

SECTION 3: COMMUNITY SETTING

The diverse rural landscape of Gill—its rolling hills, river terraces, farmlands, and upland forests—have been developed, utilized, and preserved by its human inhabitants for thousands of years. Planning for open space and recreational opportunities in Gill must take into account the multifaceted relationships between people and the open spaces and natural resources upon which they and other living beings depend. If development occurs without consideration for natural resources such as drinking water supplies or wildlife habitats, the quality of life for current and future generations of Gill residents could be diminished over time.



Verdant farmland bordered by upland forest is a familiar scene in Gill.

Context

Regional Context

Gill is located in western Massachusetts, in the northern part of the Pioneer Valley region in Franklin County, approximately five miles south of the Vermont state line. Gill is situated in close proximity to three major transportation routes: Interstate 91 is two miles to the west, Route 2 runs along the southern portion of town, and Route 10, which accesses I-91 and Route 63 in Bernardston and Northfield respectively, is just north of the Gill town line. Map 3-1: Regional Context at the end of this section shows Gill’s location in Franklin County. This proximity allows access to both the north and south as well as east and west travel corridors.

Located in Franklin County, Gill is bounded on the east and south by the Connecticut River and can be accessed easily via Routes 2 and 10. Neighboring towns include Bernardston to the north, Northfield to the east, Erving and Montague to the south and Greenfield to the west. Although Gill offers relatively easy access to nearby employment centers in Greenfield, Montague and Orange, Gill has not been subject to development pressures experienced in other parts of the State.

Two primary landscape types dominate Gill—contiguous forestland and farmlands. Forest covers the majority of Gill. Prime farmland soils are located throughout the Town but concentrated along the Connecticut River. All of Gill is located within the Connecticut River watershed.

Gill is known, in part, for its water resources, particularly Barton Cove on the Connecticut River. Barton Cove draws visitors and residents alike for kayaking, birding, fishing, boating, and camping. Gill is also known for its excellent co-educational boarding and day school, Northfield Mount Hermon. And, in recent years, a revitalization of small, diversified farms has contributed to Gill being known throughout the region for its excellent farm products.

Local Context

Residents of Gill enjoy a wide range of recreational activities in their town including hiking, skiing, snowmobiling, hunting, fishing, and birding. The Gill Town Forest provides access to 162 acres of beautiful forested land which includes hills and eskers, a magnificent pond and river, and tucked away in hidden corners, remnants of historical interest. The Town Forest was established and purchased from the Franklin Land Trust in 2009 and was inventoried for bio-richness in 2013. Specifically, the funds were used for identification and marking of boundaries; development of a recreational trail system and kiosks; control of invasive plant species/ habitat res-toration; and controlling unwanted access/dumping.

Barton Cove is a popular spot for water recreation such as kayaking, canoeing, and power boating. Barton Cove Campground, owned by H₂O Power + FirstLight Power Resources, offers a picnic area, tent camping, and canoe and kayak rentals.¹

Gill's Open Space and Recreation Plan aims to support the continued enjoyment of recreational activities and continued land protection efforts.



Early morning mist shrouds distant views at Barton Cove.

Natural Resources Context

In planning for open space and natural resource protection in the Town of Gill, residents consider the role natural resources play across the region. There are three regional landscape-level natural resources important in both

¹ <http://www.h2opower.com/recreation/barton-cove-and-munns-ferry-campgrounds/>

Gill and in surrounding communities —contiguous forestland, farmlands, and watersheds. The presence and relatedness of these significant resources present both opportunities and challenges to open space and recreation planning for Gill.

Forestlands

Forests constitute one of the most important natural resources in the Town of Gill and in the region. Forestland conserves water supplies by sustaining the soil’s ability to receive precipitation and recharge ground and surface waters slowly. Woodlands and their changing foliage give residents gorgeous surroundings upon which to gaze and appreciate. Forests clean the air and provide cool air currents in warm months.

Large blocks of contiguous forestland that are not traversed or fragmented by paved roads, wide rivers, development, or by open fields are important regional resources for several reasons. Wildlife species that require a certain amount of deep forest cover tend to migrate out of fragmenting landscapes. New frontage lots and subdivisions can often result in a widening of human activity into habitats, an increase in the populations of plants and animals that thrive alongside humans (i.e., raccoons and squirrels) and a reduction in the species that have larger home ranges and unique habitat needs. Larger blocks of forest are more suitable for active forest management as well.

One significant mechanism that can be used to protect forestlands – as well as farmlands and recreational lands – in Gill is Chapter 61. Chapter 61 is comprised of three programs that require cities and towns to reduce assessments of farm, forest and open space lands, provided the owners make a commitment to keep their lands in one or more of those uses. These programs were developed in part due to rising property values, which were forcing farmers and forest landowners to sell their land because of the increasing tax burden.

These programs are known as Chapter 61—the Forestland Act; Chapter 61A—the Farmland Assessment Act; and Chapter 61B—the Recreational Land Act. Many states have similar programs to retain open space but only the three Massachusetts laws give municipalities a “right of first refusal” to purchase lands that have been enrolled in these programs.²

According to Mount Grace Land Conservation Trust’s *Land Use Planning under Massachusetts’ Chapter 61 Laws*, “most landowners classify their lands in Chapter 61, 61A and 61B to take advantage of reduced property taxes. Many of these lands are woodlots and small farms on the outskirts of expanding urban and suburban areas. As development increases around these properties, taxes rise to cover the costs of expanded town services. Without Chapter 61, 61A and 61B, these increases in taxes would force some landowners to sell their property. Today, many parcels have remained undeveloped as a direct result of the reduced annual property tax bills following enrollment in these programs.”³

More information on Chapter 61 land classifications can be found on the Town of Gill’s website at <http://www.gillmass.org/f/24/Guides-for-Land-Classifications>. A Forest Stewardship Plan was developed in 2014, and a state Community Forest Stewardship Implementation Grant in the

² <http://www.mass.gov/eea/docs/dcr/stewardship/forestry/service/chapter-61-programs.pdf>

³ <http://mountgrace.org/publications/all>

amount of \$7,100.00 was obtained in fiscal year 2017 from the Massachusetts Department of Conservation and Recreation (DCR) to assist in furthering several of the management recommendations and practices identified in the Plan.

Farmlands

Gill has a rich history of agriculture that has contributed to the Town as we know it today. Located in the Connecticut River Valley, much of the land is desirable for farming and contains prime farmland. In the late 18th century, grains – primarily wheat, rye, and barley – were the primary cash crops. By the mid 19th century, broom corn and tobacco had replaced grain as a commodity in Gill and by 1860 Gill had become one of the largest producers of butter and eggs in Franklin County, exporting them as far away as Boston. The more local markets of Greenfield broadened to include markets in Springfield and Athol as well as those north into Vermont and New Hampshire. This came about as railroads developed. Also, lumber products became increasingly important as the farmland was cleared. Milk became a major export after 1900, and after World War II, most dairy farms began consolidating and increasing in size. Subsistence farming, once a way of life for many Gill residents, also declined.



Cattle graze at sunset on a grassy pasture bordered by woodland.

At present, only a few dairy farms remain in Gill, although out-of-town farmers rent much of the large tracts of river land to grow vegetable crops and forage. Gill currently boasts an active Agricultural Commission, and according to the Commission, the family farm is on the rebound in Gill. In 2011, the Gill Agricultural Commission's **Gill Farms: A Guide to Buying Gill Products and Supporting Agriculture in Our Community** lists 20 farms – sometimes as little as 5 or 6 acres but crammed with

produce and know-how. Products from these farmers include eggs, herbs, vegetables, flowers, cheese, beef, pork, lamb, rabbits, berries, maple syrup, honey, alpaca fleece. Several have farm stores or farm stands.

In 2009, Gill adopted the Right to Farm Bylaw that essentially guarantees the right of farmers to conduct their agricultural activities as needed, which may include the attendant incidental noise, odors, dust, and fumes associated with normally accepted agricultural practices. Whatever impact may be caused to others through the normal practice of agriculture is more than offset by the benefits of farming to the neighborhood, community, and society in general.⁴ In recognition

⁴ http://www.gillmass.org/files/AgComm_Right_To_Farm_Bylaw.pdf

of the importance of agriculture to the Town and in support of local farmers, residents of Gill voted in November 2010 to remove the excise tax on farm animals.

Watersheds

Watersheds are the areas of land that drain to a single point along a stream or river. Sub-watersheds contain first and second order stream tributaries. The most extensive component of any watershed, they are also the most sensitive to land use, both the negative impacts of runoff and the positive effects of forest cover. Two of the most important things that result from protecting forestland are maintaining the long-term integrity of wildlife habitats and water quality within the watershed's surface and ground waters. Gill is contained within the Connecticut River Watershed.

The Connecticut River Watershed is the largest river ecosystem in New England and spans four states: Vermont, New Hampshire, Massachusetts, and Connecticut. The river itself forms Gill's eastern border. Fall River forms the town's western border. Along with other brooks and streams, it flows through the town on its way to the Connecticut River. From its beginnings on the Canadian border to its end in Long Island Sound, the Connecticut River drains a landscape that is 11,000 square miles in size, 410 miles long. The river drops 2,400 feet from its source to the sea and is one of the most developed rivers in the Northeast. Entering Massachusetts through the Town of Northfield, it flows through forty-five communities before entering the state of Connecticut. The watershed is eighty percent forested, twelve percent agricultural, three percent developed, and five percent wetlands and surface waters.

The Connecticut River Watershed was designated the "Silvio O. Conte National Fish and Wildlife Refuge" by an act of Congress in 1991, the first refuge of its kind, encompassing an entire watershed ecosystem. The Connecticut River also received special attention in 1998 when it became one of only fourteen rivers in the U.S. designated as a National Heritage River. The Massachusetts Executive Office of Environmental Affairs has outlined watershed priorities for the Connecticut River that include: promoting and/or creation of riparian buffer zones along the waterways within the watershed; reducing barriers to migratory fish passages; reducing the negative effects of non-point source pollution, primarily storm run-off; and increasing the amount of water quality data available within the watershed. See Section 4 – Environmental Inventory and Analysis – for more detail on the Connecticut River Watershed, its tributaries and other water bodies in Gill.

Community History

The Town of Gill with its natural resources has attracted and sustained human settlements for thousands of years. Native Americans frequented the area to fish the waters of the Connecticut River and its tributaries and to farm the rich floodplain soils. European Colonists also used the Connecticut River for transportation, log drives, fishing, and relaxation. It would become of fundamental importance to the industrial development in the area.

Native American presence in the Town of Gill dates as far back as 5,500 B.C. Artifacts from that time period have been unearthed in Gill. There are locations in town where the presence of archaeological remains may limit development options and for which appropriate current uses

have not been determined. The Great Falls area of Gill was a prime fishing area; tribes from as far away as Eastern New York traveled to the area to fish. This same area of the Connecticut River was the site of a brutal massacre of Native Americans by the British under Captain Turner in the King Philip's War (1675-1677). Permanent Colonial settlements were not noted in Gill prior to approximately 1776.

Areas of Settlement

Gill was originally part of Deerfield in the seventeenth century, then part of Greenfield until Gill's incorporation in 1793. Over time, three distinct settled areas developed within the Town of Gill. They include Gill Center, Riverside, and Northfield Mount Hermon as described below.



Located in Gill Center, Gill Tavern – originally the Gill General Store – is a popular area eatery.

Gill Center

Gill was a major crossroads of travel on the western side of the Connecticut River. Organized around a town common, the Gill Center had a number of stores and manufacturing, several taverns as gathering spots and stagecoach stops. A local blacksmith shop, nearby grist mills and a pail factory made the Center a busy place. While fire and changes in industry have removed these landmarks, the Town Common is encircled by a number of historic buildings, including the Gill Meeting House, erected in 1794, establishing Gill's civic center along this main transportation route. Other buildings near and around the Town Common include the Congregational Church (1803), a Federal period home in the style of Asher Benjamin, and also the Town Hall (1867), the Slate Library (1921), and Gill General Store – now The Gill Tavern. This area still remains the focus of Gill's civic and social life and the Gill Town Common continues as a place where concerts, town picnics, and socials are held.

Village of Riverside

Prior to colonial settlement the area now known as Riverside hosted a major regional gathering for Native Americans coinciding with the annual shad run over the Great Falls each spring. In May of 1676, during King Philip's War, colonial militia attacked and killed hundreds of Native Americans at the site of the Peskeompskut village settlement, following which a native counter-attack inflicted heavy casualties on retreating colonial troops. Since 2014, the Battle of Great Falls has been the subject of ongoing research funded by the National Park Service's American Battlefield Protection Program and coordinated through a consortium of local towns and Native American tribes.

The Village of Riverside developed on the Gill side of Great Falls on the Connecticut River. A ferry connected Riverside with Montague as early as the 1760s. In 1798, a stone-filled crib dam was built to accommodate locks on the Montague side, allowing river traffic to bypass the Falls. A few farms, homes, and shops were established on the road from Gill Center to the ferry. Village growth accelerated in 1867 when a sawmill was built in Riverside and in 1878 when a suspension bridge was erected between Riverside and Montague. In the mid 1880s, a kindling factory and pulp mill were constructed. The sawmill burned down in 1903, and the pulp mill exploded shortly thereafter.⁵

Riverside declined as a civic and commercial center, however today it remains a residential center - a quiet, peaceful haven of residential homes with a rural, close-knit neighborhood feel. In 2016, the Gill Historical Commission published a comprehensive history of the Riverside area, *Life Along the Connecticut in Gill, Massachusetts*. The Riverside Village Historic District was designated as a National Register District on September, 18, 2017.

Northfield Mount Hermon

The Mount Hermon School for Boys founded in 1881 and The Northfield Seminary for Girls founded in 1879 were both known for their founder Dwight L. Moody. Now called Northfield Mount Hermon (NMH), the school consolidated its two campuses on the Mount Hermon property in Gill in September 2005. NMH is currently a coeducational boarding and day school for 650 students in grades 9 through 12 and postgraduate. NMH is the largest landholder in Gill, owning approximately 640 acres of property primarily in the northeastern portion of town.

⁵ Landscape and Material Life in Franklin County



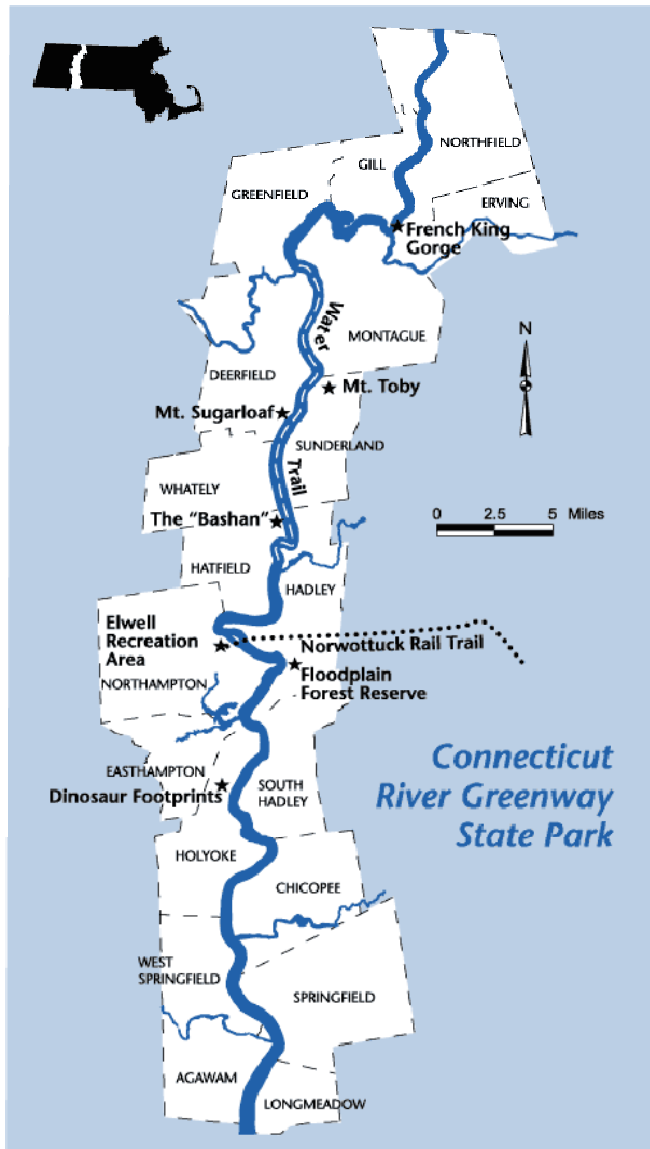
Northfield Mount Hermon's Admission Office stands on the School's 640-acre parcel located in northeast Gill.

The Role of the Connecticut River in the Community's History

The Connecticut River played a prominent role in the history of the Town of Gill. The River has provided fish for food and was the main mode of transportation for Gill residents. Since transporting goods by boat was more efficient than transporting over land, nearly all trade prior to the development of the railroad occurred on or along the Connecticut River. Timber, ice, and farm goods were just a few of the commodities transported via the river to and from the Town of Gill.

In the mid-eighteenth century, river crossings were important factors in a town's economic development and social life. Prior to the bridges, ferries were the primary means of crossing rivers. Gill had three major ferry crossings on the Connecticut River (starting from the south): Smith's, Stacy's and Munn's ferries. Smith's Ferry went out of operation with the installation of the Old Red Suspension Bridge. Munn's and Stacey's Ferries went out of operation in the 1930's due to lack of demand. The Town of Gill owns a one-acre parcel at Stacy's Ferry, which has some potential for development as a small boat launch and recreation site.

Gill has a spectacular, award-winning bridge at French King Gorge between Erving and Gill. The French King Bridge, completed in 1932, received the Annual Merit Award as "the most beautiful steel bridge" from the American Institute of Steel Construction. Recently restored, the bridge is listed on the State Register of Historic Places. In addition, the Turners Falls-Gill Bridge underwent an extensive re-construction in the mid 2000s. There are several other bridges in Gill that are of note.



Connecticut River Greenway State Park

The Connecticut River also delineates one of Massachusetts’ newest state parks, the Connecticut River Greenway State Park. As shown in Figure 3-1, the Park connects open spaces, parks, scenic vistas, and archaeological and historic sites along the length of the Connecticut River as it passes through the state.⁶ There are over 12 miles of permanently protected shoreline and numerous access points to the river.

The Role of Route 2 in the Community’s History

In 1913, the portion of Route 2 between Erving and the New York State Line was designated as the Mohawk Trail Scenic Auto Route, in honor of the Mohawk Indians who used the trail to travel east and west. As a result of the designation, commercial development began along the route to supply tourists with food, gas, lodging, and souvenirs. Route 2 continues to be the primary commercial and industrial corridor in Gill.

In 2017, the Riverside Historic District along Route 2 was added to the National Register of Historic Places. In 1975, 674 acres of land comprising all of Riverside and parts of Greenfield were designated as an Archaeological District in the National Register of Historic Places.

In 1953, Route 2 between Athol and Williamstown received a Scenic Byway designation. The Mohawk Trail Scenic Byway was one of the earliest Scenic Byways in New England. The corridor is rich in cultural, historic, scenic, natural, archeological, and natural resources. A number of historic villages and structures along the route provide evidence of the Byway’s history. The Byway also travels through some of the most beautiful scenic areas in Massachusetts.

Significant stretches of the Mohawk Trail follow the Millers River and cross the majestic Connecticut River. The Mohawk Trail East Scenic Byway Corridor Management Plan contains greater detail on the history and resources of this Byway.⁷ A Scenic Byway designation is

⁶ <https://www.mass.gov/locations/connecticut-river-greenway-state-park>

⁷ Mohawk Trail East Scenic Byway Corridor Management Plan, FRCOG, June 22, 2009

important to Gill in part because the designation brings with it potential funding on the state and national level.



The French King Bridge, at French King Gorge, offers among the most stunning views along the Mohawk Trail Scenic Byway.

Historical Resources in Gill

Along with the historical resources mentioned earlier in this chapter, other significant historical resources located in Gill include the following:

- Riverside Archaeological District (National Register of Historic Places)
- Bascomb Hollow
- Turners Falls-Gill Bridge
- French King Bridge
- Water power mill sites
- Methodist Church
- Old Bridge Crossing
- Cemeteries:
 - Center Cemetery
 - North Cemetery
 - West Gill Cemetery
 - Riverside Cemetery (acquired by the Town in 2016)



Gill Centers includes historic structures such as the Slate Library and a federal period home

- Factory Hollow (formerly the main road to Greenfield)
- Capt. Turner Monument
- Old Red Bridge Anchor with armored mudballs
- Riverside Village Historic District (National Register of Historic Places)

Population Characteristics

Demographic Information

A snapshot of Gill’s population characteristics shows a town with a slightly declining population over the last twenty years, this after significant population growth in the 1970s and 1980s. Similar to the County’s population, baby boomers comprise the largest percent of the population, suggesting a potential for increasing demands for services for the elderly the coming decades. Income rates for Gill residents are similar to those for the County and about two thirds of Gill residents work outside of Gill.

Population and Population Change

Demographics are useful for forecasting the need for open space and recreational resources that may be required by residents over time. According to the 2010 U.S. Census Redistricting Data, Gill had a population of 1,500 in 2010 (Table 3-1). In 2000, data gathered by municipal officials in the Town of Gill reported the population to be 1,620. This is different from the total population figure of 1,363 that the U.S. Census reported as of April 1, 2000. Gill municipal officials believe the 2000 U.S. Census figure was inaccurate due to miscalculation of staff and faculty housing on the Northfield Mount Hermon campus as well as to a shared zip code with Turners Falls. For the purpose of this Open Space and Recreation Plan, the 2000 and 2010 Census population figures will be used. According to the U.S. Census Bureau’s American Community Survey, the population in 2015 is estimated to have been 1,641.

Table 3-1: Total Population, 1970 - 2015

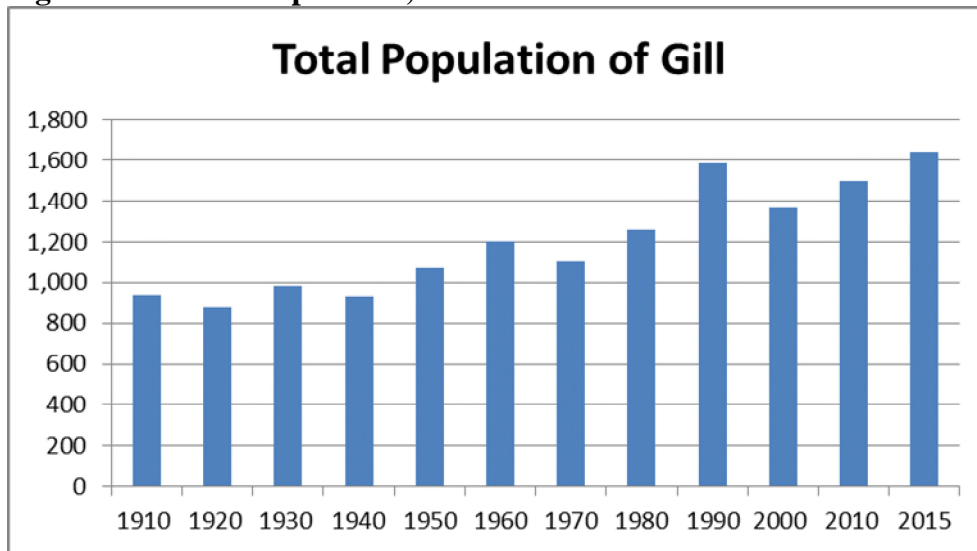
Geography	1970	1980	1990	2000	2010	2015 Estimate**
Gill	1,100	1,259	1,583	1,363*	1,500	1,641
Franklin County	59,223	64,317	70,092	71,535	71,372	71,144
Massachusetts	5,689,377	5,737,037	6,016,425	6,349,097	6,547,629	6,705,586

Source: U.S. Census Bureau – 1970 Census, 1980 Census, 1990 Census STF3A, 2000 Census SF3, and 2010 Census Redistricting Data.

*Source: Town of Gill Census 2000 figure was 1,620.

**Source: US Census Bureau, American Community Survey, Five-year Estimates, 2011-2015. In 2015, the Gill Town Census reported a population of 1,401.

Figure 3-1: Total Population, 1910 - 2015

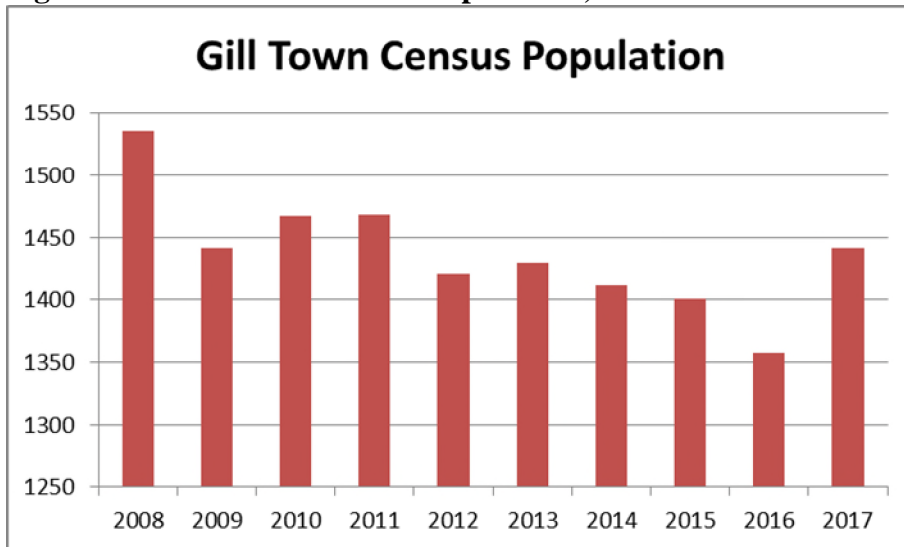


Source: U.S. Census Bureau

As shown above in Figure 3-1, Gill’s population in recent decades has varied, with significant growth in the 1970s and 1980s, and with growth slowing in the last two decades, according to the U.S. Census. From 1970 to 1980, the population in the Town of Gill grew over 14 percent and then grew significantly from 1980 to 1990 by another 26 percent (Figure 3-2). This is dramatically higher than both the County and the State during the same decades. For Franklin County, the rate of population growth was fairly consistent from 1970 to 1980 and 1980 to 1990 with approximately a 9 percent growth rate for each of those time periods. In the 1990s, the Town’s population declined by nearly 14 percent, while the County grew by approximately 2 percent, and the State grew by 5.5 percent. Between 2000 and 2010, the Town saw a 10 percent increase in population, while the County’s population declined slightly by 0.2 percent and the State population grew modestly by 3.1 percent. Between 2010 and 2015, Gill experienced an estimated 9.4 percent increase in population, compared to a 0.32 percent decline in Franklin County and an increase of 2.4 percent in the State population.

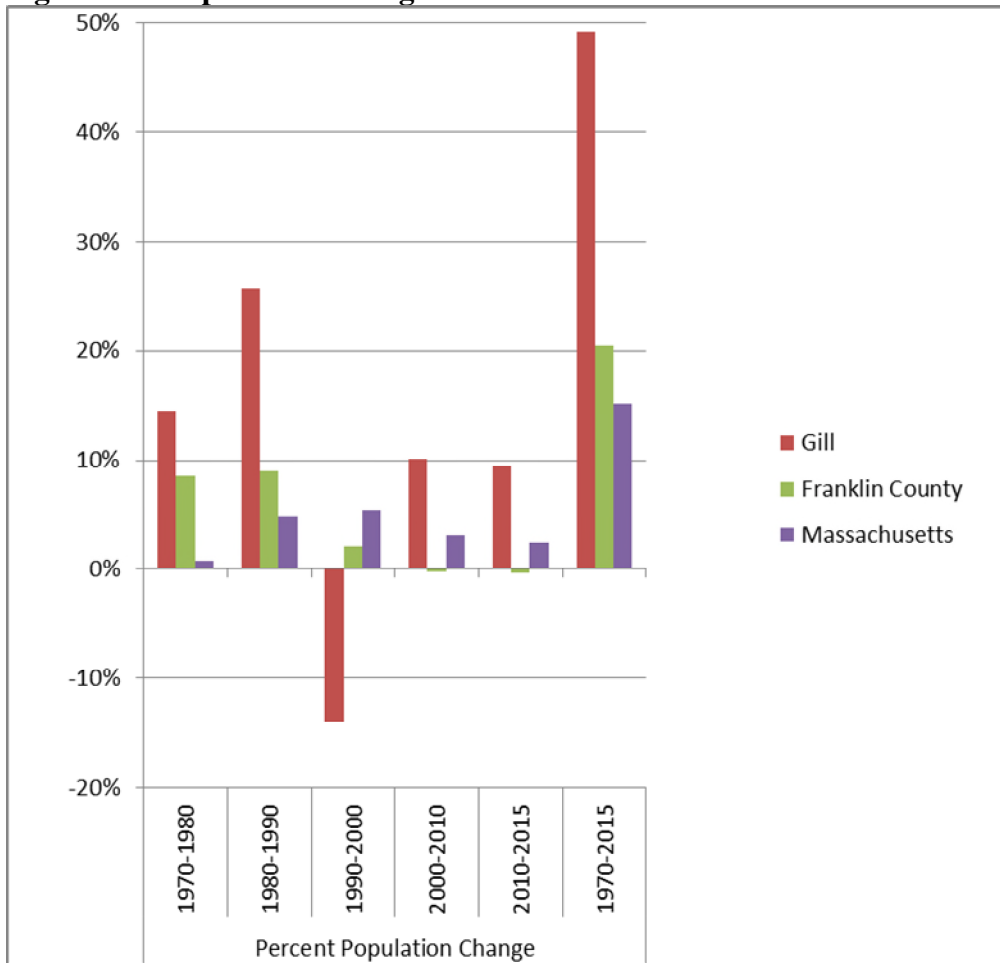
Town officials question the accuracy of the U.S. Bureau of Census population data. Figure 3-2 below shows the Town Census data for the population of the Town of Gill.

Figure 3-2: Gill Town Census Population , 2008-2017



Source: Gill Town Clerk, December 2017.

Figure 3-3: Population Change from 1970 to 2015



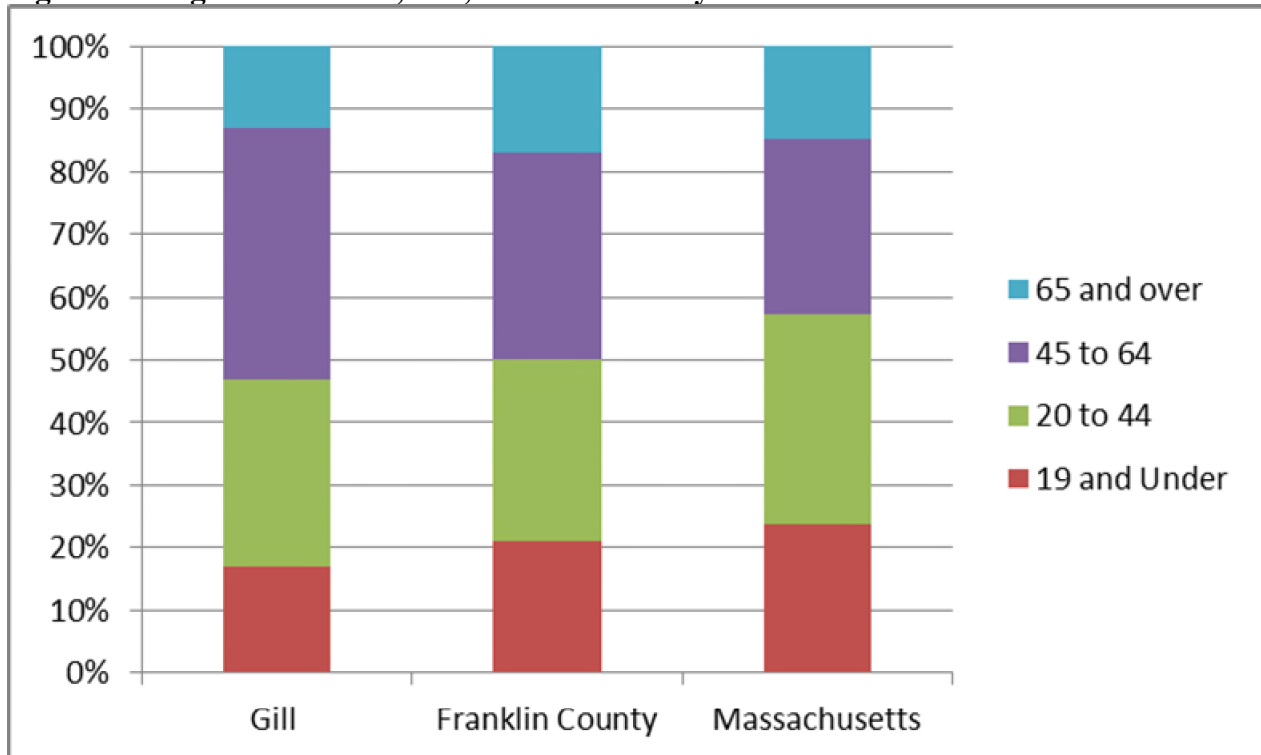
Source: U.S. Census Bureau – 1970 Census, 1980 Census, 1990 Census STF3A, 2000 Census SF3, and 2010 Census Redistricting Data; US Census Bureau, American Community Survey, Five-year Estimates, 2011-2015.

The overall 45-year trend for Gill shows a 49 percent increase in population, larger than both the County and State. This is largely attributable, however, to the large increase in the 1970s and 1980s, culminating in a record high population in 1990. This was followed by a nearly 14% decline by 2000. The trends of the last two decades show Gill’s population steadily increasing since 2000. It is important for the Town to determine how these trends translate into demand for open space and recreational resources.

In 2010, Gill’s population density was 101 persons per square mile, compared to the neighboring towns of Erving (125 persons per square mile), Northfield (88 persons per square mile), Bernardston (91 persons per square mile), Greenfield (796 persons per square mile), and Montague (269 persons per square mile).⁸

The age make-up of the population is also an important factor when considering open space and recreational needs in Town. As shown in Figure 3-4, in 2015 residents between the ages of 45-64 made up the largest percentage of the Town’s population at 40 percent, compared to 33 percent in Franklin County and 28 percent in the State as a whole, according to the U.S. Census 2011-2015 ACS. Also notable is the smaller percentage of children 19 and under in Gill (17 percent) compared to Franklin County (21 percent) and the State of Massachusetts (24 percent).

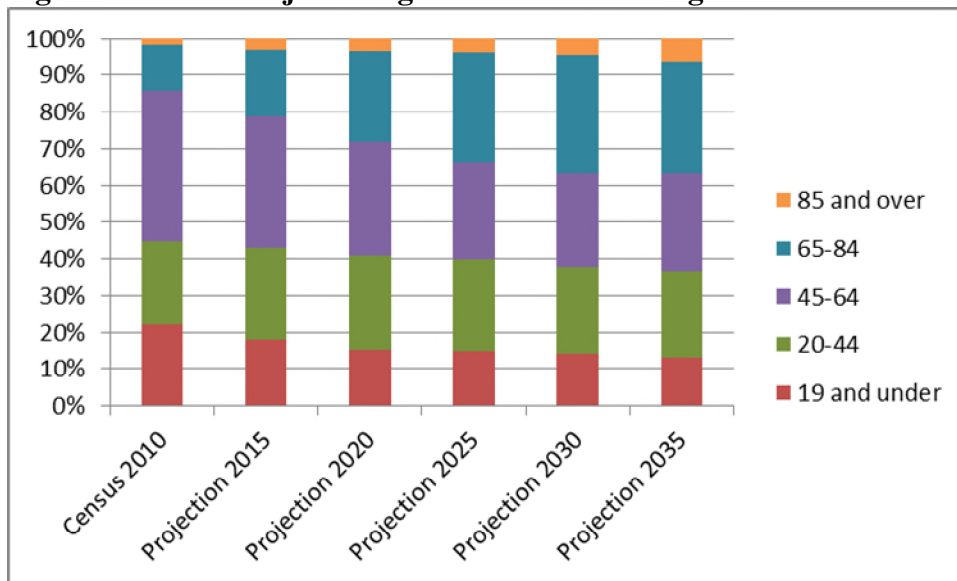
Figure 3-4: Age Distribution, Gill, Franklin County and Massachusetts



Source: U.S. Census Bureau, 2011-2015 American Community Survey 5-Year Estimates.

⁸ Calculated using 2010 U.S. Census Redistricting Data population counts, and 2005 MassGIS Land Use data

Figure 3-5: Gill Projected Age Distribution through 2035



Source: UMass Donahue Institute Vintage 2015 Population Projections. March 2015.

According to projections developed by the UMass Donahue Institute and shown in Figure 3-5, it is projected that the numbers of children aged 19 and younger in Gill will decrease by 24 percent between 2010 and 2035. During this same period, the 45 to 64 age cohort is estimated to decline by nearly 16 percent. At the same time, it is anticipated that the numbers of residents in the 65-84 age cohort will more than triple by 2035. The oldest cohort of residents (85 years of age and over) is projected to increase by nearly five times over this same period, to represent 6 percent of the overall town population in 2035.

Overall the population of Gill is aging, a trend consistent with the County and the State. The aging population may require different recreational facilities and services including accessible walking paths, arts, and leisure programs. It appears the Town of Gill needs to be concerned about providing for an aging population in its open space and recreation programming, while continuing to provide opportunities for all residents. As Baby Boomers age, they may also require different housing options than are currently available in Town. This demand for new housing could impact the available open space in Gill. The Town should proactively identify the types of housing this population group will need and determine the best locations for development, taking into consideration the needs of an older population while also working to protect open space and natural resources. Planning for growth before it happens will help to protect open space and recreation resources into the future.

Any development of new open space and recreation resources should take into consideration where the current population resides, where any potential new development will occur, and which parts of the local citizenry require specific needs. As shown in the fourth part of Section 3, Growth and Development Patterns, the location of future growth depends in large part on zoning, slopes, soil and groundwater related constraints, and on which lands are protected from development. Proactively identifying key parcels in town that might be future parks and walking trails close to current neighborhoods, and in areas that could be later developed for residential uses, will help ensure these resources are available in the future. Town officials should continue

to look for opportunities to conserve land in Gill that protects valuable scenic and natural resources and provides public access to trail networks and open spaces.

Economic Wealth of Residents and Community

Measures of the income levels of Gill’s residents as compared to the county and state are helpful in assessing the ability of the citizenry to pay for recreational resources and programs and access to open space.

Table 3-2: Income and Poverty

Geography	Per Capita Income Estimate	Median Household Income Estimate	Percent of Individuals Below Poverty Level*
Gill	\$32,193	\$73,750	10.3%
Franklin County	\$30,584	\$55,221	11.7%
Massachusetts	\$36,895	\$68,563	11.6%

* For whom poverty status was determined.

Source: American Community Survey 2011-2015 Five Year Estimates. Five-year estimate of income for the past 12 months and reported in 2015 dollars.

Table 3-2 describes the earning power of residents in Gill as compared to the county and the state. The Gill per capita income estimated for 2015 was \$32,193, which was somewhat higher than the county figure of \$30,584, and lower than the state figure of \$36,895. The median household income for Gill was \$73,750 in 2015, which was higher than both the county (\$55,221) and the state (\$68,563). Another way to describe a community’s income and economy is the poverty rate. In Gill, 10.3 percent of residents were living below the poverty level in 2015. Gill’s poverty rate was less than in the county (11.7percent) and state (11.6percent).

Although Gill’s resources include both its people and its natural landscapes, the status of its finances could be affected by an interdependent relationship that exists between the two. The costs of the community services provided to residents are paid for with the tax revenues generated by different kinds of property, both developed and undeveloped. Some developed uses such as housing often require more services including education and road maintenance. The costs associated with one household are rarely paid for by the revenues generated by that same property.

One reason that towns encourage economic development is to have other types of property in town, other than residential, to share the tax burden. Protected open space on the other hand can cost towns very little in community services, provide a modest amount of tax revenues, and reduce the amount of housing that can ultimately occur in town. This relationship is explored in more detail in subsection D. Growth and Development Patterns.

Employment Statistics

Employment statistics like labor force, unemployment rates, numbers of employees, and place of employment are used to describe the local economy. Labor force figures can reflect the ability of a community to provide workers that could be employed by incoming or existing businesses. Unemployment rates can show how well residents are fairing in the larger economy while employment figures describe the number of employees in different types of businesses.



Employment can be used as a measure of productivity. The number of people employed in each business can be used to determine the types of industries that should be encouraged in town. The town may decide to encourage business development to create more jobs and as a way of increasing taxable property values, which can help pay for municipal services and facilities, including recreational parks and programming as well as protected open space.

Wagon Wheel Restaurant on Route 2 is a popular small business – and breakfast spot - in Gill.

Labor Force: Gill Residents Able to Work

The labor force is defined as the pool of individuals 16 years of age and older who are employed or who are actively seeking employment. Enrolled students, retirees, stay-at-home parents and other persons not actively seeking employment are excluded from the labor force. Labor force and unemployment data are available on a monthly and annual basis from the Massachusetts Executive Office of Labor and Workforce Development.

Figure 3-6: Labor Force and Employed Persons in Gill, 2007 through 2016

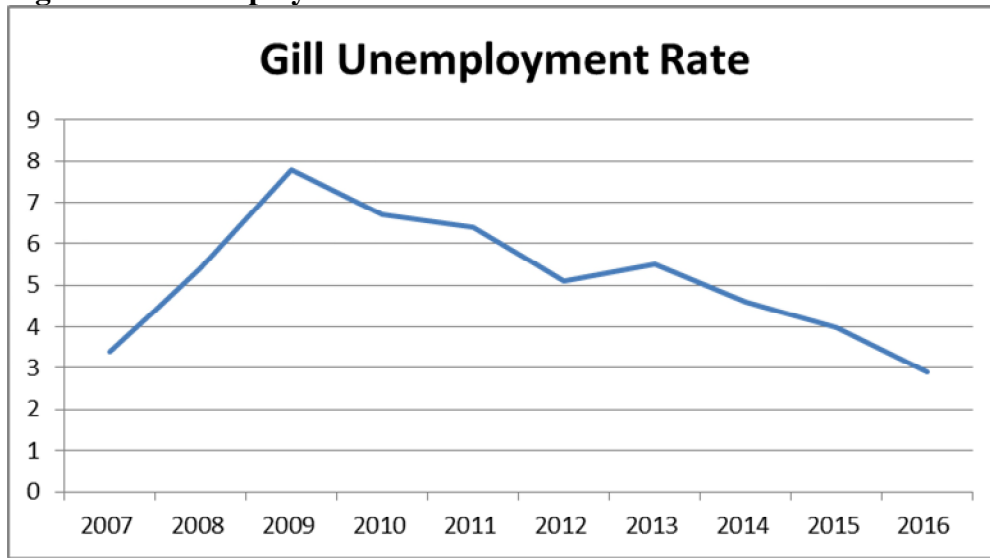


Source: Massachusetts Executive Office of Labor and Workforce Development, LAUS Data.

In 2016, the Town of Gill had a labor force of 928 with a total of 901 employed persons. These figures have increased consistently over the years since 2007, with a notable reduction in employed persons in 2009 at the height of the Great Recession, as demonstrated in Figure 3-5 above.

Figure 3-7 displays Gill’s unemployment rate from 2007 through 2016. In 2016, Gill’s unemployment rate was 2.9 percent. This compares favorably with the unemployment rate in Franklin County of 3.3 percent and is slightly lower than the unemployment rate of 3.7 percent in the state of Massachusetts in 2016. The unemployment rate in 2007 of 3.4 percent was similar to the rate in 2016, but as shown in Figure 3-7, the rates have fluctuated over the years with a notable spike in 2009.

Figure 3-7: Unemployment Rates 2007 to 2016



Source: Massachusetts Executive Office of Labor and Workforce Development, LAUS Data.

Employment in Gill: Residents and Non-Residents

The largest employer located within the Town of Gill is the Northfield Mount Hermon School, employing between 250 and 499 employees (Massachusetts Executive Office of Labor and Workforce Development). The next largest employers are Kuzmeskus Realty LLC (bus company) and Travel Kuz, employing between 100 and 249 people. The Gill Elementary School, Gill Fire Department, and Renaissance Builders all employ between 20 to 49 people. It is not uncommon in rural communities for the town government and school to be major employers.

Table 3-3: Worker* Commute Patterns

Geography	Worked in Town of Residence	Worked out of Town but in County of Residence	Worked out of County but in State of Residence	Worked out of State of Residence
Gill	26%	55%	17%	3%
Franklin Co.	29%	71%	34%	5%
Massachusetts	31%	69%	31%	4%
United States	8%	17%	24%	4%

* Employed workers 16 years and over.

Source: U.S. Census Bureau - 2011-2015 American Community Survey (ACS) Five-Year Estimates

According to the 2011-2015 American Community Survey, the percentage of Gill residents in the labor force who worked in town in 2015 was 26%, slightly lower than in Franklin County and the state of Massachusetts, but significantly higher than the United States as a whole. More than half of Gill residents worked outside of Town, but still in Franklin County.

Context and Demographics of Environmental Justice Populations

No environmental justice populations have been mapped in the Town of Gill.

Growth and Development Patterns

Patterns and Trends

Like many towns in Franklin County, Gill's historic land use development patterns can still be seen today. Gill's land use patterns include:

- The more heavily settled Riverside, an area that once supported log drives, sawmills, and the wealthy mill owners of Turners Falls.
- Gill Center, where civic life has always been focused and where the Town Hall and the Slate Memorial Library can be found.
- Working farms and farmland including active dairy farms – and Upinngil Farm and Farm Store, Cold Spring Farm and Rolling Edge Sugarhouse, to name a few. Note: The Gill Agricultural Commission has produced *Gill Farms: A Guide to Buying Gill Products and Supporting Agriculture in Our Community*.
- Forest land blankets much of the town and includes active sugarbushes and other forest industries.

Within this land of farms, forests and houses are two major linear elements: the Connecticut River and Route 2. The Connecticut River floodplain contains arable prime farmland soils and is actively farmed by small, diverse farms. Commercial properties are located primarily along Route 2 and on Main Road close to where it intersects Route 2. This trend began in the early part of the 20th Century following the designation of Route 2 as the Mohawk Trail Scenic Auto Route.

Over the past two hundred years, Gill residents developed their community using the productivity of the area's prime farmland soils as well as its proximity to the Connecticut River and the Mohawk Trail. Gill's population went through a series of expansions and contractions between 1800 and 2010. Gill's population in 2000 represented a 97 percent increase of its population in 1800. 2015 Census data puts Gill's estimated population at 1,641. The most rapid growth took place between 1980 and 1990 with a more than 25 percent increase in population. Overall, the 45-year trend for Gill shows a 49 percent increase in population.

Despite the population increase, in the late 1980s Gill experienced a reduction in the number of dairy farms due to several factors including low product prices, high production costs, aging farmers and smaller families, and a federal buy-out program of dairy herds to control pricing. Over the last century, Gill saw a reduction in the number of dairy farms and an increase in the development of residential uses outside of the historic village centers.



Clearly, the conversion of forest and agricultural land to building sites for single-family homes is the dominant land use change in Gill and in Western Massachusetts. Future development patterns in Gill may depend on national and regional employment and population trends but also on local conditions that impact development and land use, such as growing demand for locally grown farm and forest products.

Homes stand adjacent to a rye field in Gill that is permanently protected.

Table 3-4: Land Use Change in Gill, 1971 - 1999

Land Use	1971 Acres	1999 Acres	1971-1999 Change
Forest	5,887	5,558	-329
Water and Wetlands	710	756	46
Agriculture (cropland and pasture)	1,941	1,789	-152
Small Lot Residential (< .5 acre)	67	66	-1
Large Lot Residential (> .5 acre)	449	767	318
Commercial	7	20	13
Industrial	0	0	0
Recreation	102	105	3
Urban Open Land	156	158	2
Open Land	129	156	27
Woody Perennial	19	86	67
Other (transportation, waste disposal, mining)	12	17	5

Source: 1971 and 1999 MassGIS Land Use data. Totals may not match exactly due to rounding.

Due to changes and improvements in the methods for data collection and analysis, the MassGIS land use datasets for the earlier years of 1971 and 1999 are not directly comparable to the 2005 data. Table 3-5 below provides a summary of land uses in Gill in 2005. In 2005, approximately 60% of the total area in town was forested, 17% was in agricultural use, and just over 3% was in residential use, the majority on lots greater than a ½ acre, but also including 30 acres of multi-family residential use. Uses at 1% included high density residential, powerline/utility, open land, and recreation use. Commercial uses represented less than 1% of the total acreage in town and there was no recorded, industrial or mining uses.

According to the Franklin County Cooperative Inspection Program (FCCIP), from 1993 to 2016, 94 residential properties were built in Gill; 13 in 2003 alone (see Figure 3-8 below). Between 1993 and 2002, an average of 4 homes was built each year. In the years from 2004 to 2016, an

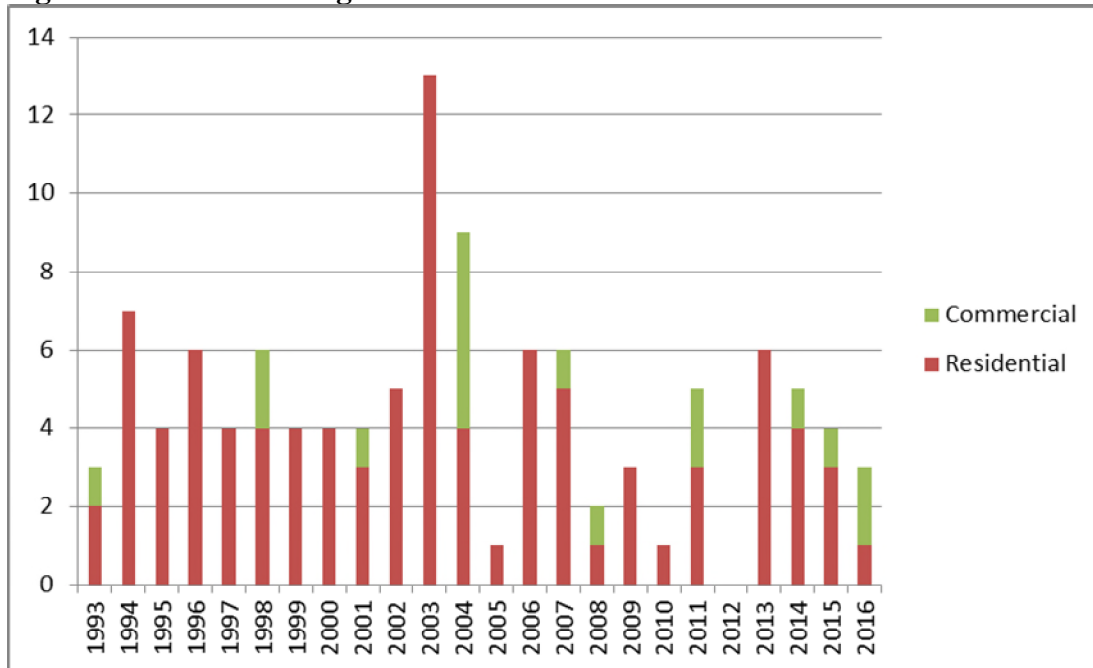
average of 3 homes was built each year. Building permit data provided by the Town for the period from 2002 through 2007 confirms a spike in residential permits in 2009, with an average of 4.8 per year. The high number of commercial permits issued in 2004 includes 2 new dormitories and 2 new modular classrooms at Northfield Mount Hermon.

Table 3-5: Summary of Gill Land Use, 2005

Land Use Category	Acres	Percentage of Total Acreage in Town
Forest	5,730	60%
Agriculture	1,599	17%
Water	676	7%
Wetlands	422	4%
Residential (> .5 acre lots)	397	4%
Open Land	159	1.7%
Urban Public/Institutional	148	1.6%
Recreation	120	1.3%
Powerline/Utility	96	1.0%
Residential (< .5 acre lots)	45	0.5%
Commercial	39	0.4%
Multi-family	30	0.3%
Other (transportation, waste disposal, mining)	17	0.2%
Industrial	0	--
Total	9,478	100%

Source: 2005 Massachusetts GIS Land Use data.

Figure 3-8: Gill Building Permits 1993-2016



Source: Franklin County Cooperative Inspection Program, November 2017.

Infrastructure

Transportation Systems

Roads and Bridges

The major transportation routes in and around Gill are:

- Interstate 91, approximately 2 miles west of the town line;
- Route 2, which runs through the southern portion of town; and
- Route 10, which connects Route 63 and I-91.

Route 2 (also known as the Mohawk Trail Scenic Byway) is one of the earliest scenic byways in New England, receiving its designation in 1953. Route 2 safety improvements in the Gill/Greenfield section are currently being completed as part of the rehabilitation of the Turners Falls-Gill Bridge and additional improvements for this area are in the preliminary planning stage.⁹



Trucks on Route 2 in Gill.

The Town has a total of 40.6 miles of road, of which approximately 11.4 are gravel.

As noted above, the construction of bridges spanning the rivers that form the Town's boundaries played a large role in the historic development of the Town of Gill. There are currently four key bridges that connect Gill to surrounding communities, including: the award-winning French King Bridge, completed in 1932; the Turners Falls-Gill Bridge, which underwent an extensive re-construction in the early 2000s; and two other notable bridges which are currently rated as "structurally deficient."¹⁰

Transit

There is currently no transit service to or from this area of the county nor are there connections to other transit routes. Previous service was sporadic and based on the Northfield Mount Hermon School schedule, making it difficult for residents to use the route since the days and times of runs were inconsistent. Service was discontinued completely at the end of FY2009.

⁹ 2016 Regional Transportation Plan, FRCOG.

¹⁰ Bridges are considered structurally deficient if they fall below specific thresholds. These bridges may span a range of conditions, from requiring a minor, but vital, repair to a more complete rehabilitation.

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The Franklin Regional Transportation Authority (FRTA) provides demand-response transportation services for the elderly and people with disabilities in Gill and the Franklin Transit Management (FTM—the operating company for the FRTA) provides ADA paratransit service.¹¹

One of the largest private bus services in Franklin County—Kuzmeskus—is based in the Town of Gill.

Rail

There are no freight or passenger rail services available in the Town of Gill. The Connecticut River Main Line runs roughly north-south through the abutting towns of Bernardston and Greenfield, transporting both freight and passengers. The Central Vermont Line - New England Central Railroad (NECR) also runs north-south through the Town of Northfield close to the town boundary with Gill. This rail line transports exclusively freight.

Air

The closest airport to Gill in Franklin County is the Turners Falls Municipal Airport, a general aviation facility located in Montague. Other municipal airports are located in the region in the towns of Northampton and Orange. Commercial flights can be obtained at Bradley International Airport, an approximately forty-five minute ride south via I-91 to Windsor Locks, Connecticut.

Pedestrian and Bicycle

Since 1991 and the passage of the federal Intermodal Surface Transportation Efficiency Act (ISTEA), bicycling and walking have been recognized as viable and efficient modes of transportation. Consequently, bicycle and pedestrian facilities are included as a regular part of transportation planning activities on the federal, state, regional, and local levels. Not only are bicycling and walking integral components of the transportation system in Gill and Franklin County, but they are also crucial components that help make the region a livable place. The U.S. Department of Transportation and the Federal Highway Administration have recently focused their attention on the important role these modes of transportation play and the many benefits they provide a community, including: reduction of greenhouse gases and other air pollution, lowered energy costs, less use of land and pavement, increased health benefits for people, economic savings, increased social interactions, and community revitalization.

Recently the FRCOG partnered with the YMCA in Greenfield, Baystate Franklin Medical Center, Greenfield Community College, and the Franklin County Chamber of Commerce to develop and launch *Walk Franklin County – for the Health of It!* This cooperative program works to promote walking for transportation, reduction of air pollution, and physical fitness and health. The *Walk Franklin County – for the Health of It!* project is a free program that allows participants to measure and record their walking progress and receive rewards for reaching their walking goals. The FRCOG has completed sets of walking maps for each town in Franklin County, including one in Gill: a flat 2.6 mile round trip walk through Gill Center. A map of the walk is available online at <http://www.walkfranklincounty.org/maps.php>.

¹¹ 2016 Regional Transportation Plan, FRCOG.

The Franklin County Bikeway is a project under implementation by the FRCOG with the aim to provide a biking network, with both on-road and off-road facilities, throughout Franklin County, linking employment, recreational, and educational destinations. Routes within Gill include:

- The Greenfield-Montague Loop Route - Intermediate/Novice (16.4 Miles) This loop connects the Canalside Trail Bike Path in Montague and Deerfield to the Riverside Greenway Bike Path in Greenfield. The route travels on the outskirts of downtown Greenfield and into Gill to connect these two off-road bike paths.
- Franklin County / Vermont Loop - Advanced (16 miles). This loop begins at the Franklin County Bikeway's Greenfield- Montague Route at the intersection of West Gill Road and Hoeshop Road. This route travels into Vermont and loops back south on Pond Road/Scott Road/West Road to Mount Hermon Station Road. This loop is strenuous because of the very hilly terrain.

Franklin County Bikeway maps are available on-line on the FRCOG website at:

<http://frcog.org/program-services/transportation-planning/>

Town officials have seasonal concerns about the pedestrian access between Gill and Montague. This access is not maintained by the MassDOT in winter on the Turners Falls-Gill Bridge.

Water Supply Systems

Except for those living on the Northfield Mount Hermon (NMH) School campus, or in the Riverside area, Gill residents rely on private wells for their water supply. NMH operates its own water supply system. The Riverside Water District manages its own water system and purchases its water from the Town of Greenfield. There is also a public well at Gill Elementary School. Prior to 1976, the Riverside area got its water from a neighborhood spring that is now privately owned and abandoned. Any future potential use of this site would not meet current MassDEP standards for reactivation.

Wastewater Treatment

NMH and Riverside have their own wastewater treatment systems. After discovering that its 1962 sewage lagoon facilities were inadequate during storm events, NMH recently updated its system at a cost of \$2 million. Following a typhoid outbreak in 1957, the Riverside community began to pursue a municipal wastewater treatment facility. After years of debate and discussions over how to pay for it, the project was finally launched in 1976 and was operational by October of 1980. The Town contracts with the Montague Wastewater Treatment Facility to treat sewage from Riverside homes and businesses, utilizing a pipe that runs under the river.

Solid Waste Management

Gill is a member of the Franklin County Solid Waste Management District. Therefore, all residents of Gill can dispose of household hazardous wastes in the fall through their program. Gill residents use the Greenfield transfer station, located at Cumberland Road (off Wisdom Way) in Greenfield. The Town provides curbside pick-up for the Pay-As-You-Throw (PAYT) program, at a cost of \$3 per bag. In calendar 2016, Gill shipped 208 tons of trash and 125 tons of recycling to the Springfield Materials Recycling Facility.

Cable and High Speed Internet

In 2016, the Town of Gill negotiated a new cable license with Comcast that will serve 95-96% of the households in Town.

Turners Falls Hydroelectric Project¹²

Key features of the Turners Falls Hydroelectric Project are the Turners Falls Dam and associated impoundment, a gatehouse, a power canal, two generating stations (Station No. 1 and Cabot Station), and a bypassed reach, all owned by FirstLight Power Resources. The Turners Falls Dam consists of two individual concrete gravity dams, referred to as the Gill Dam and Montague Dam, which are connected by a natural rock island known as Great Island. The 630-foot-long Montague Dam is founded on bedrock and connects Great Island to the west bank of the Connecticut River. It includes four bascule type gates and a fixed crest section which is normally not overflowed. When fully upright, the top of the bascule gates are at elevation 185.5 feet mean sea level (msl). The 493-foot-long Gill Dam connects Great Island to the east bank of the Connecticut River, and includes three tainter spillway gates. When closed, the elevation atop the tainter gates is at elevation 185.5 feet msl.

The Turners Falls Impoundment extends upstream approximately 20 miles to the base of TransCanada's Vernon Dam in Vernon, VT. To provide storage capacity for the Northfield Mountain Pumped Storage Project, the Turners Falls Impoundment elevation may vary, per the current FERC license, from a minimum elevation of 176.0 feet msl to a maximum elevation of 185.0 feet msl; a 9 foot fluctuation as measured at the dam. The Turners Falls Impoundment is not a level pool; rather, it is sloped between Turners Falls Dam and Vernon Dam. The slope of the water surface profile steepens as the magnitude of flow increases.

The gatehouse is located on the west of the Connecticut River. It forms the abutment for connecting the Montague spillway with the shoreline and is equipped with headgates controlling flow from the Turners Falls Impoundment to the power canal. The gatehouse houses 14 gates controlling flow to the power canal. The power canal is approximately 2.1 miles long and ranges in width from approximately 920 feet in the Cabot forebay (downstream end of canal) to 120 feet in the canal proper. The power canal has a design capacity of approximately 18,000 cubic feet per second (cfs).

FirstLight has two hydroelectric facilities located on the power canal, including Station No. 1 and Cabot Station. The canal bypasses approximately 2.7 miles of the Connecticut River. Fall River, located near the head of the bypass channel, discharges into the bypass reach. Station No. 1 discharges into the bypass reach approximately 0.9 miles downstream of the Turners Falls Dam. The Turner Falls Project is equipped with three upstream fish passage facilities, including (in order from downstream to upstream): the Cabot fishway, the Spillway fishway, and the Gatehouse fishway. Each of these facilities is associated with the Turners Falls Hydroelectric Project and utilize the power canal to facilitate fish passage.

¹² The description of the Turners Falls Hydroelectric Project was taken from the following FirstLight Power Resources website: <http://www.northfieldrelicensing.com/Pages/Turners.aspx>

Long-Term Development Patterns

Land Use Controls

Gill’s Zoning Bylaws were last updated in May 2015 and their Rules and Regulations Governing the Subdivision of Land were updated in August 2009. According to the Zoning Bylaws, the Town of Gill is divided into the following types of districts:

- Village Residential (VR)
- Residential (R)
- Residential-Agricultural (R-A)
- Village Commercial (VC)

The Town of Gill Official Zoning Map, located at the end of this section, shows the location(s) of the four districts. The vast majority of land in Gill is zoned Residential-Agricultural, with a minimum developable lot size of 2 acres. The area known as Riverside is the only part of town with Village Residential, Residential and Village Commercial Zoning. Table 3-6 shows the minimum lot size, minimum lot frontage and maximum lot coverage for each district.

Table 3-6: Zoning Bylaws – Excerpt from Dimensional Schedule

District	Minimum Lot Area in Acres	Minimum Lot Frontage in Feet	Maximum Lot Coverage*
Village Residential	0.25	100	50%
Residential	2.00	200	50%
Residential-Agricultural	2.00	200	30%
Village Commercial	1.00	150	70%

Along with the Dimensional Schedule, other elements of the Zoning Bylaws¹³ relevant to Open Space and Recreation Planning include:

- Section 6: Conservation Development. The purpose of Conservation Development is, in part, to encourage the preservation of common land for conservation, agriculture, open space, forestry and passive recreational use; to promote more sensitive siting of buildings and better overall site planning; to promote better utilization of land in harmony with its natural features; and to allow more efficient provision of municipal services.
- Section 23: Solar Electric Installations. , Approved by Town Meeting in 2011. The purpose of this bylaw is to facilitate the creation of new Large-Scale Ground-Mounted Solar Electric Installations (greater than 15 kW) by providing standards for the placement, design, construction, operation, monitoring, modification and removal of such installations that address public safety, minimize impacts on environmental, scenic, natural and historic resources and to provide adequate financial assurance for the eventual decommissioning of such installations.
- Section 15: Flood Plain Regulations. The Flood Plain District is established as an overlay to all other districts and limits development to a list of permitted uses in Article V, not including new residential structures. Any use must also be in compliance with Chapter 131, Section 40 of the Massachusetts General Laws, with the current state building code addressing floodplain areas, MassDEP’s Wetlands Protection Regulations (310 CMR

¹³ Town of Gill Zoning Bylaws, http://www.gillmass.org/files/2015-1019_Gill_Zoning_Bylaws.pdf

10.00), and MassDEP's related requirements for Inland Wetlands (302 CMR 6.00) and Subsurface Disposal of Sanitary Sewage (310 CMR 15, Title 5).

Conservation developments are characterized by common open space and clustered compact lots. The purpose of a conservation subdivision is to protect farmland and/or natural resources while allowing for the maximum number of residences under current community zoning and subdivision regulations. In some cases a greater density (density bonus) may be offered in the local ordinance to encourage this approach to residential development planning. The minimum area of land required for a Conservation Development is ten (10) acres for a subdivision or eight (8) acres for lots on an existing public way which do not require subdivision approval. At least thirty-five percent (35%) of the total parcel of land must be set aside as common land. The minimum required common land may not include wetlands, water bodies, floodplains, land with slopes greater than twenty-five (25%), roadways, and land prohibited from development by legally enforceable restrictions, easements or covenants.

The Zoning Bylaws do not prevent the town's prime agricultural land that is not currently under a conservation or agricultural preservation restriction from being developed for future residential use. Under the current bylaws, much of Gill's land is vulnerable to residential development. To protect the resource that is so vital to Gill's sense of community character - its farm and forestland - the Zoning Bylaws would merit a thorough review with a particular emphasis on protecting farm and forestland.

As part of the Subdivision Regulations the Planning Board, where appropriate, may require reservation of open space for up to three (3) years upon completion of the subdivision to provide an opportunity for the Town to purchase it for open space or recreation purposes. The Planning Board shall not require reservation of more than ten percent (10%) of the gross area of the subdivision for such purposes, and shall not require reservation of areas smaller than four (4) acres, except in extraordinary circumstances.¹⁴

Much of the development that has occurred in Town in recent decades has been along the town's roadways, under the Approval Not Required (ANR) provisions in the state's Subdivision Control Law (M.G.L. Ch., 41, §81P). In reviewing the Rules and Regulations Governing the Subdivision of Land, the community could consider incentives or other methods to more strongly encourage conservation development on appropriate properties that might otherwise be endorsed as ANRs. This recommendation is included as an Action Item in this plan.

Another regulation in place in Gill is the Right to Farm Bylaw, adopted in 2009, discussed earlier in this Section.

Cost of Community Services

The challenge for Gill and other communities is to find a model for growth that protects vital natural resource systems and maintains a stable property tax rate. In designing the model, it is important to understand the fiscal impact of different land uses, which can be calculated based on the relationship of property tax revenues generated to municipal services used. Although protected open space typically has a low assessed value and thus generates low gross tax

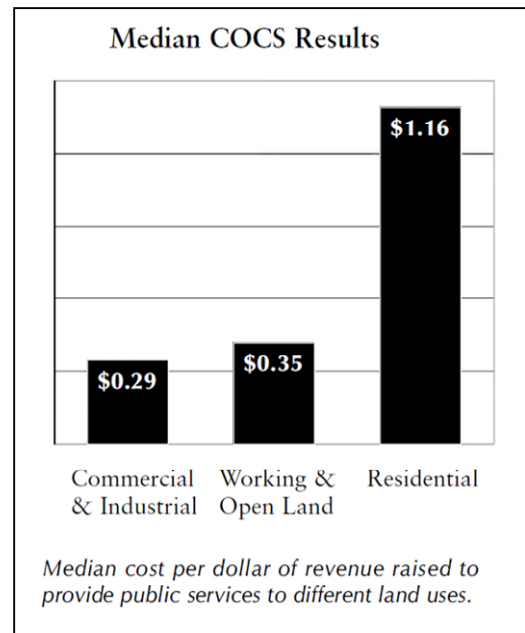
¹⁴ <http://www.gillmass.org/files/Planning-Board-SubdivisionRulesRegs.pdf>

revenues, municipal expenditures required to support this use are typically much lower than the tax revenue generated.

The American Farmland Trust (AFT) and other organizations have conducted Cost of Community Services (COCS) analyses for many towns and counties across the country. A COCS analysis is a process by which the relationship of tax revenues to municipal costs is explored for a particular point in time. These studies show that open spaces, while not generating the same tax revenues as other land uses, require less public services and result in a net tax gain for a community. Residential uses require more in services than they provide in tax revenues compared to open space, commercial, and industrial land uses. Communities, at the time of the study, were balancing their budgets with the tax revenues generated by other land uses like open space and commercial and industrial property.

Figure 3-9 demonstrates the summary findings of 151 COCS studies from around the country. For every dollar of property tax revenues received from open space, the amount of money expended by the town to support farm/forestland was under fifty cents while residential land use cost over a dollar. Taxes paid by owners of undeveloped farm and forestland help to pay for the services required by residential land uses. When a town has few land uses other than residential, homeowners and renters pay the full cost of the services required to run a municipality, maintain public ways, and educate young people. In this way, local property real estate taxes tend to rise much faster in communities that have little protected land and higher rates of residential development.

Figure 3-9: Summary of Cost of Community Services (COCS) Studies



Source: American Farmland Trust; 2016. http://www.farmlandinfo.org/sites/default/files/COCS_08-2010_1.pdf

In 2009, a COCS study was completed for the Town of Deerfield, and may provide a useful local example for Gill. In Deerfield the study found that:

- 79% of fiscal revenue in fiscal year 2008 was generated by residential land, 9% was generated by commercial land, 9% by industrial land, and 3% by farm and open land.
- 90% of expenditures were used to provide services for residential land compared with 5% for commercial land, 4% for industrial land, and 1% for farm and open land.

In other words, in fiscal year 2008:

- For each \$1 of revenue received from residential properties, Deerfield spent \$1.14 providing services to those lands.
- For each \$1 from commercial land the town spent 55 cents,
- For each \$1 from industrial land, the town spent 47 cents providing services; and
- For each \$1 received from farm and open land, the town spent 33 cents.

Residential land uses created a deficit of \$1.7 million, while the other three categories generated surpluses: \$573,397 from commercial, \$608,422 from industrial, and \$318,842 from farm and open land. While residential land use contributes the largest amount of revenue, its net fiscal impact is negative.

These findings support open space and farmland preservation, and commercial and industrial development, as a way to help towns balance their budgets. The studies are not meant to encourage towns and cities to implement exclusionary zoning that seeks to make it difficult to develop housing, particularly for families with school age children, who require more in services.

The long-term impacts of these strategies need to be considered. Patterns of commercial and industrial uses vary considerably between towns but all communities need to consider the impact of commercial and industrial development on the overall quality of life for residents. Increased industrial development could generate jobs as well as an increased demand for housing in town. Permanently protecting a large portion of the town's open space and farmland from development could provide locally grown food and jobs, but may also jeopardize the ability for future generations to determine the best use for the land. It also can increase the cost of the remaining available land, making affordable housing development more difficult.

Additionally, the current capacity of different services in town is a key factor when considering what types of development to encourage. If a community is near or at capacity for services such as police, fire, water, roads, or schools, any additional population growth could be quite costly as these services would need to be expanded. However if a community has an excess in service capacity in these areas, new residential growth would not necessarily be a strain on the town's budget.¹⁵ In a climate of declining school enrollment, while acknowledging that home owners with children cost the town more than they pay in taxes, a community might determine that they want to attract families with children in order to maintain a valued community school.

The best types of commercial and industrial development to encourage in Gill might have some of the following characteristics: locally owned and operated; in the manufacturing sector; being a "green industry" that does not use or generate hazardous materials; businesses that add value to the region's agricultural and forest products; and businesses that employ local residents. It is also important to consider that successful commercial and industrial development often generates increased demand for housing, traffic congestion and some types of pollution. Therefore, the type, size, and location of industrial and commercial development require thorough research and planning.

The 2004 Gill Community Development Plan mapped development constraints, including prime farmland and permanently protected open space. One noticeable pattern relevant to development patterns is a significant area of prime farmland that is located in the northeast area of Town, as well as along the Connecticut River on the eastern border of Town. Another pattern is a large area of permanently protected open space in the southeast area of Town. The Plan's goals and objectives encouraged commercial development in selected areas of the Route 2 corridor that are

¹⁵ *Cost of Community Services Studies: Making the Case for Conservation*. Julia Freedgood, 2002.

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compatible with residential and recreational uses and the examination of other locations to determine if there are areas suitable for commercial and/or light industrial development.

For Gill, an approach that encompasses both appropriate business development and conservation of natural resources will best satisfy the desires of residents to maintain their community character while offsetting the tax burden. Thinking about patterns on a more regional basis could help the Town in a goal of conserving large blocks of contiguous forestland, as well as permanently protected open space, prime farmland and other vital resources. By continuing to pursue growth management strategies that include active land conservation and zoning measures that balance development with the protection of natural resources, Gill will be able to sustain and enhance the community's rural village character and help to maintain a high quality of life for residents.