Section 4

Environmental Inventory and Analysis

4 - ENVIRONMENTAL INVENTORY AND ANALYSIS

A. and B. Topography, Geology, Soils and Landscape Character

Arlington is situated in the Coastal Plain of Eastern Massachusetts. Approximately 8 percent (roughly 286 acres) of Arlington's area is the surface water of bodies of water, including Spy Pond, Arlington Reservoir, Mill Brook, Alewife Brook and the Mystic Lakes. The town lies on the western, or outer, geological edge of a broad, flat, floodplain known geologically as the Boston Basin.

Topography and Geology

Approximately one-third of the town (east of Arlington Center) is part of the Boston Basin, a fairly low and level land mass. The range of elevation in this section is from 10 to 40 feet above mean sea level; it is located along the Alewife Brook floodplain and extends to Spy Pond and the Lower Mystic Lake. Spy Pond is part of the headwaters of Alewife Brook. It feeds the Alewife Brook through the Little River in Belmont, although the construction of Route 2 altered Spy Pond's historic relationship to the Little River.

Just beyond the western shores of the Lower Mystic Lake and Spy Pond is an unbroken ridge (elevation 49.2'), which is part of a terminal moraine. This ridge marks the beginning of Arlington's characteristic rocky knobs and unsorted glacial rock masses. The western portion of Arlington is hilly and rocky, with elevations ranging from 100 to nearly 400 feet above sea level. This part of town marks the beginning of the Boston escarpment. Arlington's hills, which are remnants of ancient mountains, are divided by a valley carved by the action of the now-extinct Arlington River. Outcrops of igneous rock are evidence of this earlier mountain-building volcanic period. Mill Brook flows in a west-to-east direction through this Mill Brook Valley.

Arlington's topography bears distinct marks of the glacial period. As the glacier moved down from the north, rocks of various shapes and sizes were scoured from the mountains, pulled up and carried forward by the flow of ice. As the glacial period ended, masses or rocks were dropped in unsorted layers as the forward edge of ice melted. These formations are called terminal moraines, and an example may be seen on the southern slopes of Arlington Heights.

Soils

Most of the soils in Arlington are designated urban land complexes because they have been modified so they no longer retain their original properties. Arlington's most common soil, a Charlton-Hollis-Urban Land Complex, is located in western areas and is found on slopes of 3-5 percent. Charlton soils are well-drained, upland soils where the relief is affected by the bedrock. They are stony, with 60 inches or more of friable fine sandy loam (a silt-sand-clay mixture). Hollis soils are shallow (<20 in.), excessively drained soils on bedrock uplands. They are also friable fine sandy loam. (Adapted from McLaughlin 1994, 13.)

The Newport-Urban Land Complex soil is also located in western areas of town, particularly the land west and northwest of Park Avenue Circle, lands east of Turkey Hill, and lands west of the Winchester Country Club. These soils have 3-15 percent slopes and tend to be silty loam.

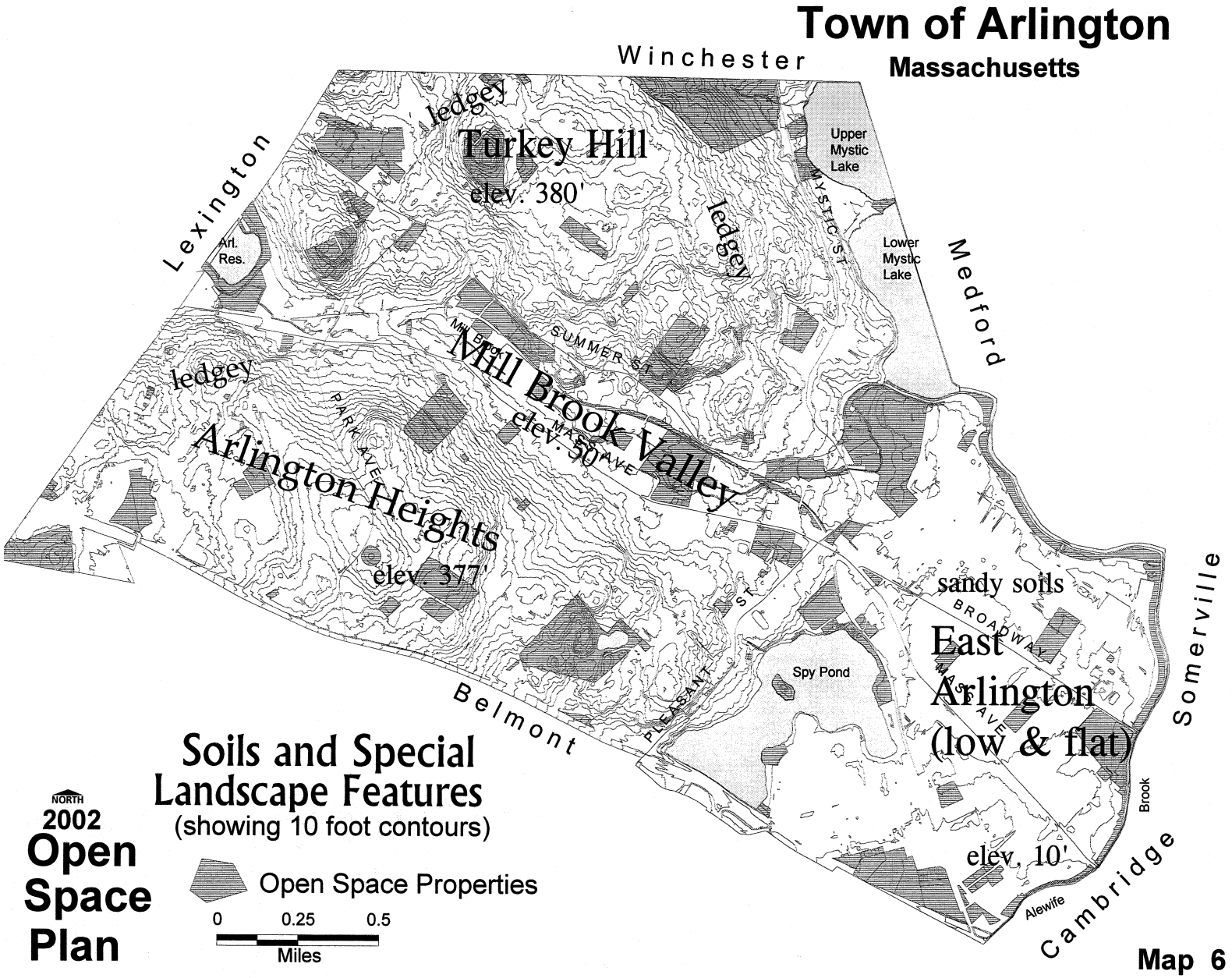
East Arlington contains primarily a Merrimac-Urban Land Complex soil found on 0-8 percent slopes. Merrimac soils are excessively drained soils on glacial outwash plains and are sandy loams over a loose sand and gravel layer at 18-30 inches. (Adapted from McLaughlin 1994, 13.) These soils contain approximately 75 percent urban land/disturbed soils. There are also some pockets of Sandy Unorthents and Unorthents wet substratum soils by the lakes, streams, and wet areas. Unorthents soils have "been excavated and/or deposited due to construction operations" (USDA Soil Conservation 1991, 27). Map 6 shows the location of Arlington's most prominent soils and special landscape features.

Effects of Soils, Topography and Geology on Open Space

Arlington has been more affected by its location in the greater metropolitan Boston area than by its soil types, topographical and geological limitations. Even though much of Arlington is quite hilly, especially in the western area known as the Heights, these hills have not significantly affected development. Further, Arlington's most common soils and topographical and geological characteristics pose little hindrance to potential development or redevelopment.

The majority of buildable land has already been used for housing development, and very little land is available for other purposes, including open space and recreational use. A notable exception is Reed's Brook, a 20-acre former landfill that Arlington purchased in March 1995. The town is currently (2001-2003) implementing a redevelopment plan for that area, which includes environmental remediation of the brook and Unorthents soils, repair of storm drain facilities, and the creation of a balanced mix of active and passive recreation facilities. Construction begins in 2002.

Map 6 — Soils and Special Landscape Features



C. Water Resources

Arlington's water resources have great scenic, recreational and ecological value; they are not used for drinking water, because Arlington receives its drinking water from Massachusetts Water Resources Authority (MWRA). Arlington's water bodies are part of the Mystic River Watershed, which is part of the Boston Harbor River Basin. Map 7 shows Arlington's water resources and wetlands, and Map 8 shows the town's floodplains.

Surface Water

Surface water makes up roughly 8 percent (286 acres) of Arlington's area (3,517.5 acres). The numerous water bodies within the town make water resources a unique attribute of the town and its open space assets, compared to other metro-Boston communities (see Table 2). However, as in many Massachusetts communities, access to water bodies is limited, since shoreline in Arlington is predominantly in private ownership. Charles Eliot (1926) and others recognized the recreational, ecological and visual importance of the town's larger water bodies—Spy Pond, the Mystic Lakes and the Arlington Reservoir. Even though much of the land bordering these water bodies has been lost to development, there are still significant opportunities for improving access to them.

According to the Department of Environmental Protection's (DEP) 314 CMR 4.00 (1995), all Arlington's water resources have a classification of B or better, indicating either the water body's current class or its goal classification. The DEP defines waters classified as B or better as water bodies that "are designated as a habitat for fish, other aquatic life, and wildlife, and for primary and secondary recreation" (DEP 1995,71).

Table 2 - Arlington's Water Resources

Lakes and Ponds	Rivers and Streams
Arlington Reservoir	Alewife Brook
Hill's Pond	Mill Brook
Lower Mystic Lake	Mystic River
Spy Pond	
Upper Mystic Lake	

Profiles of Key Water Resources

A brief profile of each water resource follows, including the water's public access, recreational uses and, for some water bodies, wildlife uses. The Inventory of Lands of Conservation and Recreation Interest (Section 5) has further details on some of these resources.

Alewife Brook

Access: Much of the Metropolitan District Commission's Alewife Brook Reservation in East Arlington is accessible by foot; the reservation also encompasses areas in Cambridge and Belmont. Access points to walking paths along the brook can be found at the intersections of the brook and the following major roads: Massachusetts Avenue, Broadway and Mystic Valley Parkway; access is also available at the end of Thorndike Street, where there is a large cattail marsh adjacent to the brook.

Recently completed and proposed commercial developments in Arlington, Belmont and Cambridge continue to threaten the hydrology and nature of the upper Alewife Brook drainage area. Several proposed developments have not been approved, but the threats to flooding conditions, wildlife habitat, native vegetation and public access for passive recreation are very serious.

Recreational Use: Passive recreation is the primary use of Alewife Brook, notably walking and bird watching. The brook itself is not usually used for active recreation, although parts of the brook are navigable by canoe or kayak.

Wildlife Use: Alewife Brook supports a small herring run, one of the few left in the Boston area. The brook and its banks attract varieties of birds, small mammals, reptiles and amphibians.

Arlington Reservoir

Access: The Arlington Reservoir is accessible from many streets and neighborhoods via paths to the walking trail around the water body. A parking lot on Lowell Street is accessible during the summer, when the beach and swimming area are open. A year-round parking lot abuts Hurd Field and Drake Village, a short walk from the Reservoir trail, the Minuteman Bikeway and Massachusetts Avenue. There is also potential to connect the Reservoir to Great Meadows in Lexington via walking trails along Munroe Brook and existing roadways.

The Massachusetts Department of Environmental Management (DEM) notified the town in 1998 that the earthen dam around the southern (Arlington) end of the Reservoir posed a high hazard to downstream residents and property. The remediation might require the removal of trees and other vegetation and the rehabilitation of the dam. Since then, various hydrological and soil studies have been undertaken to develop a mitigation plan that will meet safety concerns yet also preserve the natural habitats provided by the current water-level management program. Beyond habitat concerns and scenic/passive recreational benefits from the walking path around the Reservoir, changes to the dam and the level of water would have important consequences for public access to the swimming area and beach.

Recreational Use: Arlington Reservoir is a human-made recreational and flood control Reservoir. In 1979, the town reconstructed a sandy beach and swimming area within the Reservoir by building an earthen impoundment to separate the swimming area from the rest of the Reservoir. A water filtration system keeps the swimming water clean. Residents from Arlington and surrounding communities use this area (called Reservoir Beach) in the summertime for swimming and other recreation. The one-mile walking trail around the Reservoir is used throughout the year for birding, cross-country skiing, fishing, jogging, skating and walking.

Wildlife Use: Arlington Reservoir supports the most diverse aquatic wildlife in town. Over 50 species of water birds have been found there (see Appendix J).

Hill's Pond

Access: Hill's Pond is accessible by a path that begins at the Jason Street entrance of Menotomy Rocks Park, and from other access points in the park.

Recreational Use: Hill's Pond is a human-made pond that offers scenic recreational value. People use the pond for passive recreation, including fishing, ice-skating and bird watching.

Mill Brook

Access: Most of the area abutting Mill Brook is developed, and some of it is industrial, so access is limited. Several sections of the brook run through underground culverts. The public can access the brook at Meadowbrook Park, Mt. Pleasant Cemetery (off Mystic St.), Cooke's Hollow conservation area (located near the brook's eastern end), Mill Street, Mill Brook Drive, Wellington Park (on Grove St.), Watermill Place, Old Schwamb Mill, Park Avenue, Hurd Field, and the Arlington Reservoir, where the brook begins. Town policy requires that all new developments or redevelopment abutting Mill Brook provide public access.

Recreational Use: Mill Brook has scenic and historic value in certain areas, but is not used for active recreation. Accessible areas are limited but are used for walking and bird watching.

Mystic River

Access: Access to the Mystic River is available along the Arlington portion of the Metropolitan District Commission (MDC) parkways, however there are no parking lots along the Arlington side of the river.

Recreational Use: The Mystic River is used for boating, fishing, bird watching and enjoyment of nature. Along its banks, many people enjoy picnicking, walking and dog walking.

Wildlife Use: The Mystic River supports a small herring run of both Alewife and Blueback Herring. The river is an important habitat for many species of birds, and an over-wintering area for waterfowl, because its water current usually prevents it from freezing.

Spy Pond

Access: Spy Pond is accessible to the public at several points, via streets that lead to the pond and at Spy Pond Park on the northeastern shore. Access to the pond exists along a paved path on its southern shore, adjacent to Route 2.

Recreational Use: Fishing, boating, bird watching and skating are popular on Spy Pond. The Arlington Boys and Girls Club, located on the northeastern shore, uses Spy Pond for boating in the summer months. Human and waterfowl activity near Spy Pond Park has damaged the area of the shoreline near Linwood road, and a landscape management plan is being implemented through the Park and Recreation Commission. In addition, the Town's Spy Pond Committee, with the Department of Planning and

Community Development, has received a grant from the Massachusetts Department of Environmental Management (DEM) for a Lake and Pond Watershed Restoration Project, which will incorporate innovative and comprehensive storm water management measures in an effort to restore this urban pond to recreational usability.

Wildlife Use: Spy Pond supports a limited fish population, and in the fall and spring the pond is an important resting and feeding area for migrating birds. Throughout the year Canada Geese, various ducks and swans are found along the shores, and many other permanent and migrating species have been documented (see Appendix J).

Mystic Lakes

Access: Access to the Mystic Lakes in Arlington is limited because most of the land is privately owned. Public access is available along Mystic Valley Parkway in Medford and Winchester, but parking on the Arlington side is available only through on-street parking on side streets nearby.

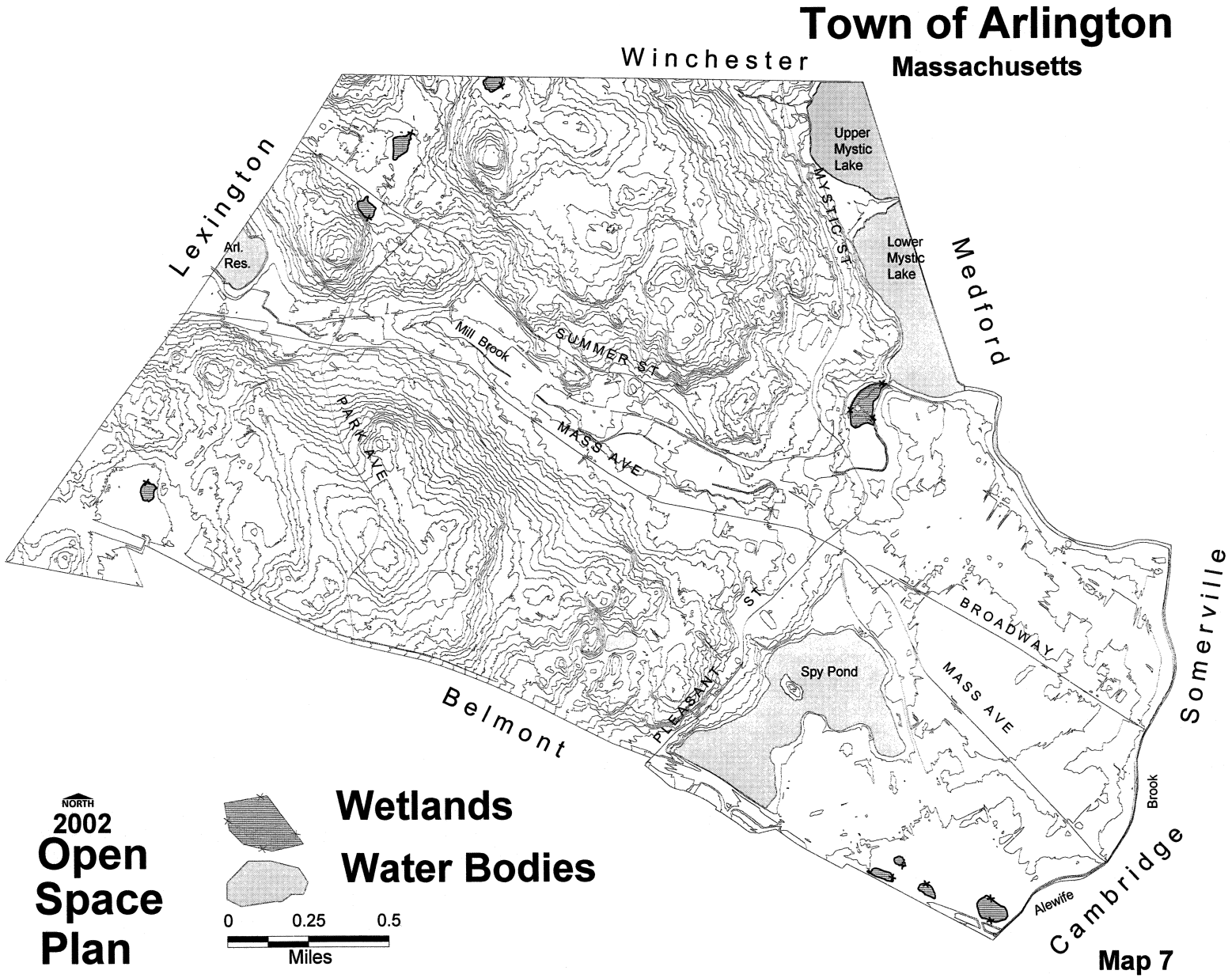
Recreational Use: The Upper and Lower Mystic Lakes straddle the boundaries of Arlington, Winchester and Medford. People use the lakes for swimming, boating and fishing. A three-acre wooded waterfront area of conservation land next to Upper Mystic Lake off Mystic Street (Route 3) near the Winchester town line, known as "Window-On-The-Mystic," is used for passive recreation. The Arlington Conservation Commission installed a bench on this shoreline so visitors may rest and enjoy the view of the lake and the preserved open space. Two private boat clubs are located on the Mystic Lakes. The Medford Boat Club is on MDC land and is accessible from Arlington and Medford. The Winchester Boat Club is not accessible from Arlington.

Wildlife Use: The Mystic Lakes support a varied fish population; Alewife and Blueback Herring migrate and spawn as far upstream as the dam. The lakes also support numbers of seasonal and migrating water birds.

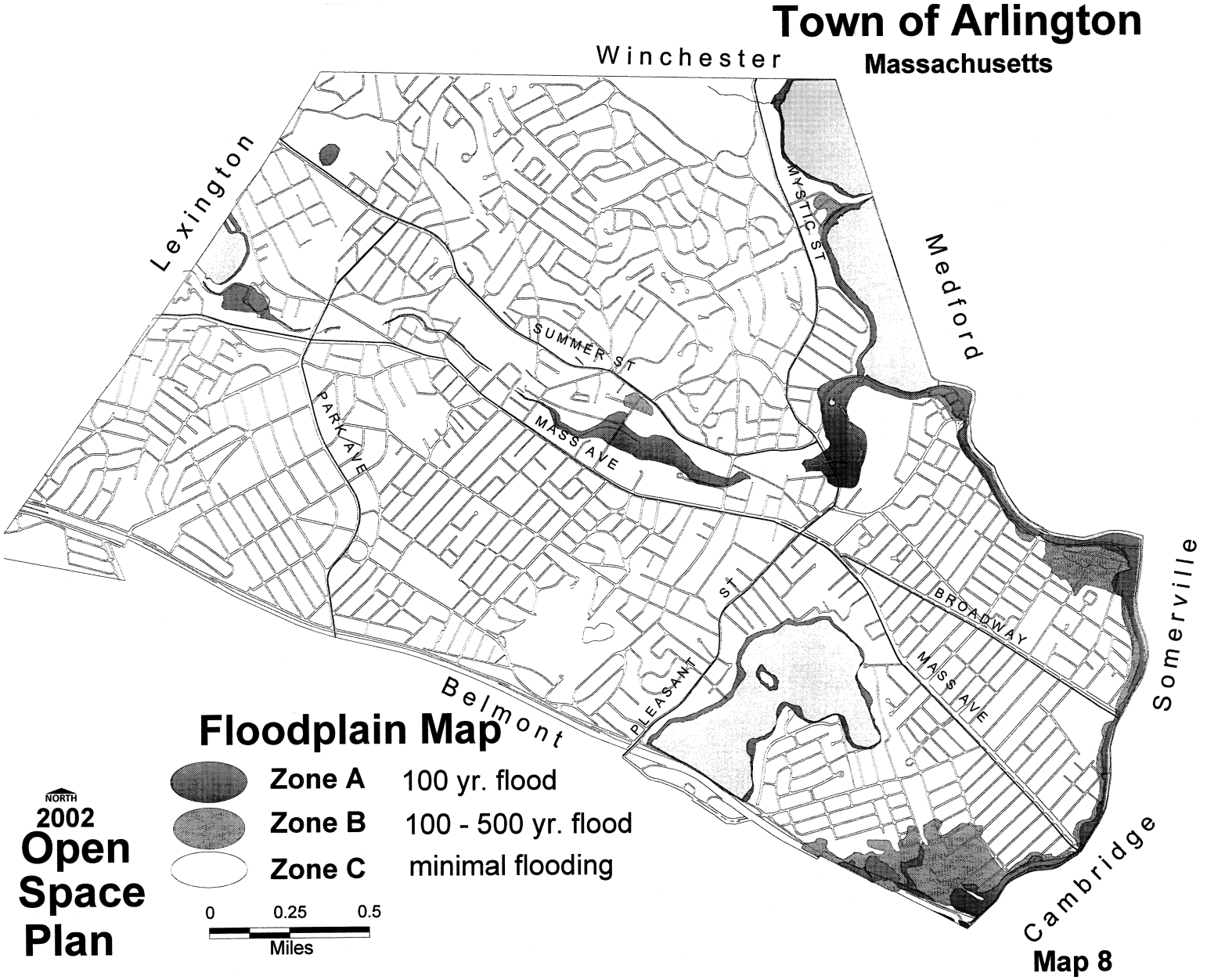
Wetlands, Flood Hazard Areas and Aquifer Recharge Areas

Arlington's wetlands provide opportunities for nature observation, skating and fishing as well as walking and bird watching in adjacent uplands. Arlington's wetland areas are mapped on Map 7. The locations of Arlington's flood hazard areas are detailed on Map 8. Major flooding problems caused by severe storms were experienced in 1996, 1998 and 2001. The areas around Reed's Brook, Mill Brook, Alewife Brook and the Mugar property were particularly affected. As mentioned earlier, Arlington imports water from the MWRA for its domestic and commercial consumption; therefore, the issue of aquifer recharge is not relevant to Arlington and is not included on Maps 7 and 8.

Map 7 — Water Resources and Wetlands



Map 8 — Floodplains



D. Vegetation

Arlington's vegetation consists of a mixture of native and introduced species. Little is known about the town's vegetation throughout history; however, Arlington was clear-cut in the 1600s (McLaughlin 1994) when much of the area was farmed, so most of the existing vegetation is second or third growth. An in-depth, townwide survey of flora found in Arlington has not been undertaken, but a major study of vegetative communities in Arlington's Great Meadows was commissioned by the Arlington Conservation Commission and completed in the spring of 2001. The Friends of Menotomy Rocks Park has surveyed the vegetation in that park.

Woodland Areas

A few wooded areas in Arlington provide peaceful areas for passive recreational activities, walking and nature observation, and are second-growth reminders of more heavily wooded areas or forests of the past. Arlington's wooded areas include Menotomy Rocks Park, Turkey Hill, Mount Gilboa and the Crusher Lot at the Ottoson Middle School.

All of Arlington's woodlands have significant overstories, which do not allow extensive shrub growth. Species typical of an Oak-Hickory forest dominate the woodland areas, including White Ash, Black Oak, Red Oak, White Oak, Scarlet Oak, Hophornbeam, Bitternut Hickory, Shagbark Hickory, White Pine and Sassafras. These areas also contain species common to disturbed soils, including Staghorn Sumac, Grey Birch and Paper Birch. Some woodland communities also include Sugar Maple, Black Cherry and Basswood (Linden).

The native shrubs and plants found in Arlington woodlands are typical of those found in other Boston Basin areas: Blueberry, Currant, Dangleberry, Deerberry, Honeysuckle, Maple Leaf Viburnum, Multiflora Rose, Pipsissewa, Whorled Loosestrife, Sarsaparilla and False Solomon's Seal. Non-native species that have infiltrated Arlington woodland areas include Norway Maple, Tree-of-Heaven (Ailanthus), Sycamore Maple, European Mountain Ash and Cherry Cultivars. Non-native shrubs include Common Buckthorn, European Buckthorn, Forsythia, Winged Euonymus and Barberry.

Wetland Areas

Arlington has a number of marshes, ponds, streams, rivers and lakes containing trees such as Green Ash, Silver Maple, Red Maple, Ashleaf Maple, Cottonwood and Willow. Cattail, Silky Dogwood, Red Osier Dogwood, Buttonbush, and the pervasive Purple Loosestrife and Phragmites are also key constituents in these areas. Willow trees, which grow in wet soils, line the edge of Spy Pond, Thorndike Field and Arlington Reservoir. Reed pads and aquatic weeds are found in and along the edges of the watercourses, inland marshes, Mystic Lakes and Spy Pond.

Landscaped and Mowed Areas

Arlington contains many landscaped and mowed parks and reservations that are accessible for sporting activities, sledding, picnicking, strolling, relaxation and scenic viewing. Robbins Farm, Town Hall Garden, Poets Corner, Hibbert Street Playground, Thorndike Field and Magnolia Field are some of Arlington's landscaped and mowed areas. Given the suburban character of the town, the primary vegetation found in its parks and reservations is a variety of deciduous and coniferous trees and cultivated shrubs and grasses.

In mowed areas, a variety of herbs and wildflowers grow naturally. Chicory, Yarrow, Burdock, Clover, All-heal, Plantain and Tansy are among the plants that have managed to take root amidst the grasses. Non-native Japanese Knotweed often invades paved or mowed areas.

Tree plantings in parks and reservations include Alder, Cedar, Hawthorn, Metasequoia, Lombardy Poplar, Sycamore, Dogwood and flowering ornamentals. Arlington's streets are lined with several species of maples and oaks, Sycamore, Basswood (Linden) and Ash, among other trees.

The use of native plantings in Arlington has gained ground through the efforts of the 2000 by 2000 tree planting program, and the Arlington Conservation Commission's native plant list.

Rare, Threatened or Endangered Species

The Massachusetts Division of Fisheries and Wildlife lists Engelmann's Umbrella Sedge, found in Arlington, as a special concern species (New England Botanical Club 1982). Special concern species, as defined by the Massachusetts Division of Fisheries and Wildlife, "have suffered a decline that could threaten the species ...or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become threatened ..." (Massachusetts DFW 1995, 6)

E. Fisheries and Wildlife

Although there are few areas for wildlife to thrive in Arlington's urban setting, the town still has a good mixture of wildlife and fisheries. Arlingtonians value the town's natural areas, and protection of wildlife is an important aspect of preserving those open spaces.

Fauna, in General

The fauna of Arlington is linked directly to the quantity, quality and diversity of soils, water and vegetation. The relative abundance and diversity of the fauna is also constrained by human activity. Thus, maintenance and regulation of the use of certain areas within open spaces is crucial to Arlington's ability to enhance, preserve and enjoy its living resources.

Currently, there are very few existing inventories of Arlington's fauna. Birds are the best documented species, due to the expertise of local observers and the relative ease with which they are inventoried (refer to *Birds in Arlington—A Checklist and Guide* in Appendix J). In general, what is known about birds probably represents most of the fauna in town; that is, where proper habitat exists, there are pockets of wildlife that have adapted to or tolerate the changes of the last three centuries. However, some areas that appear to be natural are not prime wildlife habitat and require active management. The majority of Arlington's wetlands are good examples of these poor habitat areas, because of the large stands of introduced Phragmites reed and Purple Loosestrife that have thrived, compared to native cattails, sedges and grasses. In addition, most wildlife does not thrive in fragmented, small plots, and each wildlife species requires a certain minimal sized area. Even paths or roads through certain habitats can change the species' assemblage.

The presence and distribution of major fauna groups other than birds, such as invertebrates, reptiles, amphibians and mammals, are less well known. There is no doubt that virtually all of the local native

Executive Office of Environmental Affairs, conducts wildlife inventories, and Arlington's Great Meadows and Alewife Reservation were two of the areas surveyed in June 2001. Those reports are an important resource for more up-to-date information on wildlife in those specified regions.

Invertebrates

Thousands of species of invertebrates inhabit Arlington, but none have been well surveyed. Because these animals are the part of the fauna that binds ecosystems together, they are vital to a viable ecosystem. The most common invertebrates are insects. Arlington's fauna range from the obvious butterflies (e.g., Monarch, Viceroy, Cabbage Butterfly, and Black and Tiger Swallowtails), to the dragonflies, to the many other pest and nonpest species. The abundance and distribution of common insects in Arlington is unknown. Numbers of species of spiders, crustacea, and mollusca are also unknown.

Arlington's open space contains one state-listed invertebrate (Smith 1983; 1991), the Mystic Valley Amphipod (a small, shrimp-like animal). State-listed as special concern, this animal's range is restricted to eastern Massachusetts.

Fishes

The Mystic River watershed has very few species of fishes; biologists have documented only 31 species (21 native and 10 introduced) in the small drainages of the north shore of Massachusetts. Due to the geology, the relative small size of the Mystic drainage basin, and the changes in the quality of the town's streams, the Arlington area may now have fewer than 15 fish species. While not listed state-wide, two species of river herring have declined drastically in the Cambridge/Arlington area. They currently migrate in small numbers in Little River and the lower parts of Mill Brook from the Mystic River. The Mystic River Watershed Association (MyRWA) has been active in promoting enhancement of the passage of migrating native anadromous herrings wherever they have potential access in the watershed.

There is a limited amount of sport and ice fishing in Arlington's major water bodies. Large Carp, Bluegill and Pumpkinseed Sunfish are common, and even 2-3 pound Largemouth Bass appear occasionally. The infertile hybrid tiger-musky has been introduced into Spy Pond as a trophy fish and as biological control for overpopulated sunfishes. Spy Pond was first stocked as early as 1918 and reclaimed in 1957 to eliminate so-called "trash" species. The hoped-for enhanced fishery at Hill's Pond in Menotomy Rocks Park is still possible, but was interrupted by unexpected explosions of aquatic weeds and the illegal and premature introduction of game fishes (Largemouth Bass *Micropterus salmoides* and Black Crappie *Pomoxis nigromaculatus*).

Reptiles and Amphibians

Because of the secretive nature of reptiles and amphibians, little is known about their occurrence in Arlington. The common species that exist in populated areas can easily be found in Arlington: Eastern Red-backed Salamander, Bullfrog, Green Frog, Garter Snake, Snapping Turtle and Painted Turtle. Appendix K has a list of reptile and amphibian occurrence in the Great Meadows compiled by Frances Clark (2001).

Birds

Over the past 25 years, careful observers have recorded approximately 216 species of birds in Arlington, including more than 60 breeding species. The most abundant are those that have adapted to urban habitats. The European Starling, Pigeon and House Sparrow, which were introduced in the 1800s, are very numerous. Common breeding birds found in backyards, small wooded areas and vegetated parks in Arlington are Northern Cardinal, Blue Jay, Tufted Titmouse, Black-capped Chickadee, Goldfinch, White-breasted Nuthatch, Northern Mockingbird, Downy Woodpecker, House Finch, American Robin and Mourning Dove.

Species such as Northern Flicker, Chimney Swift, Eastern Kingbird, Great-crested Flycatcher, House Wren, Gray Catbird, Northern Oriole, and Red-tailed Hawk breed in Arlington, but generally migrate south for the winter. Most of these species are insect eaters, consuming thousands of insects and worms over the summer season.

Arlington's wet open spaces and ponds attract large numbers of birds, especially during migration. Twenty-five species of ducks visit Spy Pond, the Mystic Lakes and Arlington Reservoir; the most spectacular and common are American Widgeon, Hooded and American Merganser, Ring-necked Duck, Wood Duck, Canvasback and Ruddy Duck. Also common are Mallard Duck, Canada Geese and Mute Swans.

A dozen species of sandpipers and plovers can be found at the water's edge, especially around the flats at Arlington Reservoir and Hill's Pond. All of these species require relatively clean aquatic habitat with abundant prey items. Spotted, Least, Pectoral, Semi-palmated and Solitary Sandpipers, along with Greater and Lesser Yellowlegs, are found regularly. Great Blue, Green and Black-crowned Herons are quite common.

Fifty-three bird species, many of which require open meadow or edge, nest at Arlington's Great Meadows. American Woodcock, Northern Harrier, Ring-necked Pheasant, Marsh Wren, and other meadow birds are among some of the birds found there (Andrews et al. 1993; Clark 2001).

Of the 216 species of birds reported in Arlington, 23 species are new to the area since the 193 species reported in the 1996 Arlington Open Space Plan, which was based on the bird list of Andrews et al. (1993). The current bird species are listed in a web-based report by Marjorie Rines and Karsten Hartel (*http://mrines.com/Birds/Arlington.htm*). Local bird information is shared on a list server (*http://arlingtonbirds@listbot.com*).

The newly identified species fall into several categories:

1) Rare vagrants – Ash-throated Flycatcher, Clay-colored Sparrow and Greater White-fronted Goose
2) Strays from coastal areas – Sanderling, Red Phalarope, Black-headed Gull, Black-legged Kittiwake, Common Tern and Forster's Tern
3) Regionally rare species – American Bittern, Eurasian Widgeon, Whip-poor-will, Northern Shrike, Yellow-throated Vireo and Connecticut Warbler
4) New species in the area – Wild Turkey and Red-bellied Woodpecker and Brant
5) Usual species missed in earlier surveys – Northern Saw-whet Owl, Purple Martin, Bank Swallow, Cliff Swallow and Bobolink.

Of particular interest is the value of Arlington Reservoir to birds and birders. A report by Karsten Hartel lists the birds found at the Reservoir, documents the use by birders, and list comments about the value birders place on the site (available at *http://www.arlington2020.org/reservoir/BAB1.htm*. Updated bird lists of the Reservoir and Spy Pond have been prepared in 2001 (see Appendix J). It is reassuring to note a number of reports of wintering or migrating Bald Eagles that have occurred since 1996 at the major water bodies such as Spy Pond and the Mystic Lakes.

A number of locally uncommon or unusual birds are found in and around Arlington's open spaces. These species may not be listed officially as rare, but they form a special part of the very urban nature of Arlington and Greater Boston. These included such species as the Great Cormorant, Green Heron, European Widgeon, Canvasback, Woodcock, Golden Plover, Pectoral Sandpiper, two species of Cuckoos, Red-bellied Woodpecker, all six species of local swallows, numerous warblers species, and Orchard Oriole. These species are all found in Arlington because of the availability of appropriate habitat, be it the large Mystic Lakes, the mudflats of the Reservoir, the wet meadows at Great Meadows, or the mature trees at Menotomy Rocks Park.

Mammals

Many of the typical mammals that survive and sometimes even thrive in urban settings appear in all areas of Arlington, including Virginia Opossum, Raccoon, Striped Skunk, Gray Squirrel, House Mouse and Norway Rat. Other species are found less frequently, such as Northern Short-tailed Shrew, Little Brown Bat, Eastern Chipmunk, White-footed Mouse and Eastern Cottontail. Certain species may be common but are found only in restricted habitats, such as Muskrat in aquatic areas, Meadow Vole in open meadows and Red-backed Vole in wooded areas. Larger mammals are generally absent from Arlington, although White-tailed Deer, Red Fox, Coyote and Woodchuck have been seen. See Appendix K for a list of mammals in Great Meadows compiled by Frances Clark (2001).

Rare, Threatened or Endangered Species

There are few federal- or state-listed rare, threatened or endangered species in Arlington. The state-listed special concern species, Mystic Valley Amphipod *Crangonx abberans,* is known from Great Meadows and possibly other water bodies (Smith 1983; 1991). The Bridle Shiner *Notropis bifrenatus* is found, or was known from, the Mystic River just east of Arlington and might have occurred in Arlington in the past. Arlington also has breeding populations of the uncommon Black-billed Cuckoo and Orchard Oriole. Other state-listed species, such as Bald Eagle, Peregrine Falcon, Northern Harrier and American Bittern, are also recorded occasionally but are not know to breed in Arlington (Andrews et al 1993; Viet and Peterson 1993). No state or federally listed fishes or mammals are found in Arlington.

F. Scenic Resources and Unique Environments

Arlington's scenic areas contribute to the character of Arlington and remain precious and cherished by town residents and visitors. Fortunately, the town's zoning bylaws protect most of these significant areas. Some of Arlington's special landscape features are included in Map 6.

Situated in the Mill Brook Valley (the site of a major glacial river at the end of the Ice Age), Arlington is a land of many steep hills that provide scenic vistas both throughout town and into Boston and

neighboring communities. Most streets are tree-lined, making Arlington feel less urban than neighboring Cambridge or Somerville.

With houses dating back to the eighteenth century, Arlington retains some of its colonial roots. Perhaps the town's biggest claim on American history is its role at the dawn of the American Revolutionary War, in the events of April 19, 1775, when Arlington (then known as Menotomy) saw some of the fiercest fights between the British troops and the Minutemen.

The Marquis/Minuteman Bikeway has created its own unique environment in town. The bikeway bisects the entire length of the town, crosses through Arlington Center, and connects many of Arlington's significant open spaces and historical sites. The Marquis/Minuteman Bikeway has become the most-used bicycle/recreational trail in the entire country, according to the Rails-to-Trails Conservancy. The nationally renowned bikeway is now perhaps one of Arlington's most unique features, and helps to sustain a sense of community in the town.

Scenic Landscapes

- **Views of Boston** from vantage points atop the town's many hills (Robbins Farm Park/Eastern Ave., Route 2 East, Mount Gilboa, Jason Heights, Turkey Hill, former Symmes Hospital property). The Robbins Farm playground area has such a good view of Boston that, on July 4th, hundreds of people gather on this steep hillside to view the Esplanade Fireworks — 8 miles away!

- **Views from steep Arlington hillsides** to other hillsides (Arlington Heights, Mount Gilboa, Turkey Hill and Symmes all overlook each other).

- **The Winfield Robbins Memorial Garden,** enclosed by a wall, features a brick walkway through a formal garden of flowering trees and shrubs (designed by Olmsted Associates, Inc.) and a statue of a Native American (called "Indian Hunter") by Cyrus Dallin, the famous sculptor who lived and worked in Arlington.

- **Views of the Mystic Lakes** are most easily seen from Arlington at the Window-on-the-Mystic, a three-acre conservation site that overlooks the Upper Mystic Lake off Route 3. Observers can enjoy the view from Arlington's only public waterfront on the Upper Lake from a new bench provided by the Arlington Conservation Commission. Mt. Pleasant Cemetery also offers pleasing views of the Mystic Lakes.

- **Spy Pond** offers scenic views from Route 2, the Minuteman Bikeway and the Spy Pond recreational areas along the shore.

- **Mill Brook** is visible from the Arlington Reservoir walking trail, the Minuteman Bikeway, Cooke's Hollow Park behind the Community Safety Building on Mystic Street, and other pockets of unculverted stretches throughout the valley.

- **Alewife Brook** can be viewed from the Alewife Brook Parkway (1.4 miles maintained by MDC) and from neighborhoods in East Arlington.

- **Arlington Reservoir** is reached from its beach area, Lowell Street, the walking trail around the reservoir, and the Mount Gilboa hillside.

- **Mystic River** views are from areas along the Mystic Valley Parkway (MDC land).

- **Mount Gilboa** and **Menotomy Rocks Park** have glacial rock formations and woodlands.

- **Arlington's Great Meadows** is reached from the Marquis/Minuteman Bikeway, and offers one of the most scenic areas along the bikeway.

- **Views of historic houses and buildings** and their surrounding open space include the Jason Russell House (situated at Mass Ave and Jason St., on a large lawn landscaped lot), the Jefferson Cutter House (situated on Whittemore Park in Arlington Center), the Old Schwamb Mill complex (situated on Mill Lane in Arlington Heights), and the Whittemore-Robbins House (behind the Robbins Library in Arlington Center).

- **Marquis/Minuteman Bikeway** is scenic because of landscaping, converted railroad bridges, historic landmarks (e.g., Jefferson Cutter House) and abutting open space (e.g., Spy Pond playground, Hurd Field, Great Meadows).

- **Arlington's cemeteries** add green open space to the town. Mt. Pleasant Cemetery's trees and rolling hills provide picturesque scenery and complement adjacent open space in Meadowbrook Park.

- **Symmes Hospital property** was acquired by the town in early 2002 for a combination of open space, residential and commercial/retail/medical uses, so public access to this hilltop will be enhanced.

Major Characteristic or Unusual Geologic Features

Arlington is geologically interesting because of its dramatic change of elevation and its hilly and rocky contours. The eastern part of town has elevations close to sea level, whereas elevations in western Arlington are often as high as 350 feet above sea level. Almost all the hills, including Mount Gilboa, Symmes and Menotomy Rocks, contain glacial rock formations (remnants of melting glaciers after the Ice Age) suitable for light hiking or rock climbing.

Areas of Critical Environmental Concern

According to the Massachusetts Areas of Critical Environmental Concern (ACEC) program, administered by the Executive Office of Environmental Affairs, Arlington does not have any areas of critical environmental concern.

Cultural, Archaeological and Historic Resources

Arlington has many cultural and historic areas that attract both residents and visitors. Populated by many people in the visual, print, and performing arts (and related fields), the town also has many organizations concerned with maintaining and enhancing its cultural and historic attractions and heritage.

Performing and Visual Arts/Theaters

In Arlington Center, the renovated Regent Theater and the Arlington Friends of the Drama present live theater and other programs. In East Arlington, the popular Capitol Theater shows feature films and features an old-fashioned concession counter.

The Arlington Center for the Arts, located at the former Gibbs Junior High School in East Arlington, is a vibrant center with studios for visual, print and performing artists, as well as a resident theater (Underground Railway Theater). This center also offers arts classes for adults and children, and vacation/summer camp programs.

Throughout Arlington, churches, libraries and other halls (Robbins Memorial Town Hall Auditorium, Arlington High School Lowe Auditorium) provide rehearsal and performance space for dance, choral and other performing arts groups.

Festivals, Fairs and Parades

Each May, the Arlington Center for the Arts sponsors "Heart of the Arts," a folk-arts community festival. Other arts-related organizations and town agencies collaborate on this event. Local artists participate in a juried exhibit of their work. Open studio exhibits, literary readings, crafts, and drama and music offerings make the festival an exciting event for people of all ages. The center has also begun sponsoring a townwide Open Studios weekend in the fall, when visual artists who work in many media open their home-based studios to visitors.

On Patriot's Day, Arlington hosts its own Patriot's Day Parade (one of the largest local parades in Massachusetts), complete with appearances from "William Dawes" and "Paul Revere" in an annual re-creation of their famous ride in 1775. Also in the spring, Arlington hosts the annual Quilters' Connection Exhibit and Sale. This event is held in the Unitarian Universalist Church and draws thousands of people from greater Boston and New England.

In mid- or late-September during Town Day, Arlington commemorates the birthday of Uncle Sam (Samuel Wilson), supplier to the U.S. Army, who was born in Arlington on September 13, 1766.

A Veterans' Day Parade is held annually in November.

Cultural Organizations

The Cyrus E. Dallin Art Museum, founded by a dedicated group of Arlington residents, is housed in the Jefferson Cutter House in Arlington Center. Many of Dallin's 26 town-owned sculptures are exhibited there, and plans are underway to locate a larger facility.

The Arlington Arts Council reviews grant applications from local arts applicants and disburses moneys allocated to the town from the Massachusetts Cultural Council. The community benefits from these grants with many enriching and innovative programs and cultural contributions.

Arlington's Vision 2020 Culture and Recreation Task Group works to further maintain and establish cultural and recreational activities.

Archaeological Areas

In 1959, Arvid Carlson found a prehistoric fossil of a mastodon tusk (a prehistoric mastodon was a cousin of the elephant) in Spy Pond (Balazs 1973). The Arlington Historical Society's Smith Museum now displays the 6 1/2 foot tusk, which is about 42,000 years old.

In 1988, members of Boston University's Archeology Department, under contract with the Prince Hall Mystic Cemetery Association, performed a geophysical survey of Arlington's Prince Hall Mystic Cemetery, the country's earliest Black Masonic cemetery. People buried in this cemetery are said to be from the country's first Black Grand Lodge, formed in 1776 (Pendleton 1989). Survey findings included remains from structures that once belonged in the cemetery, such as the cemetery gate and an obelisk monument. A small park and historical marker now commemorate the cemetery, although most of the former cemetery land has since been developed.

During work in the early 1990s to renovate Spy Pond Field (Ritchie 1993), the town conducted archaeological excavations along the shores of Spy Pond. Some of the archaeological remains found in this area included prehistoric litchic chipping debris and structural remains from nineteenth and early twentieth ice industry buildings.

Historic Organizations

Several historic organizations in Arlington focus on the town's heritage, including:

- Arlington Historical Society
- Arlington Historical Commission
- Arlington Historic Districts Commission (and commissions for each of seven historic districts)

Historic Districts

Arlington has one National Historic District, which is also listed in the Massachusetts State Register of Historic Places: the Arlington Town Center National Historic District, including over 230 properties in this area bounded by Massachusetts Avenue, Pleasant and Gray Streets, and an irregular boundary on its south side. The historic Whittemore-Robbins House, the Robbins Memorial Town Hall, and the Winfield Robbins Memorial Garden are important individual sites in this National District. The Arlington Historical Commission has jurisdiction over this space.

Arlington also has seven local historic districts, comprised mostly of single-family homes:

- Broadway Historic District
- Central Street Historic District
- Mount Gilboa/Crescent Hill Historic District
- Pleasant Street Historic District
- Russell Street Historic District
- Avon Place Historic District
- Jason Gray Historic District (established in 1998)

Arlington's local historic districts are under the jurisdiction of the Arlington Historic Districts Commission. The town has a demolition delay bylaw that protects historic structures within or outside of the historic districts. Maps of all Arlington local historic districts are attached in Appendix L.

Historic Sites and Attractions

The Massachusetts Register of Historic Places lists over 70 entries for Arlington, covering more than 660 individual properties. In addition to the seven locally designated historic districts listed earlier, the entries include historically significant individual properties and landmark sites, such as the milestone marking the Ride of Paul Revere at the corner of Appleton and Paul Revere Road. Several of Arlington's historic attractions are described below.

The Jason Russell House (ca. 1740), which is open for public tours, is the centerpiece of the town's history. On the evening of April 18, 1775, Paul Revere and William Dawes rode through Arlington, warning the colonists that the British were marching to Concord. The following day, battles between British troops and Colonial Minutemen took place along Massachusetts Avenue in Arlington. In the restored Jason Russell House, visitors can see several bullet holes from shots fired that day; its owner, Jason Russell, was killed and is buried in the Old Burial Ground in Arlington Center, along with 11 other Minutemen (from Arlington and other Massachusetts' communities) who died that day. A plaque on the property reads:

> The site of the house of Jason Russell where he and 11 others were captured, disarmed, and killed by the retreating British on April 19, 1775.

As the British retreated through Arlington to Boston, colonists atop Mount Gilboa fired guns on the redcoats marching down Massachusetts Avenue.

In 1988, the Jefferson Cutter House (ca. 1830) was moved to Whittemore Park, the location of one of the town's first houses in Arlington Center. This house now serves as the town's Visitor Center (sponsored by the Arlington Chamber of Commerce) and houses the Cyrus Dallin Art Museum, which displays many of his sculptures. The Cutter House has additional meeting and gallery space in its basement, which provides public exhibition space for rotating exhibits by local artists throughout the year.

The Old Schwamb Mill (ca. 1861), now a working museum, is open for public tours. Visitors can view the manufacture of high-quality oval and circular wooden picture frames using original tools and processes.

Samuel Wilson or "Uncle Sam" was born in Arlington in 1766. His monument sits in a small park in the town center (on the northwest side of the intersection of Mystic Avenue and Pleasant Street).

G. Environmental Problems

Arlington's environmental problems and challenges are typical of other northwest suburban Boston communities. The major types of environmental problems the town faces include hazardous waste site remediation, a municipal landfill closing (Reed's Brook), storm water and drainage control, and wetland enforcement matters. Solid waste management is also an ongoing challenge.

Hazardous Waste Sites

Most of Arlington's required hazardous waste remediation efforts are the responsibility of private parties, although the town is solely responsible for the closing of the old municipal landfill at Reed's Brook. Arlington has 30 confirmed hazardous waste sites, according to the Massachusetts Department of Environmental Protection (DEP)'s Bureau of Waste Site Cleanup listing (see Appendix M). The sites are at various phases of site cleanup pursuant to M.G.L. c.21E and the Massachusetts Contingency Plan (310 CMR 40.000), and most have Remedial Action Outcomes of class A or class B. The majority of these sites relate to gasoline service stations or automobile repair establishments; some of the sites are dry cleaners. Municipal or public facilities include fire stations and MBTA property.

None of Arlington's hazardous waste sites is expected to represent a significant threat, meaning the sites can be remediated with no long-term effect to the environment. Most of these hazardous waste sites involve release of petroleum products into soil or groundwater, and none of the sites is located near wetlands or other environmental resources. Furthermore, because the Massachusetts Water Resource Authority (MWRA) provides Arlington's drinking water, little threat to public drinking water exists.

The St. Camillus Parish submitted a Class B-1 RAO Report (2000) for a property off Dow Street, which was highlighted in 1992 as a *Location to be Investigated*. Timely investigation, testing and reporting have demonstrated that this site represents no significant risk to the public health, safety, welfare and/or the environment.

Two open space and recreational sites are known to contain hazardous waste contaminants in the soil and/or groundwater: the Reed's Brook site and an Arlington High School athletic field site. Reed's Brook, a town landfill from 1959 to 1969, has undergone a Comprehensive Site Assessment as part of a closure process (see below). The Arlington High School fields have been investigated under DEP governance because of the chromium and manufactured gas products discovered in its soil. The Town has reached an agreement with Massachusetts Electric and Honeywell for remediation of the site. It is expected that the total cost of remediation will be about $7.2 million dollars. The industrial parties will also contribute up to $2.9 million towards capping the site and the construction of a new athletic building on the property. Remediation will begin in 2004.

In a "due diligence" review for the proposed Town purchase of the Lahey/Health South Symmes Hospital site, the Town of Arlington was alerted to the presence of two hazardous waste areas on the property. One site is the result of oil storage leakage, and the second site is contaminated with elevator oil. The contamination occurred some time in the past and will be addressed as "limitation of use" in the planned development that is to occur on the Symmes site over the next few years.

Solid Waste

Arlington is a member of the North East Solid Waste Committee (NESWC); the town has an extensive curbside-recycling program carried out under a contract with BFI (Browning Ferris Industries). BFI also trucks the town's solid waste (trash) to NESWC's waste-to-energy facility in North Andover. The Town's involvement with NESWC expires in 2005.

Environmental Problems at Open Space Sites

Reed's Brook

The most significant environmental challenge with regard to open space concerns Arlington's acquisition of the Reed's Brook site. Under lease arrangements with 14 property owners, Arlington used the Reed's Brook site as a municipal landfill from 1959 to 1969. The town acquired the Reed's Brook land from the Federal Deposit Insurance Corporation in March 1995, and now has the responsibility of closing the landfill pursuant to Department of Environmental Protection (DEP) policies and regulations.

Since acquiring this 20-acre site, Arlington continued the environmental investigation of the site and proposed extensive measures to repair the storm drain facilities that crossed the site. The storm drain improvements required permits from the Arlington and Lexington Conservation Commissions, Mass. DEP Wetlands Division and the U.S. Army Corps of Engineers.

The town conducted a lengthy public participation process to determine the best use of the site and in 1997 recommended to the Town Meeting that the best use of the site was open space. A plan was proposed to remediate the flooding problems and redevelop the site for recreation and conservation use. The Town Meeting also voted to purchase two adjoining properties to increase the area to 22.5 acres.

A legal challenge to the plan from the Town of Lexington delayed the project for two years, but all permits were received by the end of 2001. Construction began in March 2002 and is expected take at least two years to complete. The redevelopment plan includes extensive reconfiguration of the topography, and therefore relocation of some of the waste formerly deposited there. The entire plan is intended to remove the flooding hazard and any potential exposure to landfill materials.

The completed site will have two soccer/football fields, a baseball diamond, a picnic area, a tot lot and walking trails. More than one-third of the site will be reconfigured and planted as a natural wildlife habitat including wetlands, uplands and a permanent pond. Reed's Brook itself, which has been enclosed in a culvert since 1970, will be partially uncovered and will flow into the pond. The permanent pond will flood and act as a detention basin during flood events. The flow downstream from the pond will be regulated by metered outlets to prevent downstream flooding.

Arlington's Water Resources

All of the water bodies in Arlington (particularly Spy Pond, Arlington Reservoir, Mystic Lake, Mill Brook and Alewife Brook) face the threat of non-point pollution from roadway, house, business and storm water runoff. Non-point pollution is pollution that is not traceable to a structure. For instance, a pipe that might dump volumes of pollution into the water body at one "point" would be traceable. Non-point pollution travels through runoff or sheets of rainwater that travel across the land. For example, Spy Pond receives roadway runoff from Route 2, and Arlington Reservoir receives pesticide and fertilizer runoff from nearby lands. Refer to Section 7 (Water Resource Protection Needs) for more details on the specific problems each of Arlington's water resources faces.