CHAPTER 5 HARVARD'S ECONOMY

A community's economy is influenced by the types of industries it attracts and the jobs they offer, the uses of its land, and the wealth of its households. Each town is part of an economic region, or larger area connected by population, employment, trade characteristics, and labor force. Harvard lies along the boundary of two federally defined economic regions: the Boston New England City and Town Area (NECTA) and the Worcester Metropolitan Statistical Area (MSA), which is coterminous with Worcester County. Harvard residents have access to Boston, Cambridge, and Boston Metro employment centers along Interstate Route 495 (I-495), Route 2, and Route 128 (I-95) and Worcester is roughly a half-hour away.

By any measure, Harvard's economy is quite small. There is some economic activity taking place in Harvard that cannot be measured and reported with available data, but there is very little land developed for commercial or industrial purposes. In some cases, there appears to be quite a bit of vacant space in properties that have been developed for commercial use. Moreover, 95 percent of Harvard's tax base is residential, and the commercial and industrial properties that do exist provide little in the way of tax revenue. Economic development is not only about tax revenue. Harvard has still-operating large farms and orchards that are doing quite well – establishments that clearly play a role in the Town's employment base – yet they generate relatively little property tax revenue. Still, tax base characteristics do shed some light on the extent of a community's nonresidential development. For Harvard, tax base, employment, and sales data largely reinforce what can be seen from the road: commercial activity is very small-scale, generally modest in value, and not a major contributor to the quality of life in the Town.

Resuming jurisdiction of Devens would significantly shift the makeup of Harvard's tax base, and would greatly, and immediately, increase the percentage of land available to commercial and industrial uses within the Town. Notably, this would occur without directly affecting any zoning within Residential Harvard, or within the Commercial District. In addition to the approximately 3.5 million square feet of commercial and industrial space that currently exists in Devens (as of late 2015), there is a potential for an additional 4.5 million square feet per the 1994 Reuse Plan. Expedited permitting within Devens, if continued post-disposition, may be helpful for promoting development. Harvard could also have greater local representation if jurisdiction is resumed. Both of these factors would provide for a business-friendly atmosphere that can assist with both continued economic activity.

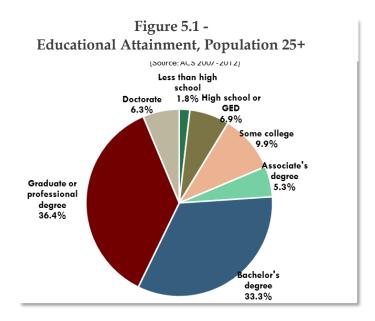
1. LABOR FORCE

Harvard is not a place that many people commute to for work, but rather a place that people call home. While approximately 14 percent of residents do work from home, most residents commute to jobs in nearby cities in the north-central region, Devens, or major employment centers along Route 128. In Residential Harvard (excluding Devens), there is a very small employment base, not many businesses, and a small percentage of residents working for local employers. For most people, living in Harvard means traveling to other locations for their livelihood, goods and services, health care, and entertainment. The absence of a noticeable commercial base reflects Harvard's land use policies and lack of infrastructure. Out of concern that commercial development might change Harvard's appearance in unwanted ways, the Town has not made it easy to establish and operate thriving businesses. Although Harvard has a commercial zoning

district along Ayer Road north of the Route 2 interchange, the land is physically and environmentally challenged and not "construction ready" for large-scale economic development.

Approximately 71 percent of Harvard's over-16 population is in the civilian labor force, which is on par with virtually all of the surrounding communities. A community's labor force includes its resident population 16 years and over employed or looking for work. It is difficult to pinpoint Harvard's labor force participation rate because economic statistics for the Town include both the household and institutional populations at Devens, but the estimate of 71 percent is regionally consistent and will be used for purposes of this Master Plan.⁴²

Compared with most neighboring towns, Harvard has a highly educated labor force that can compete for the region's high-wage jobs. Over 70 percent of the population age 25 and over in Harvard has at least a college degree, and 43 percent have graduate or professional degrees.⁴³ These kinds of statistics place Harvard ahead of its neighbors for educational attainment and help to explain the high incomes of so many Harvard households. According to the Census Bureau, the median annual earnings for Harvard men with full-time jobs is almost \$110,000, and for women with fulltime jobs, \$85,000.44 In turn, Harvard's



regionally low unemployment rate of 6.3 percent (average) reflects, at least in part, the education and incomes of its working-age population.

⁴² The estimate is based on deducting the federal prison inmates at Devens from the total population 16 and over. Source: American Community Survey (ACS) Five-Year Estimates, 2007-2012.

⁴³ ACS Five-Year Estimates, 2007-2012, B15003.

⁴⁴ ACS Five-Year Estimates, 2007-2012, DP-03.

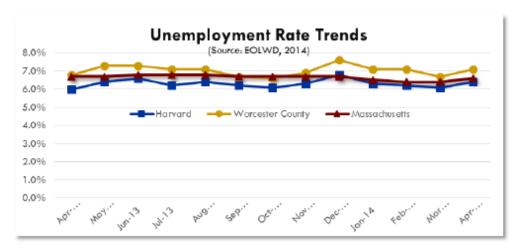


Figure 5.2 - Unemployment Rate Trends

2. EMPLOYMENT BASE

Harvard's employment base is small and not very diverse. According to available employment and wage data, Harvard's 245 employer establishments (excluding companies at Devens) are mainly service-providing industries that provide jobs to about 1,000 wage and salary workers. An employer establishment is an entity with wage or salary employees. It excludes self-employed individuals (sole proprietors) and some employers that are exempt from paying unemployment compensation insurance. As a result, economic statistics from public and private sources do not always provide a good picture of how residents support themselves, in small towns like Harvard. Organizations that report employment in cities and towns (including self-employed people and exempt establishments) estimate that Harvard has about 420 businesses, most of which are microbusinesses, e.g., people working part-time out of a home office and a variety of self-employed personal service establishments. These types of employment provide income for the individual doing the work, but labor economists exclude them from the local employment base because they do not provide job opportunities in the labor market.

The vast majority of Harvard's non-farm employment is supplied by establishments in the professional or technical services, education and health care, and personal services sectors. While the number of such establishments may be high, they may not necessarily provide many jobs.

Since published employment statistics do not include self-employed individuals, the data tends to under-count the actual level of employment in Harvard. With high educational attainment, many Harvard residents perform professional services in a home office setting and are able to

⁴⁵ Business statistics for Harvard are presumed to exclude the businesses located at Devens. The employment base data cited in this section are tied to zip codes, so the number of businesses and employees should be Harvard-specific. However, it is important to note that even when controlling for zip codes, the number of businesses and jobs reported for Harvard varies by year, season, and source. For example, government sources placed the number of businesses in Harvard at 169 and the number of jobs at 950 for calendar year 2012. The higher estimates used in this plan probably include some self-employed business owners that are not included in government economic reports.

earn incomes that support the high cost of housing. If a business thrives, the proprietor may create new jobs and seek space in one of Harvard's professional office buildings. Poor cell phone reception in sections of Harvard and slow internet speeds can create difficulties for professionals working at home. Cell phone reception is generally good along major roadways, but the hilly topography creates dead zones in more remote locations. Providing more reliable coverage and faster telecommunications would benefit self-employed individuals working out of a home office.

MassDOT's Planning Division prepared employment projections for a transportation model to predict where future traffic growth is likely to occur and where transportation improvements will be necessary. Table 5.1 shows the employment projections for Harvard from 2010 to 2040. MassDOT projects a healthy percentage gain for Harvard, 29%, during the 30-year period, with a growth of 270 jobs. In comparison, the Metropolitan Planning Organization (MPO) for the Montachusett Region shows just a 6% increase. The Town's location seems to be the primary reason for Harvard's assumed gain, as communities on the eastern edge of the Region show positive gains (Groton: 28%, Lancaster: 28%, Shirley: 28%), and towns to the west show employment losses (Gardner: -2%, Leominster: -2%, Westminster: -2%). This rationale is encouraging since it denotes a strategic location for Harvard that will help drive business to the Town.

		Emplo	Change 2010 - 2040			
	2010	2020	2030	2040	Employment Change	Percent Change
Harvard	926	1,085	1,158	1,196	270	29%
Region	77,718	84,267	83,728	82,721	5,003	6%

Table 5.1 - MassDOT Employment Projections

Location Quotients

The make-up of Harvard's employment base differs significantly from that of its closest economic region, Worcester County, and even more from the make-up of the Boston Metro employment base. The most useful way to analyze a city or town employment base is to compare it with a larger reference economy, such as a county or metro area, a labor market area, or a state. By determining the percentage of local jobs by industry sector and dividing it by the percentage of the same sector's jobs in the reference economy, one can see relative strengths and weaknesses in or specialized aspects of a community's employment base.

The resulting ratio is known as a location quotient. A location quotient of 1.00 means that an industry provides the same share of jobs in the locality as in the region. By contrast, a location quotient of 1.10 or more indicates that an industry is stronger locally than regionally, and a location quotient of less than .90 indicates an industry that is stronger regionally than locally. Sometimes a very high quotient can be problematic, e.g., the "one-company town" problem that toppled small industrial centers during the Great Depression in the 1930s, but it also can point to an economic niche.

Table 5.2 compares employment in Harvard and Worcester County by sector. It shows that agriculture, with a location quotient of 16.658, provides over 16 times as many jobs in Harvard as in the reference economy, Worcester County. Clearly, Harvard's orchards are a significant part

of the Town's economy even though the actual number of jobs is small. In contrast, Harvard's manufacturing location of .261 shows a relatively weak employment in manufacturing compared to Worcester County. Other sectors that show employment strength in Harvard (i.e. a location quotient greater than 1.1) are real estate sales and leasing (6.374), information (3.556), arts and recreation (2.487), professional, scientific, and technical services (2.483), public administration (2.221), personal services (1.754), wholesale trade (1.553), and construction (1.412).

Table 5.2 - Location Quotients for Harvard Employment Base

	Harvard Jobs	Percent	Worcester County Jobs	Percent	Location Quotient
Agriculture, Forestry, Fishing and Hunting	31	2.2%	310	0.1%	16.658
Real Estate and Rental and Leasing	59	4.2%	1,542	0.7%	6.374
Information	86	6.1%	4,029	1.7%	3.556
Arts, Entertainment, and Recreation	58	4.1%	3,885	1.7%	2.487
Professional, Scientific, Technical Services	171	12.1%	11,471	4.9%	2.483
Public Administration	112	7.9%	8,399	3.6%	2.221
Other Services (Personal Services)	79	5.6%	7,504	3.2%	1.754
Wholesale Trade	89	6.3%	9,547	4.1%	1.553
Construction	77	5.5%	9,087	3.9%	1.412
Educational Services	184	13.1%	29,131	12.4%	1.052
Retail Trade	133	9.4%	26,691	11.4%	0.830
Accommodation and Food Services	69	4.9%	17,386	7.4%	0.661
Healthcare and Social Assistance	163	11.6%	48,635	20.7%	0.558
Transportation and Warehousing	29	2.1%	9,169	3.9%	0.527
Finance and Insurance	32	2.3%	11,539	4.9%	0.462
Manufacturing	34	2.4%	21,697	9.2%	0.261
Management of Companies & Enterprises	3	0.2%	2,825	1.2%	0.177
Mining	0	0.0%	130	0.1%	0.000
Utilities	0	0.0%	1,442	0.6%	0.000
Administration and Waste Services	0	0.0%	10,296	4.4%	0.000

Sources: Executive Office of Labor and Workforce Development, ES-202, and Nielsen Claritas Site Reports (2014). Note that Harvard may have some employment in industries reported as "0." Very small numbers of jobs are often unreported by government and proprietary sources for confidentiality reasons.

Local Wages

Harvard employers pay an average weekly wage of \$1,129. While higher than the average for Worcester County, the average wage in Harvard is only 88 percent of the Boston Metro average.⁴⁶

It is not surprising that many Harvard residents commute to jobs in Eastern Massachusetts, where wages are generally higher than in the central part of the state. Harvard's highest-wage jobs are in the construction trades, professional services, wholesale trade, and administrative services to private companies (an industry that includes a wide range of support services for companies: personnel services, accounting, security, grounds keeping, and so forth). While some of Harvard's strongest industries pay high wages, other industries that have large shares of local employment pay comparatively low wages, such as information, arts and recreation, and personal services.⁴⁷

3. GOODS & SERVICES

Harvard is unusual for its limited offering of consumer goods and services. For basic purchases such as groceries, hardware, clothing, and personal care products, Harvard residents have to go to stores in nearby towns because the local retail base is so small. Since there are so few options for local consumer purchases, Harvard's retail and food service establishments capture just 19 percent of all such purchases made by Harvard households each year. Most towns "leak" some retail sales to non-local establishments, but Harvard leaks an unusually large percentage of sales. The only type of retail with sales that exceed local demand is limited-service eating establishments, due no doubt to the Dunkin Donuts on Ayer Road.

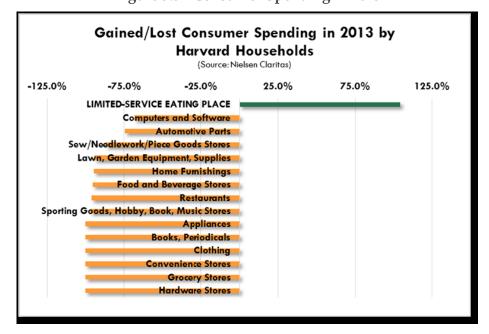


Figure 5.3 - Consumer Spending in 2013

⁴⁶ Executive Office of Labor and Workforce Development, ES-202, 2012 Annual Report.

⁴⁷ Ibid, and Nielsen Claritas Site Reports.

Due to its small commercial base, Harvard is dependent on residential property values to fund local services. According to information from the Mass. Department of Revenue, the value of residential property comprises 95% of Harvard's total assessed value. Commercial, Industrial, and Personal Property (CIP) makes up the other 5%. Home values are quite high in Harvard, and the lack of a commercial tax base means that homeowners bear the brunt of education and municipal expenses. Figure 5.4 provides a comparison with adjoining towns. Harvard has the highest percentage of residential values, although Bolton (92%), Shirley (89%), and Stow (91%) are similar. Ayer has the highest percentage of CIP values at 37%, followed by Boxborough (24%), Littleton (20%), and Lancaster (15%). Expanding the tax base with high value commercial property to provide some tax relief is an important goal of this Master Plan.

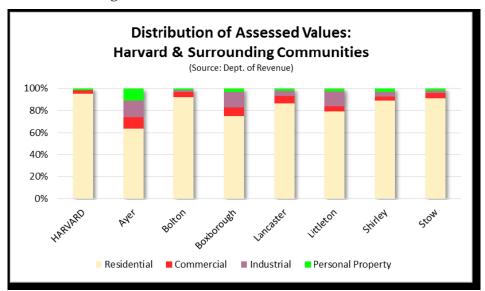
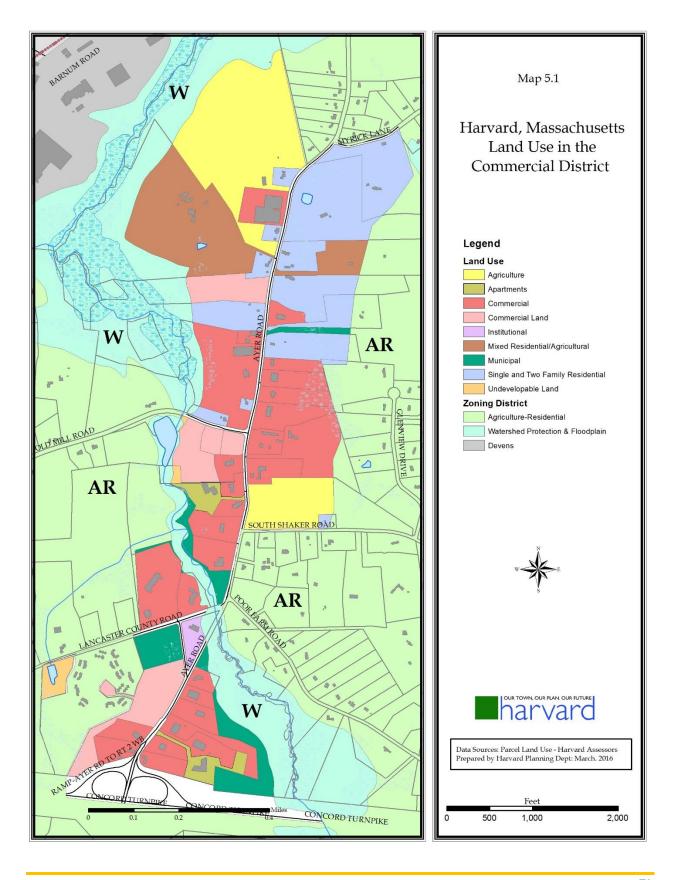


Figure 5.4 - Distribution of Assessed Values

4. AYER ROAD COMMERCIAL DISTRICT

Harvard has a few businesses in the Town Center, but the area zoned and intended for commercial purposes is the C District on Ayer Road. The C District is a linear business zone that extends approximately 1.4 miles on Ayer Road between the Route 2 interchange and Myrick Lane. Map 5.1 shows that many of the parcels in the C District – especially the large parcels – are split by zoning district boundaries. So-called split lots are common in low-density towns, but Harvard's zoning does not address how development can occur on them. The other districts that include portions of the parcels in the C District are the Watershed Protection and Floodplain (W) District and the Agricultural-Residential (AR) District. Businesses are not allowed in either of these districts.

Table 5.3 shows that the sum of land that is undeveloped, dedicated to conservation, used for agriculture or recreation, or currently in residential use is 60.9 percent of the C District's 344.5 acres (or 70.9 percent if the road right-of-way is included). As a result, only 29.5 percent of the acreage in the C District is currently in some form of commercial use. The actual percentage of land developed with commercial uses is even less, however: 12.5 percent. These figures mean that the C District is



a substantially underutilized business zone. Harvard's Phase 1 Master Plan report notes that lack of water and sewer infrastructure, market potential, and size of existing lots (some are undersized) all contribute to the limited amount of development that exists along Ayer Road. The Town's complicated zoning scheme and reliance on discretionary special permits for all but small projects discourage investment, too. It is important to note that most of Harvard's nonresidential tax revenue comes from properties in the C District.⁴⁸

Table 5.3 - Existing Land Uses Within the C District

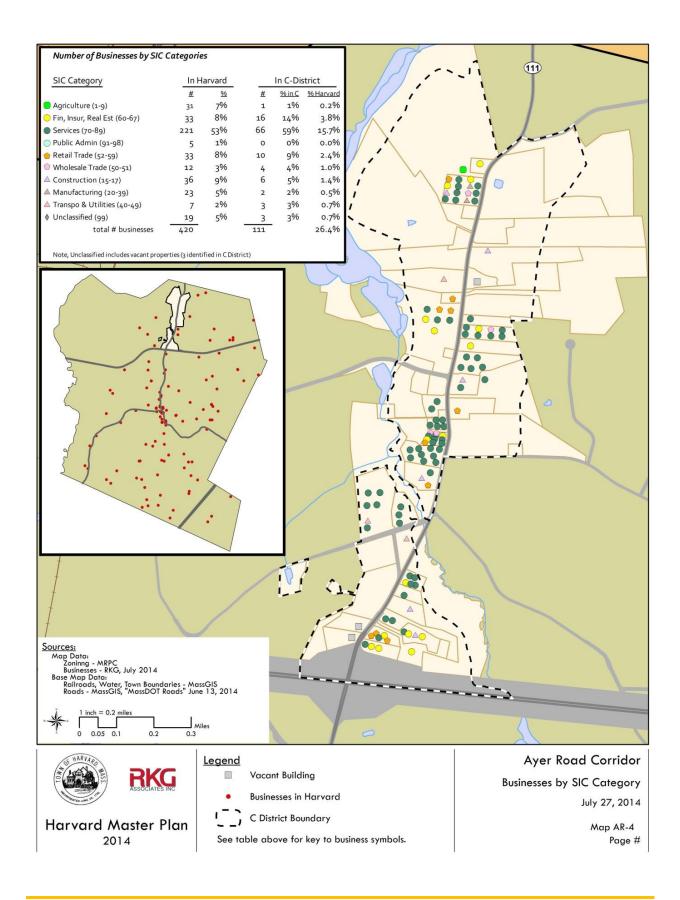
Use Category	Acres	Number of Parcels	Percentage of Total District		
Conservation	13.1	3	3.8%		
Agriculture	92.7	4	26.9%		
Recreation	4.8	1	1.4%		
Residential	75.9	16	22.0%		
Commercial	101.5	28	29.5%		
Vacant	23.4	7	6.8%		
Right-of-Way	33.2	1	9.6%		
Total:	344.5	60	100.0%		
Source: RKG Associates analysis of GIS data, July 2014					

Despite recommendations from the Fiscal Impact Analysis Team (FIAT) in 2009 and more recently, the Economic Development Committee (EDC), Harvard residents and many local officials have been reluctant to embrace ideas for reducing zoning obstacles to commercial development in this part of town. In public forums held during the Phase 1 process for this plan, participants in several discussion groups lamented the lack of small businesses and stores for basic necessities, yet they also worried about the traffic, environmental, and neighborhood impacts of "overdevelopment" in the C District. Residents said the Town needs a "credible analysis of potential benefits and risks" of more commercial development, but they also seemed to support – at least in concept – developments with a mix of uses in the C District, including housing.

Harvard does not have a verifiable inventory of local businesses, but data available from public and proprietary sources indicate that approximately 111 businesses operate in the C District. Fifty-nine percent involve some type of personal or business service, and 14 percent are in the financial, insurance, and real estate industries. Retail stores make up only 9 percent of the C District's businesses, which may explain why many residents think Harvard needs more goods and services provided by small, independent establishments. Map 5.1 displays the location of these businesses in the district and the number and percent of establishments by SIC (standard industrial classification) code.

73

⁴⁸ Massachusetts Department of Revenue, Division of Local Services, Municipal Data Bank (2014).



Economic development in the C District is limited by the lack of water and sewer infrastructure. Such systems exist in Devens, and could one day be brought to the C District, but the cost makes this unlikely in the near term. Private wells and septic systems are still adequate to serve the kind of development Harvard residents prefer for the area. Zoning permits package sewage treatment plants in an Ayer Road Village Special Permit (ARVSP), which may allow greater intensity in specific locations where landowners can navigate state and local permitting processes. An ARVSP requires a mix of land uses, which would foster additional multi-family development in the District. The Planning Board approved one ARVSP that resulted in a medical building and the Bowers Brook senior apartments at 200 Ayer Road near the Route 2 interchange.

It may be that the additional costs of state and local permitting over-shadows the incentives a developer might achieve. There are only about six potential parcels with the required 300 feet of frontage, and two others where, if parcels were combined, the frontage could be met. One is at the northwest corner of the interchange of Route 2. In this case, the existing buildings would likely be demolished and the site completely redeveloped. There is a reasonable expectation that four of the six parcels which are currently eligible for the special permit would be developed as such. These include the orchard at the north end of the district, the farm field in the middle of the district, the vacant land in front of Harvard Green, and the plaza at 285 Ayer Road (Sorrento's Pizza). There are other properties where the mixed-use concept would make sense in the C District, but they are not eligible because they lack the required 300 feet of frontage on Ayer Road.

An opportunity exists to connect the C-District to Devens' sewer and water infrastructure. The Town should update previous analyses or perform new studies to assess costs and impacts of installing infrastructure connections to Devens.

5. AGRICULTURE AND TOURISM

Harvard's natural and historic resources provide a foundation for tourism. Businesses benefit from visitors that come to Harvard for recreation and relaxation and contribute to the local economy through the purchase of goods and services. Harvard's scenic roads attract large numbers of bicyclists who enjoy the challenges of the hills and vistas across the countryside. Harvard's numerous hiking trails afford opportunities for healthy exercise, study of natural habitats, and enjoyment of winter snowfalls. The productive farms and orchards help retain a sense of the Town's roots, and farm stands offer seasonal produce of high quality.

It is difficult to measure the impact of agriculture on Harvard's economy. While there are numerous farms in production, most are family operations and the payroll of non-family members is limited. Chapter 2 notes the important contributions the Town's three large orchards have on the economy (Carlson Orchards, Doe Orchards, and Westward Orchards). Orchards and farm stands enjoy a robust business during the growing season. Residents benefit from easy access to fresh produce and lower prices than supermarket fare. Locally grown produce is one way Harvard promotes sustainability. Map 2.1, Land Use, shows locations of farming in Harvard.

Agriculture enjoys broad protection under the state Zoning Act and Harvard has not tried to restrict farming operations. Indeed, 82 percent of the Town (excluding Devens) is zoned Agricultural-Residential. Harvard is a Right-to-Farm community and offers deference to farmers to conduct operations without fear of interference from residents who might experience inconvenience from impacts such as tractor noise and manure odors.

On the other hand, Harvard's zoning regulations are not particularly conducive to promoting tourist activities. Bed and breakfast inns, for example, are only permitted in the Commercial District on Ayer Road, a location that is not especially attractive to tourists seeking an authentic New England experience. Antique stores are typically found in rural locations but Harvard does not permit them in the AR district. Recreational businesses are also only allowed in the C District. The Town Center is the focus of numerous civic and cultural events, but business uses are not permitted. The General Store, a non-conforming use and structure, exists solely by virtue of its long tenure before the advent of zoning. The General Store is important to the image of the Town Center as the central gathering point for civic life. The Town Center would be a logical location for restaurants, book stores, and other retail uses that could capture tourist dollars. With the support of residents, adoption of a new zoning district could allow low impact uses, create a small number of jobs, and bring existing uses and small lots into conformance with the Zoning Bylaw's use and dimensional regulations.

It is not possible to quantify the economic impact of tourism on the local economy in terms of jobs supported or dollars spent by non-residents. However, some of the notable tourist and outdoor attractions in Harvard that contribute positively to the economy include:

- The annual Central Mass Longboard Festival
- Fruitlands Museum (and National Register Historic District)
- Oxbow National Wildlife Refuge
- Crew races and boating on Bare Hill Pond
- The General Store and CK Bikes
- Shaker Hills Golf Course
- Harvard Public Library
- McCurdy Track
- Harvard Snowmobile Club and Trails
- Westwood Orchards and Farm Store
- National Register Historic Districts in the Town Center and Shaker Village (See Chapter 6 for a more complete discussion of historic resources in Harvard)
- Harvard Historical Society Museum in Still River
- Doe Orchards pick your own fruit and berries
- Carlson Orchards pick your own fruit and berries
- Camp Green Eyrie on Bare Hill Pond
- Oak Ridge Observatory on Pinnacle Road (Optical SETI Telescope)

The many tourist destinations suggest an economic development strategy to actively promote Harvard's natural and cultural resources. This may take the form of preparing a brochure that describes the Town's noteworthy features and contains a tourist trail map for easy discovery of destinations. Local officials could work with bicycle, boating, snowmobile and longboarding organizations to map out scenic routes and promote sporting events on a seasonal basis, but also

establish guidelines to minimize impacts on neighborhoods. The Town's web site could devote a page to inform visitors of attractions, hours of operation, and locations of restaurants and businesses. Finally, changes to zoning could allow tourist oriented businesses in the Town Center and AR district to create additional business opportunities for uses that have low impacts on the Town or neighborhood.

6. ECONOMIC DEVELOPMENT AGENDA

A. Zoning Recommendations

- 1. Adopt a new zoning district for the Town Center, either as an overlay district or a conventional district. Modify use regulations to allow small scale businesses to enhance the role of the area as a central gathering spot for the Town. Modify dimensional regulations to make a high percentage of the lots dimensionally conforming. Allow structures to contain a mix of uses, such as apartments above offices and shops.
- 2. Allow tourist oriented business in the AR district, such as antique shops, bed and breakfast inns, recreation businesses, tea rooms, etc.
- 3. Modify dimensional requirements in the Commercial District to promote a Main Street style of development. These include reducing the front setback to allow buildings closer to the street, restricting parking in the front of buildings, eliminating the floor area ratio standard, reducing the open space standard to perhaps 25% of the lot area, and eliminating the minimum lot width circle requirement.
- 4. Review the provisions of the Ayer Road Village Special Permit provision to make sure the bylaw achieves the purposes of promoting mixed uses and village-style development in the C District. Consider allowing mixed use development as a by-right use to place it on an equal footing with uses that do not require a special permit.
- 5. Revise building size limits for supermarkets that would encourage a small market to come to Harvard.
- 6. The two largest parcels available for economic development in the C District are in active agricultural use. Assess the owners' future intentions for development and if they agree, purchase agricultural preservation restrictions (APRs) to prevent loss of productive farmland.
- 7. Adopt a split lot provision to assist lots split by a zoning boundary.

B. Non-Zoning Recommendations

- Implement a Design Review process with preferred Development Guidelines for the C
 District to assist the Planning Board in approving development proposals that encourage
 compact and connected development and discourage isolated commercial sprawl.
- 2. Promote tourism by preparing informational materials of things to do in Harvard while identifying businesses for tourists to patronize.
- 3. Devote a page on the Town's website to extoll economic development opportunities in Harvard. Place useful information developers expect to see such as how Harvard fares on key economic indicators, zoning, available land and building space, and local contacts. Identify a point person on the site to contact for information and assistance.

- 4. The Economic Development Committee disbanded in 2015. The Town should explore other models for promoting economic development in Harvard.
- 5. Assess how Town departments interact with small business owners and work to improve communication and delivery of services businesses may need in a timely manner. Hold annual round table discussions to understand business needs and take corrective action where appropriate.
- 6. Develop a strategic plan and marketing approach for the C District, supported by a public-private partnership that promotes the district for medical and professional offices (finance, insurance, and real estate), custom retail, restaurants, and personal and trade services.
- 7. Work with cell phone providers to enhance service in areas of Harvard with poor reception.
- 8. With demographic shifts resulting in a greater percentage of senior households, promote a cluster of services that elder residents may need.
- 9. Periodically assess the feasibility of extending water and sewer services from Devens into the C District.
- 10. Participate in regional economic development organizations such as the MRPC, chambers of commerce, and the 495/MetroWest Partnership.
- 11. Given the proximity of Devens, a major economic engine for Central Massachusetts, identify support services needed by the large employers there that small businesses in Harvard may be able to fulfill.
- 12. Investigate how resuming jurisdiction of Devens and the additional commercial and industrial areas located there would impact the existing C-district.