

# 5

## Natural, Historic, and Cultural Resources

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### Introduction

Hudson boasts many natural, historic and cultural resources, and it is particularly known for its water features, open spaces, farmland, and scenic vistas. The Assabet River in particular is the heart of the community, providing many scenic views, and opportunities for a variety of recreational activities. It also ties Hudson to its historic past as a former mill town. Residents have long valued Hudson's natural resources, seeing them as an integral part of the community. While Hudson has experienced significant land use changes over the years, the Town strives to maintain its character and traditions as it manages its growth going forward.



The first section of this chapter provides an overview of the natural resources in Hudson, including key geological, habitat, and water resources. The following sections discuss planning efforts by the Town of Hudson, federal and state agencies and non-profit groups to conserve and protect natural resources in Hudson. The chapter ends with a series of recommendations largely drawn from

the objectives and action items identified in the 2011 Hudson Open Space and Recreation Plan.

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## Natural, Historic and Cultural Resources Goals

- Preserve, protect and enhance Hudson's natural, cultural and historic resources.
- Improve water quality of streams, ponds, and the Assabet River.
- Protect Hudson's drinking water resources.
- Acquire, expand and enhance areas for open space and recreation.
- Support Town administration of natural resources and leverage funding opportunities to support conservation efforts.

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## Natural Resources Overview

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### Setting

Most of Hudson's stormwater and groundwater drains into the Assabet River. The Assabet, along with the Sudbury River to the east, is a major tributary to the Concord River. These three rivers comprise the SuAsCo Watershed District. Portions of these rivers, comprising a total of twenty-nine miles, were designated as Wild and Scenic in April 1999, and were recognized for their outstanding ecological, historical, scenic and recreational values.

A small portion in the east of Hudson (bordering the Towns of Sudbury and Marlborough) drains into Hop Brook in the Town of Sudbury and then into the Sudbury River. The Concord River, in turn, flows northeast, joining the Merrimack River in the City of Lowell, and entering the ocean in Newburyport. Hudson, like some of its neighbors on the Assabet River, is a town that has always been dominated



by water, particularly the Assabet River. The river has physically and culturally shaped the downtown due to the early development of mills on the main stem and its tributaries: Hog Brook, Tripp's Pond, Danforth Brook and Bruce's Pond. Two lakes created by damming streams have encouraged residential development: Fort Meadow Reservoir (partly in Marlborough) and Lake Boon (partly in Stow). In the early 1900's, both of these lakes attracted residents from the Boston area, resulting in summer cottage development. These cottages have virtually all been converted into year round residential homes with 'infill' of vacant parcels now being developed.<sup>20</sup>

Due partly to Hudson's industrial heritage and the presence of the river for industrial uses, agriculture plays a relatively smaller role. This part of Massachusetts is typically known as apple country and Hudson had orchards on its hills. Perhaps the best known orchard and farm area in town is Gospel Hill, located in the geographic center of Town and portions of this area are still active agricultural land. Other major agricultural lands in town have long since been converted to housing and commercial development. For instance, Roundtop Hill was converted to the manufacturing site for Digital (now Intel) and the neighboring area known as Lakeview is now a dense single-family neighborhood.<sup>21</sup>

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## Soils, Topography and Geology

This section discusses the characteristics of the soils, topography and geology in Hudson.

### *Soils*

The soils of Hudson, like those in surrounding communities, reflect the broad geological activities noted previously and are based on the composition of the underlying bedrock and the glacially transported debris left by the last glaciation some 10,000 years ago. The soils in Hudson are predominantly two very different types. In the low, flat areas are many large beds of well-drained sandy or gravelly soils. The sandy, more fertile types predominate generally in the northern half, and the gravelly soils in the southern half of the town.<sup>22</sup>

One way to conceptualize the soils of the Town is to view the detailed classification by grouping associations of similar soils. The following is the percentage of Hudson as charted by the Natural Resource Conservation Service (NRCS):

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<sup>20</sup> *Town of Hudson Open Space and Recreation Plan, 2011.*

<sup>21</sup> *Ibid.*

<sup>22</sup> *Ibid.*

**Table 5-1 Soils**

Soil Classification	Percent of the Town	Soil Type Description
1. Windsor-Hinckley-Deerfield	37%	Level to rolling, scattered throughout the town, well drained, fluctuating water table, fewest limitations for development
2. Paxton-Woodbridge-Hollis	36%	Deep, well drained, developed on glacial soils and shallow bedrock areas, often a hardpan 2 – 3 inches below surface
3. Muck-Scarboro-Whitman	11%	Poorly drained, along the rivers and swamps, high water table
4. Canton-Hollis-Scituate	11%	Gently sloping to rolling hills, western part of town well drained, does not have impermeable layer within 4 - 5 inches of surface
5. Other (minor associations & water)	5%	Variable

Source: Natural Resource Conservation Service (NRCS).

**Prime Farmland Soils.** Agriculture has played a small role in Hudson’s economy and cultural identity since well before the town was incorporated in 1866, although it does have soils conducive to agriculture. Hudson has approximately 320 acres of land in Chapter 61A or 61B, about half of which is classified as agricultural land<sup>23</sup>. A portion of Hudson’s oldest agricultural community still remains in the eastern end of town.

*Topography*

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<sup>23</sup> Massachusetts General Laws Chapter 61, 61A and 61B is designed to encourage the preservation and enhancement of the Commonwealth’s forests, agricultural land and privately-owned recreation parcels by offering tax incentives to property owners for managing these lands for those purposes, and allowing the municipality the first option to buy (and protect) the land if landowner decides to sell. Note that Hudson does not have any land classified as forest land pursuant to Chapter 61.

Hudson lies in the Assabet Valley within a region of hilly land, characteristic of the area between the lower elevation Boston Basin to the east and the broad north-south Worcester uplands to the west. Significant water resources found at the Town's lower elevations are around the 200 foot elevation: Lake Boon (186 feet), Ft. Meadow Reservoir (262 feet), and Bruce's Pond (215 feet); while a significant number of hills reach to over 400 feet including Potash Hill (451 feet) and Phillips Hill (455 feet) in the western end of town. As you move east in Hudson, the general hilltop elevations decline to approximately 300 feet. The local relief in Hudson is therefore around 200 to 250 feet. Little land in town can be considered level.<sup>24</sup>



The geology and the resulting topography yield hilltops with attractive and distant views that contribute a special character to the Town of Hudson. It is one of the important aspects of the physical environment of Hudson. The soils present various limitations for development as in the recent housing development in the northwest section of town that presented monumental problems for the residents when large rain storms caused those slopes to erode. Developers must be made to ensure that proper control measures are taken in those situations and the new site review process by the Planning Board must be implemented.<sup>25</sup>

### *Geology*

Hudson's bedrock geology, like that of the surrounding region, is both complex and mostly hidden by overlaying glacial debris. Prior to the last glaciations, a "bedrock surface" existed that is thought to be somewhat different from the topographic surface we see today, particularly affecting drainage patterns.<sup>26</sup>

The glacier certainly has been the major landscape modifier in Hudson. Although there is considerable scientific debate about how much the glacier "tore down the hills," there is little question it "filled up the valleys" with significant deposits of sands, gravel and other permeable and porous materials. These "buried valleys" make excellent aquifers, or water resource areas. These are the primary sources for high-capacity public wells. In many of these areas, the valleys are sufficiently saturated with water that is expressed on the surface in swamps and marshes and occasionally as ponds and lakes. The Town successfully sought funding at the November 2004 Special Town Meeting to

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<sup>24</sup> *Town of Hudson Open Space and Recreation Plan, 2011.*

<sup>25</sup> *Ibid.*

<sup>26</sup> *Ibid.*

continue Phase II and III of the Bedrock Water Exploration Program to identify location(s) for future wells to be used for a public water supply.<sup>27</sup>

Other glacial impacts are also important to Hudson. There are a variety of other surface deposits scattered around and the most prominent are the drumlins, elongated hills trending in a north-south direction, made up of tightly packed and unsorted glacial materials together. These account for the major viewpoints in the area but are poor places for development, since the tight soils do not readily yield much water to shallow wells or accept sewage effluent. Many of the prominent hills in Hudson, excluding Gospel Hill and Roundtop Hill, are drumlins.<sup>28</sup>

On the flatter areas, for example around Lake Boon, outwash plains result where the melting water from the glacier sorted and deposited layered sand and gravels in a horizontal manner. The flat of topography in the center of Town is a variation of the outwash plain, but there the deposition resulted from slightly different glacial conditions.<sup>29</sup>



The area east of Manning Street, including the broad stretch of Roundtop Hill, Gospel Hill, Whitney Hill, and much of the old Goodale property, is covered with “ground moraine”. This is a thin veneer of glacial debris overlying bedrock. It is generally of poorer development potential since not only is it shallow to bedrock but also presents development limitations, since it is unsorted till.<sup>30</sup>

The geology has been very important to Hudson’s development as a community. It has conditioned where settlement originally occurred, where some of the resources are found, and where some of the opportunities and limitations are. The bedrock provides water but at a cost. It is generally deep, often in the range of 50 to 100 feet down (or more) and, in places, is sufficiently fractured to allow the collection of water in small quantities. Currently, there is no public water that is obtained from bedrock. The Intel Corporation is permitted to withdraw approximately 350,000 gallons per day from an onsite well; however, due to the high levels of iron, it has chosen not to utilize this source. The Town is currently undertaking a bedrock well exploration program that has identified a number of

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<sup>27</sup> *Town of Hudson Open Space and Recreation Plan, 2011.*

<sup>28</sup> *Ibid.*

<sup>29</sup> *Ibid.*

<sup>30</sup> *Ibid.*

sites for future consideration. Test drilling has been ongoing since fall of 2005. Approximately 10 percent of the Town's population obtain its water from onsite wells, many of which are bedrock or artesian.<sup>31</sup>

Most of the landscape results from glacial activity. This is particularly true of the hills. These are not particularly suited for development without allowance for soil limitations. The steeper slopes need to be avoided since erosion is a serious problem on such slopes.<sup>32</sup>



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## Water Resources

### *Watershed*

Three tributaries of the Assabet River (Hog Brook, Danforth Brook and Fort Meadow Brook) form the major drainage of the town. The southeastern portion of Hudson is within the watershed for the Sudbury River. The Assabet River and its sub-basins join with the Sudbury River in Concord to form the Concord River. Included in this tributary system are a number of ponds that provide wildlife habitat, recreational opportunities, and flood control.<sup>33</sup>

### *Surface Water*

Hudson is a typical river town with at least one major river and several brooks. Much of Hudson's early industrial activity and subsequent growth was based on its location along this major river and the water power that it provided early industry.



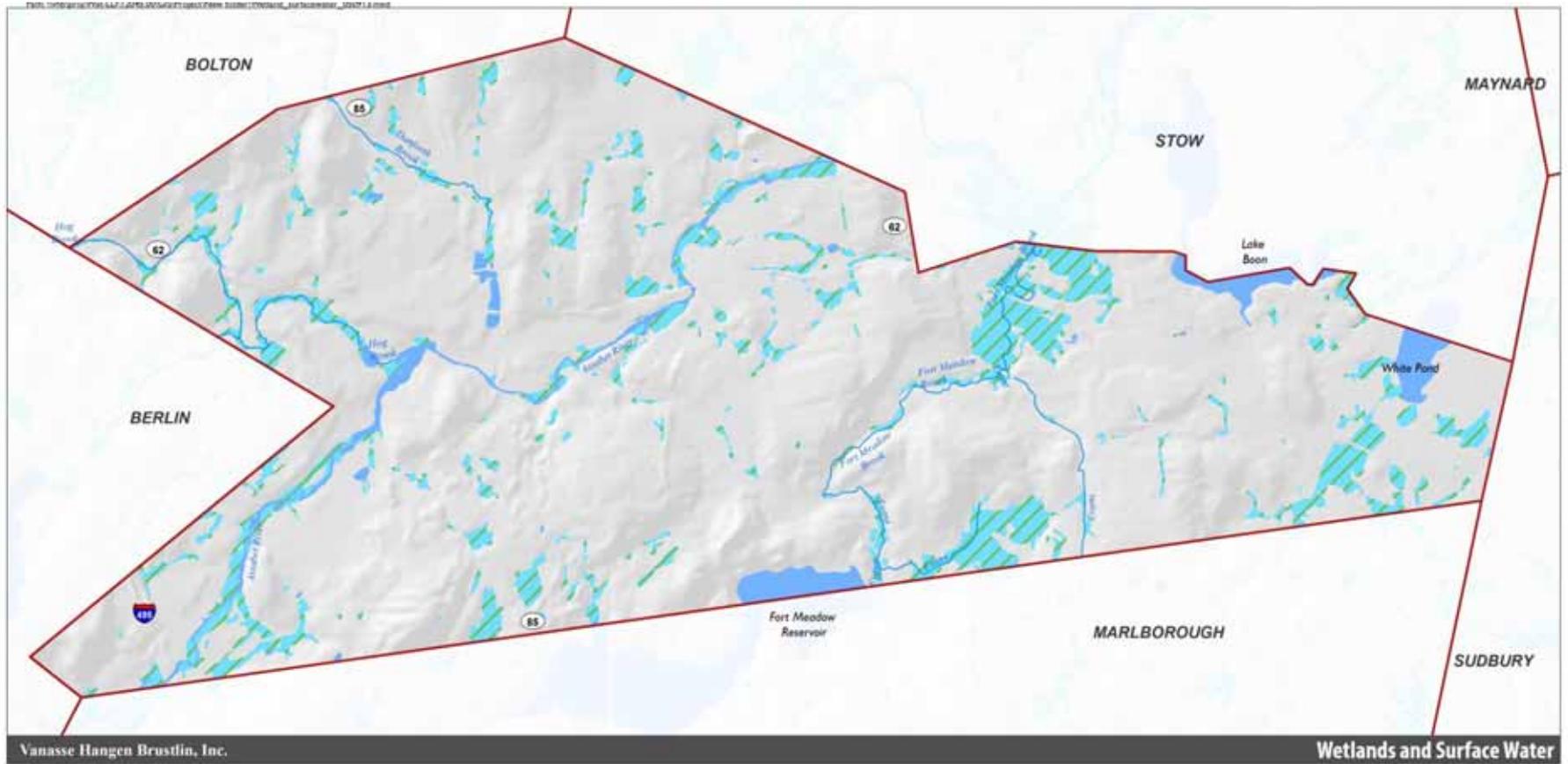
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<sup>31</sup> *Ibid.*

<sup>32</sup> *Town of Hudson Open Space and Recreation Plan, 2011.*

<sup>33</sup> *Ibid.*

Figure 5-1 Wetlands and Surface Waters



**Legend**

- Town Boundaries (MassGIS)
- Wetlands
- Open Water
- Rivers and Streams**
- Perennial
- Intermittent

Source: MassGIS  
 May 2013  
 Master Plan Update  
 Town of Hudson, MA



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The Assabet River (see Figure 5-1, *Wetlands and Surface Waters*), with its headwaters in Westborough, travels 31 miles in a northeasterly direction through the center of Hudson towards the town of Stow to meet with the Concord and Sudbury Rivers. The Washington Street dam in the center of town allows the upstream section to become a gentle and meandering section, creating a wide floodplain, while downstream the river is restrained by concrete walls along the adjacent property before widening into floodplains below the Forest Avenue Bridge. The Town of Hudson Recreation Department hopes to develop a walking trail along both sides of the river from the Taylor Memorial Bridge to Riverside Park at Chapin Street, in the future.<sup>34</sup> Hudson has several other water bodies including:

- Hog Brook (see Figure 5-1, *Wetlands and Surface Waters*) travels easterly into Hudson and is dammed at Tripp's Pond before entering the Assabet River. The brook, once highly polluted by failing septic systems in the Brown's Corner area, has recently seen a dramatic increase in brook trout.
- Tripp's Pond, which is restocked by the Department of Fish and Wildlife, is the former site of a vibrant swimming facility until the mid-1960s that has been neglected and drastically underused as a recreation area for many years. The pond is in dire need of dredging, with silt filling in many deeper areas where fish would normally breed, and creating the conditions for invasive vegetation to overgrow, such as purple lustrife.
- Danforth Brook flows southeasterly into Hudson from Bolton, and is also stocked with trout and has been a highly-regarded fishing area for many years. The brook features scenic waterfalls on a property acquired by the Town in 2001.
- Danforth Brook enters another dammed pond, known as Bruce's Pond, which is privately owned by Larkin Lumber Company and was once used to generate power for their mill. The stream continues under Main Street and becomes Tannery Brook running north to south bisecting a newly created park (South Street Skate Park), ending its journey at the Assabet River. A grant from the Department of Housing and Community Development (DHCD) created a walkway along Tannery Brook. A grant from the Executive Office of Environmental Affairs, Division of Conservation Services assisted with purchasing a parcel along the river to expand an existing park,



<sup>34</sup> United States Army Corps of Engineers. *Assabet River, Massachusetts. Sediment and Dam Removal Feasibility Study*. September 2010.

and another grant from DHCD renovated and developed that parcel. Both grants made a significant difference to open up views of the brook and the river, while creating active recreation areas. This redevelopment has helped enormously in connecting our urban center with the river.

- Fort Meadow Brook begins as the outfall of Fort Meadow Reservoir, former meadowlands once owned by Digital Equipment Corporation, that were created to provide additional water to the Assabet River during periods of low flow. This brook zigzags through gravelly land and fine marshes before entering the Assabet. Land adjacent to this brook was a former gravel operation and is now the location of three of the Town's extremely important wells. Fort Meadow Reservoir is currently used as a swimming area by both the public at the Town Beach and by private landowners bordering the lake. It is a significant boating, fishing and skating resource for both Hudson and Marlborough.
- Lake Boon, another former meadowland, is home to many summer cottages now converted to full time residences. This recreational treasure, located in both Hudson and Stow, has many private beaches and boat launches. Stow has a public beach in the northeastern corner of the lake, but Hudson has no public access, with the exception of some residents having beach rights written into their property deeds. Recreational activities include swimming, boating, fishing, skating and snowmobiling.
- White Pond, located in both Hudson and Stow, formerly served as a part of the Town of Maynard's water supply. This body of water is adjacent to two 100 acre parcels of land, one owned by the Division of Conservation and Recreation, and the second by the Division of Fisheries and Wildlife. Much of this land, known as the Fort Devens Annex, was formerly owned by the Federal Government, housing munitions sheds and army personnel. With rights to the property changed in recent years, trails for walking and hiking are available to the public, with some restricted areas being posted in various locations.
- Pickle's Pond is located on land belonging to the Farley Elementary School. It is part of an unnamed drainage brook which enters Hudson from Bolton, runs through the Falls Brook Development to Plant Ave, there creating the pond, then ends in the Danforth Brook on Lincoln Street. It had previously



provided the Town with an area for winter skating and hockey games. Neglected in recent years, it abuts a conservation parcel and has significant potential for both active and passive recreation. The Town recently purchased another 9 acres northwest of the conservation parcel. This recent purchase included the actual waterfall of Danforth Brook, now totaling over 61 acres of densely wooded conservation property.

### *Floodplains*

Hudson contains extensive floodplain areas, many encompassing large wetlands which facilitate flood storage. Based on the recently updated FEMA map, the 100-year floodplain in Hudson includes approximately 836 acres (11 percent) of the Town. The 500-year floodplain represents approximately 329 additional acres (4 percent) of land beyond the area categorized as being in the 100-year floodplain.<sup>35</sup> As a result of changes to the FEMA maps, additional homes and businesses in Hudson may find that they are located within the floodplain resulting in higher insurance costs and potential new development restrictions.<sup>36</sup>

Surface water and marshes, floodplain boundaries and floodways indicate areas where soil conditions are prone to be seasonally wet or subject to possible flooding. The Town of Hudson has adopted a Floodplain/Wetland District and a Watershed Protection District. The Floodplain/Wetland District is an overlay district which includes all areas designated as Zone A and AE (areas that would be inundated during a 100-year flood event) by FEMA. Within this district, new buildings cannot be erected, existing structures cannot be enlarged or moved, dumping and filling are not permitted, and land, buildings, or structures cannot be used for any purpose except those specified in the bylaw. The Watershed Protection District is also an overlay district which includes certain

#### *What is a floodplain?*

Floodplains are areas adjacent to water bodies and watercourses that hold water during times of increased flow, usually in early spring as the snow melts or during times of heavy rainfall. A 100-year flood is a base flood having a one percent chance of occurring in any one year. A 500-year flood has a 0.2 percent chance of happening in any given year. They serve important public safety, public health, and environmental interests. Any disturbance within the floodplain, such as filling, earth removal, or construction has the potential to alter its water-holding capacity. When this happens, flooding can extend beyond the actual boundary of the floodplain, causing damage to roads and buildings and potentially redirecting the course of rivers and streams.

Federal Emergency Management Agency (FEMA) determines the boundaries of floodplains and publishes the data on Flood Insurance Rate Maps (FIRM), used by the National Flood Insurance Program as a uniform standard for establishing property insurance requirements. Massachusetts and other states also use the FIRM for floodplain management. The 100-year floodplain is determined by the edge of the water level of a flood that has a one percent chance of occurring each year.

<sup>35</sup> Based on MassGIS FEMA Q3 Flood layer data and calculations

<sup>36</sup> There is a process for seeking an amendment to the flood zone designation. See <http://www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/change-flood-zone-designation-online-letter>.

designated areas specified by the Town, including all land lying within 25 feet of the normal highwater line of lakes, ponds, marshes, swamps, bogs, brooks, streams, and rivers. Various uses are prohibited within this district in order to preserve and protect waterbodies in the community, and maintain the water recharge areas so as to protect the Town's water supply.

### ***Groundwater***

Groundwater is a very important resource in Hudson, as the entire Town obtains its drinking water from wells operated by the Hudson Department of Public Works Water Division and a surface waterbody located in Berlin, Massachusetts. The Town of Hudson obtains its drinking water from six active sources: five groundwater wells and one surface reservoir. These sources are: Cranberry Well, Kane Well, Chestnut Wells #1, 2, 3 and Gates Pond. Another source, Rimkus Well, is an emergency backup. The three Chestnut Wells and the Kane Well are located within the same aquifer, which underlies the land between the Assabet River and Fort Meadow Brook.

The Massachusetts Department of Environmental Protection (MassDEP) implements four types of groundwater protection areas in order to protect a community's drinking water supply from contamination.

- Interim Wellhead Protection Areas (IWPA) are for those wells and wellfields that lack a MassDEP approved Zone II. The IWPA is a one-half mile radius measured from the well whose approved pumping rate is 100,000 gallons per day (gpd) or greater. Wells that pump less than this are subject to a radius proportional to the approved pumping rate based on a specified calculation.
- Zone I is a 400 foot protective radius around wells with approved yields of 100,000 gpd or greater.
- Zone II are areas of an aquifer that contribute water to a well under the most severe pumping and recharge conditions that can be realistically anticipated.
- Zone III are areas beyond the area of Zone II from which surface water and groundwater drain into Zone II.<sup>37</sup>

The Chestnut Wells, Cranberry Well, and Kane Well aquifer lies within the Watershed Protection District, and the Town has an approved Zone II designation from MassDEP for these aquifer areas. Gates Pond, located in the Town of Berlin, has been filtered under the requirements of the Federal Safe Drinking Water Act. The Cranberry and Kane Wells were placed offline due to high levels of iron and manganese in order to complete a filtration project which would help reduce these levels. The filtration project entailed constructing a pipe system from the Kane and Cranberry wells to the Chestnut filtration plant. As of January 2014, the Kane well was put back in service (see Chapter 7 – *Public Services and Facilities* for more detail). The Rimkus Well, closed due to high levels

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<sup>37</sup> MassDEP Water Supply Protection Area Definitions.

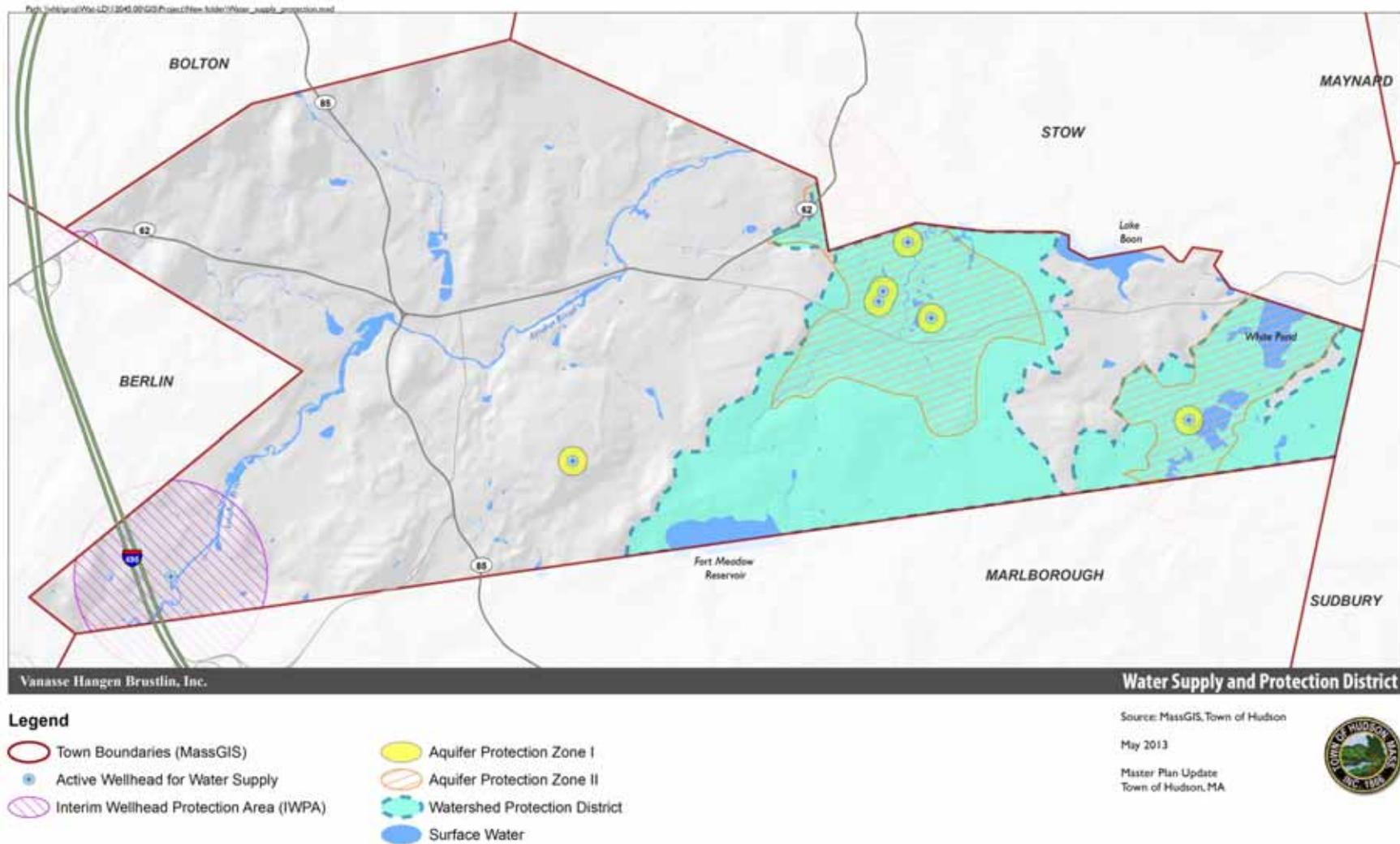
<http://www.mass.gov/eea/agencies/massdep/water/drinking/water-supply-protection-area-definitions.html>

of iron and manganese, is currently undergoing an evaluation to determine the feasibility of returning it to a reliable drinking water source and expanding its output. There is an interim well-head protection radius of ½ mile for the Zone II for this well also. For all wells, the Town owns or controls the Zone I's (a radius of 400 feet around each source). Figure 5-2, *Water Supply and Protection District*, identifies IWPA's, Zone I Wellhead Protection Areas, and Zone II Wellhead Protection Areas in Hudson.<sup>38</sup>

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<sup>38</sup> *Hudson Open Space and Recreation, 2011.*

Figure 5-2 Water Supply and Protection



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### ***Wetlands***

Wetlands are protected by federal and state law due to their importance to the health and balance of the natural environment. They offer aesthetic, recreational, and biological value to a community and serve as a home to a variety of wildlife species. Approximately 20 percent (1,548 acres) of Hudson is considered wetland areas.<sup>39</sup> These include bog, deep marsh, shallow marsh meadow or fen, shrub swamp, wooded swamp coniferous, wooded swamp deciduous, wooded swamp mixed trees, and open water. Wetlands are shown on Figure 5-1, *Wetlands and Surface Water*.



### ***Vernal Pools***

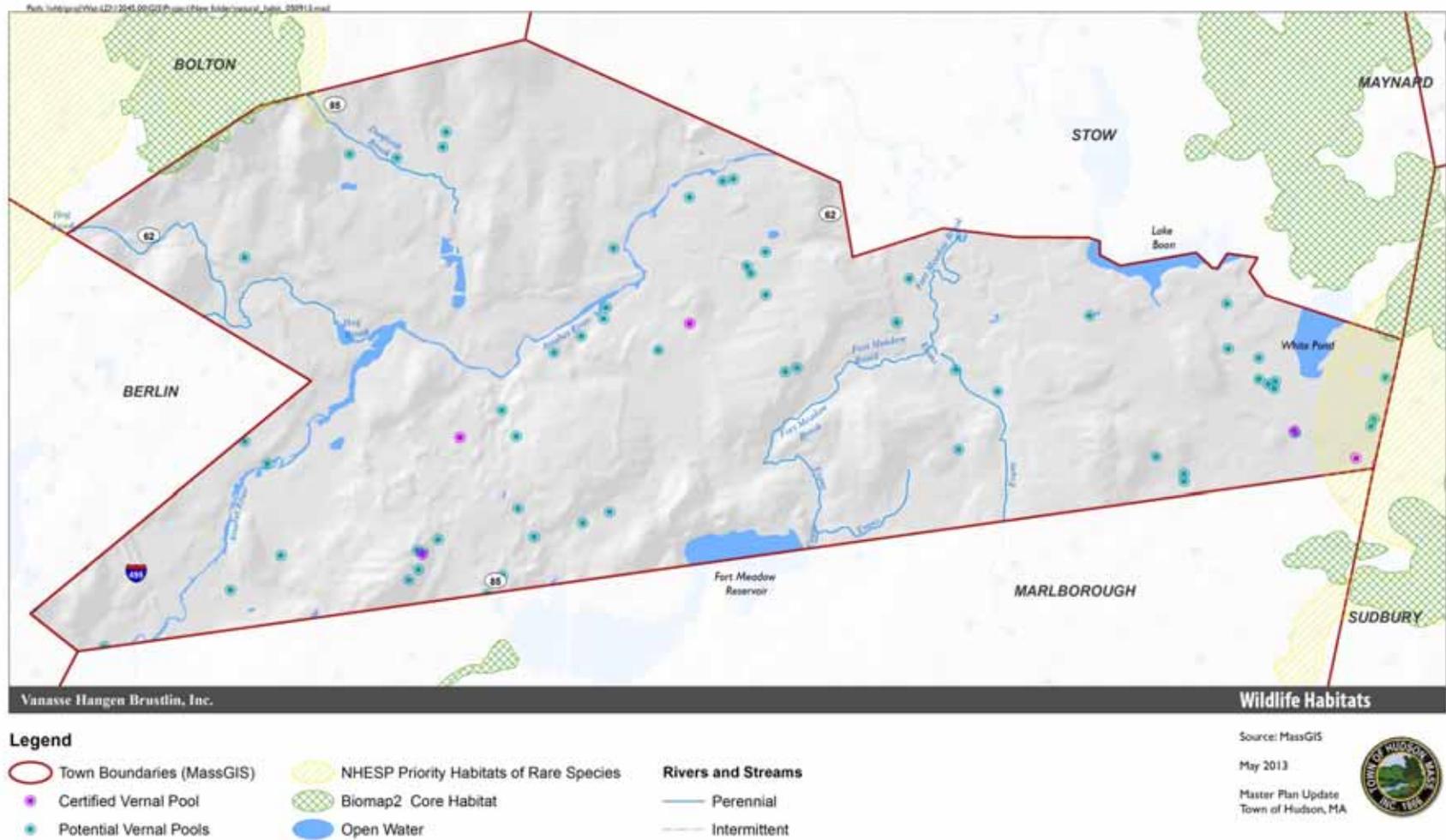
Vernal pools are unique natural resources that serve as wildlife habitat to amphibians and invertebrate animals. They typically fill with water during the fall or winter and remain filled through the spring and summer, drying completely in mid to late summer each year or every few years. Complete drying up of vernal pools prevents fish from establishing in these waterbodies, which makes them ideal for amphibians and invertebrates to thrive. The Massachusetts Natural Heritage & Endangered Species Program (NHESP) is the state agency which officially certifies vernal pools. The Massachusetts Aerial Photo Survey of Potential Vernal Pools has been produced by NHESP to display potential areas of vernal pools, until they are officially certified. There are approximately 57 potential vernal pools (partially or entirely) and five certified vernal pools (entirely) in the Town of Hudson based on NHESP datalayers and information, shown in Figure 5-3, *Wildlife Habitats*. The Town of Hudson should work with NHESP on certifying all potential vernal pools to ensure their protection.

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<sup>39</sup> Based on MassGIS Wetlands layer data



Figure 5-3 Wildlife Habitats



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## Land Cover and Wildlife

Hudson's forested areas make up approximately 3,046 acres<sup>40</sup> of land cover out of the Town's total area of 7,616 acres, consisting of mainly central hardwoods with some transition hardwoods, some elm-ash-red maple, and red and white pine.<sup>41</sup> According to the NHESP, there are two plant species classified under the Massachusetts Endangered Species Act (MESA) as threatened or species of special concern that have been identified in Hudson. They include one species of special concern, the Climbing Fumitory (*Adlumia fungosa*); and, one threatened species, the Dwarf Bulrush (*Lipocarpa micrantha*).<sup>42</sup>

Most open space areas in Hudson are scattered throughout the Town. According to Massachusetts Geographic Information Systems (GIS) data, there are approximately 1,037 acres of protected and recreational open space in Hudson.



NHESP in collaboration with The Nature Conservancy's Massachusetts Program, created *BioMap2*, a rigorous analysis and report on the state's biodiversity status. It combines rare species, natural community, and ecosystems data with spatial information in order to identify species and habitats impacts and develop concepts to protect these resources. *BioMap2* identifies Core Habitats and Critical Natural Landscapes as part of the analysis. Core Habitats are those "areas that are critical for the long-term persistence of rare species and other Species of Conservation Concern, as well as a wide diversity of natural communities and intact ecosystems across the Commonwealth."<sup>43</sup> Protecting Core Habitats helps in conserving biodiversity. Various components can determine if an area should be considered a Core Habitat: rare species presence; other Species of Conservation Concern; priority natural communities; vernal pools; forest cores; wetland cores; and, aquatic cores. Critical Natural Landscapes are "large natural Landscape Blocks that are minimally impacted by development. If protected, these areas will provide habitat for wide-ranging native species, support intact ecological processes, maintain connectivity among habitats, and enhance ecological resilience to natural and anthropogenic disturbances in a rapidly changing world."<sup>44</sup>

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<sup>40</sup> Based on MassGIS Land Use (2005) layer data for Forest areas.

<sup>41</sup> NHESP BioMap2 Hudson Summary Report. Produced in 2012.

<sup>42</sup> NHESP MESA Rare Species Occurrences by Town.

[http://www.mass.gov/dfwele/dfw/nhesp/species\\_info/species\\_viewer/species\\_viewer.htm](http://www.mass.gov/dfwele/dfw/nhesp/species_info/species_viewer/species_viewer.htm)

<sup>43</sup> NHESP BioMap2 Hudson Summary Report. Produced in 2012.

<sup>44</sup> *Ibid.*

Components that determine Critical Natural Landscapes include: landscape blocks; upland buffers of wetland and aquatic cores; and, upland habitat to support coastal adaptation.

According to the latest *BioMap2* analysis and report, the Town of Hudson contains 16 acres of Core Habitat, and no Critical Natural Landscapes. The Core Habitat partially or entirely includes one wetland core (Core 1995) and two Species of Special Concern (Core 1981). Core 1995 is located at the northeast corner of the Town, mainly located in Sudbury but just reaching across the Hudson town border. Core 1981 is located at the northwest corner along the Bolton and Hudson town border. These Core areas can be seen in Figure 5-3, *Wildlife Habitats*. The Species of Special Concern associated with Core 1981 are the Marbled Salamander (*Ambystoma opacum*) and the Four-toed Salamander (*Hemidactylium scutatum*).

According to the NHESP, there are two animal species classified under the MESA as species of special concern that have been identified in Hudson. They include the Eastern Whip-poor-will (*Caprimulgus vociferus*) and the Eastern Box Turtle (*Terrapene carolina*).<sup>45</sup>

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## Resource Protection

Hudson contains a variety of important natural and cultural resources within its boundaries, such as water supply resources, open space and recreation areas, wetlands, historic resources, and waterbodies. The Town along with various organizations work towards the protection of these key resources through protection and planning efforts. This section describes some of those efforts, including reports and studies, of how the community's resources are protected and preserved for future generations.



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<sup>45</sup> NHESP MESA Rare Species Occurrences by Town.

[http://www.mass.gov/dfwele/dfw/nhosp/species\\_info/species\\_viewer/species\\_viewer.htm](http://www.mass.gov/dfwele/dfw/nhosp/species_info/species_viewer/species_viewer.htm)

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## Natural Resource Protection

### *Hudson Conservation Commission*

Hudson's Conservation Commission is made up of seven members appointed by the Board of Selectmen. The Commission has statutory responsibility for administering the Massachusetts Wetlands Protection Act, M.G.L. c. 131, s. 40. It also is responsible for managing all conservation land owned by the Town, initiating new acquisitions or conservation restrictions, reviewing major development proposals, and protecting wildlife habitats.

The Town has not adopted more stringent local wetlands by-laws, which have been adopted by approximately 200 Massachusetts communities to better protect wetland resources. Such by-laws typically expand upon the jurisdiction of the state law by regulating work in the buffer zone more stringently or adding to the "interests" or values of wetland resources that are protected through the permitting process. Thus, the Town can enhance wetland protection through the adoption of a local by-law, although it may complicate the permitting process for projects that would have fallen outside of local regulatory jurisdiction.

### *Open Space and Recreation Plan<sup>46</sup>*

Hudson's *Open Space and Recreation Plan* was updated in February 2011. The Town has been successful in acquiring, preserving and protecting key parcels since the 1999 plan, although many sites have undergone changes in this 12 year span. Some of the parcels that have been acquired and protected (either via conservation restrictions, deed restrictions, or other methods) include the Sauta Cornfield on Brook Street, Assabet River Rail Trail properties from Marlboro to Wilkins Street, Mayo property on Route 85 and Fall Brook Road, and the Fossile Property on Brigham Street. For a complete list of acquired and protected parcels since during this time period, refer to the *Hudson Open Space and Recreation Plan, February 2011*.



Not only has the Town acquired and protected key parcels listed in the 1999 plan; significant steps have been taken towards recreation and open space goals. The most significant of these being the development of Hudson's section of the Assabet River Rail Trail, a multi-use recreational rail trail that would pass through Marlborough, Hudson, Stow, Maynard, and Acton when fully built out. The now completed Hudson/Marlborough section is 5.8 miles long and was opened to the public on September 24, 2005. Bicyclists and pedestrians alike heavily utilize the rail trail, which approximately spans in Hudson from Wilkins

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<sup>46</sup> *Hudson Open Space and Recreation, 2011.*

Street to the Hudson/Marlborough town line around Fitchburg Street. The Town also was successful in the development of the 19-acre Sauta Complex located in the eastern part of Town into a multi-purpose athletic facility, which includes a baseball and soccer fields. Other accomplishments since the last updated Open Space and Recreation Plan in 1999, include:

- Development of an urban park in downtown along the Assabet River, with amenities such as a skating park, splash pad, playground, and pavilion.
- Purchase of a 6+ acre parcel adjacent to Hudson High School, along the Assabet River, for recreation and conservation purposes.
- Amendments to the zoning bylaw in order to preserve open space areas, and target new growth areas
  - Open Space and Residential Development (OSRD) – allows greater flexibility while encouraging the permanent preservation of natural resources.
  - Accessory Dwelling Unit By-Law – allows residents in single family neighborhoods, the opportunity to develop moderately priced rental units to meet the needs of smaller households, while preserving residential character of the neighborhood.
  - Adaptive Re-Use Overlay District – encourages the reuse of existing buildings and allows mixed use development.



***Community Preservation Act***

The Community Preservation Act (CPA) is a state law that allows communities to adopt a property tax surcharge, with revenues from this surcharge to be used for open space preservation, the creation of affordable housing, preservation of historic buildings and landscape, and the creation of recreational opportunities. Dependent on the total number of communities in Massachusetts participating in the CPA and the number of deed transactions that generate fees for the fund, the state matches the town’s surcharge revenues.

At least 10 percent of the town’s revenue generated annually by the CPA must be spent or reserved specifically for historic preservation, open space, and community housing. No more than 5 percent is utilized for administrative costs. The remainder of the revenue can be spent or reserved for recreation projects, in addition to historic preservation, open space, and community housing.

Hudson’s Five Year Action Plan outlined in the 2011 Open Space and Recreation Plan lists goals, objectives, and action items to accomplish within the five year time span of the plan’s completion date. Through 2016, the Town plans on the following actions:

- Acquiring parcels of land around water supplies such as those on River Road and near the Cranberry Well and Maynard Reservoir
- Dredge Tripps’ and Pickle’s Pond to prevent eutrophication
- Increase signage along streams indicating stream health and flow information; develop reforestation programs for conservation and recreation lands
- Designate lands along the Assabet River for scenic views

- Replace Cherry Street playground equipment
- Investigate properties for community gardening
- Connect River Road properties with Gates Pond and Assabet River
- Encourage developers to build according to conservation by-laws.

To view the list of all action items, schedule, and responsible parties for the action items, refer to the *Hudson Open Space and Recreation Plan, February 2011*.

#### ***Community Preservation Plan<sup>47</sup>***

In 2006, Hudson accepted the CPA statute and approved a surcharge on real property of 1 percent. With the Town's surcharge and all state matching funds, Hudson has received \$2,314,813 in the past five years for CPA funding, which is managed by the Community Preservation Committee. The Committee accepts applications annually for projects to spend CPA funds on, reviews these projects, and makes recommendations at the May Annual Town Meeting or the November Special Town Meeting.

Since the total amount of money raised through CPA includes the state matching grant, the Town could consider leveraging that funding source further by providing additional appropriations to the CPA in order to increase the state match.

The Community Preservation Committee gives preference to those proposals which address multiple general criteria, consistent with state guidelines. The general criteria for proposals are described in Hudson's Community Preservation Plan (Figure 5-4).



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<sup>47</sup> Town of Hudson Community Preservation Committee. *Community Preservation Plan*. Updated January 2013.

Figure 5-4 General Criteria for CPA Proposals in Hudson

- Projects eligible for CPA funding must meet at least one of the requirements outlined in the legislation; specifically:
  - The acquisition, creation and preservation of open space;
  - The acquisition, preservation, rehabilitation and restoration of historic buildings or landscapes;
  - The acquisition, creation and preservation of land for recreational use;
  - The acquisition, creation and support of community housing;
  - The rehabilitation and restoration of open space, land for recreational use, and community housing that is acquired or created using the monies from the CPA fund.
- Projects that are consistent with the Town's planning documents and are acknowledged in at least one of the following: Community Development Plan, Open Space and Recreation Plan, Long-Range Capital Plan;
- Projects that have received wide scrutiny and public input and/or have been supported by the town in some other fashion;
- Projects that meet more than one CPA purpose (i.e. open space, recreation and historic preservation);
- Projects that leverage additional public and/or private funding;
- Projects that have received the endorsement of other Town boards and committees;
- Projects that demonstrate practicality and feasibility within a realistic budget.

The Community Preservation Plan also establishes more specific criteria and goals related to open space, historic preservation, community housing, and recreation resources. Overall, the Town's CPA goals are to protect natural features, scenic vistas, farmland, wetlands, hill top views, and other natural resources, while managing growth and maintaining the community's character. This means maintaining wildlife corridors and important habitat areas along the rivers and streams, balancing commercial and residential growth without compromising historic features and natural beauty, and offering a diverse housing stock and variety of recreational resources to all residents.

The following criteria have been applied for the use of CPA funds for open space preservation:

- Project provides protection of threatened parcels along rivers and streams, adjacent to other town owned property, near agricultural open land or undisturbed natural areas;
- Project provides connections of unique parcels for conservation and recreation purposes for enjoyment of the natural environment and/or educational opportunities;
- Project provides connections with existing trails or potential linkages;
- Project preserves scenic views;
- Project protects drinking water quantity and quality;
- Project preserves important surface water bodies, including wetlands, vernal pools and riparian zones.<sup>48</sup>

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<sup>48</sup> Town of Hudson Community Preservation Committee. *Community Preservation Plan*. Updated January 2013.

Since the Town adopted the CPA statute, CPA funds have been used to: acquire key parcels to conserve and increase natural resources (such as the Fossile Land acquisition and Schofield Land acquisition), rehabilitate and restore the senior center, restore the Main Street Cemetery veterans graves, engineer and develop key parcels (such as the Sauta Cornfield, Cherry Street site, and Fossile Land), complete work on the library windows of the Carnegie Building, renovate the Main Street Fire Station, expand community gardens, and transfer funds to the Municipal Affordable Housing Trust Fund. Other eligible potential projects that could be funded by CPA funds in the future include the creation of affordable housing and down payment assistance programs, trail design, and dredging of Tripp's Pond. CPA funds are an important financial resource used by the Town.

***495/MetroWest Development Compact Plan***<sup>49</sup>

The 495/MetroWest Development Compact is a regional-level planning process that focuses priorities and strategies along the I-495 corridor while collaborating and integrating these priorities into regional and state strategies. Thirty-seven communities are included in the Compact Region, including Hudson. The objective of the *495/MetroWest Development Compact Plan* was to identify and evaluate Priority Development Areas (PDAs) and Priority Preservation Areas (PPAs). PDAs are those areas that are capable of supporting additional development or redevelopment. PPAs are those areas not currently protected that deserve protection due to significant environmental resources that may be present. Some areas may be identified as a combination of the two priority areas (PPA/PDAs) containing components of both development and protection. Throughout the planning process which involved analyzing existing conditions, meeting with town staff, and holding a variety of local, regional, and state public meetings and roundtables, nearly 800 priority areas were identified within the 37 communities in the Compact. These priority areas were identified in municipal planning documents, input from municipal boards and staff, and informed by the public discussions and forums. Those priority preservation areas identified in Hudson are shown in Table 5-2 along with their relevant address. The properties that have also been identified by the Hudson Open Space Plan as areas for potential protection are noted in bold to show particular areas of interest.

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<sup>49</sup> Executive Office of Housing & Economic Development. *495/MetroWest Development Compact Plan*. March 2012.

**Table 5-2 Hudson Priority Areas**

<b>Name</b>	<b>Priority Type</b>	<b>Significance</b>
Hudson Gold LLC-Charter Oak	Preservation	Local
White Pond Road/Capasso Farms	Preservation	Local
Sarno Land	Preservation	Local
Saaristo Land	Preservation	Local
<b>Curley</b>	<b>Preservation</b>	<b>Local</b>
<b>Carney (two parcels)</b>	<b>Preservation</b>	<b>Local</b>
<b>Carney (one parcel)</b>	<b>Preservation</b>	<b>Local</b>
<b>Yankee Golden Retriever</b>	<b>Preservation</b>	<b>Local</b>
Doris Jenkins	Preservation	Local
<b>Portuguese Club (two parcels)</b>	<b>Preservation</b>	<b>Local</b>
<b>Elks Club (two parcels)</b>	<b>Preservation</b>	<b>Local</b>
Gay Land	Preservation	State
<b>Sukis Land</b>	<b>Preservation</b>	<b>Local</b>
Davis Land	Preservation	Local
Murphy	Preservation	State
<b>Riverside Rod &amp; Gun Club</b>	<b>Preservation</b>	<b>State</b>
Ribber Land	Preservation	Local
Gutknecht	Preservation	Local
<b>Standard Orchards</b>	<b>Preservation</b>	<b>Local</b>
<b>Kane</b>	<b>Preservation</b>	<b>State</b>
<b>Gerwick</b>	<b>Preservation</b>	<b>State</b>
<b>Hovagimian</b>	<b>Preservation</b>	<b>State</b>
<b>Kane (Main Street)</b>	<b>Preservation</b>	<b>State</b>
<b>Murphy Road</b>	<b>Preservation</b>	<b>Local</b>
<b>Fossile</b>	<b>Preservation</b>	<b>Local</b>
Burris/Kittredge	Preservation	Local
Kane/Perkins	Preservation	Local
Donald Newcombe	Preservation	Local
<b>Sauta</b>	<b>Preservation</b>	<b>Local</b>
<b>Standard Orchards</b>	<b>Preservation</b>	<b>State</b>
Underwood	Preservation/Development	Local

Note: Bold text notes Hudson's preservation and protection priorities according to the Hudson Open Space and Recreation Plan, 2011.

As part of the plan, municipalities are encouraged to advance the goals of the priority areas identified, and working with neighboring communities advance regionally significant projects.

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## Water Protection Planning Efforts

As the Town of Hudson contains important water features that make the community unique, a separate section on water protection efforts is warranted.

Not only does the Assabet River flow through the Town, there are important drinking water supply features that need to be protected also. Hudson additionally contains many different surface waterbodies ranging from brooks, lakes, and ponds, as noted earlier in the *Water Resources* section of this chapter. The following are efforts relevant to protecting Hudson's water features.

### ***Organization of the Assabet Sudbury and Concord Rivers (OARS)***

The Organization of the Assabet Sudbury and Concord Rivers (OARS) recently instituted a StreamWatch program to monitor the health of many of these important tributaries. OARS scientists take into consideration water flow, its effect on the river and ultimately the overall health for both fish



and local drinking water sources. Charts have been placed near various streams as well as new signs. Along with monitoring the water, they also identify and measure aquatic plants in areas behind dams. According to Executive Director, Allison Field-Juma, one of the primary concerns for the Assabet River is the eutrophication (a high concentration of nutrients, especially phosphates and nitrates, that can lead to an excessive growth of algae).<sup>50</sup> This eutrophication has taken place over many years, especially in dam impoundment areas, needs to be drastically reduced before the river can be fishable. Hudson has recently upgraded its wastewater treatment facility which improves the quality of wastewater effluent discharged to the Assabet River, improving the phosphorus flow. However, the river is still listed as an impaired water body by the U.S. Environmental Protection Agency. OARS notes that the water quality problem is especially evident in the summer months, when the river water level is low, resulting in a larger proportion of the water as effluent. In this area of the state, OARS along with the Army Corp of Engineers is investigating dam removal and will be holding workshops and community training sessions. Hudson should participate since there will be a significant impact with the removal of the Washington Street Dam.

### ***UrbanRiver Visions<sup>51</sup>***

The Executive Office of Environmental Affairs runs the UrbanRiver Visions program in order to provide assistance to communities for creating visions and establishing planning efforts to revitalize urban riverfronts across the state. The UrbanRiver Visions process involves conducting a charrette in a community,

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<sup>50</sup> Telephone interview with Allison Field-Juma, OARS Executive Director, May 15, 2013.

<sup>51</sup> Executive Office of Environmental Affairs. UrbanRiver Visions. Hudson Charrette. October 8 & 9, 2002 Summary Report.

creating a rendering of the vision expressed by the community, and developing an action plan to achieve the vision. Seven communities are involved in the program, including Hudson. One of Hudson's most important natural features, the Assabet River, flows directly through the downtown area providing Hudson the opportunity to take part of this program and create plans for future development and improvements.

During a two night community visioning session in Hudson, residents were asked to discuss ideas, goals, and potentials for the river and downtown area. Key initiatives that were discussed during the charrette included:

- Establishing a river park below the Washington Street dam and a town waterfront area above the dam with a riverwalk connecting the two destinations.
- Improving the pedestrian setting of South Street and the cross connections between Main Street and the Assabet River.
- Exploring further the potential of a town parking garage and the uses this would support such as river parks and a four-season performance facility.
- Encouraging growth of an urban village within walking distance of Main Street through the redevelopment of old mill building sites for residential uses.<sup>52</sup>

Specific focus group questions, comments, and notes can be viewed in the *UrbanRiver Visions, Hudson Charrette Summary Report*.

In 2005, Hudson received a \$19,661 UrbanRiver Visions implementation grant to complete design, engineering, and legal work for streetscape improvements and burying utilities. In 2006, the Town received another \$128,500 to restore canal walls and construct a canal walk along Tannery Brook. During this time, several other implementation grants were awarded by state agencies to the Town for its vision.

***Sediment and Dam Removal Feasibility Study – Assabet River, Massachusetts<sup>53</sup>***

The Assabet River, which flows throughout the Town of Hudson, currently does not meet state requirements for water quality due to pollutant levels. Excessive amounts of phosphorus are present in the Assabet River due to internal recycling from sediments and stormwater runoff, and discharges from wastewater treatment facilities located in Westborough, Marlborough, Hudson, and Maynard. Areas within the river behind dams experience variations in dissolved oxygen and excessive growth of aquatic vegetation, which are both caused by high levels of phosphorus. Adequate levels of dissolved oxygen are required to support aquatic life; therefore, high levels of phosphorus do not create ideal

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<sup>52</sup> Executive Office of Environmental Affairs. UrbanRiver Visions website. Hudson – The Charrette and Plan Implementation. [http://commpres.env.state.ma.us/urv\\_web/Public\\_Site/Hudson.asp.htm](http://commpres.env.state.ma.us/urv_web/Public_Site/Hudson.asp.htm)

<sup>53</sup> United States Army Corps of Engineers. *Assabet River, Massachusetts. Sediment and Dam Removal Feasibility Study*. September 2010.

environments for aquatic life to thrive. There are nine dams located throughout the Assabet River, seven of these were developed originally for mill buildings to generate industry power.

The New England District of the United States Army Corps of Engineers (USACE) performed a sediment and dam removal feasibility study in order to provide planning assistance for the Massachusetts Department of Environmental Protection on feasibility of sediment and dam removal to reduce internal recycling of phosphorus levels. Ultimate goals for the Assabet River are to improve water quality in order to meet state water quality standards, and achieve a sustainable and restored aquatic ecosystem. The main focus of the USACE study is the goal of 90 percent reduction of phosphorus release by sediments, as required in the nutrient Total Maximum Daily Load (TMDL) for the river. A TMDL is a calculation of the maximum amount of a type of pollutant that a waterbody can receive while still safely meeting water quality standards.<sup>54</sup> The TMDL requires reductions of how much phosphorus wastewater treatment facilities are allowed to discharge into the Assabet River, and also requires a 90 percent reduction in sediment phosphorus. These requirements have been established in order for the river to achieve water quality compliance.

#### ***Dam Removal Benefits***

Removing a dam has multiple benefits on water quality:

- Reduced residence time (amount of time the water remains in one area)
- Reduced biomass growth (algae and other plants) due to reduced residence time
- Reduced sediment phosphorus because there is less biomass growth
- Improved dissolved oxygen in shallow water depths

As part of the sediment and dam removal feasibility study, the USACE in conjunction with the engineering firm Camp, Dresser, and McKee (CDM) performed data collection and computer monitoring to determine plans to achieve the 90 percent reduction in sediment phosphorus goal. Based on the results of the modeling studies, removal of four of the old mill dams would benefit water quality the most (Ben Smith dam in Maynard, Gleasondale dam in Stow, Hudson dam in Hudson, and Powdermill dam in Acton). See the *Dam Removal Benefits* box on this page for more information on how removing a dam can increase overall water quality. The removal of the Ben Smith dam would reap the most benefits, as it is a significant contributor of biomass growth (due to its large size and long residence time) and affects the Powdermill dam and further downstream river reaches. The Hudson dam located on Washington Street, along with the Powdermill dam mentioned above would have the next best benefits after the Ben Smith dam. Sediment removal (dredging) was also analyzed as part of the study, but was determined to be of little value and in some cases could have negative impacts on the river water quality. Therefore, sediment removal without dam removal was dropped as a solution in the study.

Potential dam removals combined with planned wastewater treatment facility improvements (required in the TMDL) would collectively reduce sediment phosphorus by approximately 80 percent, 10 percent less than the 90 percent TMDL target. Planned wastewater treatment facility improvements would result in a 60 percent reduction, while potential dam removals would result in another

<sup>54</sup> United States Environmental Protection Agency. Impaired Waters and Total Maximum Daily Loads. <http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/index.cfm>

20 percent reduction. The sediment and dam removal feasibility study also identified engineering and environmental considerations and issues that would be associated with a potential dam removal project (such as cost estimates and impacts to resources).

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## Environmental Challenges

Based on the information provided in this chapter and other Town of Hudson documents, Hudson faces various environmental challenges today and into the future that pose threats to the Town's natural resources. These challenges should set the basis for developing strategies and plans relevant to the community's natural resources goals.



An ongoing concern for the state, Hudson, and communities located along the Assabet River, is that related to high levels of phosphorus in the water. As mentioned earlier, the Assabet River does not meet state water quality standards due to high phosphorus pollution levels. These high levels are attributed to stormwater runoff and effluent from wastewater treatment facilities located along the river, including one located in Hudson.

Mentioned in further detail in the *Public Services and Facilities* chapter, Hudson receives its drinking water from one surface waterbody located in Berlin, Massachusetts and five groundwater wells, in which water is treated by two water treatment facilities. Concerns with high levels of iron and manganese in two of the groundwater supplies have triggered a feasibility study by the Department of Public Works Water Division. Hudson should consider the alternatives outlined in the study, as well as additional potential zoning to put in place in order to prevent further contamination and increase protection of wellheads.

As with many communities in the Commonwealth and country, there exists a struggle between the preservation of open space areas and meeting needs of development and a growing population. A majority of development in Hudson occurs in the western end of Town due to the proximity of the Assabet River. Protection of lands along the Assabet River remains a priority of the Town, as

well as protection of major drainage basins. Hudson should continue to work towards preserving its valuable open space and natural resource areas.

The U.S. Environmental Protection Agency notes that warming winters in the Northeast “cause more precipitation to fall as rain rather than snow. Furthermore, rising temperatures cause snow to begin melting earlier in the year.”<sup>55</sup> While serious droughts are a problem mainly in the western United States, New England and Hudson specifically may experience heavier precipitation events with a warming climate that could “cause problems for the water infrastructure, as sewer systems and water treatment plants are overwhelmed by the increased volumes of water.”<sup>56</sup> The increases in water volumes will also impact surface water quality of Hudson’s lakes, ponds, rivers and streams as increased run off associated with heavier storms will also increase the amount of sediments, nutrients, and pollutants that enter these water bodies water supply. Gates Pond, one of the Town’s main sources of water other than ground water, will be particularly susceptible to increased pollutants as a result of heavier storms.

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## Historic and Cultural Resources

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### Historic Resources

The Hudson Community Preservation Plan lists the following goals for historic preservation:

- Preserve and maintain Hudson’s historic landmarks and historic districts.
- Preserve and protect publicly owned facilities of historic value.
- Re-evaluate the historic district boundaries to assure incorporation of historically significant buildings and properties within the district.



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<sup>55</sup> U.S. Environmental Protection Agency. <http://www.epa.gov/climatechange/impacts-adaptation/water.html>

<sup>56</sup> CCSP (2008). The Effects of Climate Change on Agriculture, Land Resources, Water Resources, and Biodiversity in the United States . A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. U.S. Environmental Protection Agency, Washington, DC, USA.

- Investigate State or National Historic Register designation for various landscapes and buildings.
- Maintain the Town's historic character.

The most significant historic resource in Hudson is the Silas Felton Historic District, which was established by Hudson's Special Town Meeting in November 1988. The District encompasses all of what is considered to be downtown Hudson. A fire in 1894 destroyed many of the buildings downtown. The reconstruction of the entire downtown shortly after the 1894 fire resulted in a downtown that is architecturally from that one period. At the time, 65 buildings within the District were identified as being historically significant, particularly because of their unusually unique and uniform architectural style and character representing a distinct time in the development of the Town.<sup>57</sup> This includes Town Hall and the Senior Center, both of which were recently renovated. The Town established rules and regulations to govern future development in the District, especially with respect to architectural character. Significant renovations and building alterations within the historic district require design review by the Silas Felton Historic District Commission (note that this differs from the Historical Commission as described below). Prior to the establishment of the District, a number of buildings were constructed that were thought to detract from the character of the area.

(insert map of Silas Felton District)

The specific purposes of the District by-law and its regulations are:

1. to preserve and protect the architectural integrity of the homes and buildings in the area and to maintain the unity of the neighborhood.
2. to encourage the construction of new structures compatible with the surrounding architecture.
3. to raise the awareness of Hudson citizens as to the value of the history, architecture, and streetscapes of the Town.<sup>58</sup>

The regulations govern any construction activity that would alter the appearance of a building that is visible from a public street. Signs are regulated as well.

The Town has a Historical Commission, but it does not appear to be active at this point in time. According to the Hudson General By-laws, the Commission is responsible for the identification of the historical or archeological assets of the

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<sup>57</sup> The initial inventory of historically or architecturally buildings in the downtown area was included in the 1978 Hudson Historic Survey. Approximately 40 structures and sites were listed, along with some conceptual design improvements that could be implemented to revitalize downtown Hudson.

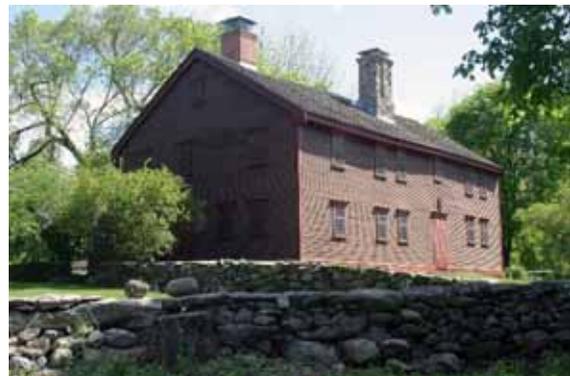
<sup>58</sup> Rules and Regulations of the Silas Felton Historic District Commission, [http://www.townofhudson.org/Public\\_Documents/HudsonMA\\_BComm/HDC/HDC%20Rules.pdf](http://www.townofhudson.org/Public_Documents/HudsonMA_BComm/HDC/HDC%20Rules.pdf)

Town. The Commission makes recommendations to the Board of Selectmen or other Town Boards whenever it is found that activities are being proposed or planned that will affect an historic or archeological site. The Commission has the power to accept gifts in the name of the Town.<sup>59</sup>

The Town also adopted a Bed and Breakfast by-law, which is incorporated into the zoning by-laws. It is designed to foster the development of bed and breakfast establishments, in part, to help preserve the long term maintenance of the Town's larger and significant historic properties.<sup>60</sup>

The Hudson Historical Society is a private organization interested in historical subjects pertaining to the Town of Hudson. They operate a museum on Broad Street.

Hudson has three properties that are individually listed in the National Register of Historic Places and also listed in the State Register: Felton Street School (the high school built in 1882 and closed in 1956), Goodale Homestead (an historic house built in 1702) and Col. Adelbert Mossman House (a Queen Anne style house built in 1895). The National Register is the official federal list of districts, sites, buildings, structures and objects that have been determined significant in American history, architecture, archaeology, engineering and culture.



In 2006, Hudson participated in the Massachusetts Heritage Landscape Inventory Programs through the Department of Conservation and Recreation along with the Freedom's Way Heritage Association. Heritage landscapes are special places created by human interaction with the natural environment that help define the character of a community and reflect its past. They are dynamic and evolving; they reflect the history of a community and provide a sense of

<sup>59</sup> See Article I, Section 9.7 of the Hudson General By-laws.

<sup>60</sup> See Section 5.2.7 of the Hudson Zoning By-laws.

place; they show the natural ecology that influenced land use patterns; and they often have scenic qualities.<sup>61</sup>

That project identified the Assabet River Corridor as having great historical significance and placed emphasis on areas of the downtown that are of historic value. Additional areas cited in the report include the Central Street Neighborhood, Downtown Hudson, Gospel Hill, Mass Central Railroad ROW, the Park/Washington Street Neighborhood, the Pleasant/Pearl Street Neighborhood, and Wood Square. Descriptions of each area along with recommendations for each are contained within that report and are incorporated into this Plan by reference. Additionally, it is worth noting that Hudson was a mill community and there are still four industrial mills and three lumber mills in existence.

The report also identifies three categories of “critical concern”. Churches were mentioned given the number of vulnerable and potentially significant churches that have not been inventoried by the MA Historical Commission (MHC). Given the heritage of railroads crossing through Hudson, the report identified the presence of railroad artifacts that should also be documented. Finally, the report mentions regional landscapes such as the Assabet River Rail Trail, the Assabet National Wildlife Refuge, and the local lakes and ponds that have regional significance and should be managed through cooperative arrangements with adjacent communities.

Hudson has eight documented ancient Native American sites dating back to the Late Archaic Period (6,000-3,000 B.P.) and four historic archaeological sites. Based on the known information about this region as well as the Native American activity in Hudson, it is likely that there are additional sites of archaeological significance in Hudson. The Massachusetts Historic Commission monitors and evaluates these sites, but the exact locations are kept confidential to limit public interference with these sites.

The Community Preservation Plan identifies the following criteria for funding historic preservation projects in Hudson:

- Protects, preserves, enhances, restores and/or rehabilitates historic properties, features or resources of historic significance as defined by the CPA;
- Project demonstrates a public benefit;
- Project demonstrates the ability to provide permanent protection for maintaining the historic resource.

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<sup>61</sup> Massachusetts Department of Conservation and Recreation, Freedom’s Way Heritage Association, Hudson Reconnaissance Report, June 2006

Priority will be given to projects that preserve, protect, or enhance historic buildings or landscapes that are presently utilized for public municipal purposes.<sup>62</sup>

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## Cultural Resources

Hudson features a number of cultural events throughout the year including Hudson Fest, which is held each year after Memorial Day, a summer concert series in Wood Park and Cellucci Park, a Downtown Trick or Treat event for local children, and a Pumpkin Fest.



The Town has a Cultural Council, which receives a \$3,500 annual allocation from the Parks and recreation budget. In recognition of the importance of the arts, the Cultural Council provides stipends to local arts programs.

The River's Edge Arts Alliance is based in Hudson. It is a non-profit organization that brings the full spectrum of the arts to the Hudson and Marlborough area. It offers opportunities to experience visual and performing arts.

The Hudson Portuguese Club was founded in 1928 to promote the Portuguese language and culture. In 2005, the Club opened its new headquarters building and restaurant on Port Street. The Hudson Portuguese Club sponsors many cultural groups, dance and music events, sports, feasts and educational programs.

The Massachusetts Cultural Council provides assistance to communities interested in establishing a Cultural District, a relatively new program. According to the Council, "a cultural district is a specific geographical area in a city or town that has a concentration of cultural facilities, activities, and assets. It is a walkable, compact area that is easily identifiable to visitors and residents and serves as a center of cultural, artistic and economic activity." It can help to attract more artistic and cultural enterprises, encourage business and job growth, expand tourism, preserve and reuse historic buildings, enhance property values, and foster local cultural development. This is a strategy that Hudson could consider.

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<sup>62</sup> Town of Hudson Community Preservation Committee. *Community Preservation Plan*. Updated January 2013.

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## Recommendations

Natural, historic, and cultural resources are important for a community to preserve, protect, and enhance as they contribute greatly to a community's character and quality of life. Various recommendations related to these resources have come out of this Master Plan and other Hudson documents and reports, especially Hudson's Open Space and Recreation Plan and the Hudson Reconnaissance Report. The following recommendations include those made in the previously referenced documents. Readers should refer to those plans for a complete list of recommendations relating to each plan.

### *Natural Resources Recommendations*

Goal 1: Preserve, Protect and Enhance Hudson's Natural Resources.

- NR 1. Work with MassDEP to certify all potential vernal pools in order to better protect and preserve these areas.
- NR 2. Consider adoption of a local wetlands by-law. As mentioned earlier, wetlands in Hudson are governed by the Massachusetts Wetlands Protection Act. Local by-laws typically expand upon the jurisdiction of the state law by regulating work in the buffer zone more stringently or adding to the "interests" or values of wetland resources that are protected through the permitting process. The Town should first assess and inventory its wetland resources to determine the need for a by-law and then consider adopting more stringent local wetlands by-law in order to better protect and preserve wetland areas.
- NR 3. Encourage developers to build according to conservation by-laws. Develop incentives and/or require conservation features of developments. These can include the set-aside of open space, reducing impervious pavement, the use of low-impact development and green infrastructure techniques to control stormwater runoff, and developing around the natural features of the site.
- NR 4. Create maintenance programs for existing conservation land to enhance scenic and natural areas as identified in the 2011 Hudson Open Space and Recreation Plan.<sup>63</sup>
- NR 5. Establish areas for enjoyment and recreational access to the natural environment by designating land along the Assabet River as scenic views and establishing greenways along selected portions of the riverbank through town.

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<sup>63</sup> Hudson Recreation and Open Space Plan, 2011. Pg. 59.

- NR 6. Acquire scenic, connectable or threatened parcels through partnerships with other organizations and private funding sources.
- Request permanent easements from private landowners that will provide greenway linkage areas from Chapin Road to Wood Park on both north and south side of River.
  - Work with Wayside Rail Trail Group (Mass Central Line) for future trail connections through Hudson.
  - Strengthen link in the eastern end of town between the State Forest and Maynard Reservoir land. Connect with Sudbury Annex and State Forest through to Marlborough.
  - Acquire connections along River Road for better access to the Town Forest (Fosgate Property) and Gates Pond Reservoir, with easements to Assabet River over private property.

Goal 2: Improve water quality of streams, ponds, and the Assabet River.

- NR 7. Support USACE dam removal proposal. Removing the dam over Washington Street in downtown Hudson would help in improving overall water quality of the Assabet River.
- NR 8. Dredge Tripps' and Pickle's Pond to prevent eutrophication, which can decrease overall water quality.
- NR 9. Restrict overdevelopment and stringently control run off and drainage by encouraging subdivision development and design to include open space.
- NR 10. Continue cleanup efforts with OARS, SuAsCo Watershed Community Council and other conservation and civic groups.
- NR 11. Permanently protect these riverfront areas identified in the 2011 Hudson Open Space and Recreation Plan.<sup>64</sup>

Goal 3: Protect Hudson's drinking water resources.

- NR 12. Educate the public of the importance of aquifer protection, water quality of waterbodies, and open space and recreation areas through workshops, information brochures, and signage.
- NR 13. Acquire parcels of land around water supplies, such as those on River Road and near the Cranberry Well and Maynard Reservoir. This will help in conserving water supplies and preventing contamination.
- NR 14. Work with Town of Berlin to increase protected land at Gates Pond Water Supply and abutting properties in Hudson.
- NR 15. Consider acquiring, conserving or purchasing the development rights of agricultural properties in the eastern end of Town on Gospel Hill and surrounding roads (Lewis, Chestnut, and Brook Streets) since they lie in the aquifer protection district.

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<sup>64</sup> Hudson Recreation and Open Space Plan, 2011. Pg. 58.

- NR 16. Identify future sites for water wells, including options in adjacent communities if financially beneficial to Hudson.
- NR 17. Consider conducting a climate change risk assessment for Hudson's utilities and gauge projected capacity to provide service under changing climate conditions. The Metropolitan Area Planning Council is preparing a Regional Climate Adaptation Plan (to be completed in February 2014) that can serve as a guide for best practices.
- NR 18. To adapt to heavier storm events related to climate change, protect the Town of Hudson's water quality by incorporating green infrastructure, such as permeable landscaping and pavement, into design whenever possible to manage stormwater onsite and restore the ability of the land to absorb stormwater.

Goal 4: Acquire, expand and enhance areas for open space and recreation.

- NR 19. Link parcels for multi-purpose use: recreation land with conservation, school land with recreation or conservation, other non-profit conservation land with Town conservation or recreation land. Inventory potential parcels for creating connections between open space areas. Connecting these areas could create additional green spaces of 50 acres or more.
- NR 20. Investigate potential properties for community gardening to increase local gardening and community food systems.
- NR 21. Explore initiatives that came out of the UrbanRiver Visions charrette, such as, improving the pedestrian setting of South Street and the cross connections between Main Street and the Assabet River, and exploring the potential of a town parking garage.
- NR 22. Improve Kane and Chestnut Street Well land through forestry programs and/or recreation use with trails.
- NR 23. Link Clement Kane land on Stony Brook Road to Marlboro's trails on abutting parcel.
- NR 24. Obtain easements on Yankee Golden Retriever and Portuguese Club for path.
- NR 25. Discuss with private organizations and representatives of other government owned lands connecting parcels through conservation restrictions or permanent easements. Specifically discuss lands surrounding or abutting their property: Elks Club, Portuguese Club, Rod and Gun Club, N.E. Forestry Foundation, Sudbury Annex, Maynard Reservoir and the State Forest.
- NR 26. Explore opportunities to leverage additional CPA state matching funds through additional Town appropriations to the CPA accounts.

Goal 5: Support Town administration of natural resources and leverage funding opportunities to support conservation efforts.

- NR 27. Consider hiring a full-time Conservation Agent to oversee and pursue the Town's natural resources projects and goals.
- NR 28. Continue to implement the Town of Hudson's Open Space and Recreation Plan goals and five-year action plan actions.
- NR 29. Investigate property owned by State, Federal and non-profit organizations for protection status.
- NR 30. Use the Community Preservation Act to preserve and enhance open space pursuant to the January 2013 Hudson Community Preservation Plan.

### *Historic and Cultural Resources Recommendations*

- HR 1. Use the Community Preservation Act for historic preservation pursuant to the January 2013 Hudson Community Preservation Plan.
- HR 2. The Town should continue its work to inventory the built environment, identify properties eligible for listing in the National Register of Historic Places, and pursue such listings. Additionally, the Town's Historical Commission and Historical Society should conduct a comprehensive inventory of historic homes in Hudson, including those that may be architecturally or culturally significant.
- HR 3. Consider the adoption of a Demolition Delay by-law. With a demolition delay bylaw, the Historical Commission can delay the demolition of historically significant properties in the hopes of finding an alternative to the demolition. Thus, the comprehensive inventory of historic properties is important if demolition delay is to be enacted.
- HR 4. Consider the preparation of a community-wide archaeological inventory which would identify areas of archaeological sensitivity, particularly those areas identified in the Hudson Reconnaissance Report.
- HR 5. Educate residents of the importance of maintaining the historic character of Hudson and its importance to their economic, aesthetic, and cultural investment in their community.
- HR 6. Landscapes identified in the Hudson Reconnaissance Report, especially the priority landscapes, should be further documented on MHC inventory forms. That documentation can be used in efforts to build consensus and encourage public support for their preservation.

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## Resources

For more information on various natural resources and historical resources topics, the following resources are suggested:

### **Town Resources:**

**Town of Hudson Conservation Commission.** Meets 7:00 PM. 1st & 3rd Thursday, every month. Town Hall.

[http://www.townofhudson.org/Public\\_Documents/HudsonMA\\_BComm/conservation](http://www.townofhudson.org/Public_Documents/HudsonMA_BComm/conservation)

**Historic District Commission.** Meets 6:00 PM. 3rd Wednesday every month. Town Hall

**Historical Society.** Meets 7:00 PM. Last Tuesday of Month. First Federated Church, Central Street.

*Hudson Open Space and Recreation Plan*, 2011. Approved January 2012.

[http://www.townofhudson.org/public\\_documents/hudsonma\\_bcomm/MPDocuments/Plans/OpenSpace/list](http://www.townofhudson.org/public_documents/hudsonma_bcomm/MPDocuments/Plans/OpenSpace/list).

*Hudson Community Preservation Plan*, Updated January 2013, Town of Hudson Community Preservation Committee,

[http://www.townofhudson.org/Public\\_Documents/HudsonMA\\_BComm/Community%20Preservation%20updated%20January%202013.pdf](http://www.townofhudson.org/Public_Documents/HudsonMA_BComm/Community%20Preservation%20updated%20January%202013.pdf).

*Hudson Reconnaissance Report*, Massachusetts Department of Conservation and Recreation, Freedom's Way Heritage Association, June 2006,

[http://www.townofhudson.org/Public\\_Documents/HudsonMA\\_ComDev/Hudson%20Reconn%20Report%20Herita.pdf](http://www.townofhudson.org/Public_Documents/HudsonMA_ComDev/Hudson%20Reconn%20Report%20Herita.pdf)



Bandstand in front of Hudson Town Hall in 1916 (top).

Clark & O'Neil Market ca. 1900 (bottom).

Source: Hudson Historical Society Collection