5 Land Use

A. Introduction

The Bernardston community would like to preserve the rural character of the town, create a more vibrant Center Village, and foster sustainable economic development. To meet these goals, land use in Bernardston needs planning needs to consider regional population growth, the associated changes in development pressure, and the impacts of climate change.

In the 1800s, Bernardston’s village center moved from the hills down to the valley alongside the Falls River, where the town hall and historic churches continue to be the heart of the community today. Classic New England buildings and churches line the main streets, and the old grain mill along the river is maintained as a farmer’s supply store. Business and industry are tucked into the southern area of town, in the village center and along state roads, leaving scattered residential areas, farms, and large tracts of forested land to the north. Interstate 91 parallels an old stagecoach route from New York to Vermont that is now State Route 5. The vast majority of land in Bernardston remains open agricultural and forested land, contributing to the rural character enjoyed by residents.

B. Existing Conditions

1. Landscape Character

The steep hills that flank the eastern and western sides of the Falls River Valley form the walls of a channel that connects Greenfield, the hub of Franklin County, with the northern Green Mountains of Vermont. Tens of thousands of passers-by travel daily through the central valley of Bernardston, passing the forested hills that rise on either side of Interstate 91. The rocky slopes of the West Mountain Ledges and Satan’s Kingdom Wildlife Management Area restrict transportation routes, agriculture, and development to the narrow floodplain that runs along the center of the town. Here, many interests compete for the fertile and accessible flat lands. Agriculture, residential, business and industrial development are in close proximity to the rivers and wetlands that eventually feed into the Connecticut River south of the town.

The village center maintains a classic New England charm, with colonial homes, a handsome brick library, an historical Town Hall, an active country store and farmer’s supply, and an impressive arched railroad bridge crossing the Fall River. Residential, business, and industrial development have spread out along state Routes 5 and 10 to the north, south, and east of the center of town. The types of established businesses in Bernardston also reflect a culture with rural values: wholesale farm supplies, campgrounds, logging companies, family-owned restaurants, and an eighteen-hole golf course.

Land use in the Falls River Valley

Bernardston's flanking mountains have funneled most development into the valley, outlined in red. A mix of land uses (left) are found there, and it also has extensive NRCS-identified prime farmland (in green, right).
Current Land Use

The land uses in Bernardston follow a traditional New England pattern of heavily forested hillsides surrounding mixed residential, industrial, and agricultural lands in the fertile floodplains along the rivers. Historically, the rivers provided energy and transportation opportunities, and the flat, well-drained soil alongside them was the obvious place to locate a town center.

In the mid-1940s, engineers identified these same flat areas along major rivers as a prime route for the new interstate highway. Interstate 91 follows the Falls River Valley, dividing the town in half. The construction of the interstate changed the course of development in town, replacing farm fields with a four-lane highway and exit ramps for a new point of entry near the center of town. In the 1975 master plan, the new highway that increased the accessibility of Greenfield, Springfield, and points south was recognized as an opportunity for industrial and commercial expansion.

The facing map shows land uses from 2005 Massachusetts Geologic Information System (GIS) data. Residential land covers just over 5 percent of the town, roughly 800 acres. Industrial and commercial land form only 0.2 percent of Bernardston, with most of the 300 acres adjacent to the state roads, highways, and railroad.

Agriculture is very visible in Bernardston. Much of the 1,500 acres of farmland that makes up 10 percent of the town form part of the scenic landscape along Route 5 from the Greenfield town line all the way north to Vermont, and along smaller roads such as Eden Trail Road into Leyden.

The large contiguous areas of forest that cover over 75 percent of Bernardston’s total 23.4 square miles include the steep hillsides east and west of the town center. This dense forest not only forms the backdrop of almost all views of Bernardston from the main roads, but most of the forested area in Bernardston is also identified by the Natural Resources Conservation Service as growing on the most highly productive “prime” forest soils. At least 1,500 acres of forest are actively logged, and 1,150 acres are permanently protected by the Department of Fish and Game for wildlife management. The access that I-91 provides to Greenfield and the greater region continues to drive development in the southern portion of town, close to the border of the city of Greenfield. To the east, west and north, the towns of Leyden, Northfield and Guilford, Vermont share a similar rural character with Bernardston.

Forests

Over 75 percent of Bernardston is forest. Responsibly managed forests can provide wildlife habitat, sequester carbon, and provide income for landowners.

Industry

CaroVail, a manufacturer of agricultural inputs, is located along State Route 10 and has access to the rail for regional distribution.
Land Use Change

The map on the facing page shows changes in land use, represented by the use to which they were converted between 1971 and 1999. Most of these lands were converted from agricultural, forested, or barren open land and developed for housing.

The Crumpin-Fox Golf course was built in 1977 and is currently owned by the Sandri Corporation, the largest landowner in town. Sandri Corporation owns over 600 acres, including an inn and the gas station in Center Village. The most significant recent business is the Kringle Candle Company, established in 2009.

Business and industrial development in Bernardston has been established along Route 10 near the border with Northfield. There are several available lots zoned for industrial and business use that border the rail line south of Route 10 and have development potential with opportunities to increase jobs in the region and Bernardston’s tax base.

One major challenge for business and industrial expansion in Bernardston is finding appropriate and affordable septic solutions. One example of a business that struggled with this issue is Lefty’s Brewery, a successful small business that was established in Bernardston’s Center Village, but relocated to Greenfield due to wastewater constraints that prevented the business from increasing its production. As the brewery expanded, soil limitations on site required the business to update to a specially designed alternative septic system in order to accommodate the increased volume of wastewater, and the brewery could not afford the upgrade.

Although the centrally located access to I-91 is a desirable asset for businesses and industries, the local soil conditions, proximity to wetlands, and lack of centralized sewers have limited the type and scale of industrial and businesses development in Bernardston.

Agricultural and forested land changes between 1971 and 1999 show shifts in land use management. Most of the land converted to agriculture in this time period was previously forest, and most of the land converted to forest was abandoned agricultural and pasture lands. There was a growth in the recreational facilities in Bernardston, with the establishment of the Crumpin-Fox golf club and the town-owned Pratt Field.

The 1980s was a period of high residential development in the region, and housing was the largest sector of development in Bernardston from 1971 to 2005. The areas in red reveal a pattern of new residential development outside of the center of town. In contrast to the density of mixed-used development in valley, residential development during this time period was dispersed throughout the town, predominantly in rural areas. This trend is of concern because the greater the distance from municipal services such as town water, schools, snow removal, road maintenance and emergency services to residents, the higher the costs to the town. Continued residential development outside of the center of town will continue to increase the costs of services to residents, and could damage sensitive wildlife habitat areas as discussed in the Natural and Cultural Resources element of this plan.

<table>
<thead>
<tr>
<th>New Use</th>
<th>Area</th>
<th>Previous Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>470 Acres</td>
<td>Forest (66%), Agricultural (26%), Barren (8%)</td>
</tr>
<tr>
<td>Recreation</td>
<td>187 Acres</td>
<td>Agricultural (50%), Forest (50%)</td>
</tr>
<tr>
<td>Barren</td>
<td>152 Acres</td>
<td>Forest (60%), Agricultural (27%)</td>
</tr>
<tr>
<td>Agricultural</td>
<td>110 Acres</td>
<td>Forest (90%), Barren (10%)</td>
</tr>
<tr>
<td>Forest</td>
<td>74 Acres</td>
<td>Cropland (33%), Pasture (33%), Barren (33%)</td>
</tr>
<tr>
<td>Commercial</td>
<td>20 Acres</td>
<td>Forest (60%), Agricultural (20%)</td>
</tr>
<tr>
<td>Industrial</td>
<td>23 Acres</td>
<td>Forest (50%), Agricultural (50%)</td>
</tr>
<tr>
<td>Waste Disposal</td>
<td>8 Acres</td>
<td>Forest (100%)</td>
</tr>
</tbody>
</table>
Developed for agricultural use.

Became forest.

Became barren land - vacant open land that is not managed for agriculture or recreation.

Converted to recreational use.

Developed for residential use.

Developed for commercial use.

Developed for industrial use.

Converted to waste disposal.

Land Use Change
1971 - 1999
2016 Master Plan
Town of Bernardston
### Zoning
Bernardston’s zoning by-laws were adopted in 1987 and have been revised numerous times since. They were created with the intention of preserving the historic, rural-agricultural landscape of the town. There are currently six zoning districts and two overlay districts. The Center Village (CV) zone allows for mixed use in the center of town, with residential plots and business lots of a minimum of a half acre. The one-acre Residential (R1) zones allow for mid-density development close to the center of town. The Residential-Agricultural (R/A) zone requires plot sizes to be at least one-and-a-half-acres and covers over 90 percent of Bernardston. The Industrial (I) and Business (B) zones are restricted to land bordering the state roads leading east and south of the center village. Agriculture and agricultural enterprises such as seasonal farm stands are allowed in every zone.

### Zoning Districts

<table>
<thead>
<tr>
<th>Code</th>
<th>Zoning District</th>
<th>Description</th>
<th>% of Landcover</th>
</tr>
</thead>
<tbody>
<tr>
<td>R/A</td>
<td>Residence / Agricultural</td>
<td>Nearly identical restrictions as R1 but a minimum lot size of one and a half acres.</td>
<td>91%</td>
</tr>
<tr>
<td>R1</td>
<td>Residence / One Acre</td>
<td>A residential district with single and two-family dwellings. Bed and breakfasts and home occupations are allowed but no other business or industry.</td>
<td>6%</td>
</tr>
<tr>
<td>CV</td>
<td>Center Village</td>
<td>A mixed-use district with single-and multi-family dwellings, small businesses and retail. The minimum plot size is ½ acre. There are no drive-thru or industry allowed in this zone.</td>
<td>2%</td>
</tr>
<tr>
<td>I</td>
<td>Industry</td>
<td>Area restricted to industrial uses, with a minimum lot size of two acres.</td>
<td>1%</td>
</tr>
<tr>
<td>B</td>
<td>Business</td>
<td>A non-residential district to accommodate larger businesses, with a minimum lots size of a half an acre.</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>EPD</td>
<td>Expedited Permitting District</td>
<td>A district with an expedited process for approval of commercial and industrial development. This area has outlined guidelines for site design, landscaping, and stormwater management. The minimum lot sizes are one half acre.</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

### Overlay Districts

<table>
<thead>
<tr>
<th>Code</th>
<th>Overlay District</th>
<th>Description</th>
<th>% of Landcover</th>
</tr>
</thead>
<tbody>
<tr>
<td>WR</td>
<td>Water Resource Protection District</td>
<td>An overlay district with stringent restrictions on use, storage of potential contaminants, and amount of pavement allowed. The purpose of this designation is to protect the public health by preventing contamination of the ground and surface water resources providing public drinking water.</td>
<td>5%</td>
</tr>
<tr>
<td>FP</td>
<td>Floodplain Overlay District</td>
<td>An overlay district with additional restrictions on development and measures to protect existing vegetation and soil stability. The purpose of this designation is to reduce the risk of public emergencies, reduction in water quality, contamination and erosion due to flooding.</td>
<td>4%</td>
</tr>
</tbody>
</table>
Zoning Districts

- Residential / Agricultural (91% of landcover in town)
- Residence 1-acre (6%)
- Center Village (2%)
- Industrial (1%)
- Business (<1%)
- Expedited Permitting District (<1%)

- Floodplain Overlay District (4%)
- Water Resource Protection District (5%)

2016 Master Plan
Town of Bernardston
Case Study: 
Using Design Guidelines to Preserve Small-Town New England Feel

Edgartown, Massachusetts, was the first village settled on Martha’s Vineyard and it thrived during the nineteenth century as a whaling community. The town became a popular tourist destination that, during a peak in commercial development at the end of the twentieth century, adopted a permitting process with design guidelines to protect the quality and character of its downtown.

In 1988, Edgartown received a grant from the Massachusetts Council on the Arts and Humanities to develop a master plan to preserve the historic rural feel of the town’s rapidly developing Upper Main Street. The landscape architectural firm Dodson Associates worked with the Planning Board, local business owners, town departments and residents to identify desirable design elements for future development.

Through weekly meetings over the course of several months, they established a goal of transforming the town’s automobile-oriented strip into a pedestrian-oriented commercial area. They used innovative site planning and design techniques to help manage growth and generate development better suited to match the existing character of Edgartown. The final recommendations included locating all parking in the rear of buildings and requiring sidewalks, trees along the main road, buried utility wires, and clustered buildings, and encouraging shared parking. The group also generated a set of design guidelines for building heights, rooflines, materials, signs, and lighting.

Although some zoning by-laws were amended as a result, the town opted to create a special permit for new development on Upper Main Street that includes illustrated design guidelines for interested developers to follow.

This strategy has been very successful for the town. Since the permitting process was implemented in 1989, the majority of the proposals conform with the town aesthetic. The clear expectations outlined and illustrated in the permitting process have led to faster and less contentious review processes for new businesses. Traffic congestion increased only marginally over the following decade, and pedestrian activity increased at a higher rate than other commercial corridors on Martha’s Vineyard. A citizen committee regularly meets to discuss ways to continue to preserve the quality of Main Street, including potentially building a bypass road around the village center. Today the town’s 4,000 full-time residents continue to rely on its rural seaside character and historic center to draw the 20,000 tourists each summer that drive the local economy.

As commercial development pressures in Franklin County and Bernardston grow, a similar set of guidelines for Center Village development could help to protect the small-town New England feel that so many of its residents value.

(Arendt, 1994; USDOT)
2. Recent Zoning Changes

Within the last five years, the Planning Board proposed significant changes to the town’s zoning by-laws that have been approved and adopted at Town Meeting. In 2010, undeveloped sites near the entrance to I-91 were designated Expedited Permitting Districts. The purpose of this designation, according to Massachusetts General Law Chapter 43D, is to promote commercial and industrial development that generates tax revenue and jobs for the town, while ensuring high quality site planning, architecture, and landscape design that fit the character of Bernardston. These districts have been assigned comprehensive performance standards that include low impact development and renewable energy production criteria, and allow for planned unit developments that comply with detailed design guidelines. The extensive criteria developed for these districts allow the town to guarantee an expedited permitting process for developers wishing to move forward with plans quickly.

The adoption of these districts also fulfills a requirement for becoming a registered Green Community, as outlined by the Massachusetts Executive Office of Energy and Environmental Affairs. Designation as a Green Community will allow the Town to apply for additional grants to finance energy efficiency and renewable energy projects on the local level (Town of Bernardston and FRCOG, 2010).

In 2013, two overlay districts were created: the Water Resource Protection District and the Floodplain Overlay District. The purposes of these overlay districts are to protect the quality of the public water supply and mitigate potential damage due to flooding. The Floodplain Overlay District contains additional restrictions on development and the storage of potentially hazardous materials, and strict land-use codes including the preservation of existing vegetation to prevent erosion during large storm events. The Water Resource Protection District prohibits specified industries and businesses, such as auto body shops, that require the use of potential contaminants and the storage of chemicals such as rock salt. These districts follow the delineated Zone II recharge areas for the wellheads in current use, as outlined in the Watershed Protection element of this plan.

In 2014, the process for permitting was amended to include increased requirements for site plan reviews. These changes will allow the Planning Board to have greater influence over the design elements of new developments in town, and to provide an opportunity for public input on the decisions of the planning board.

The adopted zoning by-laws and the changes implemented over the last five years reflect a dedication on the part of the town to socially and environmentally conscious development. These recent changes are in line with the identified goals of preserving the town’s rural character and fostering sustainable economic development.

Continuing to adopt by-laws that preserve the ecological integrity of the existing open space and include design guidelines and low impact development criteria for the other districts in town will help to ensure attractive, appropriate development in Bernardston, as well as potentially protect against the impacts of climate change. These same values should be incorporated into revisions of the Subdivision Regulations, which have not been amended since their adoption in 1987. Updating the subdivision regulations is currently on the agenda for the Planning Board.

More detailed recommendations for possible changes to Bernardston’s land use controls are outlined at the end of this section and in Section 10: Conclusions.
3. Residential Development

Residential land is the fastest growing category of land use in Bernardston. Between 1980 and 2000, the number of housing units grew by 30 percent, a higher percentage increase than in the county and the state during that period. Since 2000 the rate of development has declined sharply, although there were eighty-nine permits for new housing units granted between 2000 and 2010 (Town of Bernardston and FRCOG, 2014). Since 2010, only twelve new residences have been built in town. This decline reflects an overall decrease in the housing market in the county and the state during this time (FRCOG, 2013). According to the 2013 American Community Survey, there are 1,024 housing units in Bernardston. Eighty-four percent of Bernardston’s housing units are single-family residences, a category which include both detached homes and attached units such as condos. The rest of the town’s housing mix comprises duplexes (4 percent of the town’s total units), multiple-unit buildings (6 percent) and mobile homes (7 percent). Eighty-three percent of residences in town are owner occupied, and the median value for houses is $277,000 (American Community Survey, 2013). As shown on the Land Use Change Map, recent residential development has occurred primarily on the outskirts of town.

Franklin County as a whole experienced a similar increase in residential growth between 1970 and 2000, with a sharp decline in the rate of new construction after 2005 (FRCOG, 2013). Nearly all of the new residential units constructed in recent years have been single-family homes built along existing roadways, which is the type of residential development with the least stringent requirements for permitting, as outlined by the Commonwealth’s Approval-Not-Required rules (FRCOG, 2013). Based on population growth projections, the county has identified the need for an additional 2,000 units in the county by the year 2035, including an increase in the amount of affordable and universally accessible housing (FRCOG, 2013). The county’s goals for residential development include locating housing near existing employment opportunities and infrastructure, adapting existing structures, and increasing the energy efficiency of residential units (FRCOG, 2013).

Changes to the land use regulations that encourage in-fill development in the Center Village and residential zones near the I-91 entrances could support the goals for residential development. Because of the relative ease of building on the flatter slopes in the southern portion of town and the proximity to Greenfield, it can be anticipated that these areas will have higher development pressure in the future. In order to achieve a higher density in these areas, additional considerations for dealing with wastewater may be necessary, as discussed in the Watershed Protection element of this plan.

Residential development and housing in Bernardston are addressed in more detail in the Housing element of this plan.

Governor Winthrop House
Bernardston has many beautifully maintained historic homes.
4. Business and Industrial Development

The 1975 Master Plan identified ninety-four acres of commercial land and five acres of industrial land in Bernardston. Currently there are seventy-four acres of commercial land and forty-three acres of industrial land in town, showing a 21 percent decrease in commercial area and a 760 percent increase in industrial area over the last forty years. According to the 2012 census data, there are forty-eight registered businesses and industries in town, the largest sector being construction (15), followed by retail (9), and food service (6) (United States Census, 2012).

The available Expedited Permitting Districts offer opportunities for continued business and industrial development in Bernardston, and the current zoning by-laws require the adoption of low impact development infrastructure and design guidelines, so that future business and industrial development in these areas meet the town’s goals of maintaining rural character and fostering sustainable economic development. One identified challenge to further business and industrial development is the low suitability of soils in Bernardston for septic tank absorption and the lack of sewer infrastructure in town, as discussed in Section 3. This constraint limits the feasibility of types of industries and businesses such as food processing plants that produce large amounts of organic waste to become established in Bernardston. Business and industrial development are addressed in further detail in the Economic Development element of this plan.
5. Agriculture

Residents of Bernardston identify strongly with its agricultural heritage. Residents express appreciation for the scenic farmlands along the main roads in town, and at community meetings farms and farming were listed among Bernardston’s most valued resources and favorite activities to do in town. Loss of working farms and farmland was one of the biggest changes noted since 1975. One resident remarked that in 1975 there were thirteen operating dairy farms in town, whereas now there are two.

The 1975 Master Plan estimated there were 2,520 acres of farmland, mostly in corn and hay fields, with some apple orchards and tree farms. This estimate was created through a visual analysis, driving through town and recording on a USGS map the fields observed.

The 2005 Land Use data available today through the Massachusetts Geological Information Systems (MassGIS) shows 1,478 acres in cropland, pasture, nurseries and orchards. Assuming some margin of error due to the difference in data collection methods, there has been a loss of roughly 1,000 acres of farmland in Bernardston over the last forty years. Prior to 1975, the creation of Interstate 91 forced some families in town to give up their farms, a loss which is still remembered today. One community member, who lost part of the dairy farm he grew up on, said that every foot of the highway took away one acre of farmland.

According to the American Farmland Trust, between 1971 and 1999 Massachusetts lost an average of 2,900 acres of farmland a year to development. There are a variety of reasons for the loss of farmland.

The competitive value of farmland for residential, business, and industrial development raise the value of farmland, making land increasingly unaffordable for farmers to purchase or rent. In 2008, the average per-acre farm real estate value in Massachusetts was $12,200, the highest in the country (American Farmland Trust, 2008).

Rising land values and energy prices have contributed to an overall rise in costs for farmers, leading to abandoned farms. From 1997 to 2002, average production expenses on Massachusetts farms increased by 27.5 percent, and during the same five-year period there was a steep drop in net farm income, from an average per farm of $24,000 to an average of $11,000 (American Farmland Trust, 2008).

Agricultural Value

Agriculture is an integral part of the Massachusetts economy, culture, and landscape. In 2007 farms in the commonwealth generated $560 million a year in revenues, and employed 15,600 workers (USDA Census of Agriculture, 2012). In addition to direct contributions to the scenic qualities of the landscape and local economies, farms also offer lesser-known benefits to communities such as flood storage, carbon sequestration, recreational opportunities, and lower costs of services for rural towns.

Studies of the cost of community services in towns across the country consistently show that farmland generates more in local tax revenue than it requires in local municipal services. Even when farmland is enrolled in one of the state protection programs and is assessed at its agricultural value it helps to finance town services (American Farmland Trust, 2008).

A study of seven Massachusetts towns between 1998 and 2008 showed that for every $1.00 of revenue generated by the residential sector, $1.09 is spent in services to the sector. In contrast, for every $1.00 of

![Different land uses have different demands](media/image.png)

The cost of services to the town for farmland and open land is lower than other types of land use.
Recent Regional Agricultural Trends

In recognition of the economic challenges that farmers face, and the high value of farmland for local economies, food systems, and healthy ecosystems, there has been a surge of economic and land use policies designed to support farmers and the future of agriculture in Massachusetts.

The Agricultural Preservation Restriction program allows farmers to sell the development rights on their land, permanently protecting the land as valued agricultural land. Massachusetts was the first state in the country to pioneer this type of program in 1979, and it has since protected over 800 farms and 68,000 acres of farmland.

The state also offers tax abatement programs for farmers in exchange for temporary development restrictions. There are local governmental organizations such as the Franklin Regional Council of Governments as well as land trusts and organizations such as Communities Involved in Sustaining Agriculture that offer a variety of funding, technical resources, and marketing support for farmers. Due to these efforts, the rate of farmland loss in Massachusetts has slowed, and between 2007 and 2012 the amount of farmland and number of farms in the Commonwealth grew by 1 percent, and the income generated by farms grew by 4 percent (USDA Census of Agriculture, 2012).

These trends suggest that through ongoing efforts to ensure that local farmers have access to regional and state resources and adopting local economic and land use policies that support the agricultural sector and farmland preservation, Bernardston can support a viable future for its farmers.

The 1,478 acres of agricultural land and 11,683 acres of forested land in Bernardston provide $13 million worth of ecosystem services to the town annually.

Revenue generated by farmland and open space, only $0.47 is spent in services.

Farmland and open space also provide ecosystem services for communities. Well managed farmland with implemented soil conservation measures benefit aquifer recharge areas, filter surface and subsurface water, and help minimize flooding. Farmland can also offer valuable habitat for birds and other wildlife. Managed forests, pastures, hayfields, and cropland that is not tilled annually act as carbon sinks, sequestering carbon dioxide and helping to mitigate climate change.

One Massachusetts Audubon study concluded that the annual value of these services provided by cropland and pasture is $1,381 per acre; for forestland, the value is $984 per acre (American Farmland Trust, 2008). At this rate, the 1,478 acres of agricultural land and 11,683 acres of forested land in Bernardston provide $13 million worth of ecosystem services to the town annually.

A historically agricultural landscape undergoing changes

Rising costs of production and energy costs have contributed to the abandonment of working farms, such as this former dairy farm. Capitalizing on state and regional support networks for agriculture may help keep working farms in town.
Farms in Bernardston

Different types of agriculture require different land management. The rolling fields, grazing cattle, and stacked hay bales of a dairy farm lend a specific quality to the landscape that is very different from orderly patterns of a Christmas tree farm or long colorful rows of annual vegetables. Bernardston is home to at least eight family farms whose main incomes are earned off the land. There are many more families who enjoy keeping farm animals or working their lands as hobbies or for supplemental income. Residents list the proliferation of small farms in town as a valued asset and among the reasons they chose to live in Bernardston.

The Agricultural Commission in Bernardston was formed in 2006 and currently has seven members. Since forming, it has successfully initiated the adoption of a Right-To-Farm Bylaw that states the town’s commitment to agriculture and explicitly permits agricultural activities in town, and instituted an excise tax waiver for farm vehicles and machinery. Their principal ongoing responsibility is mediating complaints about animals and cleanliness between residents and neighboring farms. The commission has also organized a farm tour as part of Old Home Day, promotes the farmers market, and keeps local farmers informed of state legislative changes. The local farmers market is seasonal, and only two farms in town sell their products at the Bernardston market. The main purpose of the farmers market is to bring regionally local food into Bernardston for residents. Most farms in Bernardston access regional markets outside of town for the sale of their products. State legislation prohibits the sale of raw milk off farm, and the two dairy farms in Bernardston are members of “Our Family Farms,” a regional dairy cooperative where all of their milk is processed and sold.

The farmers in Bernardston express concern about who will take over the farms in the future, since most of the next generation leaves town for other careers. They also expressed concern that the town does not have a mechanism to generate funds for protecting farmland. The state requires towns to contribute up to 20 percent of the value of the development rights of a property entering into the Agricultural Preservation Restriction (APR) program. One Board member observed that this discourages farmers from seeing APR as a viable option. Assuming that the town does not have the funding to contribute, they perceive a high risk of having their request for the protection of their farm turned down at Town Meeting. The Board also expressed concern that the unprotected farmland in the southern portion of town has higher development pressure due to the close proximity to Greenfield.

The Agricultural Commission is currently talking with regional groups such as Franklin Regional Council of Governments (FRCOG) and Community Involved in Sustaining Agriculture (CISA) about the possibility of bringing industries to the local area that would support local farms, such as a slaughterhouse, milk-processing plant, or central composting facility. Encouraging the establishment of industries in town that would offer services and additional markets for local farmers and encouraging the protection of farmland could help to ensure that farms remain an active part of the landscape, ecology, and economy of Bernardston. These efforts cannot be accomplished on a municipal level; they will require continued networking with regional and state organizations.

Visible Farms

River Maple Farm was founded in 1912 and is run by the Grover family. The dairy, maple syrup, and vegetable farm is a prominent feature along scenic Route 5.
## Farms in Bernardston

Of the thirty farms identified by the Agricultural Commission, eight rely on farming as the main source of income for the family. At community meetings, residents listed the ability to have farm animals and maintain small scale farms as one of the reasons they choose to live in Bernardston.

<table>
<thead>
<tr>
<th>Location of Farm</th>
<th>Owner</th>
<th>Product</th>
<th>Estimated Acres</th>
<th>Farm is the main source of income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brattleboro Road</td>
<td>Gray</td>
<td>Pheasants</td>
<td>550</td>
<td>x</td>
</tr>
<tr>
<td>Grover</td>
<td></td>
<td>Dairy, Maple Syrup</td>
<td>160</td>
<td>x</td>
</tr>
<tr>
<td>Hodges</td>
<td></td>
<td>Forestry, Hay</td>
<td>68</td>
<td></td>
</tr>
<tr>
<td>Moulton</td>
<td></td>
<td>Beef</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shores</td>
<td></td>
<td>Tree Farm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gaines</td>
<td></td>
<td>Beef</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Couch Brook Road</td>
<td>Morley/ Cevasco</td>
<td>Mixed Vegetables and Fruit</td>
<td>17.5</td>
<td>x</td>
</tr>
<tr>
<td>Eden Trail Road</td>
<td>Pratt</td>
<td>Trees, Horses, Beef</td>
<td>130</td>
<td></td>
</tr>
<tr>
<td>Haviland</td>
<td></td>
<td>Horses, Sheep</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duprey</td>
<td></td>
<td>Dairy</td>
<td>100</td>
<td>x</td>
</tr>
<tr>
<td>Duprey</td>
<td></td>
<td>Maple Syrup, Beef, Horses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duprey</td>
<td></td>
<td>Sheep</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Mussbaum</td>
<td></td>
<td>Horses, Chickens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kinsman / Coffin</td>
<td></td>
<td>Chickens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abramson</td>
<td></td>
<td>Sheep</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>Snow</td>
<td></td>
<td>Horses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huckle Hill</td>
<td>LaValley</td>
<td>Forestry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shockro</td>
<td></td>
<td>Horse Stables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shedd Road</td>
<td>Shedd</td>
<td>Horses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Martindale Road</td>
<td>Melulene</td>
<td>Vegetables, Fruit</td>
<td>3</td>
<td>x</td>
</tr>
<tr>
<td>Schimelpfenig</td>
<td></td>
<td>Horses</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>Allen</td>
<td></td>
<td>Horses</td>
<td>55</td>
<td></td>
</tr>
<tr>
<td>Misch</td>
<td></td>
<td>Goats</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shaw Road</td>
<td>Deane</td>
<td>Horse Stables</td>
<td>180</td>
<td>x</td>
</tr>
<tr>
<td>Shaw</td>
<td></td>
<td>Beef</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Cross Street</td>
<td>Porvecchio</td>
<td>Horses, Dairy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deane Road</td>
<td>Deane</td>
<td>Forestry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ben Hale Road</td>
<td>Cutting</td>
<td>Sudbury Nurseries</td>
<td>200 (some in Gill)</td>
<td>x</td>
</tr>
<tr>
<td>Northfield Road</td>
<td>Clarke</td>
<td>Horses, Cattle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bald Mountain Road</td>
<td>Shores</td>
<td>Trees</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Valuable Farmland and Development**

Prime farmland, as defined by the U.S. Department of Agriculture’s Natural Resources Conservation Service (NRCS), is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, or oilseed crops and is available for these uses. The characteristics of these soils, including texture, nutrient levels, and moisture capacity are ideal for sustained high yields of these crops when proper management, including water management, and acceptable farming methods are applied. The USDA classifies the highest quality soils as Prime Farmland, and soils which share some, but not all, of the highest quality characteristics as Soils of Statewide Importance. For the purpose of this report, these two classifications together are referred to as identified valuable farmland.

According to the NRCS, prime farmland is of major importance in meeting the nation’s short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that local and state governments should encourage and facilitate the wise use of our nation’s prime farmland. Implementing land-use planning mechanisms to support the agricultural use of prime soils will improve local and regional food security and rural economies in the future.

There are a total of 4,891 acres of valuable farmland identified in Bernardston, which is 32.6 percent of the total land in Bernardston. Just over half of these soils are within the Falls River floodplain and gently sloped land south of Route 10; the other half are found primarily in the eastern half of the town in the higher elevations.

The permanently protected open land encompasses 688 acres of identified valuable farmland. These areas include private land with conservation restrictions or agricultural preservation restrictions, and state, town and non-profit owned land.

Many of the same characteristics of prime farmland—flat, well drained soils—provide ideal conditions for urban development and transportation. There are 1,041 acres, 21 percent of the total identified valuable farmland, that have been developed for non-agricultural uses, including residential, commercial, industrial, municipal service infrastructure, and private or public recreation. Depending on the level of infrastructure developed on them, these lands may or may not be available for agricultural production in the future.

The lack of protected farmed land in Bernardston, both on identified Prime Farmland and other soils, has led the NRCS to identify Bernardston as a hot-spot for farmland preservation in Massachusetts (see map below). The recommendations in this plan address this issue by suggesting ways the town might generate revenue and anticipate opportunities to protect farmland in Bernardston (see Section 10: Conclusions).

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**Bernardston has between 1,500 and 2,300 acres of unprotected farmland.**

According to a 2009 NRCS study, Bernardston falls into the second highest category of Massachusetts towns with unprotected farmland on all types of soils.
Non-Agricultural Uses on Designated Prime Farmland and Farmland of Statewide Importance

Designated Prime Farmland and Farmland of Statewide Importance in Agricultural Use, Forest, or Recreation.

Permanently Protected Open Space

I-91

State Highway

Town Road

Valuable Farmland and Development

2016 Master Plan
Town of Bernardston
6. Forestry

In New England, most of the land that is not actively plowed, cleared, or developed will regenerate as forest. Although many people see forests as beautiful but unproductive, they serve an important role in the local ecology and economy. Forests provide a range of benefits, including fish and wildlife habitat, carbon sequestration, and soil stabilization on steep slopes. Responsible forest management can benefit landowners economically through establishing and logging valuable hardwoods while maintaining the forest cover and habitat that protect soils and riparian zones.

In Bernardston, there are 11,683 acres of forested land, over 70 percent of the total area (MassGIS). The Massachusetts Department of Fish and Game owns the land or conservation restrictions on 1,493 acres of forested land. Most of this land is in the Satan’s Kingdom area on the eastern side of Bernardston. A 137-acre lot called Shatlock Brook lies on the far western side of town along the border with Leyden. These areas are designated as wildlife management areas and are available to the public for hunting. 1,150 acres in Northern Bernardston are owned by Hull’s Forestry, a company based in Connecticut. This area is actively logged and has both a conservation restriction on it and is registered in the Chapter 61 Forestry tax abatement program (explained in more detail to the right).

There are many state and regional resources for forestry management. Massachusetts’ Bureau of Forestry, Department of Conservation and Recreation, and Division of Fisheries and Wildlife offer a wide variety of support for land conservation and forest management. Some of these programs offer financing, marketing, and technical assistance aimed at increasing the economic viability of forests for landowners, while others offer incentives for maintaining and enhancing wildlife habitat. Regional resources for forests include the University of Massachusetts MassWoods extension program, which offers an extensive network of public and private certified foresters, appraisers, and land trusts.

Harvard Forest is an extension of Harvard University in Petersham, Massachusetts, which in addition to researching forestry ecology and management, offers educational opportunities on site and in the form of free online webinars.

Preserving the ecological integrity of the landscape and capitalizing on the resources available for landowners to benefit economically from their land are both strategies that are vital to the maintenance of the forests in Bernardston.

### Working Lands

According to the Agricultural Commission, most landowners in Bernardston who meet the requirements are enrolled in state tax abatement programs for working lands. The three laws are the Chapter 61 Forestland Act, Chapter 61A Farmland Assessment Act, and Chapter 61 Recreational Land Act. By committing a property to forest, agriculture or recreation for five to ten years, landowners’ properties are taxed as non-developable land. Land protected under Chapter 61 grants towns the right of first refusal if and when property is removed from one of the chapters and offered for sale. The right of first refusal gives the town 120 days to purchase the property or find another organization such as a local land trust to purchase the land.

Even though protection through Chapter 61 is temporary, the preserved land may support wildlife habitat or provide other ecosystem services, and helps to maintain the town’s rural character (Conservation and Land Use Planning, 2007).

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Number of Properties</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>61 Forestry</td>
<td>37</td>
<td>2,606</td>
</tr>
<tr>
<td>61A Agriculture</td>
<td>42</td>
<td>1,051</td>
</tr>
<tr>
<td>61B Recreation</td>
<td>21</td>
<td>710</td>
</tr>
</tbody>
</table>

There are 100 properties in Bernardston listed under Chapter 61, 61A, or 61B, totalling 4,368 acres.
7. Land Use Considerations

The topography and hydrologic features of Bernardston provide some constraints to future development. The mountain ranges have steep slopes, rocky outcroppings, and poorly drained soils. The wetlands and floodplains have regulatory restrictions on development. The most easily developable land in Bernardston has road frontage and no structures, or is larger than three acres, the minimum lot size allowed for subdivision in the Residential/Agricultural zoning district, which covers 91 percent of town (see Zoning map earlier in this section).

Development Constraints

On the facing map, grey represents areas that are constrained for development, including developed parcels of less than three acres that cannot be subdivided; undeveloped parcels less than one and a half acres that zoning does not permit to be developed in the majority of town; parcels with no road frontage; parcels that are owned by the town, state, or non-profits; and privately owned land with permanent development restrictions. The Floodplain Overlay District is also included in the constrained grey area.

This map is intended to show overall patterns for planning purposes and not to highlight individual plots. The areas in color show land that does not fall under the above constraints. However, these do not take into account the 200-foot road frontage requirement outlined in the zoning bylaws. There are parcel discrepancies between the MassGIS layers used for this map, and the boundaries of state-owned land may not be accurate. This analysis does not take septic suitability into account, which is a constraint to development that needs to be considered on an individual site basis.

The colors on the map represent the slopes on land available for development. Outside of the Floodplain Overlay District, there are no restrictions to developing on sloped land in the zoning by-laws. However, there are high environmental and economic costs associated with development on slopes. Disturbance of the land on slopes, especially within the watershed that drains into the Fall River and Center Village areas, could increase the sediments washed into Cushman Park. The areas with the highest environmental costs due to steep slopes are represented in dark orange and red tones. There are no development restrictions on these areas, however removing the native vegetation and building infrastructure on these areas may have significantly higher environmental and financial costs than on areas equal to or less than a 15 percent slope.

The lighter yellow tones represent land that is most easily developable based on slope. This land is concentrated in the southern part of Bernardston. Due to the amount of permanently protected land in Satan’s Kingdom and by Hull’s Forestry, there is less available land for development in the northeastern quadrant. The large amount of steep slopes on the western side of town indicate that development here would have a high environmental cost to the town and could increase the sediment and flooding issues in the Center Village.

This analysis suggests that valuable farmland and open land in the southern portion of Bernardston should be a priority for protection. Because the constraints displayed on this map are based on one-and-a-half acre lot sizes, and the zoning in the center of town is for a minimum lot size of one-half acre, there may be more available developable land in the center of town than is displayed here. Creating a fee-based transfer of development rights system would allow the Town to select areas in close proximity to the Village Center that could accept a smaller minimum lot size for a fee, opening up more development possibilities near already existing town services, and lowering the environmental and economic costs of development in town.
2016 Master Plan
Town of Bernardston

Constraints to Development
- Riverfront Resource Areas and Wetland buffers
- Developed parcels < 3 acres
- Undeveloped parcels <1.5 acres
- Parcels with no road frontage
- Permanently protected land

Slopes
- 0-3%
- 3-5%
- 5-8%
- 8-15%
- 15-25%
- >25%
- I-91
- State Highway
- Town Road
C. Recommendations

Land Use Strategies
To meet the goals of preserving rural character, creating a vibrant historic center village, and fostering sustainable economic development, residents may decide to create mechanisms to increase development in already built-up areas and to preserve the current open agricultural and forested land that form the backdrop for the views along main roads. Citizens should be involved in a process to define design guidelines for the town that will decrease potential controversy over new development and ensure that new businesses contribute positively to the town’s Center Village appearance.

Issues
The following concerns are compiled from meetings and interviews with town departments and discussions at two community meetings.

- Development history in Bernardston shows a trend of residential land developed outside of the town center, fragmenting wildlife habitat and resulting in higher cost of services to the town.
- Many of the visible agricultural and forested lands that create Bernardston’s rural character are not permanently protected and might be developed.
- Farmers are concerned about a lack of transition plans for their farms and may resort to selling for development when they retire.
- The unprotected farmland that is cleared, well-drained, and along major roads has been identified as higher risk to development. The loss of these lands would negatively impact Bernardston’s rural character and the local agricultural economy.
- The town lacks funds or a mechanism for generating funds to purchase the development rights on land that becomes available.
- In-fill in the Center Village is limited by the necessity for individual septic systems and the close proximity of wetlands.
- A lack of sidewalks, crosswalks, and centrally located parking in town makes the town less amenable for walking and biking. Because the main roads in town are state routes, adding sidewalks, crosswalks, and parking may require permission from the state Department of Transportation.
- A lack of parking in the Center Village increases the need to drive short distances for errands and reduces the accessibility of Cushman Park.
- New businesses might detract from the New England style of Center Village.
- Some green technologies, such as solar fields, are contested within the community because they are seen as desirable technology but are not aligned with the preferred rural.
- Due to a lack of business and tourist attractions along Route 10, some residents believe there is a lost opportunity to capture potential business for travelers going east on Route 10 to Northfield.
**Recommendations**
Recommendation for Bernardston’s future land use management cover a range of actions, including education and outreach, zoning and policy changes, strengthening community connections, and investing in infrastructure changes that require significant planning and funding. In Section 10 the following recommendations are explained in more detail with the responsible parties.

**Ongoing**
Organize a series of educational and network-building events to promote regional and state resources for farmers and foresters. These should include farm and forestry best management practices that promote healthy ecosystems and edge habitats, protect wetlands, and prevent erosion; tax abatement and preservation opportunities; marketing strategies; and farm transition resources. Local land trusts should be invited to present to landowners about land conservation and stewardship opportunities through estate planning outreach grants.

Update information about the Ag Commission and Conservation Commission on the town website, including links to state and regional resources that provide technical and financial assistance for farmers and foresters. Efforts should be made to include announcements about relevant state and national policy changes and local farming or forestry events.

Develop a strategy for identifying and protecting lands that may be coming out of Chapter 61, 61A, or 61B. Work with residents, the Department of Fish and Game, the Franklin Land Trust, Mount Grace Land Trust, and other conservation organizations to anticipate the funding necessary to protect these lands. When landowners enrolled in these tax abatement programs for undeveloped land decide to develop or sell their land for development, the town has only 120 days to exercise their right-of-first-refusal to purchase the property, or transfer the right to purchase the property to a qualified organization. Prioritize protection in the southern portion of town which has several wetlands and identified critical habitat that stretches across the town border and is under the highest development pressure. Second priority is the northeast region of Bernardston that is densely forested, mostly protected but has modest development pressure. The town should also consider protecting the large Landscape Block along the western mountain range which is predominantly unprotected and has low development pressure.

**1 to 5 years**
Hold a community charrette to help establish Form Based Codes for new development, design walking paths through the Center Village, and site off-street parking. These guidelines should describe in detail acceptable materials, architecture styles, sign restrictions, walking access, screened parking, and landscaping. Involving citizens in establishing the desired aesthetics is shown to result in faster permitting processes and less conflict over new development. The conclusions of the charette could be incorporated into the existing site plan review.

Post “Right-to-Farm” signs at the major roadways leading into Bernardston and on Route 10 on either side of the I-91 exit. The signs will communicate Bernardston’s commitment to their farmers, and increase the awareness of local farms and visibility of farm stands. Some residents are unaware that Bernardston adopted the by-law in 2002.

Create a Development Transfer Fee Program to allow for tighter in-fill in areas such as the R1 zones, and establish working farmland and forest in high development pressure areas as sending zones. This program allows developers to pay a fee for increasing the density of development in receiving zones. The fee is deposited into an account for the town to purchase the development rights on conservation or farmland as it becomes available. The receiving zones should be evaluated for their ability to accept higher density development based on septic suitability and low impact to critical natural habitat. Creating a transfer fee program would allow individuals to take advantage of the ability to subdivide into smaller plots and not require a major residential development for the system to generate funds for land preservation.
Create an Agricultural Interest Overlay District requiring development on working farmland to place a minimum amount of the property into the Agricultural Preservation Restriction program. This would help the town ensure a minimum loss of farmland in the future.

Develop a solar field on the town’s landfill to provide renewable energy on land that cannot be used for agriculture and is not highly visible. In 2009 Franklin County Solid Waste Management District conducted a feasibility study and potential plan for a solar field on this site. The plan proposed a system that would generate 860,000 kwh of electricity a year.

5 to 10 years
Advocate for regional public transportation connecting the Center Village in Bernardston to Greenfield. This could increase the ability of the elderly or people who do not drive to continue living in Bernardston and will decrease future dependency on fossil fuels.

Consider the area south of the railroad along River Road for Center Village development. Work with Farmer’s Supply to develop parking and a riverside walkway connecting to the small area south of Hillside Pizza, making this section of town more accessible from Church Street and maintaining the view of Arch Bridge from River Street.

10 to 20 years
Rezone Route 10 for mixed use to have shops and businesses that would support the local rural economy and diversify the tax base. This new zoning district would have design standards to maintain the historic character of Bernardston, and would become a priority if plans to implement a centralized sewer system for the business and industrial zones are developed.
**Existing Condition**
A twenty acre hay field along an existing road in Bernardston, in the Residential / Agricultural zoning district.

**Conventional Development**
A conceptual subdivision development that uses the one-and-a-half acre minimum lot size as defined by the current zoning bylaws. Thirteen houses are developed on the twenty acres.

**Agricultural Interest Overlay District Development**
A conceptual solution for development that preserves 80% of the agricultural land by mandating clustered development with half-acre lots. Eight houses are built and the remaining sixteen acres are permanently protected.