

## Section

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## Section 3: Community Setting

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Sturbridge is a suburban-rural community located at the junction of Interstate 84, Interstate 90 and US Route 20 in south-central Massachusetts on the Connecticut-Massachusetts boundary. A major tourism destination, the Town is noted for its historic character and natural beauty.

### A. Regional Context

#### *The Location:*

Sturbridge is surrounded by the Towns of Brimfield, Charlton, East Brookfield, Holland, Southbridge, Union, CT and Woodstock, CT. Sturbridge sits in a strategic “area of influence,” with Worcester being 22 miles to the northeast, Springfield 23 miles to the west, Providence and Hartford each 40 miles to the south, and Boston 55 miles to the east. Sturbridge’s location and highways provides convenient access to the Town and helps to support the tourism and hospitality industry. In addition to various tourism-related businesses, the Town promotes its favorable location for other forms of economic development.

#### *The Economy:*

Residential development has increased since the last Open Space Plan was adopted. The month after the OSRP was adopted the June 1, 2011 tornado impacted the Town of Sturbridge and cut a swath through the community and damaged many homes and businesses. Recovery was slow and a great deal of staff time was spent going home to home and evaluating damage and assessing the



Figure 3-1: Town Hall. Photo by Rebekah DeCoursey.

safety and habitability of each structure. In addition to the recovery reconstruction, 2011 marked the year that new housing starts once again began to increase. The rate of new construction starts is now at a manageable rate with an average of 18-22 new homes per year being constructed. This is much more manageable and places less of a burden on our resources than the building boom the Town experienced in the early 2000's; at that time new housing starts were 708 between 2000 and 2007. Redevelopment around our lakes has also been a source of much activity with many seasonal cottages being torn down and new year round homes being constructed where the cottages once stood. Additionally, a 103 unit affordable housing complex was recently approved but not yet constructed. Residential development will remain steady over time for Sturbridge due to its convenient location, exceptional services and schools and its quality of life.

The Commercial and Industrial areas are generally located along Routes 20 and 131 and at the intersection of I-90 and I-84 through the central and eastern parts of town. Much of this development consists of retail shops and professional offices with the Sturbridge Business Park and the Sturbridge Technology Park anchoring both ends of Route 20.

The Commercial Districts, of which there are four (Commercial Tourist, Historic Commercial, Commercial and Commercial II) all allow for mixed use development to occur in some fashion. There is also a Special Use District located along Route 15 that allows for Planned Unit Business Development and hospitals or medical treatment buildings.

The Town has focused efforts on the Commercial Tourist District in recent years and has prepared a conceptual design for this District along Main Street (Route 20) from the intersection with New Boston Road to the intersection with Brookfield Road. The conceptual design plan once implemented will:

- Improve livability in the corridor by creating a more pedestrian and bicycle friendly area;
- Provide more transportation options including transit;
- Create connections to the Quinebaug River from the District;
- Enhance the attractiveness of the corridor; and
- Encourage economic growth and stability within the corridor.

Retail development in Sturbridge is a combination of tourist specialty stores, a few small shopping plazas, and a larger shopping center that contains several national retail stores and restaurants. There is also a shopping plaza on Route 131 (south of the Town Common area) containing a Shaw's Supermarket, JC Penney, Tractor Supply Company, Ocean State Job Lot and some smaller stores, primarily supplying goods for local residents.

The Town has taken a proactive approach in recent years in an effort to attract industry and other commercial enterprises. An Economic Development Tourism Coordinator was hired in 2016. The Coordinator serves as a liaison between the business community and local officials, and works towards attracting business to the community. A major part of the Coordinator's

work is focused on assisting the Sturbridge Tourist Association to promote tourism related activities and events in the community. The Land Use Division has streamlined permit procedures to make the permitting process as easy and expeditious as possible. The Town has also adopted the provisions of Chapter 43D and has designated several Priority Development Sites as just one more way to increase the amount of manufacturing jobs available within the community, and to help diversify our tax base to insure a healthy local economy and a vibrant community. The Land Use Division is also in the process of implementing new permitting software that will allow applicants the ease of on-line permitting for several application types.

*The Resources:*

Sturbridge is rich in natural resources that serve important environmental and ecological purposes in addition to providing natural beauty and recreational opportunities. The Town is located primarily within the Quinebaug River Watershed, which is in the southern part of Central Massachusetts. The watershed extends south into Connecticut and western Rhode Island and covers 850 acres<sup>1</sup>. Additionally, The Quinebaug River and seven major open water bodies are within the town. The associated wetland and floodplain areas all help define priority areas for protection within the community.

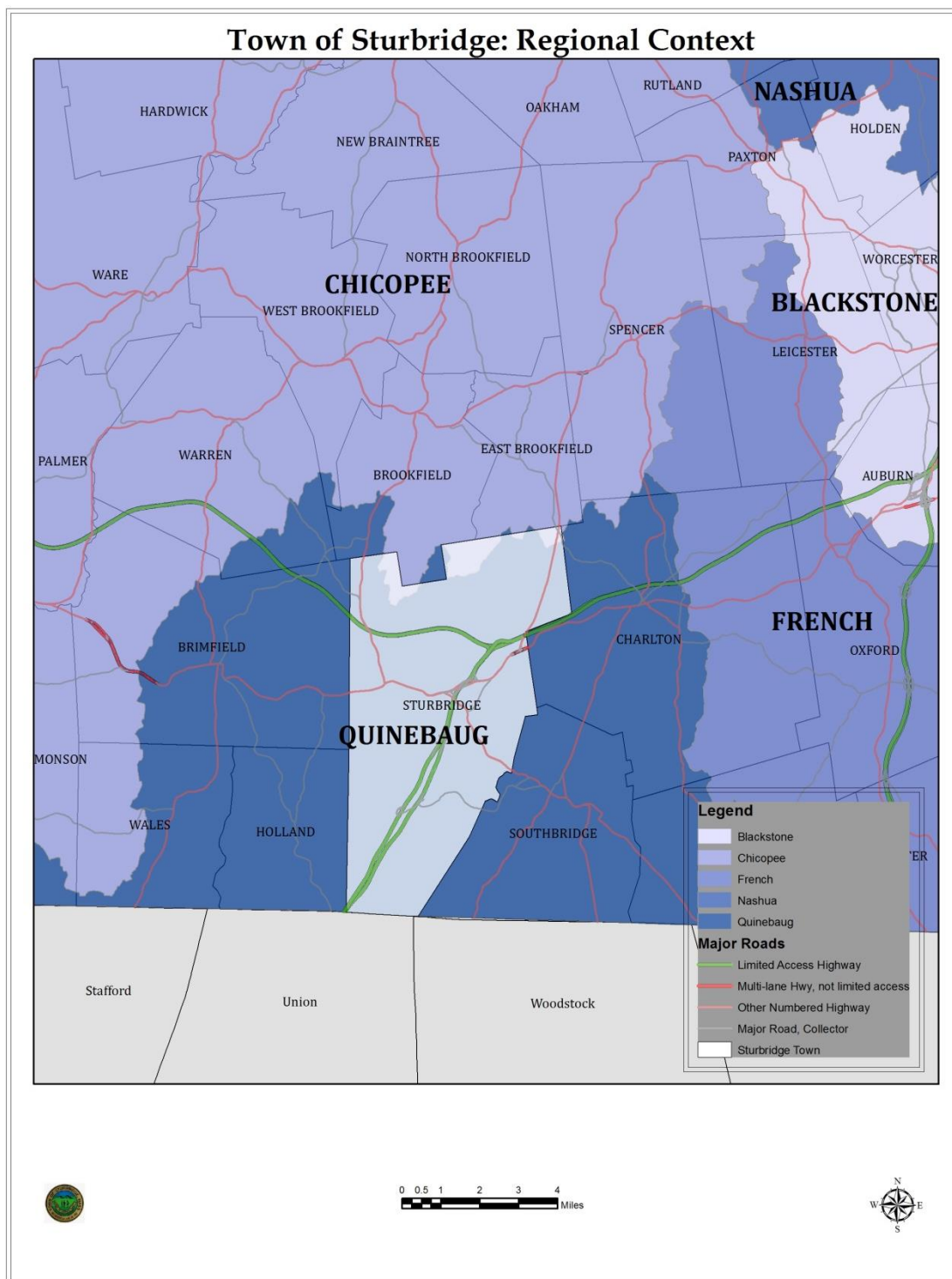
Sturbridge's geographic location and natural amenities offer a unique opportunity to provide linkages in a regional open space corridor/multi-use trail greenway system. The Town has been active in these trail construction efforts. Recently, the Town published "A Guide to the Trails and Open Spaces of Sturbridge". This colorful booklet provides information on nine open space lands and trails both constructed and under construction with maps showing parking areas, access points and trail maps. A notable project is the Grand Trunk Trail, which is still under construction at this time. This six-mile segment travels east-west through town and for the most part is contained on the old rail bed for the Southern New England Railway, a division of the Grand Trunk Railway in Canada. This trails starts on the eastern border of Sturbridge and Southbridge at the Westville Dam. The trail continues eastward to the property at the East Brimfield Dam and continues south along Long Pond where it will someday connect to the Brimfield Trails. A more complete discussion on the Sturbridge Trail System can be found in Section 5 of this Plan.

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<sup>1</sup> Mass.gov. "Massachusetts' 28 Watersheds." <https://www.mass.gov/files/documents/2016/08/ov/mass-watersheds-map.pdf>.

# TOWN OF STURBRIDGE OPEN SPACE AND RECREATION PLAN - 2018

Map 1: Regional Context and Major Watersheds.



## B. History of the Community<sup>2</sup>

A little more than three hundred years ago, an Indian trader on his way to the Connecticut Region unexpectedly encountered some of the “Tantiusque Indians” who showed him some samples of a “black rock.” These proved to be specimens of graphite (which was commonly called “lead” at that time as it is today in pencils). The discovery of the mine developed interest in what was then known as the “Lead Mine Region.” Beginning in 1658, and for many years thereafter, the region was intermittently engaged in mining. In 1729, petition was made to the general court to open the land for settlement. The request was granted that year with the following stipulations, “in seven years’ time from this date to settle and have actually on the spot, fifty families, each of which is to build a house of eighteen feet square at least; to break up and bring fit to plowing seven acres of land; to settle a learned, orthodox minister . . .” This then was the beginning of the Town of Sturbridge which was named in honor of some of its early settlers whose origins were in the Town of Stourbridge, England. The town was formally incorporated as the Town of Sturbridge in 1738 and held its first Town Meeting in September 1738. From the Town’s founding until well into this century, Sturbridge was primarily an agricultural community.

By 1742 the Town had organized its first school. Three schoolhouses were built by 1753. Eventually 13 school districts were established in town. About 1770, Colonel Ebenezer Crafts built the “hotel” now known as the “Publick House”, which underwent a restoration in 1937, at which time a new front entrance of colonial design replaced the former front door.

By 1795, the Town was actively settled and contained 14 sawmills, 4 grist mills and shops producing carriages, pistols, chairs, tables and looms as well as thriving farms. In 1812, the Sturbridge Manufacturing Company started the first cotton mill in town, which operated until 1882 when it was struck by lightning and destroyed. In 1826, the Quinebaug Manufacturing Company was established and a mill was constructed in the Fiskdale section to produce cotton and woolen materials. In 1833, a second mill was built and several tenement houses were erected to house mill workers. In 1852, the Snell Manufacturing Company erected a factory in the Fiskdale section to produce augers and bits, which supplemented older buildings that had been operating on the same site. In 1895, fire destroyed two of the original buildings and in 1909 the third and newest building was likewise burned. These were subsequently replaced by the most recent Snell Manufacturing Company building, also located in Fiskdale.

From the Town’s founding through the 19<sup>th</sup> century, Sturbridge was primarily an agricultural community. Agriculture continued as a significant factor in the local economy through the 19<sup>th</sup> century. The 1859 report of the Worcester South Agricultural Society lists 152 members from Sturbridge (compared with 48 members from Charlton, 10 from West Brookfield and 30 from Dudley). Of the 262 listings for real property in the 1875 Sturbridge Assessors’ Report, 40% (or 106) list a farm as part of the valuation. An indication of the decline of agriculture in Sturbridge was included in the 1936 Selectmen’s report which explains that the Highway Department work has

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<sup>2</sup> Excerpted in large part from the Town’s 1971 Master Plan, with additions and corrections by Charles Blanchard and others. This section has been carried over from the 2005 OSRP.

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now become a year round function “because we find now that we have living in the outside districts people who are dependent entirely upon our highways from transportation to and from the different industrial plants for their living.”

In 1937, the “Quinebaug Village” was begun as a model New England Village of the year 1800. The Town of Sturbridge was selected as the locale for this model because of its charm and the beauty of its surroundings. In 1947, the project was taken over by “Old Sturbridge Village” and has experienced continual growth in scope since that time. In 1966, Old Sturbridge Incorporated acquired approximately 1,000 acres of land adjacent to the present “Village”. In 2006, the Town and the Division of Fisheries and Wildlife acquired 826 acres from the Village for Open Space protection.

Although Sturbridge’s Commercial and Industrial tax base is remarkably high for a community of its size, more recently many have described the town as a “bedroom community.” Located with quick access to Interstate 84, Interstate 90 (Mass Pike) and Route 20, Sturbridge offers an easy commute to a variety of employment locations. According to the U.S. Census Bureau 2012-2016 5-year estimates, three-quarters (74.7%) of Sturbridge workers aged 16 and older worked outside of Sturbridge. While this rate is only slightly higher than the regional average (Worcester County is at 71.6%), what does differ is the length of travel time to work. Over half of Sturbridge workers (51.9%) spend 30 minutes or more traveling to work. This compares with 41.8% for Worcester County and 44.5% for the State of Massachusetts. The Town’s scenic qualities and other amenities that are valued by today’s residents could prove an incentive for additional residential development.

Table 3-1: Sturbridge Population Growth

	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020	2030
<b>Population</b>	1,573	1,772	2,227	2,805	3,604	4,878	5,976	7,775	7,837	9,268	10,400	11,502
<b>10-Year Change</b>		199	455	578	799	1,274	1,098	1,799	62	1,431	1,132	1,102
<b>% Increase</b>		12.65%	25.68%	25.95%	28.48%	35.35%	22.51%	30.10%	0.80%	15.44%	10.88%	9.58%

Source: U.S. Census Bureau, 1920-2010; Worcester Regional Comprehensive Economic Development Strategy Population Projections.

Table 3-2: Population Estimates, Percent Change per Decade.

	1980-1990	1990-2000	2000-2010	2010-2020
<b>Sturbridge</b>	30.10%	0.80%	15.44%	10.88%
<b>Worcester County</b>	9.80%	5.67%	5.96%	5.40%
<b>Massachusetts</b>	4.87%	5.53%	3.03%	5.80%

Source: U.S. Census Bureau, 1980-2010; UMASS Donahue Institute Population Estimates Program; Worcester Regional Comprehensive Economic Development Strategy Population Projections

In addition to analyzing total population, it is important to examine the age distribution within a community. Different age segments will have alternative recreation needs and opinions on ways to utilize open space. The number of Sturbridge residents in the various age brackets resembles the patterns shown in the Worcester County population and in the statewide population. U.S. Census 5-year estimates show 25.3% of the Sturbridge population are under the age of 20; 9.3% from 20 to 29 years of age; 9.9% from 30 to 39 years; 17.2% from 40 to 49 years; 15.7% from 50 to 59; and 22.5% are 60 years or over. Sturbridge has a higher percentage of residents over the age of 40 than both Worcester County and Massachusetts. Sturbridge is not unlike many small towns in Massachusetts and across the nation, which have aging populations, and fewer young families moving into town. The Town aims to accommodate the recreational needs of older residents while working to attract and retain younger residents and families in order to keep Sturbridge a thriving town.

Table 3-3: Age Distribution, 2016

	Sturbridge town	Worcester County, Massachusetts	Massachusetts
<b>Household Composition</b>			
Under 20 years of age	25.3%	25.1%	23.7%
20 – 29 years of age	9.3%	13.2%	14.4%
30 – 39 years of age	9.9%	12.0%	12.5%
40 – 49 years of age	17.2%	14.2%	13.6%
50 – 59 years of age	15.7%	15.4%	14.5%
60 years of age and over	22.5%	20.2%	21.2%

Source: U.S. Census Bureau 5-year estimates, 2012-2016

Of the age brackets in Table 3-3, Sturbridge displays a rate of over 3% *higher* than that of the County or State for the 40-49 age segment. For this bracket, Sturbridge has 17.2%, while Worcester County has 14.2% and Massachusetts has 13.6%. Alternatively, Sturbridge displays a rate over 4% *lower* in

the 20-29 age segment at 9.3%, compared to the County (13.2%) and State (14.4%), as well as a lower rate for the 30-39 bracket. When observing the population under age 40 versus the population over age 40, for both Worcester County and Massachusetts there is essentially an even split. However, in Sturbridge there is a rate of almost 56% residents over the age of 40. Additionally, age projections from UMass Donahue Institute estimate that between 2010 and 2030 there will be a 41% increase in the 60+ age bracket, which is by far the largest increase of all the age brackets. The younger population categories are projected to grow at a much slower rate, a trend that mirrors the national phenomenon of the elderly population expanding at a faster rate the younger populations. While this trend is consistent with that of the local area and statewide demographic trends, it is a significant consideration for open space and recreation planning. This aging trend in Sturbridge is also reinforced by the increase of the town's median age, which was 39.3 years of age in 2000 and has increased to 43.1 years of age in 2016.

The demographic trends indicate that additional recreation facilities and activities for seniors will be needed during the next decade. The increase in the senior population spurs the need for passive forms of recreation such as walking trails and parks and this must be balanced with open space and recreational facilities for youth and families.



## C Population Characteristics

In addition to examining age characteristics, it is important to look at household characteristics when assessing open space and recreation needs. Household characteristics have a direct impact on the types of open space and recreation area that are required and/or desired by a community.

Table 3-4: Household Characteristics, 2010.

	Sturbridge town	Worcester County, Massachusetts	Massachusetts
<b>Households by Type</b>			
<b>Total households:</b>	<b>3,611</b>	<b>303,080</b>	<b>2,547,075</b>
<b>Family households:</b>	<b>72.3%</b>	<b>66.8%</b>	<b>63.0%</b>
With own children under 18 years	32.7%	31.1%	28.3%
Married-couple family	59.6%	50.0%	46.3%
With own children under 18 years	25.8%	21.9%	19.7%
Male householder, no wife present:	3.5%	4.7%	4.2%
With own children under 18 years	1.7%	2.2%	1.8%
Female householder, no husband present	9.1%	12.2%	12.5%
With own children under 18 years	5.2%	7.1%	6.8%
<b>Nonfamily households:</b>	<b>27.7%</b>	<b>33.2%</b>	<b>37.0%</b>
Household living alone	22.6%	26.2%	28.7%
Male householder	9.4%	11.7%	12.1%
Female householder	13.2%	14.6%	16.7%
<b>Households with individuals &lt;18 years</b>	<b>34.6%</b>	<b>33.7%</b>	<b>30.8%</b>
<b>Households with individuals 65+ years</b>	<b>27.1%</b>	<b>24.1%</b>	<b>25.6%</b>

Source: U.S. Census Bureau, 2010

Based on the data in Table 3-4, it is clear that family households, particularly married-couple families, are the dominant household type in Sturbridge (72.3%). The county and the state both have lower rates of family households and higher rates of non-family households. The rate of households with individuals under the age of 18 is 34.6% in Sturbridge, while Worcester County is at 33.7%, and Massachusetts is at 30.8%. According to elementary school enrollments from the Department of Education as of 2016, Sturbridge has 0.25 elementary students per household compared to the county average of 0.23 and the state average of 0.20. This statistic further highlights Sturbridge as a town of predominantly family households.

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Table 3-5: Household Size, 2010.

	1-person	2-person	3-person	4-person	5-person	6-person	7+ person
<b># of Households</b>	817	1,294	583	601	228	68	20
<b>Percentage</b>	23%	36%	16%	17%	6%	2%	<1%

Source: U.S. Census Bureau, 2010

The U.S. Census reports 2016 median household income for Sturbridge at \$85,000. Worcester County median household income is listed at \$67,005 and Massachusetts median household income is listed at \$70,954. Table 3-7 below shows a breakdown of income characteristics for the Town of Sturbridge, comparing the years 2000, 2010, and 2016.

Table 3-6: Income.

Sturbridge, Massachusetts – Income						
	2000		2010		2016	
	Number	Percent	Number	Percent	Number	Percent
<b>Total Households</b>	<b>3,066</b>	<b>(X)</b>	<b>3,686</b>	<b>(X)</b>	<b>3,602</b>	<b>(X)</b>
Less than \$10,000	85	3.8%	283	7.7%	91	2.5%
\$10,000 to \$14,999	51	2.3%	99	2.7%	155	4.3%
\$15,000 to \$24,999	157	7.0%	356	9.7%	246	6.8%
\$25,000 to \$34,999	204	9.1%	76	2.1%	239	6.6%
\$35,000 to \$49,999	335	14.9%	414	11.2%	298	8.3%
\$50,000 to \$74,999	484	21.5%	674	18.3%	563	15.6%
\$75,000 to \$99,999	350	15.6%	525	14.2%	399	11.1%
\$100,000 to \$149,999	413	18.4%	728	19.8%	924	25.7%
\$150,000 or more	168	7.5%	277	7.5%	687	19.1%
<b>Median Household Income (\$)</b>	<b>56,519</b>	<b>(X)</b>	<b>71,607</b>	<b>(X)</b>	<b>85,000</b>	<b>(X)</b>
<b>Mean Household Income (\$)</b>	<b>60,237</b>	<b>(X)</b>	<b>87,772</b>	<b>(X)</b>	<b>108,945</b>	<b>(X)</b>
<b>Median Family Income (\$)</b>	<b>64,455</b>	<b>(X)</b>	<b>95,000</b>	<b>(X)</b>	<b>102,308</b>	<b>(X)</b>

Source: U.S. Census Bureau, 2000 and 2010; ACS Community Survey 5-year estimates 2012-2016.

Table 3-7 shows employment by industry in Sturbridge over the past seven years. Of note is the 44% decline in construction jobs as well as the 74% decline in transportation, warehousing, and utilities jobs. While the seven-year period before 2010 showed a decline in

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manufacturing jobs greater than 50%, recent years have demonstrated a small but gradual increase in this employment sector in Sturbridge.

Table 3-7: Employment by Industry, 2010-2016.

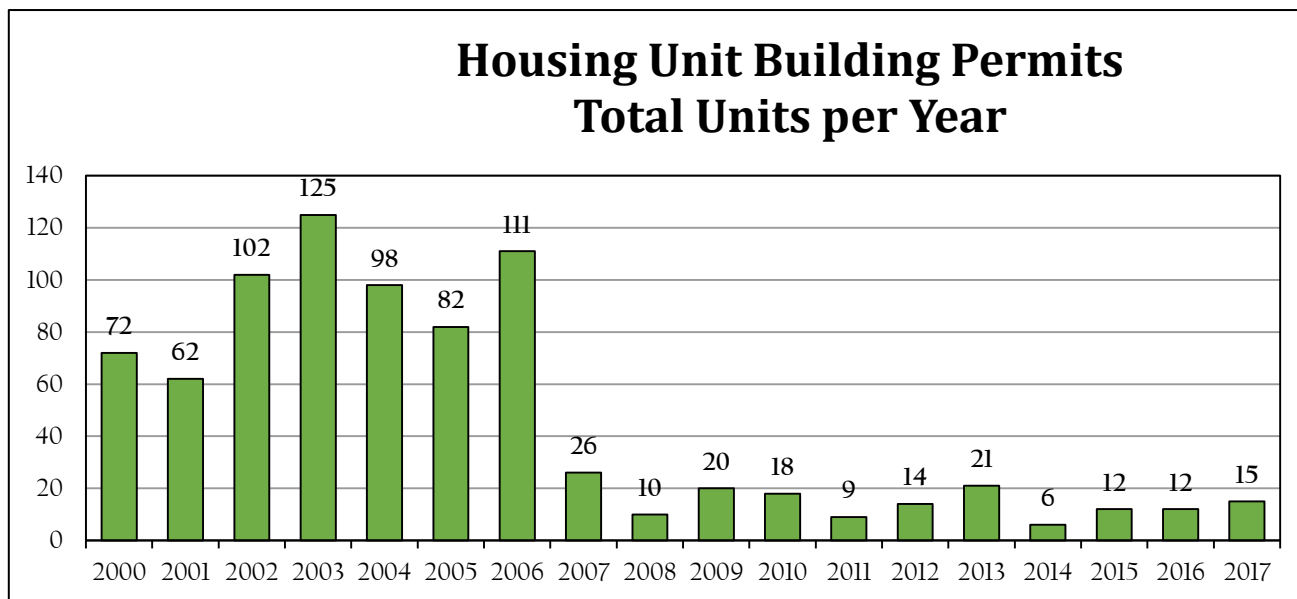
	2010	2011	2012	2013	2014	2015	2016	% Change 2010-2016
<b>Civilian Employed Population 16 years and over</b>	<b>4,704</b>	<b>4,688</b>	<b>4,485</b>	<b>4,642</b>	<b>4,596</b>	<b>4,644</b>	<b>4,738</b>	<b>1%</b>
Construction	276	332	310	328	267	214	192	-44%
Manufacturing	566	570	628	610	631	731	592	4%
Wholesale Trade	158	59	70	171	184	149	181	13%
Retail Trade	426	358	314	452	469	518	577	18%
Transportation, Warehousing, & Utilities	191	204	204	239	167	114	110	-74%
Information	24	26	51	112	134	111	120	80%
Finance, Insurance, & Real Estate	552	547	573	432	442	486	427	-29%
Professional, Scientific, & Management, and Administrative & Waste Management Services	397	440	450	389	505	730	759	48%
Educational Services, and Health Care & Social Assistance	1,523	1,447	1,255	1,312	1,194	997	1,270	-20%
Arts, Entertainment, & Recreation, and Accommodation & Food Services	310	372	383	401	429	356	282	-10%
Other Services, ex. Public Admin	135	173	91	62	68	82	79	-71%
Public Administration	131	149	144	134	106	156	149	12%
<b>Total, All Industries, All Ownership, Average Weekly Wage</b>	<b>\$611</b>	<b>\$614</b>	<b>\$637</b>	<b>\$664</b>	<b>\$683</b>	<b>\$712</b>	<b>\$717</b>	<b>15%</b>

Source: U.S. Census Bureau, 5-year estimates 2010-2016.

The small increase in manufacturing jobs is a welcome sign as town leaders believe that restoring at least some of the manufacturing jobs within the community is vital to the long-term economic health of the community in terms of employment statistics and a diversified tax base.

After a surge in housing unit-building permits between 2000 and 2006, residential growth has stagnated in the range of 6 to 26 units per year between 2007 and 2016. The housing crisis in 2008 was national event that had immediate local impacts, as exemplified by the sudden downward surge in residential growth after 2006 in Sturbridge. The total number of households has dropped from 3,686 in 2010 to 3,602 in 2016. Additionally, the population of Sturbridge continues to gradually grow and is projected to slowly continue its incline. With an aging population and fewer younger residents moving into town, Sturbridge may be facing a rate of growth that is slower than that of other Massachusetts towns and cities.

Figure 3-8: Housing Unit Building Permits in Sturbridge, MA, 2000 – 2017.



Source: Department of Housing and Urban Development, State of the Cities Data Systems.

### Population Density

According to the 2010 Census, the population density of the Town of Sturbridge is 240 persons per square mile of land area. The population density of Worcester County is 529 and Massachusetts is 840 persons per square mile.

### D. Growth and Development Patterns

While residential development in Sturbridge used to be town wide and industrial development existed along the Quinebaug River, the introduction of the Turnpike and Interstate 84 along with several US Routes has changed this settlement pattern significantly. Residential areas are centered around lakes and ponds and along the collector roads, which run into the numbered highways. Less residential development exists on the outskirts of Town. However, with developable land becoming scarcer within the already developed areas, the Planning Department is receiving more inquiries about land located on the outskirts of town. These areas are located away from public services and a good distance from town recreation areas.

There has been significant commercial development within the Town of Sturbridge. Approximately 478 acres are zoned General Industrial or Industrial Park; this is about 2% of the total land area. With an Industrial Park on each end of the town, the town has a significant number of clean manufacturing facilities located within each. Retail development is spread throughout Route 20 and portions of Route 131 as well.

There are 187 miles of roadways within the Town of Sturbridge. Of this amount 80 miles of roadway are public and 58 miles are private roadways that have not been accepted by the Town. MassDOT roadways include I-90, I-84, Route 20, Route 131, and Route 49, consisting of a total of 48 miles. Additionally, there is one mile of roadway contained in the State Park. Most of the roadways (66%) within the Town are classified as local roadways; 14% of the roadways are Interstate Highways; and Route 20 and Route 131 are classified as urban principal arterials since they serve as the primary links to the interstate highway system.

The major east-west roadways in Sturbridge are Route 131 and Route 20. The major north-south roadways are Route 148, New Boston Road, Route 15 and Route 49. Two interstate highways travel through Town. The Massachusetts Turnpike (I-90) is an east-west interstate that connects Boston to New York State. There is an interchange access point to I-90 located at the connection with Interstate 84 (I-84) in Sturbridge. I-84 is a north-south interstate that provides access to Connecticut and points southwest. The northern terminus of I-84 is at I-90 in Sturbridge.

Portions of Route 20, particularly through the Commercial Tourist District, along with portion of Route 131 have pedestrian sidewalks. Bicycle lanes exist along Route 15, Route 49, and portions of Route 20, Route 131, and Route 148. There are no existing statewide designated bicycle routes in Sturbridge.

Water and sewer service exists throughout the central section (urbanized portion) of Town. At present the system has expanded to include the majority of Main Street, beginning at Riverview Ave and proceeding easterly on Route 20 to the Route 20/131 intersection, then turning southeasterly on Route 131 to the Southbridge Town line. The system also serves the Tantasqua Regional High School on Route 148 approximately three miles north of Route 20. Other areas in Town that have water and sewer utilities to various degrees are: Fiske Hill Road, south of Summit Ridge; the perimeter of Cedar Lake; the perimeter of Big Alum; the Technology Park industrial area; and portions of Arnold Road, Cedar Street and New Boston Road. In other parts of town, the extension of water and sewer lines has increased development in areas that may not have been developable because they did not perc, or had limited room for expansion of on-site disposal systems.

The Wastewater Treatment Facility (WTF) located at 69 Route 84 was upgraded in 2012 to repair and replace aging and obsolete equipment, to provide additional capacity to address environmental concerns and population growth within the existing service area, and to ensure compliance with the existing National Pollutant Discharge Elimination System (NPDES) Permit. According to reports prepared for the Town by Tighe & Bond, the new facility reduced the discharge of phosphorous to the Quinebaug River by over 60% and reduced the amount of nitrogen discharged to the river by over 30%. The new plant utilizes new treatment technologies, including "Bio-Mag" which increases the amount of wastewater that can be treated in tanks and "Co-Mag" which removes phosphorous from wastewater.

The Annual Reports provided by the Water and Sewer Departments for 2017 indicate that at the end of 2017, there were 1,702 active water service connections serving over 5006 people by the town's water supply. Approximately 23% of the facility's flow originated from Well #1,

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29% from Well #3, 43% from Well #4 and 5% from Well #5 for a total of 189.72 million gallons of treated water. The Sturbridge WTP has an average daily design flow capacity of 1.23 million gallons. The town's water storage capacity is 2.3 million gallons, which equals 3 days of normal water usage.

The Sturbridge WTP effectively treated and supplied an average of 519,775 gallons of water daily. This amounted to a total of 189,718,000 gallons of finished water produced and pumped into the town's distribution system.

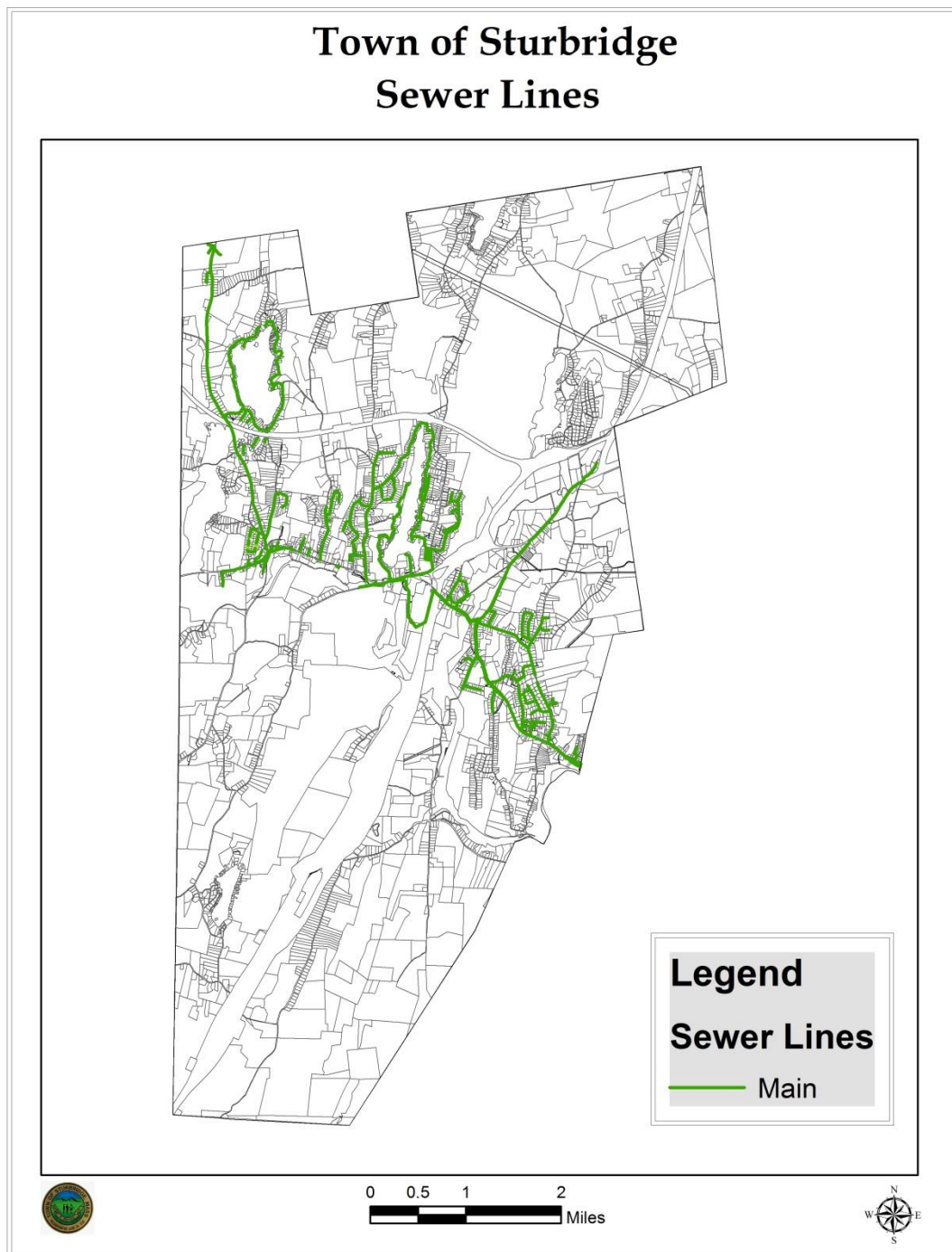
In 2017, there were 9 new sewer customers connected to the wastewater collection system and by the end of the year the sewer collection system serviced approximately 2,065 customers. Approximately 8% of the facility's flow originates from local industries, 37% from commercial connections and 4% from non-classified connections. The remaining 51% is domestic sewage generated from residential and public sources. In addition, the wastewater Pollution Control Facility (WPCF) accepts and treats septage wastes from private septic systems as well as leachate generated from the Sturbridge landfill.

The Sturbridge WPCF has an average daily design flow capacity of 1.3 million gallons a day. In 2017, the Sturbridge WPCF effectively treated an average of 451,000 gallons of wastewater daily. This amounted to a total of over 164 million gallons of wastewater treated and discharged to the Quinebaug River.

In an effort to conserve the Town's drinking water, the facility recycles a portion of the discharge water. This recycled water is used throughout the treatment process. In 2017, this saved over 55 million gallons of town drinking water. Also in 2017 equipment changes saved an additional 1 million gallons of drinking water, a savings expected to double in 2018.

Map 2 on the following page shows the existing sewer system in town for the sewer main and lateral lines that the DPW currently has data for. Data collection and mapping are underway to accurately depict the current water and sewer infrastructure in town. It is an ongoing effort.

Map 2: Sewer Infrastructure



An Open Space Residential Development Bylaw was adopted by the Town at the Annual Town Meeting in 2009. This bylaw provided an alternative to conventional subdivision design and is one of the tools that can help to minimize residential sprawl in communities. This flexible approach to subdivision design provides for a greater level of natural resource protection while allowing greater flexibility with regard to lot sizes and setbacks. Less land clearing occurs, the amount of impervious surface is reduced and at least 50% of the entire parcel is preserved as permanently protected open space. However, the bylaw had not been utilized at all since adoption. The bylaw was further revised at the Annual Town Meeting in 2017 to allow a variety of housing types with a more streamlined permitting process. It is hoped these changes will encourage use of this tool.

Many of the Town's long-range planning efforts are being concentrated in largely undeveloped areas such as the Route 15 corridor, which runs north/south through town. The town wide survey for the Master Plan asked respondents to indicate if they favored or opposed specific listed uses along Route 15. The majority of respondents indicated that they either strongly favored or favored uses that are permitted under current zoning along this corridor. A more in depth review of the existing bylaw was undertaken by the Planning Board and CMRPC in 2015. The review recommended that the bylaw be amended to focus on a specific type of development instead of the multiple, sometimes competing uses that are allowed in the corridor. Based upon this review CMRPC is currently conducting a market analysis for this corridor to help the Town identify which uses may be most successful in this corridor. Protecting scenic value along this corridor, which is an impressive gateway into Massachusetts from Connecticut, is very important. It is anticipated the Planning Board and Board of Selectmen will soon be evaluating changes to the zoning bylaw so that appropriate growth can be encouraged in this corridor.

The Commercial and Industrial areas are generally located along Routes 20 and 131 and at the intersection of I-90 and I-84 through the central and eastern parts of town. Much of this development consists of retail shops and professional offices with the Sturbridge Business Park and the Sturbridge Technology Park anchoring both ends of Route 20. With Industrial land becoming scarce, there are recommendations in the town's Master Plan to evaluate areas of town for expansion of industrially zoned land.

The Commercial Districts, of which there are four (Commercial Tourist, Historic Commercial, Commercial and Commercial II) all allow for mixed-use development to occur in some fashion. There is also a Special Use District located along Route 15 that allows for Planned Unit Business Development and hospitals or medical treatment buildings. However, as noted above, the Route 15 area will be the subject of zoning revision work in the coming year.

The Town has focused efforts on the Commercial Tourist District in recent years and has prepared a conceptual design for this District along Main Street (Route 20) from the intersection with New Boston Road to the intersection with Brookfield Road.



Sturbridge's town center consists of the Town Hall and Center Office Building, a library, a post office, churches and a Town Common. The Town's commercial center of activity is located along Route 20 west of Interstate 84. There is a benefit having the Town's institutional/symbolic center "off of the beaten path." At present, the Town Common is used for community concerts (at the gazebo-style bandstand) and other local events, and is also used as a passive recreation area with benches and picnic tables. Because of existing and open lands around the center, there is an opportunity to create green areas that buffer and protect the center from the noise and presence of the highways just north and east.



Figure 3-3: Town Common. Photo by Rebekah DeCoursey.

A comparison of land use maps from the years 1971, 1985 and 1999 shows the amount of land converted to residential use during a span of 28 years. Most of the land used for new development between 1971 and 1999 came out of forestlands and, to a lesser extent, farmlands. The data on the following chart is from the University of Massachusetts Amherst from its most recent statewide land use mapping effort (1999) and its two previous efforts from 1985 and 1971. The classification "other" includes forested areas, vacant/unused land, wetlands (though water bodies are included in the last) and other land that does not seem to be actively used. Urban open land includes parks, cemeteries and other developed open spaces. Transportation is land used for transportation purposes. In Sturbridge, this represents the land devoted to roadway right-of-ways and would also include trucking terminals, etc. A comparison of the land use data indicates a substantial increase in residential, industrial and commercial development, and a substantial loss of forest and farmlands between 1971 and 1999. This comparison is displayed in Table 3-9 on the following page.

Table 3-10 is a land use classification chart that uses Sturbridge Assessor's data to show acreage broken out by land use category including Residential, Open Space, Chapter Lands, Commercial/Industrial, and Exempt. This real-estate parcel data is collected and maintained by the Town Assessor and is a way to break down land ownership, primarily for taxation purposes. Alternatively, Table 3-11 is a land use classification chart from a MassGIS 2005 dataset of satellite imagery that contains more specific categories and distinguishes land solely based on what is on the ground, and not based on land ownership parcels. For example, while residential acreage using the MassGIS classification system is at 2,037.14 acres in Sturbridge, the residential acreage using the Assessor's data is at 10,633 acres. This large difference in acreage is because the Assessor's system includes not only the house but also the land on the parcel owned by the resident, while the MassGIS data considers only the house to be residential. Both charts are significant for understanding open space preservation and land use change in Sturbridge.

# TOWN OF STURBRIDGE OPEN SPACE AND RECREATION PLAN - 2018

## Land Use Classification

Table 3-9: Land Use Classification 1971-1999

Land Use	1971 acres of land	1971 % of land total	1985 acres of land	1985 % of land total	1999 acres of land	1999 % of land total	% Increase (1971-99)
Other	20,337	81.6%	19,754	79.3%	17,925	71.9%	-11.9%
Agriculture	983	3.9%	814	3.3%	707	2.8%	-28.1%
Urban open	192	0.8%	192	0.8%	192	0.8%	0.0%
Waste disposal	49	0.2%	49	0.2%	49	0.2%	0.0%
Water	961	3.9%	963	3.9%	963	3.9%	0.0%
Commercial	118	0.5%	154	0.6%	239	1.0%	+102.5%
Industrial	45	0.2%	57	0.2%	63	0.3%	+40.0%
Mining	83	0.3%	115	0.5%	95	0.4%	+14.5%
Recreation	134	0.5%	151	0.6%	177	0.7%	+32.1%
Transportation	697	2.8%	714	2.9%	723	2.9%	+3.7%
Residential	1,326	5.3%	1,886	7.6%	2,594	10.4%	+95.6%

Source: MacConnell “map-down” land use analyses, University of Massachusetts, Amherst.

Table 3-10: Land Use Classification Sturbridge Assessor’s Data

Land Use Type	# Acres	% of Land Total
Residential Acres	10,633	48%
Open Space Acres	6,823	31%
Chapter Lands	2,285	10%
Commercial / Industrial Acres	1,352	6%
Exempt Acres	1,195	5%
<b>Total Acreage</b>	<b>22,288</b>	<b>100%</b>

Source: Town of Sturbridge Assessor’s Data (Spring 2018).

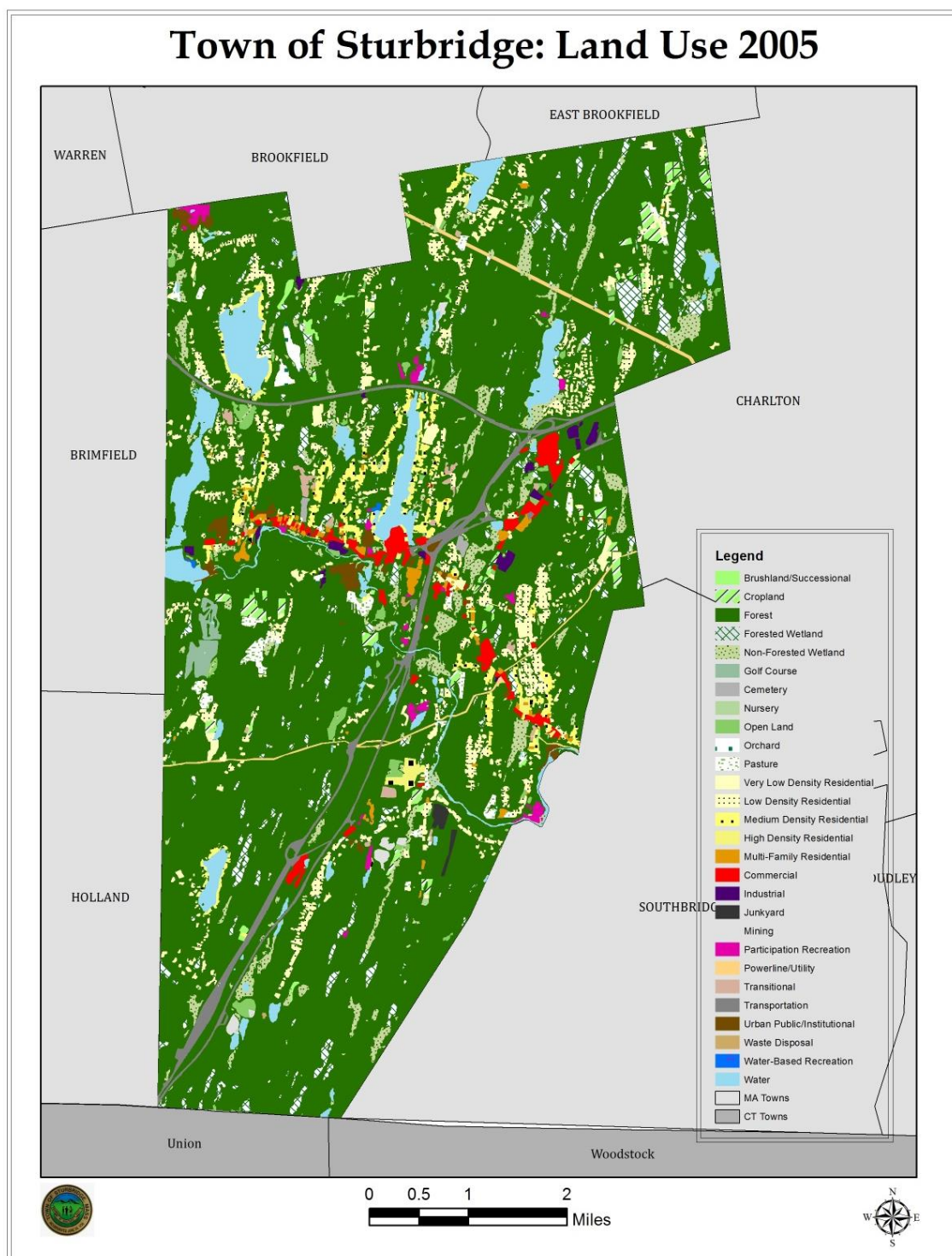
# TOWN OF STURBRIDGE OPEN SPACE AND RECREATION PLAN - 2018

Table 3-11: Land Use Classifications, MassGIS 2005

Land Use Type	# GIS Acres	% of Land Total
Brushland/Successional	38.11	0.15%
Cemetery	20.44	0.08%
Commercial	300.11	1.20%
Cropland	261.15	1.05%
Forest	17,947.16	71.97%
Forested Wetland	642.19	2.58%
Golf Course	91.36	0.37%
High Density Residential	74.16	0.30%
Industrial	85.17	0.34%
Junkyard	32.67	0.13%
Low Density Residential	970.37	3.89%
Medium Density Residential	475.00	1.90%
Mining	46.73	0.19%
Multi-Family Residential	137.88	0.55%
Non-Forested Wetland	922.96	3.70%
Nursery	5.21	0.02%
Open Land	182.24	0.73%
Orchard	46.73	0.19%
Participation Recreation	103.23	0.41%
Pasture	203.03	0.81%
Powerline/Utility	123.35	0.49%
Transitional	74.54	0.30%
Transportation	507.94	2.04%
Urban Public/Institutional	152.38	0.61%
Very Low Density Residential	379.73	1.52%
Waste Disposal	4.42	0.02%
Water	1,103.09	4.42%
Water-Based Recreation	6.32	0.03%
<b>Total</b>	<b>24,937.67</b>	<b>100%</b>

Source: MassGIS Land Use, 2005, Sturbridge, MA.

Map 3: Land Use 2005



Map 4: Zoning Map

