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natural resources & open space

Introduction

Open spaces and the benefits of natural resources are a treasured commodity within densely developed communities. They have value in health, recreation, ecology, and beauty. The landscape of Arlington is adorned with natural features that have defined, and continue to influence, the location and intensity of the built environment. Lakes and ponds, brooks, wetlands, meadows and other protected spaces provide crucial public health and ecological benefits, as well as recreational opportunities. In addition, man-made outdoor structures such as paths, gardens, and playing fields, also factor into the components of open space.

Natural and built features all need careful preservation, maintenance, and integration with continuous development in Arlington. Actions in Arlington also affect neighboring towns, and it is important to note that local policies and practices relating to water and other natural resources have regional consequences. There must be a focus on irreplaceable land and water resources in decisions about where, what, and how much to build in Arlington.

Existing Conditions

Topography, Geology, and Soils

Arlington straddles several geologic and watershed boundaries that contribute to its varied landscape. The west side of town lies within the Coastal Lowlands (also known as the Eastern Plateau), a **physiographic area** that includes large portions of Middlesex County, with elevations ranging from 100 feet to nearly 400 feet above mean sea level (MSL). Arlington's highest elevation, Turkey Hill (380 feet), along with Mount Gilboa and Symmes Hill, are all located in this part of town. Mill Brook flows from west to east through the valley below these hills. Another band of hilly terrain runs along the south and west sides of Arlington.

A **watershed divide** lies near Arlington's southwest corner, where a small portion of town is part of the Charles River watershed. The majority of Arlington's land is located in the Mystic River watershed, and most of the water that falls in town flows toward low-lying areas in the eastern and southern parts of Arlington,



master plan goals for natural resources & open space

- Use sustainable planning and engineering approaches to improve air and water quality, reduce flooding, and enhance ecological diversity by managing our natural resources.
- Mitigate and adapt to climate change.
- Ensure that Arlington's neighborhoods, commercial areas, and infrastructure are developed in harmony with natural resource concerns.
- Value, protect, and enhance the physical beauty and natural resources of Arlington.
- Treasure our open spaces, parks, outdoor recreational facilities and natural areas.

emptying through Alewife Brook and the Mystic River leading to Boston Harbor River Basin and into Massachusetts Bay. Arlington's section of the Boston Basin consists of the low-lying, relatively flat floodplain bordering the Alewife Brook between Lower Mystic Lake and Spy Pond.¹ Here, elevations range between 10 and 40 feet above MSL.

¹ U.S. Natural Resource Conservation Service (NRCS), *Soil Survey of Middlesex County* (2009), 5-6.

Table 8.1: Soil Types Found in Arlington

Soil Type	Description	Location in Arlington
Charlton-Hollis-Urban Land Complex	Charlton Soils: well-drained, upland soils. Stony, with 60 inches or more of friable fine sandy loam (a silt-sand-clay mixture). Hollis soils: shallow (less than 20 inches), excessively drained on bedrock uplands. Friable fine sandy loam.	Western areas on slopes of 3 to 5 percent
Newport-Urban Land Complex	Newport Soils: found on 3 to 15 percent slopes, tends to be silty loam.	West and northwest of Park Circle, east of Turkey Hill, and west of Winchester Country Club
Merrimac-Urban Land Complex	Merrimac Soils: excessively drained soils on glacial outwash plains, sandy loams over a loose sand and gravel layer at 18 to 30 inches. Soils contain approximately 75 percent urban land/disturbed soils.	East Arlington
Sandy Udorthents and Udorthents Wet Substratum	Udorthent Soils: excavated and/or deposited due to construction operations.	East Arlington by lakes, streams and wet areas

Source: Arlington Open Space and Recreation Plan 2007-2012.

Neither topography nor soil conditions have deterred development in Arlington over the past century. Homes and businesses were built in floodplains and on steep slopes both ignoring and hindering natural storm water management. According to the Environmental Protection Agency (EPA), a significant portion of the town (41.4 percent) is covered with impervious surfaces – mainly buildings and pavement – which impede the land’s ability to absorb and disperse rainwater.² Also affecting Arlington’s water absorption are large areas of ledge and rocky soils.

Most of Arlington’s soils have been disrupted due to the intense development that occurred here over past centuries. The U.S. Natural Resource Conservation Service (NRCS) classifies these kinds of soils as urban land. In Arlington and virtually all cities and towns in the Greater Boston area, urban land occurs in a soils complex, or an intricate mix of two or more soil series, i.e., urban (disturbed) land mixed with soils that still retain their original characteristics. Table 8.1 describes specific information about Arlington’s soils.

Water Resources

Approximately 226 acres, or 6.4 percent of Arlington’s total area is covered by surface water, including two lakes, two ponds, one reservoir, one river, and several brooks (see Map 8.1). Most of Arlington is located in the Mystic River watershed, which covers about 76 sq. mi. and includes portions of twenty-two communities in the Greater Boston area, from Lexington to Wilmington, Belmont to Melrose. The Charles River watershed

reaches slightly into the Poets Corner and Arlmont Village neighborhoods. Arlington shares most of its water resources with neighboring communities, and all of its large water bodies are located on or near town boundaries. Together, Arlington, its neighbors, and nonprofit advocacy groups have collaborated to protect and improve the quality of their shared water resources.

LAKES, PONDS, AND RESERVOIRS

Mystic Lakes. The Upper and Lower Mystic Lakes form Arlington’s northeast boundary with Winchester and Medford. Each water body qualifies as a Great Pond under state law.³ The Mystic Lakes are regionally significant water bodies that support a variety of fish, year-round and migrating birds, and outdoor recreation such as swimming, boating, and fishing. State-owned park land provides public access to the water along the eastern shores of the Mystic Lakes, but access in Arlington is limited because most of its shoreline is privately owned. The Town owns only three acres of steeply-sloped conservation land with shoreline on the Upper Mystic Lake, known as Window on the Mystic. This area is managed by the Arlington Conservation Commission.

Spy Pond. Spy Pond, also a Great Pond, is located near Arlington’s southeast boundary with Belmont and

² U.S. Environmental Protection Agency (EPA), Region 1, “Impervious Cover & Watershed Delineation by Subbasin or GWCA Arlington, MA” (March 30, 2010).

³ “Great Pond” is a pond or lake that contained more than 10 acres in its natural state, or a water body that once measured 10 or more acres in its natural state, but which is now smaller. Ponds or lakes classified as Great Ponds trigger Chapter 91 licensing requirements for piers, wharves, floats, retaining walls, revetments, pilings, bridges, and dams, and waterfront buildings constructed on filled land or over water. See Mass. Department of Environmental Protection (DEP), Wetlands and Waterways, Massachusetts Great Pond List.

forms part of the headwaters of Alewife Brook. Spy Pond supports a limited fish population and is an important resting and feeding area for migrating and year-round birds. According to the Natural Heritage and Endangered Species Program (NHESP), Spy Pond has ecological significance as an aquatic core habitat and a natural landscape that supports at least one species of special conservation concern (Engelmann's Umbrella-sedge)⁴ In the middle of the pond is Elizabeth Island, a two-acre property owned by the Arlington Land Trust and permanently protected with a conservation restriction held by the Arlington Conservation Commission and Mass Audubon.

Spy Pond is a popular recreational spot for fishing, boating, bird watching, and ice skating. Swimming is not officially permitted and public access to the pond is limited to several short paths and Spy Pond Park. The Arlington Boys and Girls Club, located on the northwestern shore, uses Spy Pond for summer boating programs. The Arlington-Belmont Crew also uses the pond for its practices and meets, and the Arlington Recreation Department rents canoes and kayaks for public use during the summer.

It is a beloved community resource with well-organized advocates including the Spy Pond Committee of Vision 2020 and Friends of Spy Pond Park, Inc. Over the past decade, the Town has made improvements to the pond and shoreline access points, including major park improvements in 2005 and a joint project with the Appalachian Mountain Club Trail Team and MassDOT to reconstruct a multi-use path along Route 2. In addition, the Town has worked with consultants to remove invasive and nuisance plant species and replace them with native vegetation along the shoreline.⁵ Water quality and environmental degradation of Spy Pond is an ongoing concern, and the Town has received state assistance with environmental remediation efforts.

Hill's Pond (Menotomy Pond). Located in Menotomy Rocks Park, Hill's Pond is a 2.6-acre man-made water body that provides habitat for common species of fish, frogs, birds, and insects. Accessible by footpaths from Jason Street and other adjacent roads, Hill's Pond offers scenic vistas and recreational opportunities for fishing and bird watching, and ice skating during

the winter months. In the mid-1990s, Arlington completed an award-winning improvements project that involved draining, dredging, and redesigning the pond. In 2007, the Town installed aerators to improve water quality and re-graded and edged the pond to minimize erosion and run-off. Hill's Pond is monitored, tested, and treated for invasive plant species each year.

Arlington Reservoir. The 65-acre Arlington Reservoir site, including 29 acres of water, is located at Arlington's western border with Lexington. It served as Arlington's public water supply from the early 1870s until the Town joined the Metropolitan Water District (now the MWRA) in 1899. Only about half of the Reservoir's surface water area lies within Arlington (the remainder is in Lexington), but the entire perimeter is owned by the Town and managed by the Arlington Department of Public Works (DPW) and Park and Recreation Commission (PRC). The Arlington Reservoir Committee, a subcommittee of Vision 2020, provides advocacy for protecting and improving Arlington Reservoir's water quality and surrounding landscape.

The Arlington Reservoir supports diverse wildlife habitats and includes Arlington's largest collection of aquatic species. It also serves as a recreational resource, with a mile-long perimeter walking trail, and swimming at a sandy beach (Reservoir Beach) on the northeastern shore. The Town has made some improvements at the beach recently. An earthen dam along the southern edge maintains the Arlington Reservoir's water level. Water can be released into the Mill Brook by way of a sluice gate in the dam. In 1999, the state notified Arlington that the dam was failing and needed to be repaired in order to protect downstream properties. Town officials, engineers, and members of Vision 2020 collaborated to design a plan that would protect public safety, preserve and enhance recreation facilities, and protect the wooded landscape around the reservoir. This award-winning rehabilitation project was completed in 2006. A Wildlife Habitat Garden surrounding the new bridge and spillway was established in 2011 and is maintained by the Vision 2020 Reservoir Committee.

RIVERS AND BROOKS

Mystic River. The Mystic River is a regional resource that provides recreational and scenic benefits, as well as habitat for many species of birds, fish, and other fauna. Its primary source is in Reading, where the Aberjona River begins. The Aberjona flows into the Mystic Lakes which then releases into the Mystic River, which passes along Arlington's eastern border, through Medford,

⁴ NHESP, BioMap 2 Arlington Report (2012).

⁵ Aquatic Control Technology, Inc., to Arlington Department of Public Works, "2012 Aquatic Management Program □ Arlington, MA, Spy Pond, Arlington Reservoir and Hills Pond" (undated).

Somerville, Everett, Charlestown (Boston), and Chelsea until it merges with the Chelsea River and empties into Boston Harbor. As one of five sub-watersheds of the much larger Boston Harbor watershed, the Mystic River watershed is very urban and densely populated and, as such, has significant environmental challenges.

Historically, the Mystic River was the site of significant industrial and maritime activity during the eighteenth and nineteenth centuries. This industrial legacy contributed to the river's serious pollution issues. Several organizations have worked to improve water quality, and educate the public about the Mystic River's ecological and public health significance to the region. Formed in 1972, the nonprofit Mystic River Watershed Association (MyRWA) is dedicated to restoring and protecting the river, organizing stewardship programs, promoting public access, monitoring water quality, and sponsoring clean-up activities.

The EPA's Mystic River Watershed Initiative (2009) is a partnership of federal, state, and local agencies, nonprofit organizations and UMass-Boston, to improve environmental conditions in the Mystic River and its tributaries, as well as support marine science research, protect open space, and provide public access to the water.⁶ In addition, the Massachusetts Department of Conservation and Recreation (DCR) which owns the land abutting the river, created the Mystic River Master Plan (2009) to address various recreational improvements and maintenance needs along the river and the Mystic River Reservation. As of June, 2014, state funding has been made available to finalize the designs and permits necessary to implement the plan.⁷

Mill Brook. The Mill Brook flows from west to east through the center of Arlington, roughly parallel to both Massachusetts Avenue and the Minuteman Bikeway from the Arlington Reservoir to Arlington Center, where it turns northward and flows through Mt. Pleasant Cemetery and Meadowbrook Park into the Lower Mystic Lake. It functions as part of a larger drainage system that collects water from as far upstream as Arlington's Great Meadows in Lexington. As the water source for several mills and mill ponds during the eighteenth and nineteenth century, the Mill Brook is a significant piece of Arlington's cultural landscape, a link to its industrial past. As of 2014, much of the Mill Brook

is channeled, with segments running through underground culverts, and only limited views to the exposed sections of the waterway. There are access points in several Town-owned parks and cultural sites including Meadowbrook Park, Mt. Pleasant Cemetery, Cooke's Hollow Conservation Area, Wellington Park, the Old Schwamb Mill, Hurd Field, and the Arlington Reservoir. In 2010, the Open Space Committee prepared a preliminary study for a linear park abutting the Mill Brook. According to that report, the Mill Brook needs "restoration and remediation to improve biodiversity, water quality, drainage and flood control."⁸ Portions of the Mill Brook are subject to "chronic flooding" largely because so much of it is channelized.

Alewife Brook. A Mystic River tributary, the completely channelized Alewife Brook forms Arlington's eastern boundary with Cambridge and Somerville. It is located within the state-owned Alewife Brook Reservation, a 120-acre conservation area that is one of the region's largest urban parks. Managed by DCR, the Alewife Brook Reservation includes land in Arlington, Cambridge, and Somerville. Alewife Brook continues to be the site of significant flooding concern for neighborhoods in East Arlington, Cambridge, and Belmont. Its urban setting and surrounding land use patterns make the Alewife Brook highly vulnerable to flooding, combined sewer overflows (CSOs), and high nutrient saturation.⁹ There is concern in Arlington that recent large-scale development projects completed or proposed in Cambridge and Belmont near Route 2, Alewife Brook and the Alewife MBTA station, could exacerbate the area's flooding problems.

Reed's Brook. This small brook, including a retention pond to control flooding, flows through McClennen Park in the northwest corner of Arlington on the Lexington border. It meanders through both towns before feeding into Munroe Brook and entering the Arlington Reservoir. Before 1959, Reed's Brook was surrounded by agricultural land, and from 1959 to 1969 Arlington operated a landfill in this area. McClennen Park was redeveloped by the town during the early 2000s and dedicated in 2006.

⁶ U.S. Environmental Protection Agency, *Mystic River Watershed Initiative* (undated publication).

⁷ <http://mysticriver.org/mystic-river-master-plan/>

⁸ Mill Brook Linear Park Study Group, "Mill Brook Linear Park Report" (2010).

⁹ Blankenship, et al., *Quality and Quantity: Stormwater Management in Alewife Brook* (Tufts University WSSS and Mystic River Watershed Association, 2011), 9.

WETLANDS

Wetlands perform basic functions such as flood storage, flood damage control, pollution filtration, and groundwater recharge. They are also essential habitats for many birds, animals, insects, and native plants, whether common, threatened, or endangered. In Arlington, wetlands can be found in scattered sites along Alewife Brook, Spy Pond, Hill's Pond, the Arlington Reservoir, Meadowbrook Park, on undeveloped properties near Thorndike Field, and in several sites near Reed's Brook in the northwest corner of town. Most of the mapped wetlands in Arlington are shallow marshes and shrub swamps bordering a water body, river, brook, or stream.

Wetlands are sensitive, scenic, and ecologically valuable resources. The regulations that protect them comprise some of the strongest controls over land development in Massachusetts. Wetlands protection laws and regulations do not directly control land use but they do affect where construction can occur, how construction activities can be carried out, and what types of mitigation may be required for construction near wetland resource areas. Wetland impacts are regulated by the federal Clean Water Act, the state Wetlands Protection Act (WPA) and Rivers Protection Act, and the Town of Arlington's Wetlands Protection Bylaw and Regulations. The Clean Water Act requires a permit for dredging or filling of any "waters of the United States," including most wetlands. The Massachusetts WPA requires Conservation Commission review and approval for work in and within 100 feet of wetlands and within 200 feet of perennial rivers. Arlington's local wetlands bylaw imposes some additional restrictions.

FLOODPLAINS

Several areas in Arlington experience major flooding problems every few years, including the areas around Reed's Brook, Mill Brook, and Alewife Brook. The Federal Emergency Management Agency (FEMA) released new floodplain maps for Arlington in 2010 and Town Meeting adopted them in 2010 (See Map 8.1). Virtually all of Arlington's easterly boundary – from the Mystic Lakes to the Mystic River, the Alewife Brook, and Spy Pond – falls within federally designated floodplains. The Arlington Reservoir and portions of the Mill Brook are also in floodplains.

Since construction in a 1-percent floodplain is strictly regulated by both state and local bylaws, and can be allowed only by a permit from the Conservation Commission, changes to floodplain boundaries may have an

impact on future development not only within Arlington but on the greater flood-prone region along the Alewife Brook. Moreover, changes in flood risk assessments on a given property could have a significant impact on the homeowner's cost of flood insurance. The Arlington-Belmont-Cambridge (ABC) Tri-Community Group has recently been reauthorized by the state to address flooding in the Alewife Brook watershed region and to monitor combined sewer overflows (CSOs) along the brook.

Vegetation

Vegetation reveals a lot about a community's soil conditions and climate, as well as its density of development. It also plays a critical role in hydrologic cycles, stormwater management, heat management, and quality of life.

NATIVE AND INVASIVE PLANTS

Arlington's waterways are home to numerous species of native trees, bushes, and plants that thrive in wet soils. These include Green Ash, Silver, Red, and Ash-leaf Maples, Cottonwood, and Willow trees. Cattail, Silky and Red Osier Dogwoods, and Buttonbush are also commonly found. Reed pads and aquatic weeds can be found in and around the town's water bodies, including Mystic Lake and Spy Pond.¹⁰

The Town encourages landscaping and gardening with native plants. For example, the DPW uses native species in its landscaping work, and the Conservation Commission publishes a list of native plants as a guide for property owners and developers. As part of the Arlington Reservoir dam reconstruction project, the Town's Vision 2020 Reservoir Committee installed a Wildlife Habitat Garden planted with native shrubs, trees, and perennials.¹¹ The Town also used native plant species in rain gardens established in 2012 and 2013 at Spy Pond, Hardy School, and Hurd Field. These gardens are designed to collect, absorb, and clean stormwater runoff.

Numerous species of non-native and invasive trees, shrubs, and plants exist throughout Arlington. An invasive species is defined by the National Invasive Species Council as "... an alien (or non-native) species whose introduction does, or is likely to cause economic or en-

¹⁰ Ibid.

¹¹ Arlington Reservoir Committee, "Wildlife Habitat Garden," http://www.arlington2020.org/reservoir/Habitat_Garden.htm.

vironmental harm or harm to human health.”¹² Non-native species in Arlington include Norway and Sycamore Maples, Tree-of-Heaven, and Mountain Ash trees, as well as Common and European Buckthorns, Forsythia, Winged Euonymus, some Honeysuckles, Multiflora Rose, Oriental Bittersweet, Barberry, and Japanese Knotweed shrubs. Purple Loosestrife, Phragmites reed, and water chestnut are also found in and near many of the town’s wetlands and water bodies. All of these are fairly typical of the invasives found in Massachusetts cities and towns.

Using the Town’s Water Bodies Fund, Arlington tries to control and remove invasive plants and aquatic weeds at its conservation lands, including the water chestnut growing at the Arlington Reservoir.¹³ MyRWA has also worked to remove water chestnut from the Mystic River. Water chestnut, which grows in dense floating mats, limits the amount of light that can reach below the water’s surface. It reduces oxygen levels in the water, increases the potential for fish kills, and limits recreational activities such as boating, fishing, and swimming.¹⁴

Arlington has an “endangered species” – Englemann’s Umbrella Sedge – on the shores of Spy Pond.

STREET TREES AND WOODLANDS

One of the most important elements of Arlington’s well-developed streetscape is the abundance of street trees, although there are many areas where the tree canopy is thin or nonexistent. Arlington has significant tree coverage helping to improve air quality, filter pollutants, in aid flood control and erosion prevention. Street trees provide a buffer from car traffic, and some relief from the summer sun and winter winds. Trees and plants play a critical role in the hydrologic cycle, stormwater management, and heat management. Woodlands, though limited in size, are still found in several locations throughout town, at Menotomy Rocks Park, Turkey Hill, Mount Gilboa, Arlington Reservoir, portions of the Symmes property, Hill’s Hill, and the Crusher Lot at the Ottoson School. According to the Town’s Open Space and Recreation Plan, these woodlands include White Ash, several species of Oaks and

Hickories, White Pine, Sassafras, Staghorn Sumac, Grey and Paper Birches, and more limited examples of Sugar Maple, Black Cherry, and Linden trees. Native shrubs and plants found in these woodland areas include Blueberry, Currant, Dangleberry, Deerberry, Maple Leaf Viburnum, Whorled Loosestrife, and False Solomon’s Seal.¹⁵ Arlington as a whole is experiencing a diminishing street tree population. There are currently approximately 18,000 public trees bordering Arlington’s streets and sidewalks, just 75 percent of the 24,000 estimated in a 1998 statistical survey. Many of those remaining are the invasive Norway Maple.

The Town’s commitment to protecting its trees is key to its sustained designation as a Tree City USA community.¹⁶ Cities and towns become eligible for designation if they meet four key requirements: having a tree warden, following state law for regulating the forest, celebrating Arbor Day, and spending at least \$2 per capita on forestry preservation and maintenance. Arlington has instituted policies for responding to requests from residents to remove or add street trees. The Town does its best to address problems with dead or dying trees and hazardous tree limbs on public property, but it will not remove healthy trees. Residents who want to remove healthy street trees have to accept financial responsibility for public notification, a public hearing, taking down the tree, and planting a replacement. Although the Town plants eighty to ninety trees every year, local officials report that Arlington is losing more trees than it gains, in part due to sporadic torrential rains and winter storms. Arlington Town Meeting established the Tree Committee to assist the Tree Division by promoting the protection, planting, and care of trees in Arlington. Other initiatives of the Tree Committee include increasing the number of site-appropriate public trees, promoting community awareness of trees and their benefits, providing a website about trees (public and private) and related Town services, providing information about tree selection, planting and care, raising funds to support the Tree Committee’s mission, and exploring the feasibility of a Town-wide tree inventory.

¹² National Invasive Species Council, <http://www.invasivespecies.gov>.

¹³ See Aquatic Control Technology, Inc., to Arlington DPW, 2012 Report.

¹⁴ U.S. Department of the Interior, National Park Service, “Aquatic Plants: Water Chestnut,” <http://www.nps.gov/plants/alien/pubs/midatlantic/trna.htm>.

¹⁵ *Open Space and Recreation Plan Update 2007-2012* (2007), 54-59.

¹⁶ The Tree City USA® program is sponsored by The National Arbor Day Foundation, in cooperation with the U.S. Department of Agriculture Forest Service and the National Association of State Foresters. It provides technical assistance and national recognition for urban and community forestry programs.



TOWN-SUPPORTED GARDENS

The Arlington Garden Club, in coordination with DPW, sponsors the adoption of more than sixty traffic islands throughout town and posts signs indicating the name of the sponsor. Volunteers plant flowers and shrubs, and water and maintain them throughout the year. The Garden Club presents awards, noted on small signs, for the “best” islands each year. A Wildlife Habitat garden of native plants located at the Reservoir spillway is maintained by Vision 2020 Reservoir Committee volunteers. The Town has also collaborated with various groups on building three rain gardens - at the Hardy School, Spy Pond Park, and near Hurd Field next to the Arlington Reservoir. Two volunteer-managed community gardens are located on Town-owned land at Robbins Farm Park and Magnolia Field.

Open Space

TOWN-OWNED OPEN SPACE

In urban communities like Arlington, residents value open space of all kinds, from pocket parks to playing fields to protected wetlands, for there is very little unused land in town. Arlington has 554.6 acres of publicly owned open space, including conservation land, parkland, and land in schools and recreational uses, and state-owned open land (Map 8.2). This also includes the 183-acre Great Meadows which is located in Lexington but owned by Arlington.

Protected open space is land set aside and restricted for conservation, protection of surface waters, groundwater, and natural diversity, or passive recreation. According to state records, Arlington has 162 acres of protected open space including town conservation land and other land with long-term or perpetual protection

through other means, e.g., a conservation restriction (CR).¹⁷ By contrast, public parks and recreational facilities often serve other needs, e.g. team sports, playgrounds, or neighborhood gathering places.¹⁸ These are described in the Recreation section of the Public Facilities and Services chapter.

TOWN CONSERVATION LAND

The Arlington Conservation Commission (ACC) oversees and manages twenty-four land parcels with a combined total of 33.11 acres (see Table 8.2). Except for a few relatively large conservation areas and parks, most are small, scattered-site holdings of less than one acre that Arlington acquired as tax title takings before the 1970s.¹⁹ Many are unmaintained woodlands with limited access or visibility.

The ACC has adopted general use regulations for its properties and tries to address issues with encroachment and landscape dumping. It relies on its partner, the Conservation Land Stewards, to identify management needs. A significant portion of the ACC’s small land acquisition fund was contributed to help fund the Arlington Land Trust’s purchase of Elizabeth Island in Spy Pond, establishing the conservation restriction co-held by ACC and Mass Audubon. Key ACC holdings include:

- **Meadowbrook Park.** This 3.3 acre parcel is adjacent to Mt. Pleasant Cemetery. Primarily wetlands, the site encompasses land where the Mill Brook enters the Lower Mystic Lake. The ACC has carried out several stewardship projects here: stabilizing the banks of the brook and improving public access, removing invasive reeds, and planting native wetland and aquatic plants along the brook.
- **Mount Gilboa Conservation Area.** A 10.7-acre conservation site in northwest Arlington, this reserve is a steep, tree-covered hill with one house, large rock outcroppings, and a network of woodland trails. The Town rents the house to private individuals.
- **Window on the Mystic.** Located off Mystic Street (Route 3) near the Winchester line, this 3-acre conservation parcel is Arlington’s only public wa-

¹⁷ NHESP, BioMap 2: Arlington Report (2012).

¹⁸ See Chapter 9 for discussion of Arlington’s parks, playgrounds, and other developed recreation facilities.

¹⁹ Cori Beckwith, Conservation Administrator, Interview with Community Opportunities Group, Inc., August 1, 2013.

Table 8.2. Open Space Parcels Under the Jurisdiction of the Arlington Conservation Commission

Site Name	Location	Acres
Mt. Gilboa	North of Mass. Ave. (parking at Park Place, off Crescent Hill Avenue)	10.70
Turkey Hill	Above Forest and Washington Sts., northwest Arlington	10.70
Meadowbrook Park	Mouth of Mill Brook; surrounded by Mt. Pleasant Cemetery	3.30
Window-on-the Mystic	East of Mystic Street near Beverly Road on Upper Mystic Lake	3.00
Forest Street	Opposite intersection of Forest/Dunster Lane, Winchester town line	1.00
Cooke's Hollow	Off Mystic Street, south of the Community Safety Building	0.75
Ridge Street	North end of Ridge Street	0.60
Woodside Lane	Across from 26, 30 and 34 Woodside Lane	0.60
Brattle Street	Surrounding 54 Brattle Street	0.54
Stone Road	Across from 24 Stone Road	0.19
Madison Avenue	Adjacent to Mt. Gilboa lands	0.46
Philemon Street	South side of 32 Philemon Street	0.13
Concord Turnpike	Between Scituate and Newport Streets, Concord Turnpike and Arlmont Streets	0.13
Mohawk Road	2 parcels; intersection of Washington and Mohawk Streets	0.13
Hemlock Street	Uphill from 5 Hemlock Street, near former Symmes Hospital	0.12
Short Street	Between 8 Short and 11 West Streets	0.11
Inverness Road	Next to 36 Inverness Street	0.10
Rublee Street	Intersection of Rublee and Udine; entrance to Sutherland Woods in Lexington	0.10
Kilsythe Road	Landlocked behind 44 and 48 Kilsythe Road	0.09
Water Street	Area with two benches north of Bike path next to Buzzell Field	0.08
Brand Street	2 parcels, left of 72 Brand Street and right of 36 Brand Street	0.20
Spring Street	Across from 120 Spring Street	0.04
53 Park Avenue, rear	Access through left side of 53 Park Avenue	0.02
Central Street	Adamian property, end of Central Street	0.02
TOTAL		33.11

Source: Arlington Conservation Commission, http://www.town.arlington.ma.us/Public_Documents/ArlingtonMA_ConComm/misc/conservationlands

terfront on the Mystic Lakes. It offers scenic views and is the primary public access point to the Upper Mystic Lake. The property’s rugged landscape has made it difficult for the ACC to manage and maintain the site, resulting in limited use by visitors. Over the years, representatives of Arlington Boy Scouts and other volunteers have installed a trail and steps at the property, but there is no public boat launch or beach at the site.²⁰

◦ **Cooke’s Hollow.** This small parcel is a long, narrow, partially landscaped area located along both sides of Mill Brook near Mystic Street. The park provides scenic vistas and includes park benches and interpretive signage about its historic significance as the site of the first mill the area in the 1630s. The Arlington Garden Club installed gardens and public access at the site, and the Town renovated the park in 2008.

key Hill Reservation. Turkey Hill Reservation is a heavily wooded, 10.7-acre parcel with walking trails and the Massachusetts Water Resources Authority’s (MWRA) Turkey Hill water tower. The Arlington Park and Recreation Commission has jurisdiction over the land around the water tower. During the mid-2000s, Arlington worked with the state, the MWRA, and neighborhood residents to address security issues at the site. A stewardship group organized through the ACC’s Land Stewards Program monitors and maintains the Reservation.

OTHER TOWN-OWNED OPEN SPACE

Arlington also owns open space that is not under the ACC’s direct purview. Most notable is the 183-acre **Great Meadows**, which is Arlington’s largest open space holding, though it is actually located entirely in the Town of Lexington. While generally thought of as conservation land, Great Meadows is not protected in perpetuity. The Arlington Board of Selectmen has ju-

²⁰ Cori Beckwith, Arlington Conservation Administrator.

jurisdiction over the land, most of which is a flat, marshy plain surrounded by wooded uplands with hiking trails. The Minuteman Bikeway forms its southern border and offers the most direct access to the trails. Local officials and citizen groups in Arlington and Lexington have worked to preserve the natural resources at Great Meadows. In 1999, the ACC commissioned a Natural Resource Inventory and Stewardship Plan for this property.²¹ Thereafter, Arlington and Lexington residents formed the Friends of Arlington's Great Meadows (FoAGM) to serve as stewards of the property. FoAGM has surveyed plants and animals in the Meadow, organized regular bird watching and geology walks, and built a series of boardwalks to improve the visitor's experience and protect natural resources.

State-Owned Open Space

The Commonwealth of Massachusetts owns several land parcels in Arlington, the largest being the Alewife Reservation, which is managed by DCR. The DCR prepared master plans for both the Alewife Reservation (2003) and the Mystic River (2009).

The 120-acre **Alewife Reservation** in Cambridge, Belmont, and Arlington is one of Boston's largest urban wilds. It provides habitat for a wide range of indigenous and migratory birds and many other animals, including deer and coyote. A large portion of the reservation consists of wetlands and water bodies, including Little Pond, Little River, and Alewife Brook. The site also has wooded uplands and meadows. In 2013, DCR completed a federally-funded \$3.8 million multi-use path along the Alewife Brook connecting the Minuteman path with the Mystic Valley along the Alewife Brook Parkway. The Alewife Brook Greenway Bike Path restoration project (also referred to as the Minuteman Bikeway Connector) included the installation of a dirt/stone pathway with elevated boardwalks in ecologically sensitive areas, removal of invasive plants, and new landscaping. The path provides much-improved access for bicyclists, pedestrians, bird watchers, and others.

The Massachusetts Water Resources Authority (MWRA) owns the pumping station on Brattle Street and the water tower on top of the Turkey Hill. The Arlington Park and Recreation Commission has jurisdiction over the 10.7 acres of wooded land around the Turkey Hill

water tower – Turkey Hill Reservation - and the Conservation Commission owns a couple of small adjacent parcels. During the mid-2000s, Arlington worked with the state, the MWRA, and neighborhood residents to address security issues at the site. A stewardship group organized through the ACC's Land Stewards Program monitors and maintains the reservation.

In addition, the Massachusetts Department of Transportation owns a maintenance building near Route 2, as well as land along Route 2 that includes a path on the southern edge of Spy Pond.

Privately Owned Open Space

Elizabeth Island. The Arlington Land Trust (ALT) acquired Elizabeth Island in 2010. With privately raised funding and support from the Conservation Commission, the Commonwealth's Conservation Partnership program, and the Massachusetts Audubon Society (MAS), the ALT purchased this undeveloped, heavily vegetated 2-acre island in the middle of Spy Pond and granted a conservation restriction (co-held by the ACC and MAS). In turn, MAS prepared a management plan for the island that identified minor maintenance needs. Elizabeth Island is open to the public, but its limited access allows the island to serve as nesting habitat for various species of birds and small mammals. ALT and the Friends of Spy Pond Park host tours of the island several times a year, and the Recreation Department has a boat rental program on the pond during the summer months so residents can visit the island on their own.

Symmes Woods. The Town of Arlington acquired the 18-acre Symmes Hospital property in 2002 in order to control future development on this large, central site. The property included several former hospital buildings, a nurse's residence, several parking lots, and nine acres of steep woodland. After an extensive public process, Arlington sold the property to a developer in 2007. The disposition agreement required the permanent protection of approximately nine acres of the site, including two public parks and the woodland now known as Symmes Woods.

The site offers parking for public visitors to use the parks and woodland trails for passive enjoyment, all protected with a Conservation Restriction (CR) held jointly by the ACC and ALT. A Conservation Restriction is recorded on a property's deed and provides the most restrictive form of land protection. It allows property owners to convey partial (less-than-fee) interest in their

²¹ Frances Clark, Carex Associates. Natural Resources Inventory and Stewardship Plan of Arlington's Great Meadows in Lexington. July 2001.

http://www.foagm.org/AGM_inventory/RptMaster.pdf

land to a qualified conservation organization such as the ALT, or public agency such as the ACC. By granting a CR, the landowner agrees to preserve the property in its “natural” state and forego future development. If given for less than full compensation, the landowner may receive the benefit of a charitable tax deduction.

Unprotected Private Open Space

Seventeen acres on several parcels in the southeast corner of Arlington, known as the Mugar land, are the largest privately owned undeveloped properties in Arlington. The empty land, located next to Route 2, Thorndike Field and the Alewife Brook Reservation, has been a concern for the Town for many years. In 2000 and 2001, Town Meeting endorsed the permanent protection of the land but local officials have not yet reached agreement with the owners who themselves have proposed several unsuccessful development concepts for the site.²² In 2010 the Town negotiated an agreement to acquire a substantial majority of the property with grant-funding, but the owners later withdrew. These properties have been altered and filled-in over many years; a substantial amount of the site remains wetlands and the majority of the area is susceptible to flooding. The entire site is within a FEMA-designated flood zone and “must be kept free of encroachment so that the 1-percent annual chance flood can be carried without substantial increases in flood heights.”²³

Other significant unprotected private sites in Arlington are the Winchester Country Club (48 acres) and Belmont Country Club (11.2 acres), which are presently in use as golf courses but, in fact, zoned as residential. The Roman Catholic Archdiocese owns land at Poets Corner (6.5 acres), the Arlington Catholic High School field on Summer Street (2.3 acres), and St. Paul’s Cemetery (14.9 acres), also zoned as residential. The Kelwyn Manor Park (1.8 acres) includes a playground and open space at Spy Pond, but is owned by a private neighborhood association.

Sustainability and Climate Change Adaptation

In Arlington, both staff and volunteer committees work on the development and implementation of sustain-

ability programs, and educate the community about climate change adaptation. In 2006, Town Meeting adopted the Arlington Sustainability Action Plan, prepared jointly by Tufts University students and members of Sustainable Arlington, an affiliate of the Vision 2020 Environment Task Group. The plan is primarily a **climate action plan** that focuses on energy efficiency, transitioning to sources of energy that lower or eliminate the production of greenhouse gases, reducing single-occupancy vehicle trips, and educating the public. Many of the recommendations have been adopted and continue to be carried out by the Town, including the hiring of an energy coordinator and a recycling manager, and the purchasing of fuel-efficient vehicles. Many of the steps taken to implement the Sustainability Action Plan set the stage for Arlington’s designation by the **Massachusetts Green Communities Program** in 2010.

Sustainability focuses on the convergence of the built and natural environments in places where people can have healthier, more productive lives while reducing their impact on the world’s natural resources. Seen this way, sustainability encompasses land use, transportation, economic diversity and competitiveness, and a broad range of environmental management practices. Arlington has understood this for a long time as shown in the nine Vision 2020 goals the Town adopted in 1993.

Current examples of good sustainability policies in Arlington range from the Safe Routes to School Program (walkability and public health) to the Vision 2020 surveys conducted each year (community assessments and inclusiveness). The Minuteman Bikeway, the “complete streets” plan for Massachusetts Avenue in East Arlington, and Arlington’s tradition of neighborhood schools are also good examples of sustainability in facilities planning and design. Furthermore, Arlington’s efforts to care for trees, its successful recycling program, and its unusually strong commitment to stormwater education exemplify the sense of environmental stewardship shared by residents, town officials, and staff. With help from MyRWA, rain gardens have been built at Hurd Field (Drake Road in Arlington Heights), at the Hardy School (Lake Street), and at Spy Pond Park. Rain gardens are vegetated areas that collect, absorb, and clean stormwater runoff. In addition, porous parking surfaces have been installed at Hurd Field and Thorndike Field in East Arlington.

²² The state MDC Land Acquisition Program in 2000 listed the Mugar land as third highest ranked land acquisition priority of nearly 300 ranked parcels, among parcels not yet protected.

²³ Federal Emergency Management Agency (FEMA). Flood Insurance Rate Map (25017C0419E). 2010

Arlington's Commitment to Sustainability

Current examples of good sustainability policies in Arlington range from the Safe Routes to School Program (walkability and public health) to the Vision 2020 surveys conducted each year (community assessments and inclusiveness). The Minuteman Bikeway, the “complete streets” plan for Massachusetts Avenue in East Arlington, and Arlington’s tradition of neighborhood schools are also good examples of sustainability in facilities planning and design.

Issues and Opportunities

Open Space

In Vision 2020 surveys, the World Café event in October 2012, and at many community meetings, Arlington residents have been remarkably consistent about the town’s natural resource protection needs. Residents believe that Arlington should protect, improve, and maintain the open spaces it currently owns and, where possible, make more diverse use of existing open space properties. In a 2013 survey of support for the nine Town Goals developed by Vision 2020 and adopted by Town Meeting, the goal addressing the protection and enhancement of Arlington’s natural resources and sustainability was considered second most important, beaten only by the need for good public schools. Arlington residents have expressed a desire to see the Town do more to protect open space and natural resources.

Concerns of residents include the limited amount of public access to water bodies in Arlington. There is a well-used nature trail around the Arlington Reservoir, but very limited access around Spy Pond, where most of the shoreline is privately owned. Public access is also limited on the Arlington portion of DCR land on the shores of the Mystic Lakes and Mystic River. Furthermore, the protected open space that does exist in Arlington is not always well-connected or

well-maintained, so the ecological and passive recreational values of the land are significantly diminished. The Minuteman Bikeway does provide a recreational link among many sites along the Mill Brook.

Residents also recognize that protecting open space and natural resources requires regional action, especially for urbanized communities like Arlington and most of its neighbors. Some of the regional or inter-local efforts that do exist are described in the Town’s Open Space and Recreation Plan, which also calls for more funding and staff to manage and maintain the town’s open space. Due to budget constraints, however, Arlington has not been able to increase staff in most of its municipal departments; in many cases, especially the DPW, the number of personnel has actually decreased. Funding constraints also limit Arlington’s ability to acquire open space. In 2014, Arlington Town Meeting voted to put the Community Preservation Act (CPA) on the Town-wide ballot, a move that could bring the town a dedicated source of revenue for open space, historic preservation, and affordable housing. Approved in November 2014, the CPA could offer the town a new funding source for acquiring and protecting currently undeveloped land, especially parcels located in floodplains.

Water Quality

NONPOINT SOURCE WATER POLLUTION

Another source of environmental concern is nonpoint source water pollution—pollution that originates from diffused or widespread sources and enters surface water and groundwater through storm water runoff. Nonpoint source pollutants include:

- Excess fertilizers, herbicides, and insecticides from lawns and farmland;
- Oil, grease, and toxic chemicals from urban runoff and energy production;
- Sediment from improperly managed construction sites and eroding stream banks; and
- Bacteria and nutrients from pet wastes.

These pollutants have harmful effects on downgradient water supplies, recreation, and fisheries and wildlife. Identifying and controlling the source of pollutants, such as a leaking underground oil tank or the leaching of fertilizer into a water body, is much more difficult than point source pollution. The most important ways

to control nonpoint source pollution are through proper land management, effective maintenance of petroleum, erosion control, and storm water management bylaws and zoning to control land use. All of Arlington's water bodies are threatened by nonpoint pollution due to untreated storm water runoff from roadways, residential properties, and businesses. Storm water runoff is accelerating the process of eutrophication in many town water bodies, and in the case of Spy Pond is also creating a sandbar.

WATER QUALITY STANDARDS

The federal Clean Water Act (CWA) requires all fifty states to assess the quality of surface waters every two years and identify water bodies with significant water quality impairments. All of the water bodies in Arlington are designated suitable for "habitat for fish, other aquatic life, and wildlife..., and secondary contact recreation ... Class B waters shall be suitable for irrigation and other agricultural uses and for compatible industrial cooling and process uses. These waters shall have consistently good aesthetic value."²⁴ Though designated for these purposes, the water bodies in Arlington do not actually meet Class B surface water quality standards. DEP has classified almost all of the ponds, lakes, rivers, and named brooks in Arlington as "Category 5" impaired waters under the CWA. As Category 5 waters, they require a **Total Maximum Daily Load (TMDL)** in order to restore them to meet surface water quality standards for Class B waters. As defined by the EPA, TMDL is an estimate of how much of a pollutant, or group of pollutants, a water body (lake, pond, river, stream, or estuary) can absorb without becoming polluted. TMDLs are developed for a pollutant (or a group of pollutants) in water bodies that are listed in each state's list of impaired waters, known as the 303(d) list.

Spy Pond has been the subject of environmental concerns for several decades. In 2001, the Town received two state grants to assist in adopting Best Management Practices to control nonpoint water source pollution, to address the more than forty storm drains allowing excess phosphorus from lawn fertilizers and road salt and sand to enter the pond. From 2010 to 2013, Spy Pond was one of five water bodies in Massachusetts tested weekly by the Department of Public Health (MDPH) to identify harmful algae blooms (HABs) as part of a grant from the Centers for Disease Control

(CDC).²⁵ The Massachusetts Department of Transportation (MassDOT) recently installed Best Management Practices (BMP) devices to address runoff from Route 2 that was causing the formation of a sandbar in the pond.²⁶ Nevertheless, while Spy Pond is state-designated as a Class B water body, it does not meet the Commonwealth's Class B water quality standards. Spy Pond remains impaired from causes such as chlordane, DDT, excessive algae growth, and phosphorous – all conditions that make it a Category 5 water body that requires a TMDL.²⁷

The Mystic Lakes suffer from nonpoint runoff from the Mystic Valley Parkway and lawn and yard maintenance. Aquatic weeds such as milfoil continue to be found in the lakes, causing concerns to both human safety and eutrophication of the water body. In the past, the Winchester Boat Club has successfully applied aquatic pesticides to control weeds in its area of the Upper Mystic Lake. According to the 2012 Integrated List of Waters, both the Upper and Lower Mystic Lakes qualify as Category 5 waters due to dissolved oxygen, and the Lower Mystic Lake is also impaired due to PCB (found in fish tissue), salinity, chronic toxicity, DDT, and hydrogen sulfide.²⁸

The five-mile segment of the Mystic River that flows from Arlington to the Amelia Earhart Dam in Somerville/Everett is impaired by arsenic, chlordane, chlorophyll-a, DDT, dissolved oxygen saturation, *Escherichia coli* (*E. coli*), PCB in fish tissue, phosphorus (Total), and chronic toxicity. In annual self-assessments under MassDOT's NPDES Stormwater Management Plan, the agency estimates that the watershed of this segment consists of approximately 3,860 acres, 59.8 percent of which is impervious.²⁹ MyRWA and other state and private entities perform regular monitoring and maintain records of water quality.

Mill Brook suffers from nonpoint source pollution and storm drain pollution all across the town. The principal cause of Mill Brook's impairment is *E. coli* from animal wastes.

²⁵ Arlington Board of Health, <http://www.arlingtonma.gov>.

²⁶ Cori Beckwith, Conservation Administrator, Interview with Community Opportunities Group, Inc., August 1, 2013.

²⁷ DEP, *2012 Integrated List of Waters*, 144.

²⁸ *Ibid.*

²⁹ MassDOT, "Impaired Waters Assessment of Mystic River" (Segment MA71-02), 2012.

²⁴ Code of Massachusetts Regulations (CMR) 314: 405(b).

Alewife Brook, one of the most polluted water bodies in Arlington, is adversely affected by combined sewer overflows (CSOs) from Cambridge, Somerville, and the MWRA system. Cambridge has separated some of its combined drains, but overflows remain problematic. There are several reported causes of the Alewife Brook's Category 5 status, including copper, E. coli, foam and oil slicks, lead, dissolved oxygen, PCB in fish tissue, phosphorus, and chronic toxicity.

Arlington Reservoir faces nonpoint pollution problems from pesticides and fertilizers from a nearby farm and surrounding homes. Water chestnuts are also a problem that the Town tries to control by manual and mechanical harvesting during the summer. Two storm drains on the Lexington side of the Reservoir also are sources of pollution.

Urban Wildlife

Many Arlington residents say that since roughly 2000, they have seen increasing numbers of rabbits, wild turkeys, coyote, deer, and raccoons around town. Over time, largely due to the introduction of exotic plants in natural communities and displacement of native species, animals that rarely ventured into settled areas now frequent yards in residential neighborhoods. The problems range from predatory wildlife to human illness, injury, and fatalities, and property damage. In Arlington, controlling the population of geese by egg addling has become an essential part of managing water quality at Spy Pond and at Reed's Brook in McClennen Park.

Environmental Hazards

HAZARDOUS WASTE SITES

The Massachusetts DEP Bureau of Waste Site Cleanup regulates the identification, assessment, and remediation of contaminated sites, known as Disposal Sites under the Massachusetts Contingency Plan regulations. According to the DEP's Reportable Release Lookup table, there have been 193 reported disposal incidents in Arlington since 1987.³⁰ The vast majority of incidents reported to DEP were relatively minor or low risk, involving a response that did not require oversight by DEP or a Licensed Site Professional. Seven incidents are "Tier classified," however, meaning a type or an extent of contamination that poses a higher risk to the public.

³⁰ MA DEP, "Waste Sites and Releases: Arlington," <http://public.dep.state.ma.us/SearchableSites2/Search.aspx>.

DEP has identified six sites in Arlington that are subject to Activity and Use Limitations: remediated (and sometimes not remediated) sites that can be used for new purposes, subject to restrictions recorded with the deed. For example, the playing field at Arlington Catholic High School can be used for an athletic field and accessory purposes, but not for construction of a residence or business.

NATURAL HAZARDS RESPONSE

In recent years, Arlington has experienced both natural and human-caused disasters, e.g., hurricanes, blizzards, floods, and hazardous material spills. To help prepare for these events, Arlington established a Local Emergency Planning Committee, composed of town employees and residents. The committee has developed a new Emergency Management Plan for the town which focuses not only on preparedness and response but also mitigation and recovery.³¹ Arlington has a Hazard Mitigation Plan, as required by the Federal Disaster Mitigation Act of 2000; on file with the DPW and with the Community Safety-Fire Division. The Metropolitan Area Planning Council (MAPC) worked with the community in its creation. to develop the Hazard Mitigation Plan. "Hazard mitigation" involves long-term strategies, such as planning, changes in policy, educational programs, public works projects and preservation of floodplains and wetlands, to reduce or alleviate losses of life, injuries, and property resulting from natural hazards.

Tree Cover

Despite Arlington's ongoing support for maintaining and protecting trees, the town is losing tree cover due to storms, utility company maintenance, the failure of replacement street trees to thrive, and budget limitations. In July 2012, for example, a "microburst" rain storm descended on East Arlington, destroying approximately one hundred trees. Although the Town appropriates funds for tree replacement each year, the DPW is not staffed to provide the amount of field labor involved with proper urban forestry management. According to the DPW director, the town is losing more trees than it is replacing each year. Storm-related problems are not the only cause of tree loss. Sometimes new trees planted to replace older trees (uprooted or removed) do not survive. In the business districts, there needs to be a close collaboration between the Town, store owners, other commercial tenants, residents, and

³¹ Arlington Emergency Management Services, www.arlingtonma.gov/Public_Documents/ArlingtonMA_EMS/index.

community organizations to take better care of both existing and new trees. Aside from the environmental and public health benefits of trees in urban areas, the trees have a significant impact on the quality of the pedestrian's experience in Arlington's commercial centers and neighborhoods .

Recommendations

1. **Create a comprehensive plan for the Mill Brook Study Area**, including possible “daylighting” options for culverted sections of the waterway, flood plain management, and public access. Apply design guidelines for new development along the corridor to ensure development that will enhance the brook and improve it as a resource for the Town.

Comprehensive plans allow decision making at various scales to adhere to overlying principles. The Mill Brook corridor crosses residential, industrial and open space land use districts. These different zoning districts regulate land use, but do not necessarily ensure that new or repurposed developments respect their environmentally sensitive location or create accessible pedestrian connections among open spaces and adjoining neighborhoods. A Mill Brook plan should create landscaping and building design standards, and establish requirements for public access to the Mill Brook, and the preservation of views.

2. **Address maintenance needs for all of the Town's open spaces and natural resources.**

... Consider additional staffing and funding to properly protect and maintain all open spaces and natural resources throughout the Town. Among the steps that should be explored is the designation of a facilities manager for open space, natural resources, recreational areas, and trees to oversee development and implementation of an overall maintenance plan for all Town-owned outdoor spaces. In addition, the DPW may need to hire more staff to meet growing maintenance demands at parks and other open spaces, and to coordinate concerns with street trees, invasive plants, and other vegetation. To supplement regular capital planning and budgeting procedures for major open space improvement projects, some funding could be provided through the Community Preservation Act,

fundraising with local Friends groups and other local organizations, state or private grants, and other innovative means.

- ... Street trees are a major asset for Arlington, but they also present problems. They provide beauty and shade, help mitigate ground level pollution, and are part of the greater ecological system. Many trees were lost in recent storms, and more still are at risk. A plan for tree maintenance and replacement needs to be developed and implemented in order to replace lost trees, maintain mature trees wherever possible, and attain a desired planting density with appropriate native species. Additional funding is required in order to reverse this trend and start a net increase in street trees. Concurrently, the jurisdiction and management of street trees needs to be better outlined. The responsibility and care for street trees needs to be well understood by residents. The Town and the Tree Committee need to perform public outreach to educate property owners.

3. **Pursue strategies to protect large parcels of undeveloped land in order to preserve open space and manage the floodplains.**

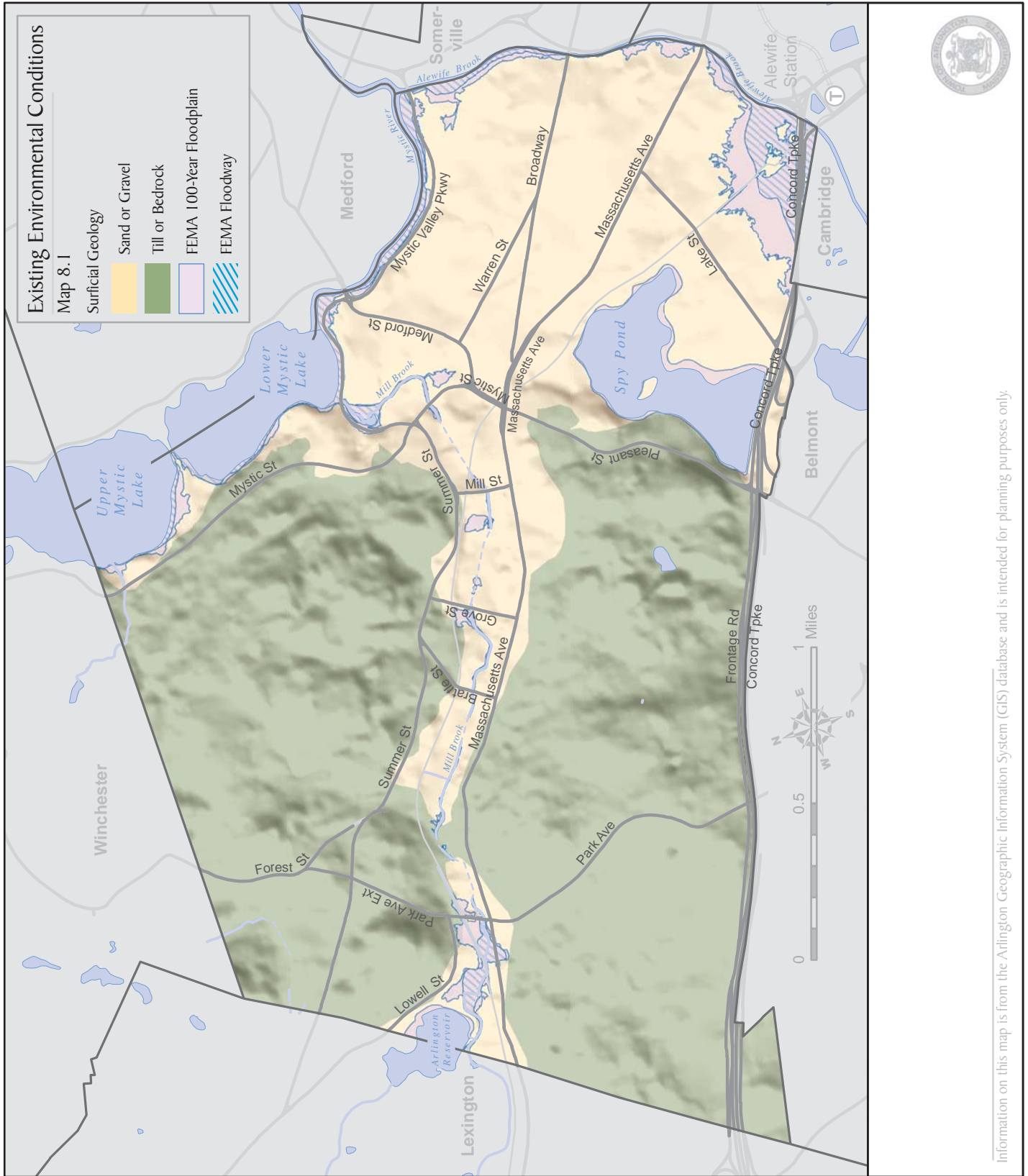
... **Privately owned property along Route 2 in East Arlington** totaling seventeen acres remains undeveloped. The parcels, known locally as the Mugar property, remain vacant after several proposals were rejected by the Town. The properties, zoned for Planned Unit Development (PUD) are located adjacent to a large park (Thorndike Field), near the Minuteman Bikeway and Alewife Brook Reservation, and the Alewife Red Line MBTA station. The majority of the site is located in the 1-percent flood zone and construction is heavily restricted. Arlington needs to continue to pursue resolution of this land, either for partial development or complete open space protection.

... **The 183-acre Great Meadows** is located in Lexington, but is owned by the Town of Arlington, under the jurisdiction of the Board of Selectmen. The largest part of Arlington's Great Meadows is a flat, marshy plain containing a series of hummocks. It is part of the watershed that flows into Arlington Reservoir

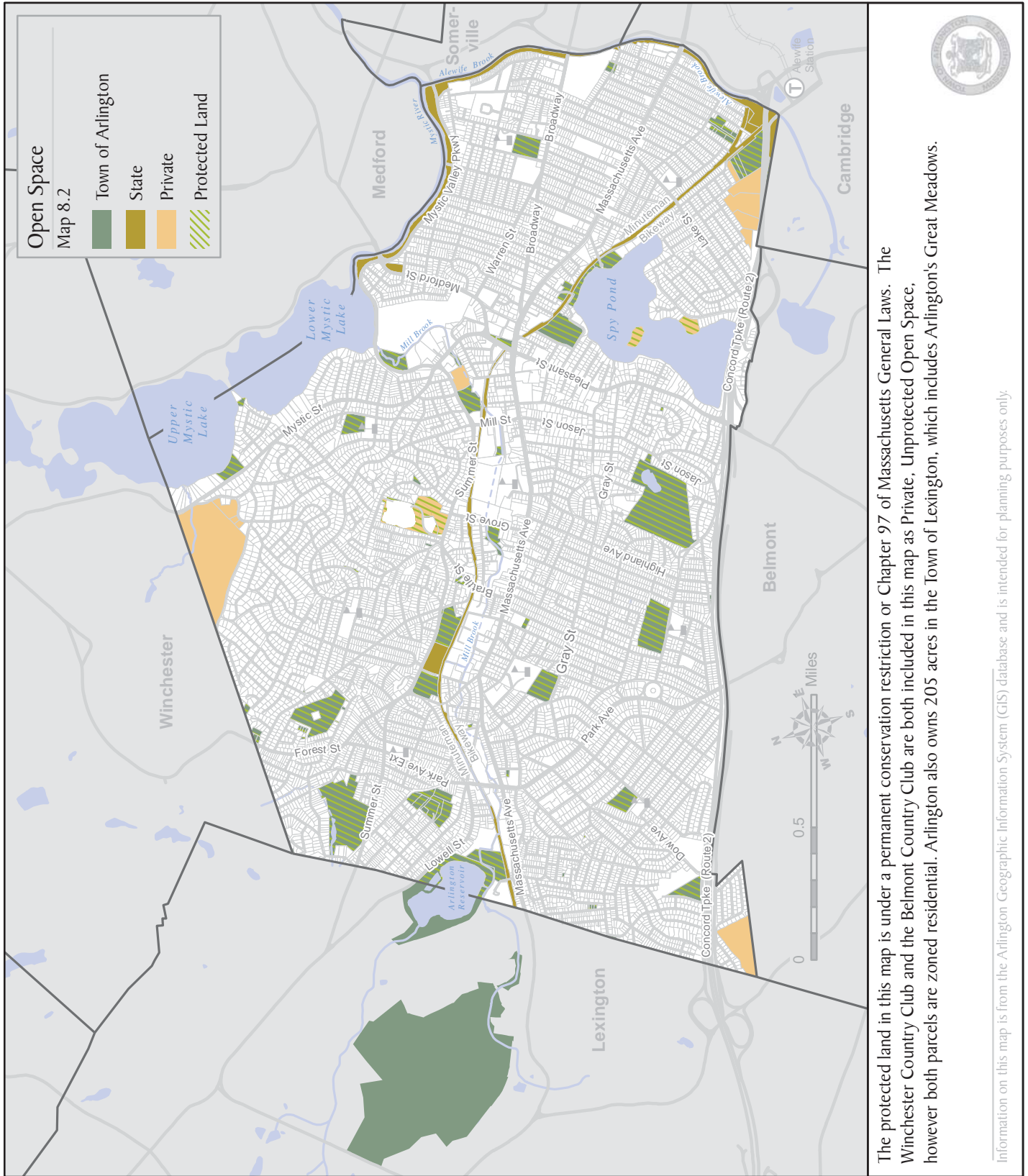
and eventually into Mill Brook. Surrounding the wetland are wooded uplands crisscrossed by walking trails. The Minuteman Bikeway forms the southern border and offers the most direct access to the trails. More than 50 percent of the site is certified vegetated wetland. The Lexington zoning bylaw protects the wetlands in Great Meadows by zoning them as Wetland Protection District (WPD). However, the property is not fully protected as conservation land. Arlington officials should renew efforts to work with Lexington to investigate ways to ensure its protection for open space and flood control.

Among the tools available, a **Transfer of Development Rights (TDR) bylaw** should be considered as a combined land protection and economic development strategy. In order to be effective, a TDR bylaw will require partnering with a viable land trust so that development rights can be acquired efficiently when the owner of a "sending" area (such as the vacant land near Thorndike Field) is ready to sell.

4. **Use more native and natural choices for landscaping on Town-owned properties; consider replacement of some grass areas with native groundcovers; consider a bylaw to require more native landscaping for new developments.** Arlington should explore the legality of imposing restrictions on the use of invasive plants in landscaping projects and on removing plants from both Town and private property when they create a hazard or threat to other properties or public land. Groups including the Conservation Commission and Department of Public Works should share information with the public about specific species that have been identified as harmful and suggest safe ways to remove them.
5. **Use environmentally sustainable planning and engineering approaches for natural resources management** to improve water quality, control flooding, maintain ecological diversity (flora and fauna), promote adaptation to climate changes, and ensure that Arlington's residential areas, commercial centers, and infrastructure are developed in harmony with natural resource conservation.
6. **Implement the Master Plan consistent with the current Open Space and Recreation Plan.** The Town of Arlington's Open Space Committee is updating the current state-approved Open Space and Recreation Plan for 2015-2022. Many of the needs, goals, and objectives in that plan overlap with this Master Plan, and they should be reinforced and expanded, particularly in reference to this Natural Resources/Open Spaces section and in the Recreation section under Public Facilities and Services. Among the Open Space Plan goals are the promotion of public awareness of the Town's valued open spaces and the development of improved access to water resources such as Spy Pond, Mystic River, and Mystic Lakes.
7. **Consider measures to encourage development projects that respect and enhance adjacent open spaces and natural resources.** Recent projects such as new public parks and protected woodlands at the former Symmes Hospital site and a renovated park between Arlington High School and the Brigham's site demonstrate that economic development can go hand in hand with natural resources protection. Other examples could include ongoing projects that support streetscape improvements (such as Broadway Plaza and Capitol Square). Future emphasis should be placed on using redevelopment incentives and encouraging more public/private planning and collaboration projects such as these. This is also an opportunity to plan for the use of open spaces for more creative and cultural activities, including public art projects.
8. **Protect all water bodies and watersheds for both healthy ecological balance and recreational purposes.** Work with Cambridge, Somerville, and the MWRA to eliminate all CSO discharges into the Alewife Brook within the next twenty years. In addition, uphold the Town Meeting vote to restore Alewife Brook to a Federal Class B waterway



Information on this map is from the Arlington Geographic Information System (GIS) database and is intended for planning purposes only.



The protected land in this map is under a permanent conservation restriction or Chapter 97 of Massachusetts General Laws. The Winchester Country Club and the Belmont Country Club are both included in this map as Private, Unprotected Open Space, however both parcels are zoned residential. Arlington also owns 205 acres in the Town of Lexington, which includes Arlington's Great Meadows.



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