/x698071894/Forums-to-focus-on-health-of-Plymouth-Carver-Aquifer#ixzz1SlvqqU9i)

SURVEY RESULTS ARTICLE 2011