

Section

4

Section 4: Environmental Analysis

A. Geology, Soils and Topography

Sturbridge, situated in the southwest corner of Worcester County, exhibits the geo-morphological results that are typically associated with glaciated landscapes in central New England. The terrain is hilly with generally north to south oriented ridgelines that are interspersed with extensive wetland systems in areas of lower relief. Large areas of the Town are overlain with thick deposits of glacial till. There is, however, an important swath of stratified deposits that can be found in the central part of Sturbridge from the northern boundary in the vicinity of South Pond going southerly all the way to the Connecticut border. Elevations range from just over 1,115 feet above sea level, down to approximately 510 feet above sea level in the lowest areas. The major stream is the Quinebaug River that bisects the Town flowing in a general west to east direction from Brimfield into Southbridge. There are numerous smaller streams and vegetated wetland areas distributed throughout the Town. The entire Town of Sturbridge is located within the Quinebaug River watershed.

Sturbridge is located on the central plateau of Worcester County. The plateau as a whole is so thoroughly dissected that large areas of smooth plateau surface do not exist within the county – and certainly not within Sturbridge. The surface of the plateau is interrupted in many places by hills rising higher than the general plateau elevation, which averages 800 to 900 feet in the southern portions of the county. These hills are predominately small in area and consist largely of elongated, rounded hills with the longer axes generally oriented north-to-south. Some of the hills are piles of unconsolidated clay, gravel and sand, called “drumlins” by geologists. These drumlins are the result of glacial activity in the past. The most recent glacier is estimated to have retreated some 12,000 to 15,000 years ago. As the glacier melted and retreated, it dumped along the receding face the load of boulders, stones and soils it gathered while moving southward. The material left by the glacier is called glacial “till” and, with drumlins, constitute most of the land surface area of Worcester County. Some of the hills within the central plateau consist of rock hills with a thin layer of unconsolidated material covering them. Hills in Sturbridge, particularly the southern section of town, are both types.

Much of the most easily developable land has been developed; road frontage lots without development constraints such as wetland, ledge and unsuitable percolation tests for septic systems are increasingly hard to find. The result has been the creation of large interior tracts of land as yet inaccessible by road systems and still economically unattractive because of site development costs. At some point, the cost of development will be exceeded by the return on the development. This will make these large tracts vulnerable to development pressures.

The soils in Sturbridge are generally unsuitable for agricultural purposes and many of the areas with more suitable soils for agriculture have been developed residentially. According to the USDA-Natural Resources Conservation Service report of 1998, Soil Survey of Worcester County, Massachusetts, Southern Part, Sturbridge can be divided into six soils categories. A graphic depiction of the Town's soils can be seen following the descriptions.

- **Paxton-Woodbridge-Ridgebury Soils:** Nearly level to steep, very deep, well drained to poorly drained soils on glaciated uplands. This soil type consists of soils on upland hills and ridges dissected by many small drainage ways. Stones cover more than 3% of the surface in most areas. The soils were formed in glacial till derived from schist, gneiss, and granite. This is the predominant soil type found in Sturbridge, covering much of its western half and the northeastern corner of Town.

The slope, the hazard of erosion, the stoniness, and the seasonal high water table are main limitations for agricultural operations. Non-agricultural uses are limited by slope, wetness, slow permeability in the substratum and depth to bedrock. Constructing buildings so that the lower or basement level is above seasonal high water table helps to prevent damage caused by wetness and frost action. Landscaping treatments designed to drain surface water away from buildings helps to prevent the damage caused by wetness. Because of the slow or very slow permeability, the substratum does not readily absorb effluent in the septic tank absorption fields. Installing a drain field that is larger than average helps to overcome this limitation. Planting suitable grasses on road banks can reduce erosion hazards since large amounts of cuts and fill generally are needed in areas where roads are constructed.

Recreational uses can be limited by these soil types as well with camping areas, picnic areas, playgrounds and golf courses being hindered by wetness, slope and stones. Paths and trails may be better suited than other recreational uses on lands with these soil types, although they will still be at least moderately hindered by the presence of stones and by wet conditions.

- **Brookfield-Brimfield Soils:** Gently sloping to steep, very deep and shallow, well-drained and somewhat excessively drained soils on glaciated uplands. This soil type consists of soils on upland hills and ridges that have rock exposures throughout. Stones cover more than 3% of the surface. The soils were formed in glacial till derived from micaceous schist. This soil type covers a small section of the Town's southeast corner.

Stoniness is the main limiting factor for agricultural uses within this soil type. Large stones and boulders on the surface of land may hinder and damage harvesting and planting equipment. Building can be limited by slopes, but designing buildings and lot layouts so that they conform to the natural slope of the land can help to overcome this limitation. Constructing driveways and roadways on the contour when possible and planting suitable grasses on road banks can help to reduce erosion hazards.

Recreational uses can be limited due to slopes and stones with campgrounds, picnic areas and playgrounds being most impacted. Paths and trails may be better suited than other recreational uses on lands with these soil types, although they will still be at least moderately hindered by the presence of stones and slopes.

- Freetown-Swansea-Saco Soils: Nearly level, very deep, very poorly drained soils on uplands, outwash plains and floodplains. This soil type consists of soils on broad flats that have small depressions. These soils are in old glacial lakes or small ponds adjacent to streams. The soils were formed in organic deposits and alluvium. In Sturbridge, this soil category is located along either side of Westville Lake and the Quinebaug River.

Much of the acreage within this soil type is poorly suited to farming, woodland and development. High water tables and the possibility of flooding are limiting factors. Lands within this unit may be idle, covered with trees or managed for wildlife habitat. Excessively wet soils, excess humus, and low strength soils limit development.

All recreational development including campgrounds, picnic areas, playgrounds, paths, trails and golf fairways is limited due to severe wetness, ponding and excess humus.

- Canton-Montauk-Scituate Soils: Nearly level to steep, very deep, well-drained soils on glaciated uplands. This soil type consists of soils located on upland hills and rolling glacial till flats. It is dissected by broad drainage-ways that flatten out on the lower slopes. Stones cover more than 3% of the surface in most areas. The soils were formed in friable glacial till. In Sturbridge, this soil category covers a large section in the south of Town.

Much of the acreage within this soil type is suitable for agricultural and farming uses, although wetness can be a concern. Constructing buildings so that the lower or basement level is above seasonal high water table can help prevent damage as can landscaping that is designed to drain surface water away from the buildings. Roadways should be constructed on coarse, textured base material with adequate side culverts for adequate drainage.

Limiting factors for recreational development include large and small stones, and slopes. These factors can pose challenges for the development of camping areas, picnic areas, playgrounds, paths and trails and golf fairways.

- Chatfield-Hollis Soils: Gently sloping to steep, moderately deep and shallow, well-drained and somewhat excessively drained soils on glaciated uplands. This soil type consists of soils on hills and ridges that have bedrock exposures throughout. Stones cover more than 3% of the surface in most areas. The soils were formed in glacial till. In Sturbridge, this soil category is found in two locations: a small area west of Walker Pond and another small area located between Hamant Brook and Breakneck Brook.

This soil type is poorly suited to cultivated crops and pasture. Excavation for building sites is difficult with heavy equipment being needed for the removal of bedrock. The bedrock is a hindrance for road construction and is also the main limitation for septic tank absorption fields and the installation of distribution lines.

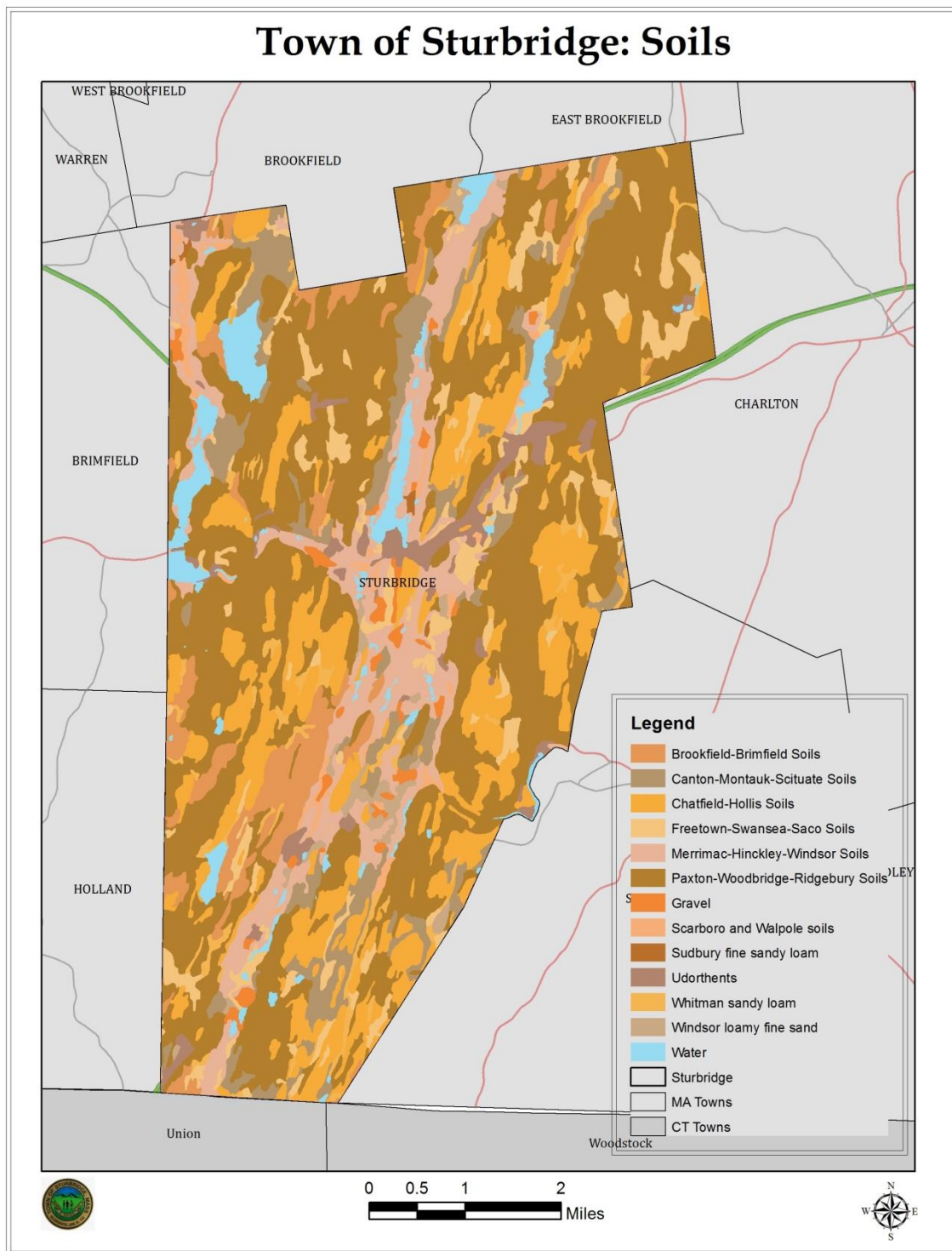
All recreational development including the development of camping areas, picnic areas, playgrounds, paths and trails and golf fairways is hindered by the presence of small and large stones, slopes and depth to rock.

- Merrimac-Hinckley-Windsor Soils: Nearly level to steep, very deep, excessively drained and somewhat excessively drained soils on outwash plains. This soil type consists of soils located on broad, flat plains and in rolling to steep areas throughout the southern portion of Central Massachusetts. The soils were formed in water-sorted deposits of glacial outwash. In Sturbridge, this soil category appears as a series of thin strips in the center of Town.

This soil type is suitable for agricultural uses and development. Drought conditions can be a management concern for agricultural uses but irrigation and the addition of organic matter to soils can help combat that condition. Extensive cutting and filling is normally required for roadway construction. Building the roads on the contours and planting suitable grasses on the road banks can help reduce erosion hazards. The slope and poor filtering capacity can be concerns for septic tank absorption fields.

Camping areas, picnic areas, playgrounds, paths and trails and golf fairway development may be somewhat impacted by slopes, excessively sandy conditions and drought conditions.

Map 5: Soils



B. Landscape Character

Sturbridge is characterized by its abundance of natural features – the hills, woods, lakes, and streams. The strong influence of the hills and their pronounced northeasterly-southwesterly orientation, determines much of the land use and settlement patterns in the Town. The hilly and forested aspects of the Sturbridge landscape offer many pleasant vistas and view sheds. Most notable are those which include the Route 84/15 corridor as well as the Route 49 corridor and portions of Route 20, particularly on the west end of town at the intersection of Route 148 continuing west to Long Pond along the Quinebaug River. Much of this area is threatened due to limited protection and development pressures at the present time.

The Town of Sturbridge participated in the Massachusetts Heritage Landscape Inventory Program in 2007. This planning process helped identify “Heritage Landscapes” which are “special places created by human interaction with the natural environment that help define the character of a community and reflect its past.¹” Participating in this program helped the community identify certain aspects of the landscape that give the town its own special unique character. The following Priority Heritage Landscapes were identified:

Quinebaug River

Description: The Quinebaug River cuts from west to east across Sturbridge’s north-south oriented topography. A moderate-flow river, it enters Sturbridge at the US Army Corps of Engineers (USACE) East Brimfield Reservoir/ Long Pond flood control project, and flows through the steep valley of Fiskdale where it once provided the waterpower that led to the area’s development in the 18th and 19th centuries. The river broadens and becomes marshy through the central plain that includes Old Sturbridge Village, then receives inflow from Cedar Pond and provides enough fall for another small mill site (David Wight – see Old Sturbridge Village) before it meanders through the southeastern section of town to the Westville Dam on the town’s border with Southbridge.

Today the river is appreciated for its scenic qualities, fly-fishing and good kayaking. It still powers the saw and gristmills at Old Sturbridge Village, while both Long Pond and Westville Lake provide public access for boating and fishing under US Army Corp auspices. The Grand Trunk rail bed shadows the course of the river, from inundated trestles in the East Brimfield Reservoir, along the south bank through Fiskdale and Snellville, cutting across wetlands in Old Sturbridge Village and level floodplain in the southeastern part of town.

¹ Sturbridge Reconnaissance Report, June 2007. Introduction.

Barrett Farm (Douty Road)

Description: Barrett Farm encompasses 246 acres of primarily open, rolling land, on the north side of Stallion Hill, within sight of the Quinebaug River. The farm extends along both sides of Douty Road, one of Sturbridge's designated Scenic Roads, and approximately 100 acres was under Chapter 61A. However, the Barrett Farm was sold this past year to a developer.



Figure 4-1: Barrett Farm. Photo Courtesy of Ed Douty.

Despite efforts by the Town to purchase the property using the first right of refusal afforded by Chapter 61 and Community Preservation Funding, the Article was defeated at the Annual Town Meeting. While a majority of the voters were in favor of funding the acquisition, the Article failed to get the 2/3 vote required to pass. The developer had spent a great deal of effort and funds on advertisements in the local papers and flyers mailed to all households explaining why it was not prudent to purchase the land for open space. The developer also made promises of a donation of land to the Town. Plans have not been submitted as of this writing, so it remains to be seen if the promises of open space will come to fruition.

The new owners demolished the historic farmhouse this past year. The farmhouse pictured was located on the east side of the road. The farmhouse was a two-story, gable roofed building with 8-over-12 windows and two interior stove chimneys. The center-entrance front door was surmounted by a semicircular fanlight. A two-story ell at the rear of the building attached to a low, one-story shed. The house was aluminum sided. A small well house stood in the front yard, which was shaded by two mature sugar maples flanking the front walk. Across Douty Road was a group of farm buildings in fair to poor condition, including two wooden barns, a silo and other sheds and outbuildings. Elsewhere on the property were a 1968 gambrel-roofed Cape house and a small 20th century electric sawmill.

Background: This farm appears to have been part of the Allen family's extensive colonial-era holdings that stretched down to what is now Fiskdale. The house, dated on town assessor's records as 1770, appears to have been updated in the 19th century, based on its two small interior chimneys that suggest conversion from fireplace to wood stove heat. In 1872, the owner was C. G. Allen. The property's present identification as Barrett Farm dates to its purchase by Everett Barrett in 1941. Barrett, succeeded by his son Walter, managed a dairy herd of 100 Holstein and Jersey cows until Walter's death in 1993. The prior owner and her husband were the third generation of the family on the property before the sale to the developer.

Fiskdale

Description: Fiskdale is a village landscape centered on an 1828 brick, three-story mill building. The neighborhood stretches along Main Street (Route 20) from Arnold Road on the east to Brookfield Road (Route 148) on the west. Land parcels south of Main Street abut the Quinebaug River, while those north of Main are restricted by the steep slope of Bates Hill, especially toward the western end of the area. A mix of small commercial enterprises, many housed in freestanding Greek Revival wood frame buildings that evoke the neighborhood's prosperous history, characterizes Fiskdale. The original Fiske mill, with assorted additions and alterations, is still standing between Main Street and the lower of two dams, and is currently in use as mixed commercial and office space. Across the street is Fiskdale's other anchor building, the 1880 brick Blackington Building, an imposing Gothic brick and slate commercial block with steep-roofed tower and dormers.

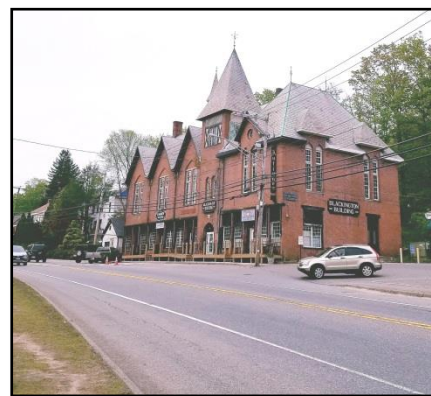


Figure 4-2: Blackington Building in Fiskdale.
Photo by Rebekah DeCoursey.

Theme: Ponds

Description: The linear shape of the town of Sturbridge is reflected in the shapes of all its major ponds. Both are dictated by the north-south oriented, glacially formed uplands and valleys that characterize much of this area, across which the Quinebaug cuts and which it drains. Today, all of Sturbridge's ponds serve recreational purposes. Big Alum has the densest residential development surrounding it, and Long Pond the least, its shoreline being owned by the US Army Corps of Engineers.

Background: Leadmine Pond, the north end of Long Pond, Big Alum Pond, Cedar Lake, Walker Pond, and the part of Brookfield's South Pond that extends into Sturbridge are all natural ponds, documented before industrial development on the 1795 map of the town. Long Pond was at least doubled in size as part of the 1964 East Brimfield Lake flood control project, and a lower dam on the Quinebaug created Westville Lake during the same period.

The shores of Big Alum Pond – or Lake Pookookapog as it was called – became a vacation cottage site as early as the 1890s. In 1889, a local history described Walker Pond (earlier Saltonstal's Pond) as *a pleasure resort*, probably due in part to its proximity to the trails and scenic vista available around Walker Mountain as well as a swimming area on the pond's west side. These features were incorporated into Wells State Park when the Wells family (see Old Sturbridge Village section) donated 678 acres to the state in 1962. At present, the pond's remaining shoreline is developmentally fairly stable, privately owned in sizable parcels and, at the southern end, bordered by the Massachusetts Turnpike.

Sturbridge Town Common Historic District

Description: The historic civic, religious and commercial center of Sturbridge encompasses 138.15 acres including the town's original six-acre common. It is further defined as the area along Main Street (Route 131) between Hall Road on the east and the I-84 overpass on the west, containing 47 public and privately owned properties. The area was designated a National Register Historic District in 1977.

Background: Sturbridge was incorporated as a town in 1738, and the present town common was immediately set off as the site for meetinghouse and burial ground. The common later developed into a center of commerce as well, due to the convergence of roads there. Sturbridge's original, irregularly shaped common remains intact, surrounded by buildings of compatible sizes and forms in a wide range of styles, with a preponderance of Federal and Greek Revival structures. Properties include public institutions such as the Old Sturbridge Burial Ground (1738), Erasmus Babbit Inn or Publick House (1772), Sturbridge Town Hall (1838), Sturbridge Center School (1855), Joshua Hyde Public Library (1896), and the Federated Church of Sturbridge and Fiskdale (1922), as well as numerous residences. Many of the buildings are of local or regional historical importance, as well as architectural significance.

Hobbs Property (23 Hall Road)

Description: This 23.43-acre property, bordered by Hall Road on the east and Hobbs Brook on the west, is notable for a long stretch of open field that parallels the road and is defined on the east by a tree-lined stonewall that marks the effective edge of beaver-dammed wetlands. The property includes a wood-frame house built by Samuel Hobbs about 1780, with an attached carriage shed and a barn. A tannery also stood near the intersection of Hall Road and East Main Street, although no sign of the business is immediately visible today. Approximately the southern half of the property is located within the Sturbridge Common National Register Historic District.

Background: Samuel Hobbs, a participant in the Boston Tea Party, operated a tannery adjacent to the brook until his death in 1823. Later generations of the family continued the business at least as late as 1870. Sturbridge selectman William Whittemore occupied the house from the late 19th into the 20th century. The property continues to be privately owned.

Old Sturbridge Village (1 Old Sturbridge Village Road)

Description: A world-renowned open-air history museum that combines historic architecture, material culture collections, costumed interpretation and educational programs to interpret New England village life of the early 19th century. As of 2006, OSV was the largest single private landowner in Sturbridge, owning 1,260 acres of land in the center of town plus 52 buildings (the town's largest state-owned holdings are Breakneck Brook Wildlife Management Area and Wells State Park, each approximately 1400 acres). A substantial portion of the OSV real estate – 814 acres of the Village's "back land" – was sold to the Town of Sturbridge in 2006. The portion still owned by the Village, over 400 acres, includes the core museum landscape with its collection of historic

buildings and reconstructed craft shops, as well as associated collections storage, educational, commercial, and administrative buildings fronting on Old Sturbridge Village Road. The landscape includes a stretch of the Quinebaug River and of the Grand Trunk Rail Road rail bed, discussed previously (see Quinebaug River).

Background: Old Sturbridge Village was founded in the late 1930s by the Wells family of Southbridge, to house their collections of early 19th century Americana and interpret the life of early industrial rural New England (ca. 1790-1840) to the public. The living history museum opened to the public in 1946 on land that had constituted David Wight's farm in the early 19th century. Wight had dammed the Quinebaug River where it flowed through his land to provide power for a saw- and gristmill operation.²

Update:

Old Sturbridge Village Academy Public Charter School: This new addition to the educational offerings is a K-8 Charter Public School that opened September 11, 2017 for grades K-3. This tuition-free public charter school has a maximum enrollment of 360 students and admission is by lottery. The lottery is open to all students in Massachusetts; however, preference in the lottery is given to students who reside in the 12 towns that comprise the district (Brimfield, Brookfield, East Brookfield, North Brookfield, Holland, Monson, Palmer, Southbridge, Spencer, Sturbridge, Wales, and Webster) as well as students that have a sibling enrolled in the OSVAC.

C. Water Resources

Water resources include watersheds, surface waters, wetlands, stormwater, groundwater and drinking water sources. The Town of Sturbridge has a wealth of water resources within its boundaries due to the many ponds, lakes and streams in addition to the Quinebaug River.

Watersheds:

Sturbridge is primarily located within the Quinebaug River Watershed, which is in the southern part of Central Massachusetts. Covering 850 square miles, the watershed extends south into Connecticut and Western Rhode Island.

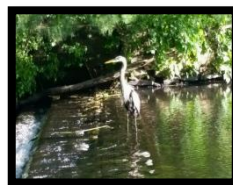


Figure 4-3: Quinebaug River, Fiskdale. Photo by Rebekah DeCoursey. Insert photo by Matt Cornell.

² This section was taken in its entirety from the Sturbridge Reconnaissance Report: Blackstone Valley/Quinebaug-Shetucket Landscape Inventory. Massachusetts Heritage Landscape Inventory Program. June 2007.

To the north/northwest is the Chicopee River Watershed. To the west is the Connecticut River Watershed and to the east is the French River Watershed.³ The Quinebaug River stretches approximately 65 miles, 19 of which are in Massachusetts. Its watershed is heavily forested and contains 54 lakes and ponds. Together with the French River Watershed and the Quinebaug-Shetucket River Valley, it forms the Thames River Watershed.

Surface Waters:

Located within the Town are seven major open water bodies: Cedar Lake, Walker Pond, Leadmine Pond, Big Alum Lake, East Brimfield Lake (Long Pond), and South Pond (Quacumasit). These are either wholly or partially within the boundaries of Sturbridge. Public access to the major water bodies is available through either State or Town owned properties. More detailed descriptions follow:

Cedar Lake: Located in the north-central section of town, this lake is roughly 183 acres. The Town's recreational beach is located near the southwest end of the lake, and the Sturbridge Host Hotel on Route 20 is on the south end. Hotel guests or restaurant patrons can access a small beach on the lake. There is also a small area on the west side of the lake that is a popular fishing site.

Walker Pond: This 104 acre body of water is located in the northeast corner of town, east of Wells State Park. The park provides access to the pond with its admission fee. Boat access is available via boat ramp at the north end of the pond on town owned land.

Leadmine Pond: This 53 acre lake is located at the southwestern corner of town, about one mile west of Route 84 near the Holland town line. Boat access is limited to car top boats or canoes, which can be carried across public property off Leadmine Road. Shore access is very limited.

Big Alum Lake: Covering roughly 195 acres, this is the largest lake in Sturbridge. The lake can primarily be accessed via residential routes, though there is a walking route around the lake, which is more than three miles long. There is also a public boat ramp at the end of Clarke Road Extension. Fishing, boating, swimming and water skiing are all popular at this lake.

East Brimfield Lake (Long Pond): This 360 acre lake straddles Sturbridge and Brimfield. Connecting to the lake to the north is Long Pond, which can be accessed at fishing areas off Champeaux Road. There are two public access ways to East Brimfield Lake, both off Route 20. Several activities allowed in this area include motorized boating, fishing, and canoeing.

Quacumquasit Lake (South Pond): This is a 218-acre lake located in Brookfield and Sturbridge about three miles north of Route 20. There is a small beach located off Lake Road in Brookfield.

Breakneck Pond: Breakneck Pond serves as the source waters to Breakneck Brook, which flows from south to north. The majority of Breakneck Pond is located in Connecticut – Breakneck Brook

³ "Massachusetts' 28 Watersheds." <https://www.mass.gov/files/documents/2016/08/ov/mass-watersheds-map.pdf>

provides wonderful recreational opportunities and wildlife habitat along its run to the Quinebaug River.

Also located within the Town is a section of the Quinebaug River, which offers excellent potential for trail linkages throughout the region. There are several large forested and unforested wetlands, most notably Hobbs Brook, McKinstry Brook and Breakneck Brook. The Federal Emergency Management Agency (FEMA) Flood Map shows many small north /south flood plain striations. The Town has adopted bylaws that limit construction in floodplain areas. The US Army Corps of Engineers owns land and easements within the floodplain of the Quinebaug River totaling nearly 600 acres.

Wetlands:

Sturbridge has extensive wetlands and wetland resource areas. In addition to the noted great ponds, lakes, rivers and vernal pools there are extensive wetlands complexes, perched wetlands, and small ponds, perennial and intermittent streams.

Northwest Region

There is an extensive perennial stream system in the northwest corner of town with Bordering Vegetated Wetland surrounding it until it outlets into East Brimfield Lake. There are also several intermittent streams flowing into Big Alum Pond, each with extensive Bordering Vegetated Wetlands surrounding it.

Northern Central Region

In the Northern Central part of town, there are several unnamed perennial streams with several “through flow” ponds that eventually discharge into the Quinebaug River. There are also a large variety of Bordering Vegetated Wetland complexes and an unnamed perennial stream that flows into Cedar Lake. The Wolf Swamp Wildlife Management Area is supported in this area.

Northeast Region

In the Northeast corner of town there are extensive linear (north/south) wetlands surrounding the ridgelines of Hitchcock Mountain. The perennial streams fed by the wetlands in the ridges of Hitchcock Mountain feed/are headwaters for Walker Pond. In the northeastern part of town there is a perennial stream and “through flow” wetlands that serve as the headwaters to McKinstry Brook, and the McKinstry Brook Wildlife Management Area.

Central Region

The central part of town has several intermittent and perennial streams that feed the Quinebaug River. The perennial stream outletting from Cedar Lake begins a rather extensive wetland complex between Route 20 and the Quinebaug River.

Walker Pond is the headwaters for the perennial Hobbs Brook. Hobbs Brook is surrounded by extensive Bordering Vegetated Wetlands from its source to the Quinebaug River. Pistol Pond is a “through flow” pond within the Hobbs Brook stream system.

Eastern Central

In the Eastern Central part of town there is a large beaver impoundment (south of Route 131 and west of Wallace Road). This wetland serves as the headwaters to a perennial stream that is a tributary of the Quinebaug River.

Southwest Region

Finlay Pond, a small-perched headwater pond, serves as the source waters for an unnamed perennial stream which flows into the Hamilton Reservoir in Holland. Further south Leadmine Brook, which is surrounded by a significant system of Bordering Vegetated Wetlands, flows into Leadmine Pond.

South Central Region

A significant series of headwater “through flow” ponds which serve as the source waters to Hamant Brook exist just east of Route 84.

Southeast Region

South of the Sturbridge town line, within the State of Connecticut and within the Nipmuck State Forest is the Breakneck Pond. Breakneck Pond serves as the source waters to Breakneck Brook, which flows south to north. Breakneck Brook and the surrounding area have extensive wetlands interspersed between the ridgelines, which run north/south. Breakneck Brook also serves as an important tributary to the Quinebaug River.

The Town has four municipal wells. There are 12 additional water systems registered with the State Department of Environmental Protection (DEP) that, because of the number of persons served, are regulated as public water supplies under the federal Drinking Water regulations. The Town owns most of the land falling within the Zone I contribution areas and what land it does not own is under the purview of the Army Corps of Engineers. Zone II contribution areas have been delineated for all four municipal wells and have received DEP approval.

Wetlands are protected under the Massachusetts Wetlands Protection Act (MGL c. 131 § 40), which was originally enacted into law as the Hatch Act in 1972 and amended by the 1996 Rivers Act. The law aims to protect public and private water supplies, prevent storm damage and pollution, protect wildlife habitat and fisheries, reduce the effects of potential flooding and protect groundwater supplies.⁴

The Town has adopted a local wetlands bylaw that is more stringent than state law. Enacted in 2002, it serves to not only protect wetlands and natural resources but also provide erosion and sedimentation control and protect water quality, rare species habitat, recreational values, and agriculture and aquatic activities.⁵ Activities within 200' of wetlands require Conservation Commission review and approval to be sure there will be "no significant adverse impact" to the wetlands.⁶ In addition, the local bylaw creates a 25-foot "no new disturbance" buffer and a 50-foot "no permanent structure" requirement. The Conservation Commission has been working on revising its Rules and Regulations to provide greater clarity for property owners and others filing with the Commission.

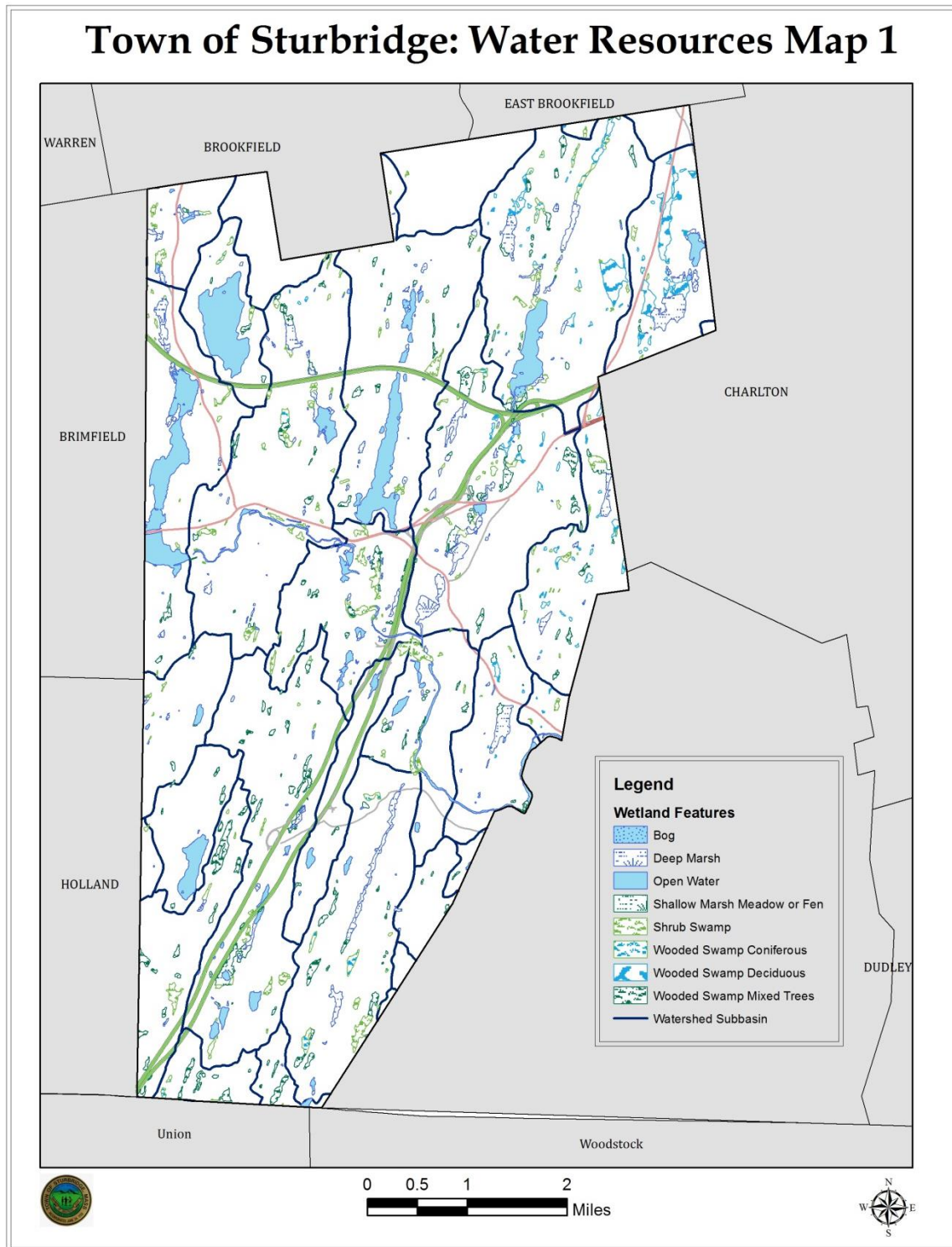
The Water Resources Maps 1 and 2 can be viewed on the next pages. Water Resources Map 1 displays the natural hydrologic resources, while Map 2 incorporates wellhead protection areas.

⁴ Wetlands Protection Act regulations. Massachusetts General Laws Chapter 131, section 40: The Wetland Protection Act. <https://www.mass.gov/regulations/310-CMR-1000-wetlands-protection-act-regulations>. Department of Environmental Protection.

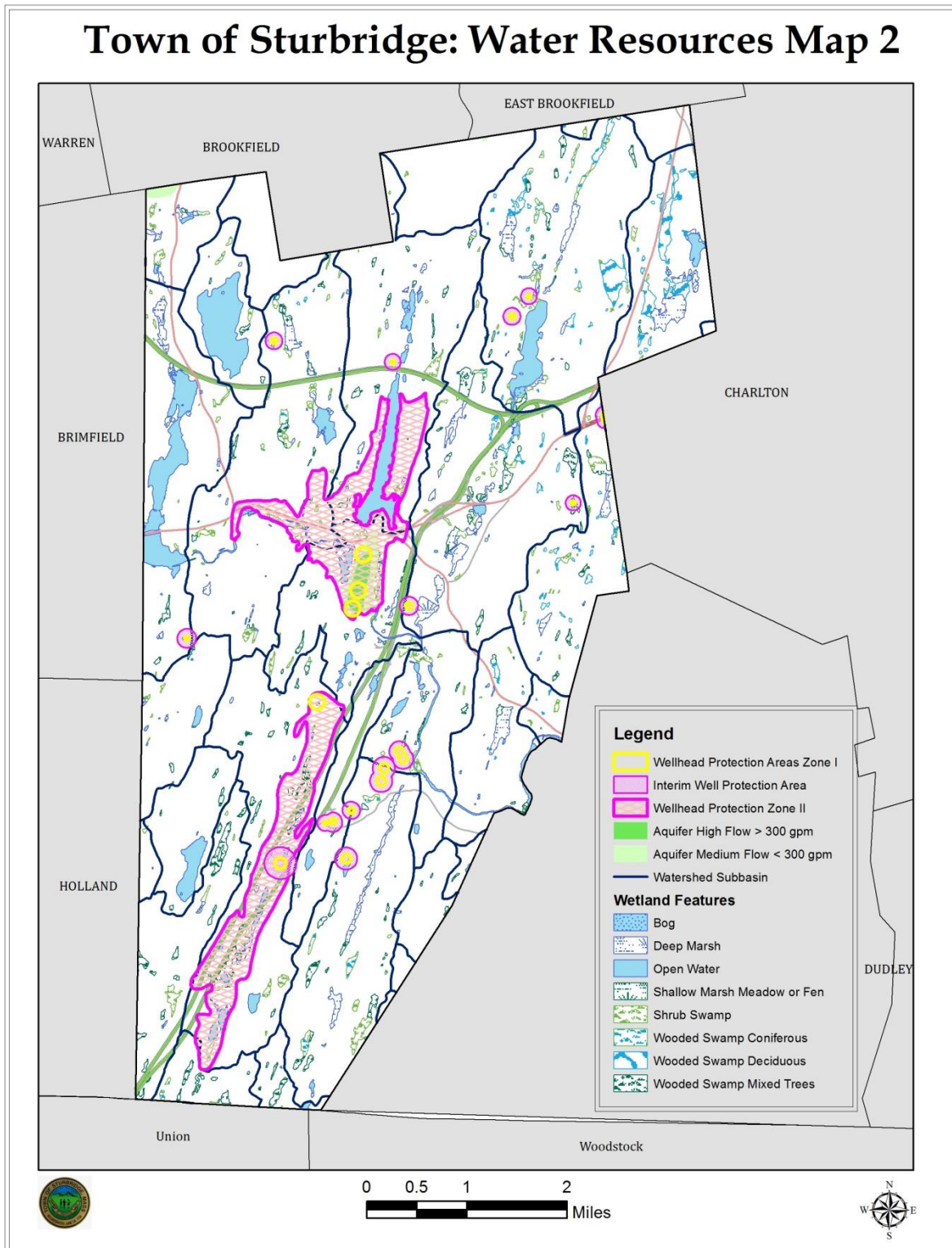
⁵ Town of Sturbridge Conservation Commission Website. "Regulations for Administering the Town of Sturbridge Wetland Bylaw in association with the Wetland Protection Act, 310 CMR10.00 and Rivers Protection Act. https://www.town.sturbridge.ma.us/sites/sturbridgema/files/uploads/tos_regs_2004_adopted.pdf

⁶ Ibid.

Map 6: Water Resources Map 1



Map 7: Water Resources Map 2



Groundwater:

Groundwater resources can be found in the areas along the Quinebaug River and Hamant Brook. Aquifer areas in the central part of town – such as those in the Quinebaug River Valley – have higher yields, estimated at greater than 300 gallons per minute. Other areas have yields closer to 10 to 100 gallons per minute.

The Town also has a Groundwater Protection District, which regulates construction, land uses and storage of liquid petroleum products. The map was most recently updated at the Annual Town Meeting held on April 27, 2009 to include an area along the Route 15 – I84 corridors. The amendment was necessary to allow for an expanded area of protection due to the installation of a new Well # 4 by the Town.

While always a consideration for the Open Space Committee and the Town, groundwater protection is a topic that has moved to the forefront this year due to issues on McGilpin Road in Sturbridge and well contamination issues in the abutting Town of Charlton. According to an end of year update in a bulletin published by the MassDEP, “in early 2017 MassDEP was notified that citizen testing on McGilpin Road had indicated the presence of 1,4-dioxane in one private well. MassDEP subsequently conducted drinking water well sampling to confirm the presence of 1,4-dioxane and other possible contaminants of concern, including lead, that may be affecting drinking water wells on McGilpin Road, and launched a multi-faceted investigation to investigate possible sources in addition to the landfill including local geology, home plumbing, and possible neighborhood sources such as properties on which visible solid waste was observed.”⁷

MassDEP began its investigation by sampling 11 homes within 500 feet of the original home with the 1,4-dioxane detection (this included resampling at the original home). Results from these 11 homes showed a high presence of lead in the water and therefore lead became a contaminant of concern in addition to 1,4-dioxane. MassDEP continued to work outward in 500 foot intervals from the homes with lead detected in the water, testing for lead and 1,4-dioxane as well as VOCs along McGilpin Road until MassDEP achieved non-detects for these contaminants and/or they reached municipal water. In total, MassDEP sampled 44 private bedrock wells at least twice and up to three times between January and June in 2017. Samples were collected at up to three locations at each residence: directly from the well, from the pressure tank, and from the kitchen faucet. MassDEP immediately provided bottled water to all residents who had any detections of lead and/or 1,4-dioxane in their wells.

By mid-summer, MassDEP had compiled a significant amount of sampling data for review and analysis. Reported concentrations of lead ranged from below the reporting level, < 1 µg/L, up to 880 µg/L. No water samples collected directly from a well had a concentration of lead greater than 15 µg/L, which is the Federal Action Level for lead. In contrast, samples collected from within the domestic plumbing system at residences on McGilpin Road and Fiske Hill Road more

⁷ MassDEP End of year Update January 3, 2018. “McGilpin Road Private Wells Study Sturbridge, MA.” Accessed online at <https://www.mass.gov/lists/private-well-sampling-at-mcgilpin-road-in-sturbridge-ma> (April 17, 2018).

frequently had concentrations of lead greater than 15 µg/L. Other than 1,4-dioxane and lead, MassDEP's sampling revealed no other detections of contaminants within the spectrum of contaminants sampled. The bulletin also indicates the following next steps to be taken⁸:

- **USGS Study:** MassDEP seeks to collaborate with the USGS to undertake a more detailed study of lead in private wells in the McGilpin Road area. The objectives of the proposal are to evaluate whether private wells on McGilpin Road and Fiske Hill Road have a significantly higher rate of concentrations of lead compared to other private wells in the same bedrock unit. The study will compare isotopic signatures of both lead and strontium from water and particulates collected directly from the wells to the water and particulates collected from within the homes' plumbing systems to determine whether lead concentrations are related to water corrosivity. Corrosion of plumbing and fixtures from corrosive water would implicate the plumbing system as the source of lead. MassDEP and the USGS will be working together to finalize the study's scope of work and implement it, pending USGS approval. The proposed study will be co-funded by MassDEP and USGS at a total cost of \$184,800. MassDEP will pay 60% of the cost at \$111,500, and the USGS will pay the remaining 40% at \$73,300. The project is anticipated to be completed by September 2019, or earlier.
- **1,4-dioxane:** Based on the hypothesis that lead may likely be coming from the domestic plumbing, additional analysis of potential sources in the area for the 1,4-dioxane is needed. This assessment would include sampling of septic systems and drinking water wells to determine if 1,4-dioxane and other compounds that may be commonly found in septic systems from its presence in many consumer products are affecting drinking water wells. This approach is consistent with work done in the Town of Eastham to differentiate between wells affected by the Town's closed landfill and those affected by septic systems. MassDEP's sampling in Sturbridge has not shown any 1,4-dioxane contamination above the drinking water guideline.
- **Additional Landfill Assessment:** With the decision to forego an expansion and close the Southbridge landfill, MassDEP regulations require the landfill owner/operator to submit a Comprehensive Site Assessment, assessing the full nature and extent of any contamination coming from the landfill. MassDEP will be working with the Southbridge landfill to define the scope of additional testing at the landfill, including the addition of monitoring wells. In the interim, MassDEP is also working with our contractors to develop a scope of work for conducting a geophysical survey and installation of deep bedrock wells, if needed. This contract can be executed in the future if additional monitoring is determined necessary.
- **Follow up sampling:** MassDEP expects to conduct follow-up sampling at residences along McGilpin Road in summer 2018. Until then, bottled water will be provided to residents who wish to continue receiving it.

⁸ MassDEP End of year Update January 3, 2018. "McGilpin Road Private Wells Study Sturbridge, MA." Accessed online at <https://www.mass.gov/lists/private-well-sampling-at-mcgilpin-road-in-sturbridge-ma> (April 17, 2018).

- **Water Line Study:** The Board of Selectmen is currently seeking funds for a waterline extension study for this area as well.

All of this has made residents and Board members even more acutely aware that groundwater is a precious finite resource that must be protected for current and future residents⁹.

Floodplains:

Floodplains are areas adjacent to waterways that are inundated with water during times of increased flow. In the Town of Sturbridge, the major flooding on the Quinebaug River occurs in the spring and can be the result of spring rains combined with snowmelt. The two most severe floods were the result of tropical storms. In August 1955, Tropical Storm Diane dropped record amounts of rain on ground that was already saturated due to Tropical Storm Connie.¹⁰ Since the Town is rich in water resources, a great deal of land lies within the floodplain. The 100- and 500-year flood plans can be seen on Map 10: Flood Zone Map at the end of this section.

The Town currently has a Floodplain District which does not allow the construction of new structures within the floodplain. Significant changes have been made to the Flood Insurance Rate Maps (FIRM) as part of an overhaul by the Federal Emergency Management Agency. These changes will become effective on July 4, 2011. The Town did amend its Zoning Bylaw at the Annual Town Meeting held on June 6, 2011 to reflect the newest Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM) and to insure that the bylaw is consistent with the most current standards for construction recommended by FEMA.

Vernal Pools:

The Division of Fish and Wildlife has certified 55 vernal pools in Sturbridge and local conservationists believe there are many more scattered throughout the community; in fact, there are 193 sites in Town that the State considers “potential” vernal pools¹¹. Vernal pools are unique wildlife habitats best known for the amphibians and invertebrate animals that use them to breed. Vernal pools, also known as ephemeral pools, autumn pools and temporary woodland ponds, typically fill with water in the autumn or winter due to rising groundwater and rainfall and remain ponded through the spring and into summer. Vernal pools dry completely by the middle or end of summer each year, or at least every few years. Occasional drying prevents fish from establishing permanent populations. Many amphibian and invertebrate species rely on a breeding habitat that is free of fish predators. Some vernal pools are protected in Massachusetts under the Wetlands Protection Act regulations as well as several other federal and state regulations. The Natural Heritage Endangered Species Program (NHESP) serves the important

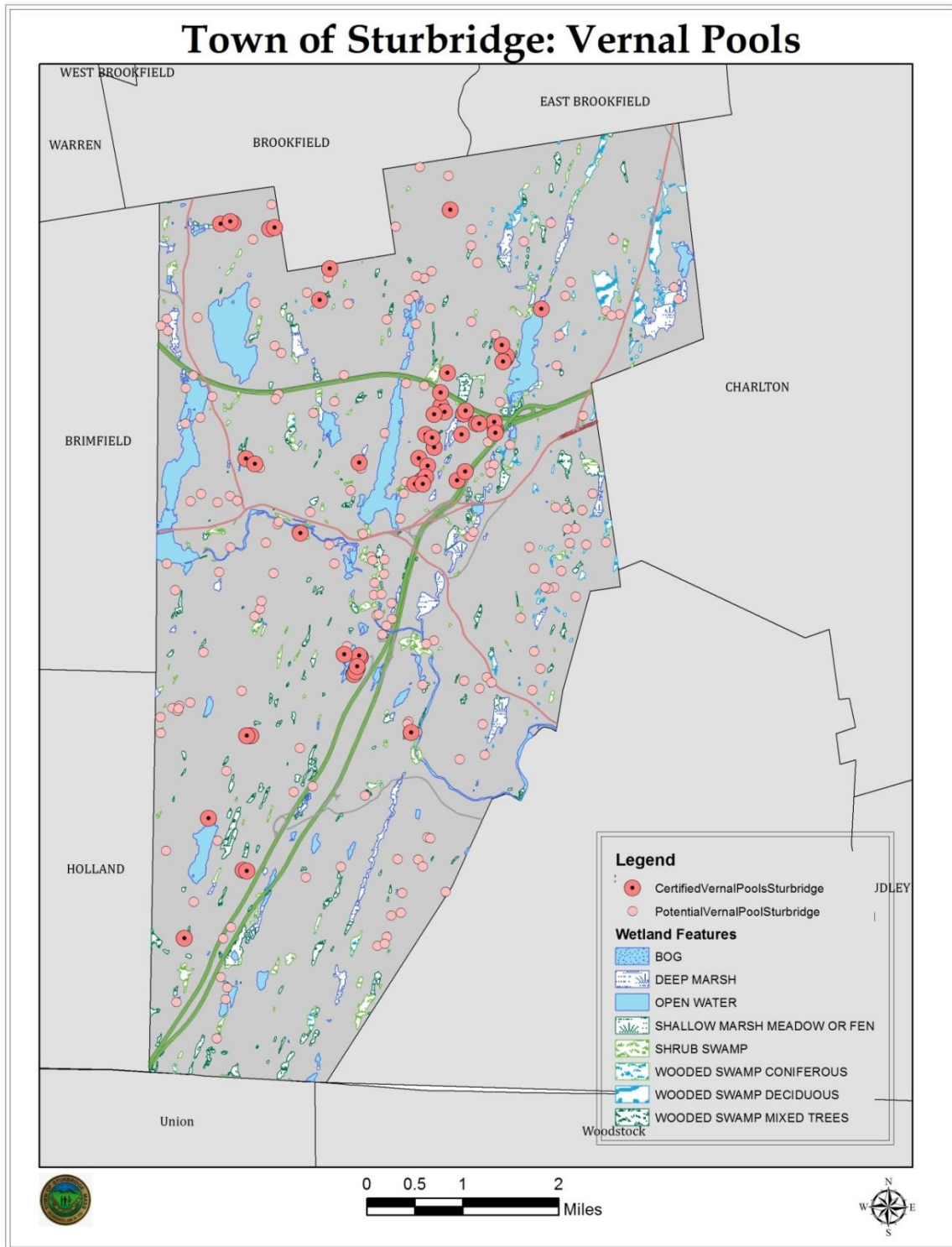
⁹ MassDEP End of year Update January 3, 2018. “McGilpin Road Private Wells Study Sturbridge, MA.” Accessed online at <https://www.mass.gov/lists/private-well-sampling-at-mcgilpin-road-in-sturbridge-ma> (April 17, 2018).

¹⁰ Federal Emergency Management Agency. Flood Insurance Study, Worcester County Massachusetts. Effective Date, July 4, 2011.

¹¹ Natural Heritage Endangered Species Program (NHESP) Certified Vernal Pools. Data available online: http://maps-massgis.opendata.arcgis.com/datasets/88d5ba624a3447c7a30c148a6f1692b0_2 (Accessed May 17, 2018).

role of officially “certifying” vernal pools that are documented locally. The locations of the State certified vernal pools as well as potential vernal pools in Sturbridge can be seen below.

Map 8: Vernal Pools



In 2001, with funding from the Executive Office of Energy and Environmental Affairs (EEA), the NHESP developed a BioMap for the entire Commonwealth in order to identify the areas most in need of protection to ensure native biodiversity. The BioMap identified Core Habitat areas based on verified data that corresponds to actual locations on the ground. The areas mapped were determined by biologists to be those most suitable to support viable plant and wildlife species. Similarly, the NHESP's Living Waters Project in 2003, attempted to identify and map the State's most critical sites for maintaining freshwater aquatic biodiversity. These Core Habitat sites represented where the State would focus its conservation priorities.

Both of these maps were replaced in 2010 with BioMap2, a map with supporting documentation. The original BioMap plan was based on data collected prior to 2001. More than 4,000 records have been added to the NHESP database since that time and better understanding of the geographic extent and types of suitable habitat needed to support many Massachusetts endangered species has been gained. This report and map discusses biodiversity in Massachusetts, which is defined as the "totality of genes, species and ecosystems in a given place, as well as the ecosystem structure and function, the ecosystem processes that support and sustain life."¹² According to this report, biodiversity is an "invaluable natural resource" that when protected enhances water supply and watershed protection, as well as recreational opportunities and aesthetic benefits. Fragmentation or degradation of important natural communities and important habitat areas can in turn lead to loss of biodiversity and endangering of species.

The BioMap2 Project sought to produce a statewide map which could guide the protection of Massachusetts' biodiversity. In an effort to guide land protection the map shows areas that if protected would provide suitable habitat over the long terms for the maximum number of Massachusetts terrestrial and wetland plant and animal species and natural communities.¹³

The newest maps identify Core Habitat and Critical Natural Landscape. These two elements are defined as follows:

Core Habitat – identifies key areas to ensure the long term persistence of species of conservation concern, exemplary natural communities, and intact ecosystems across the Commonwealth.¹⁴ According to the report, Core Habitat has several subcomponents include species of special concern, priority natural communities, aquatic core, forest core, wetland core, and vernal pool core. Protection of Core Habitats will contribute to the conservation of specific elements in biodiversity.

¹² BioMap 2 : Conserving Biodiversity of Massachusetts in a Changing World. Prepared by the MA Department of Fish & Game, Division of Fisheries and Wildlife, Natural Heritage & Endangered Species Program, and The Nature Conservancy. 2010. Page 6.

¹³ Readers may access the map online at: <https://www.mass.gov/service-details/biomap2-conserving-the-biodiversity-of-massachusetts-in-a-changing-world> (accessed May 22, 2018)

¹⁴ Mass.gov. BioMap 2: Conserving Biodiversity of Massachusetts in a Changing World. Available: <https://www.mass.gov/service-details/biomap2-conserving-the-biodiversity-of-massachusetts-in-a-changing-world> (Accessed May 17, 2018).

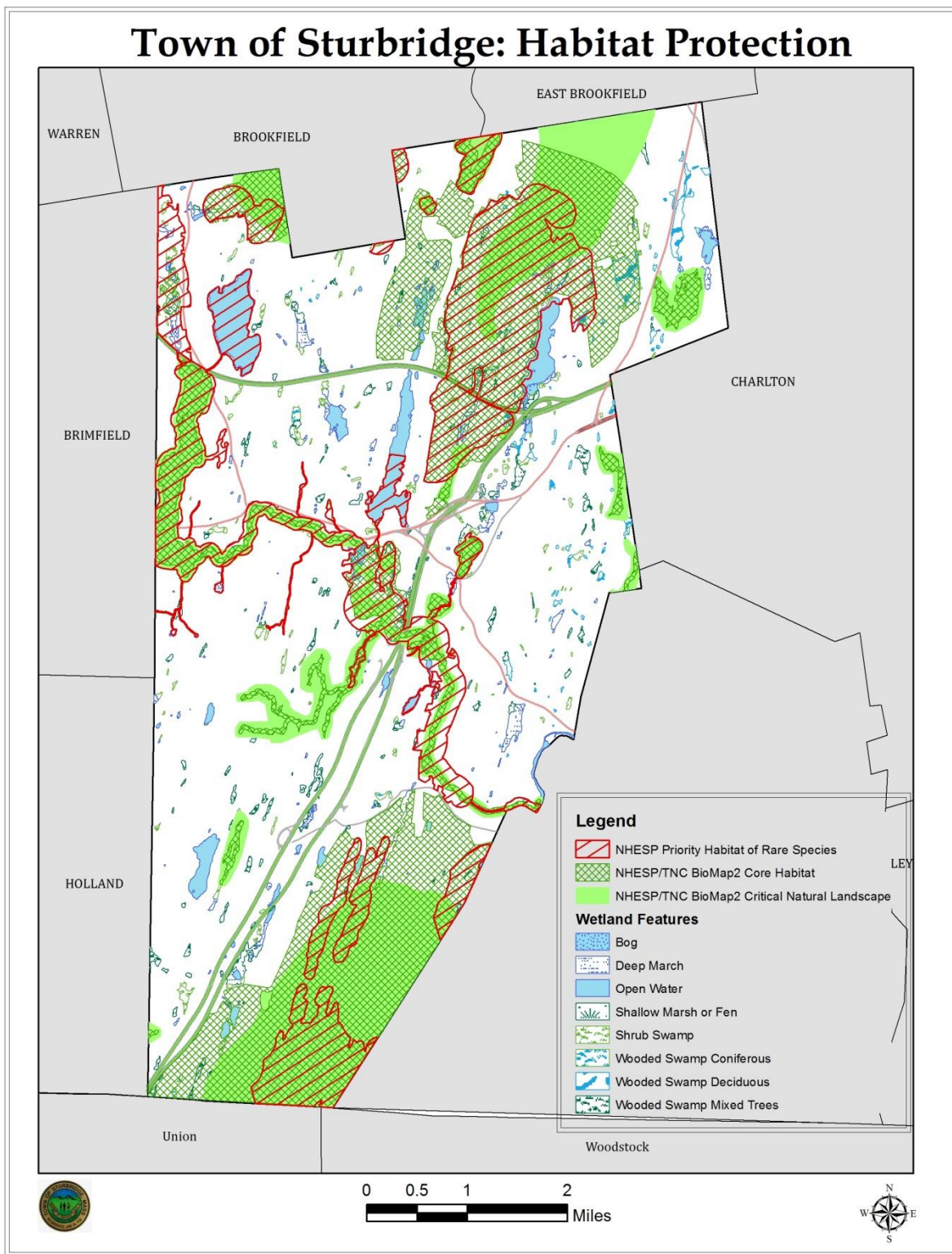
Critical Natural Landscape – According to the report, the subcomponents of Critical Natural Landscape include foraging habitat for tern species, landscape blocks, upland buffers and wetland core, upland buffers of aquatic core and upland habitat to support coastal adaptation. It identifies large natural landscape blocks that are minimally impacted by development. If protected, these areas will provide habitat for side ranging native species, support intact ecological resilience to natural and anthropogenic disturbances in a rapidly changing world. Areas delineated as Critical Natural Landscape also include buffering upland around wetland, coastal and aquatic core habitats to help insure their long term integrity”¹⁵.

There are many threats to biodiversity. Climate change is one such threat, but beyond that habitat loss, habitat fragmentation, invasive species, air and water pollution and alteration of ecological processes all pose threats to biodiversity. The BioMap2 can help communities work to retain biodiversity by providing a priority blueprint for land preservation efforts. The Town of Sturbridge will need to focus future preservation efforts in the areas delineated on the newest map to help insure biodiversity in the future.

These BioMap2 areas of Core Habitat, Critical Natural Landscape, as well as the NHESP Priority Habitat of Rare Species within the town are shown on Map 9 on the following page.

¹⁵ BioMap 2: Conserving Biodiversity of Massachusetts in a Changing World. Prepared by the MA Department of Fish & Game, Division of Fisheries and Wildlife, Natural Heritage & Endangered Species Program, and The Nature Conservancy. 2010. Page 9.

Map 9: Habitat Protection



D. Vegetation

Despite recent development trends, large portions of Sturbridge remain forested. Some important open agricultural land is still undeveloped. The forest type is northern mixed hardwood with the dominant tree species being red oak, white oak, red maple, white ash, white pine and eastern hemlock. Of the nearly 18,000 acres of forested land, over half is predominantly large hardwood stands. Nearly 1/3 is large mixed wood stands while less than 5% is mostly large conifer stands.

According to Massachusetts General Laws Chapter 87, “all trees within a public way or on the boundaries thereof including trees planted in accordance with the provisions shall be public shade trees; and when it appears in any proceeding in which the ownership of or rights in a tree are material to the issue, that, from length of time or otherwise, the boundaries of the highway cannot be made certain by records or monuments, and that for that reason it is doubtful whether the tree is within the highway, it shall be taken to be within the highway and to be public property until the contrary is shown”.¹⁶

The Town has a very active Tree Warden. It is the responsibility of the Tree Warden to oversee the planting of trees, to maintain and care for the trees, and to remove injured or dangerous trees in the public area. The Tree Warden organizes and keeps track of every public shade tree that is to be planted and every tree that has already been planted in the town of Sturbridge. It is the Tree Warden’s goal not only to preserve the community forestry of Sturbridge, but to enhance it. In the past the Tree Warden’s Advisory Committee has assisted the Tree Warden in various tasks and activities in Sturbridge. Efforts to revive this Committee and complete a full analysis of the Town’s forestry resources are expected to be underway this summer.

The Tree Warden determines where trees can be planted within public property (the common, streets, parks, etc.). The Tree Warden also maintains all public shade trees by inspection, pruning, and trimming where needed. Pest control is also part of the Tree Warden’s duties in caring for the health of our trees. Recently the Tree Warden has provided numerous residents advice on dealing with the dreaded Gypsy Moth which are killing many trees throughout town. Dead public shade trees in the town of Sturbridge are removed immediately.

The Town of Sturbridge has been the recipient of numerous DCR Urban and Community Forestry Grants over the years which have helped to supplement the Public Shade Tree planting efforts undertaken by the town. Each year the Tree Warden has an “Adopt a Tree Program” and plants a significant number of trees for those who agree to care for them. The Town of Sturbridge has also proudly boasted the Designation of Tree City USA for 30 consecutive years now.

Sturbridge also contains a variety of wetland habitats, each with its own distinctive plant communities. Seasonally flooded basins occur primarily on stream flood plains and are populated

¹⁶ Massachusetts General Laws Chapter 87.

by grasses and herbaceous species. The shrub swamps contain a variety of woody species including alder, buttonbush, dogwood and willow. The meadows contain numerous grasses and sedges. The shallow marshes are home to a distinctive vegetation complex, which includes cattails, bulrushes, burweed, pickerelweed and arrowhead. The deep marshes also have water lilies and a variety of pondweeds.

There has been substantial loss of open farmland over the last fifty years. Some farmlands have reverted to forest, but much has been developed residentially. A few large examples of typical agricultural land do remain. A floral inventory for State listed species has been done at Wells State Park with a few species identified within the park boundaries.

The Massachusetts Natural Heritage and Endangered Species Program lists the following plant species for Sturbridge (note the three plant species listed as “endangered”):

Table 4-1: NHESP Plant Species List

Taxonomic Group	Scientific Name	Common Name	State Status	Federal Status	Most Recent Observation
Vascular Plant	<i>Adlumia fungosa</i>	Climbing Fumitory	SC		2008
Vascular Plant	<i>Asplenium montanum</i>	Mountain Spleenwort	E		1946
Vascular Plant	<i>Clematis occidentalis</i>	Purple Clematis	SC		2008
Vascular Plant	<i>Corallorhiza odontorhiza</i>	Autumn Coralroot	SC		1984
Vascular Plant	<i>Eriophorum gracile</i>	Slender Cottongrass	T		1997
Vascular Plant	<i>Liatris borealis</i>	New England Blazing Star	SC		1934
Vascular Plant	<i>Lipocarpa micrantha</i>	Dwarf Bulrush	T		2009
Vascular Plant	<i>Lygodium palmatum</i>	Climbing Fern	SC		1937
Vascular Plant	<i>Platanthera flava</i> var <i>herbiola</i>	Pale Green Orchid	T		1933
Vascular Plant	<i>Poa languida</i>	Drooping Speargrass	E		2000
Vascular Plant	<i>Ranunculus pensylvanicus</i>	Bristly Buttercup	T		2008
Vascular Plant	<i>Celastrus scandens</i>	American Bittersweet	T		2009
Vascular Plant	<i>Leptochloa fusca</i> spp. <i>Fascicularis</i>	Saltpond Grass	T		2008
Vascular Plant	<i>Trichomanes intricatum</i>	Appalachian Bristle-fern	E		2010

State: E=Endangered T=Threatened SC=Special concern WL=Unofficial watch list.

Federal: E= Federally Endangered T=Federally Threatened

E. Fisheries and Wildlife

The large forested tracts and abundant wetland areas provide the necessary habitat requirements for the typical flora and fauna of southern New England. There are frequent sightings of coyotes, turkeys and white tailed deer. Fisher and bobcats are also known to inhabit the town. Numerous beaver impoundments have been created on many suitable sites, which great blue herons now use as nesting sites. Moose and black bear sightings occur on an annual basis. State estimated habitat maps indicate a number of sites where State listed wetlands species exist. At Wells State Park, a

population of State listed non-wetland endangered reptiles has been discovered. Field research is currently underway to gather more information on this population. Because of the large interior forested tracts, the potential for permanent wildlife corridors exists. Further research will be needed to document corridors, habitats, and other features related to wildlife in Town.

The State annually stocks Long Pond, Big Alum, Leadmine Pond and the Quinebaug River with trout. Indigenous fish exist in other ponds and streams within the Town.

Hamant Brook flows in a northerly direction and generally parallel to U.S. Interstate 84 (I-84) in the Town of Sturbridge, Massachusetts. The brook has a surface watershed area of 3.7 square miles and a total length of approximately 4.7 miles as determined from Geological Survey (USGS) 7.5-minute topographic quadrangle maps. Surface water features in the watershed include wetland complexes and approximately a half-dozen small impoundments along the main stem of the brook and tributary streams.



Figure 4-4: Hamant Brook before the restoration project. Photograph taken in fall of 2017.

The Hamant Brook Restoration Project is an aquatic habitat and stream restoration effort being undertaken along Hamant Brook in Sturbridge by the Town in partnership with the

Massachusetts Department of Fish and Game Division of Fisheries and Wildlife (DFW), Old Sturbridge Village (OSV), and American Rivers. The primary goals of the project are to restore aquatic habitat and to reduce costs and liability associated with ownership and maintenance of aging infrastructure. The Lower Pond Dam, Middle Pond Dam and Upper Pond Dam were breached as part of this restoration project. Native fauna such as brook trout, the only native resident salmonid species in Massachusetts, are the target species for the proposed habitat restoration work.



Figure 4-5: Hamant Brook after restoration project. Photograph taken in spring of 2018.

The Project's primary funding source is Millennium Power Project mitigation funding. Massachusetts and Connecticut can access a mitigation fund established by the Millennium Power Plant in Charlton during its permitting process. Proposals are accepted for restoration activities related to native species of fish that should have been in the Quinebaug or are impaired because of stream flow. The DFW was awarded funding through the Millennium Power Project following evaluation of DFW's proposal for restoration of fish passage and coldwater stream habitat through removal of the project dams and replacement of the OSV Road culvert at Hamant Brook. Selection of the Project for funding was based on a competitive proposal evaluation and

scoring procedure in categories of instream flow management, fish passage management, and habitat management. The highest scores within each category were given to restoration actions, followed by rehabilitation and enhancement actions.

The most recent listing of the Massachusetts Natural Heritage and Endangered Species Program shows the following species existing in Sturbridge (note the four wildlife species listed by the State as “endangered”, as well as the entry for the Indiana Myotis, which is listed as a “federally endangered” species):

Table 4-2: NHESP Animal Species List

Taxonomic Group	Scientific Name	Common Name	State Status	Federal Status	Most Recent Observation
Fish	Notropis bifrenatus	Bridle Shiner	SC		2015
Amphibian	Ambystoma opacum	Marbled Salamander	T		2010
Reptile	Clemmys insculpta	Wood Turtle	SC		2016
Bird	Haliaeetus leucocephalus	Bald Eagle	E		1999
Mammal	Myotis sodalis	Indiana Myotis	E	E	1938
Mammal	Sorex palustris	Water Shrew	SC		1996
Mussel	Strophitus undulatus	Creeper	SC		2010
Butterfly/Moth	Callophrys hesseli	Hessel’s Hairstreak	SC		1997
Dragonfly/Damsel	Gomphus abbreviates	Spine Crowned Clubtai	SC		2016
Mammal	Myotis lucifugus	Little Brown Myotis	E		1983
Mammal	Myotis septentrionalis	Northern Long Eared Bat	E		2000
Dragonfly/Damsel	Neurocordulia obsoleta	Umber Shadowdragon	SC		2016
Butterfly Moth	Pyrrhia aurantiago	Orange Shallow Moth	SC		2010

State: E=Endangered T=Threatened SC=Special concern WL=Unofficial watch list.

Federal: E= Federally Endangered T=Federally Threatened

F. Scenic Resources and Unique Environments

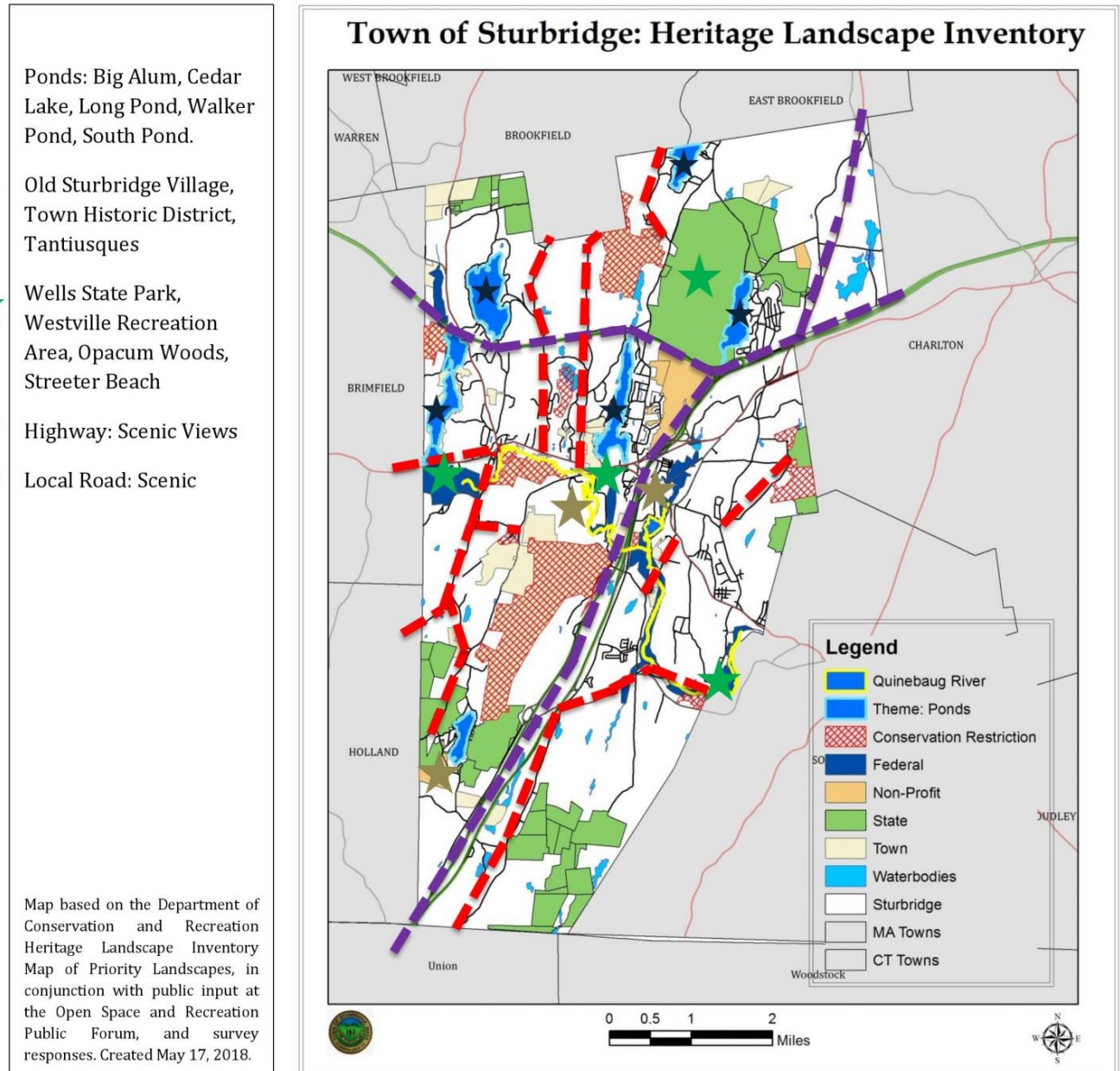
The rural character of the Town is an essential part of both residential quality of life as well as economic development. The long, straight stretch of Route 49 presents some serene travel through wooded landscape and hilly terrain and also prevents the interruption of intersecting roadways. Visitors and residents alike consider the entrance to Wells State Park particularly scenic. The Park borders Walker Pond and boasts a spectacular view off Carpenter’s Rock as well as numerous recreational amenities from mountain biking to camping to swimming. The Westville Recreation Area, shared with the Town of Southbridge, provides good fishing and has several recreational fields and picnic areas. Another unique and scenic area is the 266-acre Opacum Woods. Located close to Sturbridge Center, this site is accessed via the trailhead at Old Brook Circle within the subdivision known as “The Preserve”. Opacum Woods contain a large beaver pond, historic and prehistoric sites, 3.5-miles of walking trails, and allows for a variety of passive recreation opportunities. It also serves as habitat for a variety of wildlife species.

The Mass Turnpike corridor through Sturbridge is generally considered scenic, with rolling wooded hills and views of water. South of the Turnpike and along the Brimfield town line, Long Pond and the Quinebaug River provide both attractive vistas as well as recreation. While the land along much of the Quinebaug River is privately controlled, access is usually tolerated and several walking trails exist along its southern banks with views and great fishing. Scenic roads run through much of the Town and from Fiske Hill Road and McGilpin Road, there are vistas of the valley over Charlton.

Sturbridge is well known for its historic appearance, with the National Historic District located around the Town Common. The district contains 42 historic buildings and structures. This area also includes the Hobbs Brook Conservation Area, a valuable wetland estuary, which is home to blue heron and many other species. On the south side of Town, the Trustees of Reservations maintain a 77-acre tract known as the Tantiusques Leadmine, the site of the discovery of graphite in 1633. This area features the mineshafts and tunnels where the graphite was extracted. Old Sturbridge Village is a major cultural attraction and complements other historic areas in Town. The expansiveness of the Breakneck area, which includes a large portion of the Southbridge aquifer and abuts portions of Nipmuck State Forest in Connecticut, may have sufficient qualities to be considered an Area of Critical Environmental Concern.

The Town's scenic features have been cited in survey after survey as one of the major reasons that residents have moved to Sturbridge. The Town's hills, water bodies, and woodlands have all been identified as scenic. The views along roads, the rural character, with stonewalls and stands of trees, have been mentioned as scenic features as well. A graphic depiction of the Town's unique features and scenic resources can be found on the Heritage Landscape Inventory Map on the following page.

Map 10: Heritage Landscape Inventory Map (unique features and scenic resources)



G. Environmental Challenges

1) Surface Water Pollution

The Sturbridge Lakes Advisory Committee has found that the four top concerns for the Sturbridge Lakes are boating congestion, invasive aquatic plants, stormwater runoff, and shoreline erosion. Lesser concerns identified were wildlife control (i.e. Beaver and Canada Geese), bacterial counts, litter/waste, non-native baitfish, and dock issues. These water quality concerns are being addressed by the promotion of good environmental stewardship practices such as riparian vegetation buffer zones, use of low or no phosphorus fertilizers, low or no wake zones, etc.. The Sturbridge Conservation Commission also organizes a volunteer water quality-monitoring program to track adverse trends or localized problems¹⁷.

Development around the lakes, especially the teardown and reconstruction of seasonal cottages into larger year round residences has become a common occurrence in recent years. While the Conservation Commission and Zoning Board of Appeals carefully review each project for compliance with the current applicable bylaws and regulations, the impact of this development pattern must be carefully monitored to insure quality of our water resources. The conversion of these seasonal cottages into year round homes has an impact on town resources as well. While many of these roads are private and are privately maintained, the town assists these residents in monitoring the activities and providing construction materials to be sure that the work is done in an environmentally conscious manner.

The Sturbridge Wetlands Bylaw works to address activities within close proximity to wetlands and other resource areas that have a high likelihood of adverse impacts on said resources. These adverse impacts from construction include erosion and siltation, among other things. All construction activities proposed within the Conservation Commission jurisdiction are reviewed by the Commission to be sure they are in compliance with Bylaw; in particular all erosion and sedimentation controls measures must be in place prior to commencing construction.

The Town strives to educate the public about the importance of stormwater management and lot coverage requirements as one way of protecting groundwater. The Town was the recipient of a 604b grant from the U.S. Environmental Protection Agency (EPA) and the Department of Environmental Protection (DEP) for a phased project that included an educational program about stormwater runoff, and technical assistance for the development of a Low Impact Development Bylaw.

The Phase 1 Educational Program consisted of two parts. The first was the Earth Day activities that were collaborated with Old Sturbridge Village. We began work on this project in January with several meetings with education staff at Old Sturbridge Village and CMRPC staff to discuss the educational program at Old Sturbridge Village. This program was intended to educate the

¹⁷ Report to the Sturbridge Board of Selectmen from the Sturbridge Lakes Advisory Committee: Report and Recommendations. October 2008. Section 4.0 Common Concerns and Issues for Sturbridge Lakes.

public about low impact development and stormwater issues. This event took place on Earth Day – April 22, 2016, which was during school vacation week. The event was heavily advertised by OSV and there was an article in the Sturbridge Times Magazine. We believed that parents from Sturbridge would be bringing their children to the Village on vacation week and we could reach the parents through the eyes and activities of their children, especially since Sturbridge residents attend for free.

The event ran from 11:00 am to 3:00 pm and included the following activities:

- Rain Garden heritage seeds planting
- Enviroscene interactive stormwater display
- Interactive pervious concrete sample display
- Sawmill and Gristmill demonstrations
- Quinebaug River Boat Ride
- Videos about the benefits of Low Impact Development
- Display of Posters and fact sheets on how you can help keep water clean

The OSV historians were on hand to provide an historical perspective on stormwater management as well.

Phase 2 of this project was drafting a new LID (Low Income Development) Bylaw. Our existing Stormwater Regulations were adopted in March 2011 and are based on the Model Stormwater Bylaw Regulations in the MA Smart Growth Toolkit. However, the Town regulations did not include the performance criteria section in the Model Stormwater Bylaw Regulations. It was determined that we could consider adding a new section for Stormwater Management Performance Criteria after Section 8.13 of the existing stormwater regulations. This was completed and adopted by the Town on September 12, 2017.

TOWN OF STURBRIDGE OPEN SPACE AND RECREATION PLAN - 2018

2) Identified Polluted Sites in Town

The Massachusetts Department of Environmental Protection currently lists one hundred forty-five 21E sites (also known as “brownfields”) in Sturbridge; however, this list is a bit deceptive as it contains multiple instances of contamination on a single property. The Town’s “brownfield” sites are as follows¹⁸:

RTN	Town	Release Address	Site Name/ Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type	Files
2-0000130	STURBRIDGE	392 MAIN ST	FORMER ARCO STATION	NONE	1/15/1987	REMOPS	8/1/2001			Oil	Y
2-0000276	STURBRIDGE	RTE 15 MASHAPAUG RD	MOBIL GAS ATLAS OIL 01QRC	NONE	7/15/1987	DEPNFA	4/7/1993				Y
2-0000370	STURBRIDGE	40 MAIN ST	SUNOCO GAS STATION	NONE	4/15/1989	RAO	7/2/2010	Phase V	A 3	Oil	Y
2-0000434	STURBRIDGE	149 CHARLTON RD	VILLAGE AUTOMOTIVE INC	NONE	10/15/1988	RAO	6/24/2008		A 2		Y
2-0000797	STURBRIDGE	365 MAIN ST	MOBIL STATION	NONE	11/21/1990	PSNC	12/10/2015	Phase V		Oil	Y
2-0010053	STURBRIDGE	MAIN ST	INTERSECTION	TWO HR	10/25/1993	RAO	10/24/1994		A 2	Oil	Y
2-0010121	STURBRIDGE	MAIN ST	MHD FACILITY 44	72 HR	12/15/1993	RAO	8/15/1995		A 1	Oil	Y
2-0010133	STURBRIDGE	365 MAIN ST	MOBIL STATION 10	TWO	12/28/1993	RAO	2/25/1994		A	Oil	Y

¹⁸ The DEP Website <https://www.mass.gov/find-out-about-a-contaminated-property> has information that can help the reader of this plan better understand the cleanup of sites and spills. Readers of this plan are encouraged to visit that website for detailed information on this program. The Appendix of this plan has a glossary of terms that can also help the reader better understand the abbreviations used in this table.

TOWN OF STURBRIDGE OPEN SPACE AND RECREATION PLAN - 2018

RTN	Town	Release Address	Site Name/ Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type	Files
			PUMP	HR					2		
2-0010142	STURBRIDGE	MASS PIKE W	MI MARKER 79	TWO HR	1/4/1994	RAO	8/8/1994		A 2	Oil	Y
2-0010151	STURBRIDGE	400 MASHAPAUG RD	STURBRIDGE ISLE TRUCK STOP	TWO HR	1/12/1994	RAO	12/22/1994		A 1	Oil	Y
2-0010175	STURBRIDGE	RTE 84W	BEHIND STATE POLICE BARRACKS	TWO HR	1/30/1994	TIER1D	7/7/2008			Oil	Y
2-0010184	STURBRIDGE	358 MAIN ST	CARRIAGE HOUSE INN	120 DY	2/2/1994	RAO	3/26/1999		A 1	Oil	Y
2-0010188	STURBRIDGE	MASS PIKE W	MI MARKER 79	TWO HR	2/11/1994	RAO	6/14/1994		A 2	Oil	Y
2-0010197	STURBRIDGE	MASS PIKE	MI MARKER 68E BRIMFIELD-WARREN LINE	TWO HR	2/17/1994	RAO	4/15/1994		A 2	Oil	Y
2-0010204	STURBRIDGE	RTE 84	EASTBOUND NEAR REST AREA	TWO HR	2/23/1994	RAO	4/22/1994		A 1	Oil	Y
2-0010379	STURBRIDGE	MA TURNPIKE E	MI MARKER 74.5	TWO HR	7/11/1994	RAO	11/17/1994		A 1	Oil	Y
2-0010512	STURBRIDGE	MASS PIKE	STURBRIDGE EXIT 9 PLAZA	TWO HR	10/8/1994	RAO	12/9/1994		A 1	Oil	Y
2-0010531	STURBRIDGE	MASS PIKE	APA TRUCK LEASING	TWO HR	11/1/1994	RAO	1/4/1995		A 2	Oil	Y

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RTN	Town	Release Address	Site Name/ Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type	Files
2-0010566	STURBRIDGE	MASS PIKE E	MI MARKER 79.1	TWO HR	11/28/1994	RAO	1/17/1995		A 2	Oil	Y
2-0010716	STURBRIDGE	MASS PIKE	EXIT 9	TWO HR	3/31/1995	RAO	9/27/1995		A 2	Oil	Y
2-0010759	STURBRIDGE	MASS PIKE	REST STOP 5E	TWO HR	5/5/1995	RAO	6/12/1995		A 1	Oil	Y
2-0010776	STURBRIDGE	MASS PIKE W MI MARKER 78	TRUCK ACCIDENT	TWO HR	5/11/1995	RAO	6/22/1995		A 2	Oil	Y
2-0010781	STURBRIDGE	441 MAIN ST	CPC ENGINEERING	120 DY	5/15/1995	RAO	4/9/2001	Phase III	B 1	Oil and Hazardous Material	Y
2-0010783	STURBRIDGE	MASS PIKE E	MI MARKER 77	TWO HR	5/22/1995	RAO	7/21/1995		A 1		Y
2-0010905	STURBRIDGE	421 MAIN ST	ARLAND TOOL AND MANUFACTURING	72 HR	9/8/1995	REMOPS	1/12/2009	Phase V		Oil	Y
2-0010907	STURBRIDGE	441 MAIN ST	WHEELABRATOR TECH INC	72 HR	9/8/1995	RAO	12/27/2007		C 2	Oil	Y
2-0011047	STURBRIDGE	400 MASHAPAUG RD	STURBRIDGE ISLE TRUCK STOP	TWO HR	12/26/1995	RAO	2/27/1996		A 1	Oil	Y
2-0011099	STURBRIDGE	MASHAPAUG RD	STURBRIDGE MOBIL	TWO HR	2/8/1996	RAO	4/9/1996		A 1	Oil	Y

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2-0011138	STURBRIDGE	236 MASHAPAUG RD	MOBIL STATION	TWO HR	2/27/1996	RAO	4/9/1996			Oil	Y
2-0011148	STURBRIDGE	MAIN ST	MHD FACILITY 44	120 DY	3/1/1996	RAO	12/27/1996		B 1	Hazardous Material	Y
2-0011157	STURBRIDGE	RTE 84W	RAMP ON EXIT 1	TWO HR	3/13/1996	RAO	5/16/1996		A 1	Oil	Y
2-0011255	STURBRIDGE	400 MASHAPAUG RD	ROUTE 84	TWO HR	5/30/1996	RAO	7/15/1996		A 1	Oil	Y
2-0011260	STURBRIDGE	MASS PIKE	INTERCHANGE 9	TWO HR	6/3/1996	RAO	7/16/1996		A 1	Oil	Y
2-0011264	STURBRIDGE	11 MASHAPAUG RD	KRUCZEK RESIDENCE	TWO HR	6/3/1996	TIER1D	6/10/1997			Oil	Y
2-0011355	STURBRIDGE	RTE 84	CENTIMARK CORP	TWO HR	8/14/1996	RAO	6/16/1997		A 1		Y
2-0011424	STURBRIDGE	MASS PIKE S	MI MARKER 78	TWO HR	10/3/1996	RAO	12/9/1996		A 2	Oil	Y
2-0011425	STURBRIDGE	MASS PIKE W	500 FT OF EXIT 9	TWO HR	10/5/1996	RAO	12/2/1996		A 2	Oil	Y
2-0011534	STURBRIDGE	400 MASHAPAUG RD	STURBRIDGE ISLE TRUCK STOP	TWO HR	12/19/1996	RAO	3/20/2003		A 2	Oil	Y
2-0011595	STURBRIDGE	400 MASHAPAUG RD	STURBRIDGE ISLE TRUCK STOP	TWO HR	2/4/1997	RAO	12/15/1997		A 1	Oil	Y

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RTN	Town	Release Address	Site Name/ Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type	Files
2-0011761	STURBRIDGE	RTE 84E	BTWN EXIT 3A 3B	TWO HR	6/12/1997	RAO	8/11/1997		A 1	Oil	Y
2-0011805	STURBRIDGE	22 SECOND ST	RESIDENCE	TWO HR	6/9/1997	RAO	12/23/1998		A 2	Oil	Y
2-0011875	STURBRIDGE	126 FISKE HILL RD	RESIDENCE	TWO HR	9/10/1997	RAO	6/1/1998		A 2	Oil	Y
2-0011893	STURBRIDGE	RTE 84	AT INTERCHANGE 9	TWO HR	9/23/1997	RAO	11/24/1997		A 1	Oil	Y
2-0011905	STURBRIDGE	RTE 84	STURBRIDGE ISLE	TWO HR	9/30/1997	RAO	12/5/1997		A 2	Oil	Y
2-0012177	STURBRIDGE	361 MAIN ST	LOT 15	TWO HR	4/3/1998	RAO	1/11/1999		A 2	Oil and Hazardous Material	Y
2-0012226	STURBRIDGE	RT 84 AT RAMP TO MTP	NO LOCATION AID	TWO HR	5/21/1998	RAO	7/17/1998		A 1	Hazardous Material	Y
2-0012301	STURBRIDGE	CHARLTON RD RTE 20	HALL ROAD 1700 FT NORTH OF	120 DY	7/17/1998	RTN CLOSED	7/30/1998				Y
2-0012387	STURBRIDGE	CHARLTON RD	NEW ENGLAND TRUCK STOP	120 DY	9/8/1998	RAO	3/29/2002	Phase III	A 2	Oil	Y
2-0012394	STURBRIDGE	RTE 84 W	REST AREA AT EXIT 2	TWO HR	9/10/1998	RAO	9/10/1998		A 1	Oil	N
2-0012420	STURBRIDGE	CHARLTON RD	149 CHARLTON RD	120 DY	9/25/1998	RTN CLOSED	9/30/1999			Oil	Y

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		RTE 20									
2-0012456	STURBRIDGE	MAIN ST	STURBRIDGE DEPOT	72 HR	10/14/1998	RAO	10/6/1999		A 2	Oil	Y
2-0012488	STURBRIDGE	319 BROOKFIELD RD	TANTASQUA REGIONAL HIGH SCHOOL	TWO HR	11/10/1998	RAO	11/10/2000	Phase II	A 2	Oil	Y
2-0012570	STURBRIDGE	149 CHARLTON RD	VILLAGE AUTOMOTIVE	72 HR	12/23/1998	RTN CLOSED	9/30/1999			Oil	Y
2-0012615	STURBRIDGE	149 CHARLTON RD	GIFFORD RD	120 DY	1/19/1999	RAO	1/24/2000		A 2	Oil and Hazardous Material	Y
2-0012878	STURBRIDGE	MASS PIKE	MM79	TWO HR	7/26/1999	RAO	9/23/1999		A 1	Oil	Y
2-0013011	STURBRIDGE	MASS PIKE	MM 78E	TWO HR	11/3/1999	RAO	1/3/2000		A 2	Oil	Y
2-0013305	STURBRIDGE	40 MAIN ST	SUNOCO STA FMR	72 HR	5/30/2000	RTN CLOSED	5/30/2001			Oil	Y
2-0013314	STURBRIDGE	21 OLD HAMILTON ROAD EXT	POLE NO 39	TWO HR	6/7/2000	RAO	8/3/2000		A 2		Y
2-0013348	STURBRIDGE	201 CHARLTON RD	NEW ENGLAND TRUCK STOP	72 HR	6/30/2000	RTN CLOSED	8/7/2000			Oil	Y

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RTN	Town	Release Address	Site Name/ Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type	Files
2-0013525	STURBRIDGE	660 MAIN ST	STURBRIDGE IND PARK FMR CORNING NETOPTIX	TWO HR	10/19/2000	RAO	10/2/2006		A 2	Hazardous Material	Y
2-0013737	STURBRIDGE	358 MAIN ST	SUPER 8 MOTEL INC	72 HR	3/19/2001	RAO	5/17/2001		A 2	Oil	Y
2-0013763	STURBRIDGE	400 RTE 15	STURBRIDGE ISLE XTRA MART	TWO HR	4/3/2001	RAO	12/16/2003	Phase II	B 1	Oil	Y
2-0013981	STURBRIDGE	3 FALLS RD	RESIDENCE	72 HR	9/7/2001	RAO	10/17/2001		A 1	Oil	Y
2-0013995	STURBRIDGE	41 MAIN ST	SUNOCO STN	120 DY	9/18/2001	RTN CLOSED	4/16/2002			Oil	Y
2-0014107	STURBRIDGE	MASS PIKE AT EXIT 9	NEAR TOLL BOOTHS	TWO HR	12/4/2001	RAO	2/11/2002		A 1		Y
2-0014118	STURBRIDGE	379 MAIN ST	SANTANDER BANK	72 HR	12/13/2001	RAO	4/17/2002		A 2	Oil	Y
2-0014156	STURBRIDGE	MASS PIKE MILE MARKER 79	EXIT 9 EASTBOUND	TWO HR	1/10/2002	RAO	2/25/2002		A 2		Y
2-0014206	STURBRIDGE	400 RTE 15	STURBRIDGE ISLE TRUCKSTOP	TWO HR	2/26/2002	RAO	5/6/2002		A 1	Oil	Y
2-0014404	STURBRIDGE	514 MAIN ST	SOUTHBRIDGE CREDIT UNION	72 HR	7/23/2002	RAO	11/7/2003		A 2	Oil	Y

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RTN	Town	Release Address	Site Name/ Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type	Files
2-0014431	STURBRIDGE	MASS PIKE RT 84 AND RT 90	BEATON ROADWAY RELEASE	TWO HR	8/9/2002	RAO	2/28/2003		A 1	Oil	Y
2-0014436	STURBRIDGE	45 BURGESS SCHOOL RD	BURGESS ELEMENTARY SCHOOL	72 HR	8/13/2002	RAO	10/18/2002		A 1	Oil	Y
2-0014524	STURBRIDGE	RTE 84 W	BETWEEN EXITS 2&3	TWO HR	10/25/2002	RAO	12/23/2002		A 2	Oil	Y
2-0014563	STURBRIDGE	660 MAIN ST	CORNING INC	120 DY	11/21/2002	RTN CLOSED	12/31/2002			Hazardous Material	Y
2-0014643	STURBRIDGE	40 MAIN ST	IMPACTED RESIDENCE 27 MAIN ST	72 HR	1/27/2003	RTN CLOSED	5/30/2003			Hazardous Material	Y
2-0014659	STURBRIDGE	400 RTE 15	DRAKE PETROLEUM	120 DY	1/8/2003	RAO	5/15/2003		A 2	Oil	Y
2-0014676	STURBRIDGE	236 RTE 15	EXXON STATION	TWO HR	2/25/2003	RAO	4/28/2003		A 1	Oil	Y
2-0014724	STURBRIDGE	51 HOLLAND RD	MUIRFIELD DEVELOPMENT	TWO HR	4/4/2003	RAO	4/13/2004		P A	Hazardous Material	Y
2-0014753	STURBRIDGE	544 MAIN ST	MA ELECTRIC POLE 97	TWO HR	5/3/2003	RAO	7/1/2003		A 1		Y
2-0014785	STURBRIDGE	LOTS 51 AND 55 HOLLAND RD	FORMER US FILTER	TWO HR	6/27/2003	RAO	6/29/2004		B 1	Hazardous Material	Y

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RTN	Town	Release Address	Site Name/ Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type	Files
2-0014814	STURBRIDGE	71 MASHPAUG RD	MASHPAUG RD AT POLE 28	TWO HR	6/19/2003	RAO	8/14/2003		A 1		Y
2-0014875	STURBRIDGE	175 CEDAR ST	CEDAR ST POLE 47	TWO HR	8/13/2003	RAO	10/8/2003		A 2		Y
2-0014915	STURBRIDGE	27 BROOKFIELD RD	27 BROOKFIELD RD UST	72 HR	9/16/2003	RAO	1/14/2004		A 1		Y
2-0014922	STURBRIDGE	277 MAIN ST	RTE 131 PUBLICK HOUSE	72 HR	9/22/2003	RAO	8/12/2004		A 2	Oil	Y
2-0015054	STURBRIDGE	400 HYNES RD	STURBRIDGE ISLE TRUCK STOP	TWO HR	12/19/2003	RAO	2/27/2004		A 1		Y
2-0015114	STURBRIDGE	MASS PIKE EASTBOUND MM 75	MA TURNPIKE ROADWAY RELEASE	TWO HR	2/5/2004	RAO	4/1/2004		A 1		Y
2-0015124	STURBRIDGE	365 MAIN ST	MOBIL STATION	TWO HR	2/11/2004	RTN CLOSED	2/9/2005			Oil and Hazardous Material	Y
2-0015168	STURBRIDGE	315 CHARLTON RD	T & S TRUCK SERVICE	TWO HR	3/19/2004	RAO	12/31/2004		A 2	Oil	Y
2-0015244	STURBRIDGE	MASS PIKE MM 78 5	CARDINAL FREIGHT CARRIERS	TWO HR	5/10/2004	RAO	7/6/2004		A 2	Oil	Y
2-0015366	STURBRIDGE	40 MAIN ST	JACKS GAS AND AUTO REPAIR INC	72 HR	8/13/2004	RAO	1/20/2010	Phase II	A 2	Hazardous Material	Y

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2-0015483	STURBRIDGE	100 CHARLTON RD	CARRIER INDUSTRIES	TOW HR	11/14/2004	RAO	1/12/2005		A 1	Oil	Y
2-0015544	STURBRIDGE	201 CHARLTON RD	NEW ENGLAND TRUCK STOP	TWO HR	12/29/2004	RAO	12/20/2007	Phase 111	A 2	Oil and Hazardous Material	Y
2-0015899	STURBRIDGE	71 MASHAPAUG RD	CURBOYS AUTO PARTS INC	72 HR	9/19/2005	TIER 2	3/13/2014	Phase II		Oil and Hazardous Material	Y
2-0015914	STURBRIDGE	506 MAIN ST	CUMBERLAND FARMS	72 HR	9/28/2005	PSNC	9/8/2017			Oil	Y
2-0015940	STURBRIDGE	MASS PIKE EXIT 9	COWAN SYSTEM LLC	TWO HR	10/8/2005	RAO	2/3/2006		A 1		Y
2-0016021	STURBRIDGE	RT 84 WESTBOUND	MGM TRANSPORTATION ROADWAY REL	TWO HR	12/6/2005	RAO	1/30/2006		A 1	Oil	Y
2-0016088	STURBRIDGE	195 CHARLTON RD	TRAVEL NEST MOTEL	TWO HR	1/25/2006	RAO	12/1/2006		A 1	Oil	Y
2-0016104	STURBRIDGE	100 CHARLTON RD	STOP & SHOP	TWO HR	2/6/2006	RAO	4/3/2006		A 1	Oil	Y
2-0016238	STURBRIDGE	MASS PIKE AT EXIT 9	MA TURNPIKE ROADWAY REL	TWO HR	5/17/2006	RAO	7/7/2006		A 2	Oil	Y
2-0016339	STURBRIDGE	60 FISKE HILL RD	SILVERBERG RESIDENCE	120 DY	8/3/2006	RAO	9/18/2006		A 2	Oil and Hazardous Material	Y

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RTN	Town	Release Address	Site Name/ Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type	Files
2-0016355	STURBRIDGE	MASS PIKE INTERCHANGE	MASS PIKE AUTHORITY	TWO HR	8/15/2006	RAO	10/20/2006		A 2	Oil	Y
2-0016385	STURBRIDGE	400 HAYNES ST	PILOT TRUCK STOP	TWO HR	9/7/2006	RAO	10/20/2006		A 1	Oil	Y
2-0016413	STURBRIDGE	RTE 84 EASTBOUND	KEYSTONE FREIGHT ROADWAY REL	TWO HR	10/4/2006	RAO	12/4/2006		A 2	Oil	Y
2-0016417	STURBRIDGE	RTE 84 E AT EXIT 1	NATIONAL FREIGHT INC ROADWAY REL	TWO HR	10/6/2006	RAO	12/8/2006		A 1	Oil	Y
2-0016483	STURBRIDGE	71 MASHPAUG RD	CURBOYS AUTO PART INC	72 HR	11/30/2006	RTN CLOSED	3/30/2007				Y
2-0016511	STURBRIDGE	RST AREA 1 AT I 84 W	DART TRUCKING ROADWAY REL	TWO HR	12/20/2006	TIER1D	1/16/2007			Oil	Y
2-0016547	STURBRIDGE	RTE 84 E	DELAWARE VALLEY TRANS ROADWAY REL	TWO HR	1/19/2007	RAO	3/2/2007		A 1		Y
2-0016631	STURBRIDGE	400 RTE 15	PILOT TRUCK STOP	TWO HR	3/19/2007	RAO	7/5/2007		A 1	Oil	Y
2-0016662	STURBRIDGE	RTE 84 E	COVENANT TRANSPORT ROADWAY REL	TWO HR	4/20/2007	RAO	6/19/2007		A 2	Oil	Y

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2-0016693	STURBRIDGE	400 RTE 15	PILOT TRUCK STOP	TWO HR	5/11/2007	RAO	7/10/2007		A 1	Oil	Y
2-0016765	STURBRIDGE	506 MAIN ST	CUMBERLAND FARMS	72 HR	7/20/2007	RTN CLOSED	7/25/2008			Hazardous Material	Y
2-0016899	STURBRIDGE	RTE 49	ROADWAY	TWO HR	12/4/2007	RAO	1/25/2008		A 1	Oil	Y
2-0016900	STURBRIDGE	559 MAIN ST	STURBRIDGE MARKETPLACE	120 DY	11/30/2007	RAO	10/17/2008		B 1	Hazardous Material	Y
2-0016926	STURBRIDGE	INTERSTATE 84 W	BOSTON TRANSPORTATION	TWO HR	12/17/2007	RAO	8/14/2008		A 2		Y
2-0016994	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER	120 DY	3/3/2008	RAO	3/13/2008		A 2	Oil	Y
2-0016996	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER 222	TWO HR	3/7/2008	RAO	2/23/2011	Phase IV	C 1	Oil	Y
2-0017005	STURBRIDGE	236 RTE 15	MOBIL RS 13008	TWO HR	3/11/2008	RAO	4/22/2008		A 1	Oil	Y
2-0017006	STURBRIDGE	236 HAYNES ST	MOBIL FACILITY	120 DY	2/22/2008	RAO	8/13/2008		B 1	Hazardous Material	Y
2-0017019	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER SERVICE STATION	TWO HR	3/22/2008	RTN CLOSED	3/9/2009	Phase II		Oil	Y

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2-0017038	STURBRIDGE	16 CHURCH ST	CHURCH	72 HR	4/10/2008	RAO	11/21/2008		A 2	Oil and Hazardous Material	Y
2-0017041	STURBRIDGE	236 RTE 15	MOBIL RS 13008	72 HR	4/14/2008	RAO	4/14/2009		B 1	Hazardous Material	Y
2-0017078	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER 222	TWO HR	5/8/2008	RAO	7/6/2008		A 1	Oil	Y
2-0017082	STURBRIDGE	346 MAIN ST	FELLED UTILITY POLE	TWO HR	5/12/2008	RAO	7/10/2008		A 1		Y
2-0017104	STURBRIDGE	MA TPKE AT EXIT 9	MASS TURNPIKE	TWO HR	5/23/2008	RAO	7/22/2008		A 2	Oil	Y
2-0017121	STURBRIDGE	MASSACHUSETTS TURNPIKE-MM 78 W	DIESEL FUEL SPILL	TWO HR	6/9/2008	RAO	8/8/2008		A 2	Oil	Y
2-0017178	STURBRIDGE	236 OLD RTE 15	MOBIL STATION RS 13008	72 HR	7/22/2008	RAO	4/14/2009			Hazardous Material	Y
2-0017271	STURBRIDGE	HAYNES ST	ROADWAY	TWO HR	10/2/2008	RAO	11/6/2008		A 1	Oil	Y
2-0017367	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER 222	TWO HR	12/23/2008	RAO	2/19/2009		A 2	Oil	Y
2-0017386	STURBRIDGE	400 HAYNES ST	DIESEL FUEL RELEASE	TWO HR	1/11/2009	RAO	3/3/2009		A 1	Oil	Y

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2-0017497	STURBRIDGE	362 MAIN ST	PICADILLY PUB	120 DY	4/22/2009	RAO	7/1/2013	Phase III	B 1	Oil and Hazardous Material	Y
2-0017520	STURBRIDGE	RTE 84 E REST STOP	ROUTE 84 EAST REST STOP	TWO HR	5/19/2009	RAO	7/29/2011		A 1		Y
2-0017531	STURBRIDGE	RTE 84 E	STURBRIDGE ISLE TRUCK STOP	TWO HR	5/28/2009	RAO	11/23/2009		A 2	Oil	Y
2-0017538	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER	TWO HR	6/2/2009	RAO	10/30/2009		A 1	Oil	Y
2-0017541	STURBRIDGE	400 HAYNES RD	PILOT FUELS	TWO HR	6/3/2009	RAO	7/23/2009		A 1	Oil	Y
2-0017542	STURBRIDGE	400 HAYNES RD	PILOT FUEL STATION	TWO HR	6/3/2009	RAO	7/23/2009		A 1	Oil	Y
2-0017554	STURBRIDGE	400 HAYNES ST	PILOT TRUCK STOP	TWO HR	6/19/2009	RAO	7/31/2009		A 1	Oil	Y
2-0017573	STURBRIDGE	MASS PIKE WESTBOUND EXIT 9	ROADWAY	TWO HR	7/1/2009	RAO	8/28/2009		A 1	Oil	Y
2-0017601	STURBRIDGE	RTE 20 AT 201 CHARLTON RD	DIESEL FUEL RELEASE TO STORM DRAIN	TWO HR	7/30/2009	RAO	9/15/2009		A 2	Oil	Y
2-0017665	STURBRIDGE	MASS PIKE W	VEHICLE ACCIDENT	TWO HR	9/27/2009	RAO	11/23/2009		A 2	Oil	Y

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RTN	Town	Release Address	Site Name/ Location Aid	Reporting Category	Notification Date	Compliance Status	Date	Phase	RAO Class	Chemical Type	Files
2-0017749	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER 222	TWO HR	12/18/2009	RAO	2/24/2010		A 1	Hazardous Material	Y
2-0017787	STURBRIDGE	6 CHARLTON ST	RESIDENCE	TWO HR	2/7/2010	RAO	12/28/2011	Phase II	A 2	Oil	Y
2-0017797	STURBRIDGE	MASS PIKE AT EXIT 9	MASS PIKE EXIT 9	TWO HR	2/19/2010	RAO	4/21/2010		A 2	Oil	Y
2-0017816	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER 222	TWO HR	3/18/2010	RAO	5/14/2010		A 1	Oil	Y
2-0017857	STURBRIDGE	362 MAIN ST	PICCADILLY PUB	72 HR	4/22/2010	RAO	6/23/2010		A 2	Oil	Y
2-0017999	STURBRIDGE	RTE 84 EAST MM1	RTE 84 EAST REST AREA	TWO HR	9/24/2010	TIER1D	10/3/2011			Oil	Y
2-0018034	STURBRIDGE	215 CHARLTON RD	PAD MOUNTED TRANSFORMER	TWO HR	10/25/2010	RAO	12/13/2010		A 2	Oil	Y
2-0018063	STURBRIDGE	MASS PIKE EXIT 9 TOLL AREA	DIESEL FUEL RELEASE	TWO HR	12/16/2010	RAO	2/25/2011		A 2	Oil	Y
2-0018074	STURBRIDGE	MASS PIKE WEST MM 78.7	ROADWAY RELEASE	TWO HR	12/31/2010	RAO	3/30/2011		A 2	Oil	Y
2-0018221	STURBRIDGE	365 MAIN STREET	GASOLINE STATION	TWO HR	6/6/2011	RTN CLOSED	6/6/2012			Oil	Y
2-0018280	STURBRIDGE	I84 RAMP TO MASS PIKE	DIESEL FUEL RELEASE	TWO HR	8/7/2011	RAO	11/22/2011		A 2	Oil	Y

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2-0018298	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER 2522	TWO HR	8/18/2011	RAO	10/14/2011		A 1	Oil	Y
2-0018325	STURBRIDGE	122-130 MAIN STREET	STURBRIDGE XTRAMART	120 DY	8/31/2011	REMOPS	8/2/2017	Phase V		Oil and Hazardous Material	Y
2-0018417	STURBRIDGE	130 MAIN ST	XTRA MART STATION	72 HR	11/17/2011	RTN CLOSED	9/13/2013			Oil	Y
2-0018445	STURBRIDGE	2 MASHAUG RD	RESIDENCE	TWO HR	12/11/2011	RAO	12/11/2012		A 2	Oil	Y
2-0018559	STURBRIDGE	WATER WORKS RD	WATER PLANT	TWO HR	4/23/2012	RAO	6/14/2012		A 2	Oil	Y
2-0018586	STURBRIDGE	149 CHARLTON ROAD	BEE ZEE GAS STATION	TWO HR	5/29/2012	RAO	7/28/2012		A 2	Oil	Y
2-0018591	STURBRIDGE	ROUTE 84 EAST EXIT 2	RYDER TRUCK	TWO HR	5/31/2012	RAO	6/19/2012		A 1	Oil	Y
2-0018672	STURBRIDGE	149 CHARLTON STREET	BEE ZEE GASOLINE SERVICE STATION	72 HR	8/20/2012	RAO	6/7/2013		A 2	Oil	Y
2-0018708	STURBRIDGE	400 HAYNES STREET	GASOLINE RELEASE	TWO HR	10/1/2012	RAO	11/29/2012		A 2	Oil	Y
2-0018752	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER 222	TWO HR	11/22/2012	RAO	1/22/2013		A 1	Oil	Y
2-0018774	STURBRIDGE	400 HAYNES ST.	PILOT	TWO HR	12/20/2012	RAO	4/18/2013		A 2	Hazardous Material	Y

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2-0018791	STURBRIDGE	RTE 84 E @ EXIT 3A	TT ACCIDENT	TWO HR	1/17/2013	RAO	5/8/2013		A 2		Y
2-0018808	STURBRIDGE	RTE 84 E @ HAYNES RD EXIT	TT ACCIDENT	TWO HR	2/11/2013	RAO	3/19/2013		A 1	Oil	Y
2-0018811	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER	TWO HR	2/12/2013	RAO	4/9/2013		A 1	Oil	Y
2-0018887	STURBRIDGE	236 HAYNES STREET	MOBIL BRANDED GAS STATION	72 HR	5/6/2013	PSNC	7/23/2015	Phase III		Oil	Y
2-0018902	STURBRIDGE	400 RTE 15	PILOT TRAVEL CENTER	TWO HR	6/3/2013	RAO	7/22/2013		A 1	Oil	Y
2-0018985	STURBRIDGE	122-130 MAIN STREET	XTRAMART SERVICE STATION	72 HR	8/29/2013	RTN CLOSED	10/28/2013			Oil	Y
2-0019013	STURBRIDGE	RTE 84 E	ROUTE 84E REST STOP	TWO HR	10/4/2013	TIER1D	10/13/2014				Y
2-0019032	STURBRIDGE	506 MAIN STREET	CUMBERLAND FARMS STORE 2131	120 DY	10/23/2013	RAO	2/12/2014		B 1	Hazardous Material	Y
2-0019034	STURBRIDGE	506 MAIN ST	CUMBERLAND FARMS STATION	72 HR	10/25/2013	RTN CLOSED	12/23/2013			Oil	Y
2-0019044	STURBRIDGE	RTE 84 AT EXIT 1 SOUTHBOUND	EXIT 1 ONRAMP SOUTHBOUND TO RTE 84	TWO HR	11/18/2013	RAO	1/16/2014		A 2	Oil	Y

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2-0019059	STURBRIDGE	173 MAIN STREET	STURBRIDGE GAS	120 DY	11/12/2013	RAO	12/31/2013		B 1	Hazardous Material	Y
2-0019189	STURBRIDGE	RTE 84 REST AREA	SCHNEIDERE NATIONAL ROADWAY RELEASE	TWO HR	4/19/2014	PSNC	6/4/2014			Oil	Y
2-0019413	STURBRIDGE	371 MAIN ST	ROADWAY HYDRAULIC FLUID RELEASE	TWO HR	1/26/2015	PSNC	2/16/2015			Oil	Y
2-0019428	STURBRIDGE	I-84 EB MM 1	I-84 EASTBOUND MM 1	TWO HR	2/17/2015	PSNC	4/23/2015			Oil	Y
2-0019469	STURBRIDGE	299 CLARK ROAD EXT	THE GREEN BOYS LANDSCAPES	72 HR	4/9/2015	PSNC	1/12/2016			Oil	Y
2-0019577	STURBRIDGE	236 RTE 15	MOBIL BRANDED STATION	72 HR	7/14/2015	PSNC	9/10/2015				Y
2-0019630	STURBRIDGE	ROUTE 20 WEST	RELEASE TO STORM DRAIN	TWO HR	9/1/2015	PSNC	10/30/2015				Y
2-0019762	STURBRIDGE	END OF I84E EXIT 1 OFF RAMP	ROUTE 15	TWO HR	1/22/2016	PSNC	5/25/2016				Y
2-0019771	STURBRIDGE	RTE 84 E @ MASS PIKE	ROADWAY SPILL	TWO HR	2/3/2016	PSNC	3/7/2016				Y
2-0019781	STURBRIDGE	I-90 EAST BOUND	INTERCHANGE 9	TWO HR	2/11/2016	PSNC	3/10/2016				Y

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2-0019787	STURBRIDGE	7 PICKER ROAD	STURBRIDGE	TWO HR	2/15/2016	PSNC	6/20/2016				Y
2-0019816	STURBRIDGE	184 E NEAR EXIT 2	RELEASE TO STORM DRAIN	TWO HR	3/21/2016	PSNC	5/4/2016				Y
2-0019875	STURBRIDGE	400 HAYNES ST	PILOT TRAVEL CENTER	TWO HR	5/18/2016	PSNC	7/18/2016				Y
2-0019901	STURBRIDGE	12 HAYNES ST	FORMER PUBLIC HOUSE	72 HR	6/23/2016	PSNC	8/22/2016				Y
2-0020001	STURBRIDGE	319 BROOKFIELD RD	TANTASQUA REGIONAL HIGH SCHOOL	TWO HR	10/2/2016	PSNC	11/28/2016				Y
2-0020030	STURBRIDGE	400 ROUTE 15	PILOT TRUCK STOP	TWO HR	10/30/2016	PSNC	2/28/2017				Y
2-0020066	STURBRIDGE	362 MAIN ST	FORMER PUB CVS REDEVELOPMENT	72 HR	12/12/2016	PSNC	2/10/2017				Y
2-0020089	STURBRIDGE	MASS PIKE W @ EXIT 9	WESTBOUND @ EXIT 9 ON RAMP	TWO HR	1/13/2017	PSC	3/20/2017				Y
2-0020216	STURBRIDGE	INTERSTATE 84	EXIT 1 EAST BOUND	TWO HR	6/5/2017	PSNC	10/10/2017				Y
2-0020229	STURBRIDGE	MASS PIKE WEST MM 76.4	ROADWAY RELEASE	TWO HR	6/19/2017	UNCLASSIFIED	6/19/2017				Y
2-0020237	STURBRIDGE	RTE. 84W @ EXIT 1	ON-RAMP FROM RTE. 15	TWO HR	6/28/2017	PSNC	7/31/2017				Y

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2-0020253	STURBRIDGE	ROUTE 84 EB MM 2.4	ROUTE 84 MM 2.4	TWO HR	7/11/2017	PSC	9/12/2017				Y
2-0020304	STURBRIDGE	I-84 EB MM2.6	I-84 EM MM 2.6	TWO HR	9/7/2017	PSNC	10/30/2017				Y
2-0020309	STURBRIDGE	I-84 WB MM 4.4	DIESEL FUEL RELEASE	TWO HR	9/11/2017	PSNC	11/10/2017				Y
2-0020382	STURBRIDGE	ROUTE 131	HYDRAULIC OIL RELEASE	TWO HR	12/4/2017	PSNC	1/5/2018				Y
2-0020416	STURBRIDGE	MASS PIKE WEST	TRACTOR TRAILER ACCIDENT	TWO HR	12/29/2017	Unclassified	12/29/2017				Y

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The old municipal landfill site off Cedar Street has been capped. The current Recycling Center and Landfill on Breakneck Road is expected to last another twenty years given the current rate of recycling. The Board of Health is promoting “Zero Waste” since an increase in recycling and a decrease in waste can help to extend the life of the landfill. After closure, this site might be suitable to be renovated as an open space area.

3) Forestry Issues

The Town of Sturbridge is unique in that it has a Forest Harvesting Bylaw. The intent of the Bylaw is to provide an additional level of regulation over and beyond Chapter 132 of the Massachusetts Forest Cutting Practices Act. The bylaw was implemented to allow additional Town oversight of Forest Cutting Plans by the Conservation Commission, Department of Public Works, and Board of Selectmen. The Sturbridge Forest Harvesting Bylaw requires the following: a copy of the State Certified Forest Cutting Plan signed by the State Forester and a copy of the site plan, proof of notification of the Conservation Commission, correspondence from the DPW Director regarding the driveway permit and bonding for road repairs and/or erosion controls, a certified list of abutters within 200-feet of the “cutting area”, proof of land ownership and/or a notarized letter from landowner to be provided to the town giving permission to harvest or gain site access from property other than that being harvested, a copy of the State Harvesters License, a reforestation plan for clear cutting projects and a filing fee of \$10.00.

The Town Administrator schedules a public hearing upon receipt of needed application materials (cost of legal ad is the responsibility of the applicant), and the applicant is responsible for sending the legal advertisement to abutters. At the hearing the applicant provides photographs showing the condition of all access and roadways in order to document the existing condition of access and roadways. The Board of Selectmen hears comments from all interested parties. The Board of Selectmen may place limits on the hours of operation, reasonably regulate noise levels, and require dust and debris protection on the site. The performance bond is held by the Town until the operation is complete and a final inspection has been conducted by the DPW Director.

In addition, the Conservation Commission Forestry Liaison and/or the Conservation Agent walk every Forest Harvesting Site with the Licensed Forester. The Commission inspects all proposed stream crossings; all buffer zone and/or resource area work, and make recommendations to the Board of Selectmen on any required plan adjustments. The Commission or its Agent always requires that comments/requirements of the Natural Heritage and Endangered Species Program (NHESP), and Department of Conservation and Recreation (DCR) are followed. In addition, the Commission always requires compliance with the Massachusetts Forestry Best Management Practices.

4) Sedimentation Issues

Private Roads

Private, unpaved roads present some of the most detrimental impacts to resource areas within the Town of Sturbridge. Many of these sedimentation issues result from insufficient/non-existent stormwater treatment, lack of maintenance by private road residents, steep slopes, and undersized water conveyances like culverts. Private road sedimentation issues are difficult to address and solve. Since typically the drainage problems result from multiple properties or the private roadway itself, it is impossible to correlate a sedimentation issue with just one property owner for repair or mitigation. The town highly encourages private road residents to form (informal) private road associations. The purpose of forming these associations is to build consensus amongst landowners for the need to monitor, maintain, repair, improve and address private road issues. In exchange for private road association, cooperation the town provides assistance with materials and permit filings to facilitate repairs.

Major Highways

The presence of major highways within the Town of Sturbridge and their proximity to wetlands and water bodies causes serious sedimentation issues as a result of stormwater discharges of road sand. Several water bodies in town including Cedar Lake, Long Pond, and Walker Pond experience increase sediment loads as a result of major highways. In addition, many wetlands and streams experience sediment problems from the highways.

Stormwater

Generally speaking, there is a need for Town wide improvements to stormwater infrastructure. In many areas where construction occurred prior to state stormwater regulations, drainage was not considered or installed, resulting in erosion and sedimentation into resource areas. In some cases lack of repair or maintenance and/or damage to failed structures cause sedimentation issues. There are several areas of town where improvements are being focused to improve stormwater problems that are causing sedimentation. The Town recently updated its Stormwater Regulations to incorporate Low Impact Development standards.

5) Flood Control

The US Army Corps of Engineers flood control system protects the area from severe flooding associated with the Quinebaug River. Dams exist at the east and west ends of Town along the Quinebaug River. Additionally the Town has a floodplain district bylaw that is very restrictive in terms of development in the floodplain. A map of the flood zones follows this section, with both 100-year flood zones and 500-year flood zones noted on the map.

6) Environmental Equity

The open space areas are fairly well distributed throughout the community. The north side of Town contains the vast expanse that is Wells State Park. Opacum Woods and the Cedar Pond Recreation Area are also in this section of town. The Town also acquired the Plimpton property off of New Boston Road in July of 2015. In partnership with the Opacum Land Trust, the USDA Forest Service, and the Massachusetts Department of Fish and Wildlife, the Town of Sturbridge helped preserve the former family farm as part of the Plimpton Community Forest. Voters in Sturbridge approved the purchase of the forest, using a combination of Community Preservation Act funds and local, state, and federal grants, and philanthropic gifts.

The property will provide timber revenue to the town, and 15 acres at 7 Allen Road will be reserved for new sports recreation fields. Its location near Wells State Park, the Wolf Swamp Wildlife Management Area, and the Hamilton Rod and Gun Club creates a unique destination of recreational open space and wildlife habitat. In July 2015, the Plimpton Community Forest opened as part of a 2,700-acre tract of connected open space and wildlife habitat, providing a new community resource for recreation such as hiking, mountain biking, dog walking, hunting, and fishing.

The southern side of town contains the Leadmine Mountain Conservation Area, Leadmine Mountain Wildlife Management Area, and other parcels owned by the Division of Fisheries and Wildlife. The town ball fields are also located on the southern side of town, as is the Westville Dam recreation area. As new developments occur, open space is being required within those neighborhoods. The Town has been asking developers to provide land that is suitable not only for open space protection, but those lands that could be suitable as a playground or ball field for the neighborhood. The concern is that as properties near the outskirts of town become developed, the young families and children will have a lack of recreational areas within walking or biking distance. It is hoped that through these planning efforts and development agreements, there will be an equitable distribution of open space and recreation areas throughout the town.

During this planning process, as in previous updates, the Town tries to gauge the desire for open space and/or recreation areas within various sections of Town. Question 3 of the survey for this update asked the question “Do you feel there are adequate protected open space and recreational properties in your neighborhood?” Of the 238 survey respondents, 232 answered this question and six skipped this question. Of those that did, answer the question 119 respondents of 51.29% answered yes, 84 respondents or 36.21% answered no, and 29 respondents or 12.50% indicated they were not sure. The survey also asked where the respondents lived based upon the four quadrants of town shown above. 206 respondents answered this question, with 32 skipping over the question. Of those that responded 67 or 32.52 percent reside in Area A, 82 or 39.81% reside in Area B, 27 respondents of 13.11% reside in Area C and 30 or 14.56% reside in Area D. More than 36% of respondents indicated that they did not believe there was adequate open space and recreational properties in their neighborhood. In hindsight, it would have been helpful to ask which area respondents resided within in the same question that asked if there was sufficient protected space and recreational opportunities.

Nevertheless, the Open Space Committee will consider these findings when considering a strategy for future open space protection. Areas C and B both have large protected tracts of land, but there are not the same amounts of protected open land in areas A & D. It is interesting to note that there are significant water resources in Area A and the residents that live on these lakes may feel they have adequate recreational opportunities in their own back yards. Care must be taken to make sure that we are providing equitable protected lands and recreational opportunities in all area of town.

Map 11: Flood Zone Map

