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Harvard Town Center Action Plan

March 2005

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Harvard Town Center Vision Statement

“Harvard's Town Center is the municipal, cultural and institutional heart of Harvard. The Center is a vibrant mix of residential, limited commercial, municipal and institutional activities. Our vision of the Center is one where these functions are carried out in adequate facilities that support and maintain the visual, historical, and philosophical character of the current Center. Existing historic structures should be reused in a fashion sympathetic to their historic intent and with respect to their unique situations. Redevelopment of existing sites and additional building should consider the primary function of the Town Center as a gathering place, and provide safe and attractive pedestrian access and adequate parking. Traffic flow should be controlled so that the scale of the Center remains appropriate to the historic use of a small town common. The town should ensure that sufficient land is in public ownership to allow planned expansion, provision of safe drinking water and adequate sewage treatment, and public facilities to operate within these guidelines.”

Town Center Planning Committee

“The only constant is change.” I Ching



Executive Summary

Since the mid-1980's various town Committees and organizations have studied the Town Center in one way or another. Two master plans recommended the development of a comprehensive plan for the Center. Recently, townspeople have become more aware of the Center's limitations and fragility: the relocation of the Post Office to Ayer Road; building on small lots which could only comply with current Title V requirements with mounded septic systems; limited reuse potential of existing buildings, both municipal and private, due to zoning and/or septic constraints; and traffic and pedestrian safety issues.

It also became apparent that what was needed was not just another study, but rather a specific plan of action for addressing these issues in an integrated manner.

In 2003 the Annual Town Meeting appropriated Community Preservation Act monies to fund a master plan for the Town Center, as recommended by the 2002 Harvard Master Plan. The Town Center Planning Committee (TCPC) was charged with developing, with professional assistance, a Public Realm Plan and Waste Water Feasibility Study for the Center. In the spring of 2004, the TCPC retained Bluestone Planning Group and Daylor Consulting Group, Inc. to prepare these plans.

The Harvard Town Center Plan is the result of ten months of intensive work built on previous studies, public meetings, and input from the many town boards having jurisdiction over the Center. It is an action plan that clearly delineates the steps to be taken, and by whom, to achieve the Town's vision of its Center.

Harvard Center as a Valued Community Place

Harvard Center and the Common are places of classic beauty and historic meaning and are the heart of community life for all of Harvard's citizens. The Center is home to historic houses, community churches, town government, public schools, small businesses, recreational fields, and the town beach. It retains much of its historic landscape and is the site of community celebrations. It is also a central crossroads through which many of Harvard's primary roads converge. In other words, it long has been and continues to remain *the* central village in town where people converge – whether by chance encounter or by intent - to gather, celebrate, and meet for community and daily activities.

Yet, in spite of appearances that all is well, that is not entirely the case. Today, the Center's vitality continues to be threatened by further losses of activity if existing churches and businesses



The issue is not whether change is coming, but how best to plan for changes and new opportunities that inevitably come so that they support desired community goals and expectations rather than occur haphazardly and without foresight or intent. The future of the Center is too important to Harvard's citizens to be left to chance.

cannot successfully remain or expand, the Harvard School has no place to grow, or, the old Harvard Public Library building cannot be successfully reused due to its site's severe septic capacity limitations and extremely limited parking. Furthermore, as Harvard's population gradually ages, the town's seniors have limited suitable housing choices available to them given the prevalence of large single-family homes throughout town. Therefore, the issue is not *whether* change is coming, but *how best to plan* for changes and new opportunities that inevitably come so that they support desired community goals and expectations rather than occur haphazardly and without foresight or intent. The future of the Center is too important to Harvard's citizens to be left to chance.

Purposes & Goals

The overarching goal of this Action Plan is to make recommendations that will reconcile two seemingly contradictory desires – to move forward with those actions necessary to support and sustain the Center's vitality and mix of activities while simultaneously preserving the center's classic village character and imagery. If done well, the Center in the future will be more vital, but appear much as it does today. Without needed changes, the Center's present vitality cannot be sustained. Stewardship and preservation often demand change, and "doing nothing" may no longer be a wise option.

This Action Plan also seeks to examine the Center's future comprehensively, rather than on a project-by-project or issue-by-issue basis.

This Action Plan also seeks to examine the Center's future *comprehensively, rather than on a project-by-project or issue-by-issue basis*. It strives to examine the Center from a wide variety of perspectives - such as the maintenance and strengthening of vitality, preservation of existing and creation of new 'public gathering places', an increased diversity of housing choices for Harvard's seniors, needed zoning changes, municipal facility and institutional expansion and reuse needs, traffic and parking, increased pedestrian safety and trail linkages to open spaces, historic preservation, recreational opportunities, water supply, and very importantly, the necessity to provide sufficient septic capacity to support many of the other goals listed above. The Action Plan's recommendations will then suggest in a *proactive rather than reactive* manner those initiatives necessary to maintain the Center's vitality and beauty for years to come.

Summary of Key Recommendations

Underlying all the following recommendations is the primary goal of maintaining the Center's historic vitality and reinforcing its role as the town's central community gathering place for all of Harvard's citizens – whether for municipal, civic, church,

educational, or recreational purposes. *Fundamental to the achievement of this primary goal, and many of the specific recommendations cited below, will be the need to increase the Center's septic capacity to accommodate both current needs and the needs of the future.*

I. Preserve and Strengthen Gathering Places

- Initiate a comprehensive “Municipal Space Needs and Facilities Inventory” to assess buildings’ utilization and condition, and municipal services’ future needs. Primary facilities to be assessed include the Hildreth House, Town Hall, current Library, and Bromfield House.
 - Hildreth House should be renovated to accommodate increasing demands for its use in providing services to an expanding senior population.
 - Current Library should be considered for a new community use – such as a Community and/or Arts Center. To allow such an outcome, its septic and parking capacity must be expanded.
 - Maintain Town Hall as the site of town offices, which will require elevator access to the second floor, public bathroom, and improved document storage.
- Recognize that Harvard Elementary School may need to relocate from the Center within the decade to accommodate increasing enrollments as expansion options adjacent to the school are not viable. Therefore, identify and acquire a new site.
- Allow the Congregational Church to expand in the Center.
- Allow renovation of the Unitarian Church’s Fellowship Hall to accommodate expanded civic and community gathering purposes.
- Find a new home for the Teen Center, now at Devens.
- Attract a few new businesses to the Center as new community gathering places –such as a restaurant, coffee house, small food market or bookstore. To allow and encourage this, a limited ‘Mixed Use Commercial Overlay Zoning District’ should be established to allow new businesses by special permit. It could also allow apartments on the second floor above a retail store(s).

Underlying all these recommendations is the primary goal of maintaining the Center’s historic vitality and reinforcing its role as the town’s central community gathering place for all of Harvard’s citizens – whether for municipal, civic, church, educational, or recreational purposes.

Fundamental to the achievement of this primary goal will be the need to increase the Center’s septic capacity to accommodate both current needs and the needs of the future.



II. Maintain Town Character and Compact Village Form

- Continue to acquire lands around the Center for conservation, recreational or town purposes to limit large-lot residential sprawl at the Center's periphery – which could eventually 'blur' the edges of the Center's current compact village form.
- Rezone the core of the Center around the Common as a new Village Residential / VR District to reflect existing historic compact development patterns of small lots and houses built close to the street rather than continuing the current AR large-lot district right in the Center.

III. Increase the Center's Wastewater and Septic Capacity

- Create a new Harvard Center Water and Sewer District serving the Center. The new sewer network could be constructed in several phases by adding onto the existing modular wastewater treatment facility constructed for the schools.
- Establish a Harvard Center Water and Sewer Commission to own and operate the Center system. Charge the Commission with establishing a Betterment District and fee structure. Shift management of the current wastewater treatment system from the School Committee to the Water and Sewer Commission.
- Petition DEP for a revised groundwater discharge permit for the schools and new library, based on actual flow. The current permit for 23,000 gallons / day should accommodate more than just the schools and new library and, in fact, additional flows would improve the system's functionality.
- To the extent there is excess capacity in the current facility, Phase 1 of the sewer network should first serve municipal and institutional uses, along with some residential and commercial uses. Subsequent network phase(s) could accommodate remaining residential and commercial uses – both existing and new – in the Center. All existing buildings along the Phase 1 sewer line route would have to be allowed to hook up, thereby limiting the Phase 1 service area to the available excess capacity.

- Identify and purchase site(s) for additional leach field(s) to accommodate daily flows through the wastewater treatment facility in excess of the 23,000 gallons / day the existing leaching field on Massachusetts Avenue can handle.

IV. Provide for Greater Housing Choice

- Provide for a greater diversity of housing in the Center – particularly for seniors. Primarily pursue this objective by replicating current housing patterns in the Center where existing older homes have been used for apartments or include accessory units.
- Allow new housing only on suitable sites – such as the current Harvard Housing Authority’s proposal for senior housing on a town owned land on Massachusetts Ave. When new housing is built, it should resemble the historic scale, style and size of existing homes – albeit on smaller lots.

V. Provide the Supporting Public Realm: Parking Spaces, Pedestrian Improvements, Traffic Calming Measures, and Landscape Beautification Improvements

- Improve and expand the North Parking Lot and utilize it as the Center’s primary centrally-located municipal parking lot to serve the Center’s schools, churches, and businesses. Provide improved walkways from this lot to various Center destinations.
- Provide new public parking spaces along Common St. between Massachusetts Ave. and Fairbanks St. to serve the new community uses at the old Public Library and nearby businesses. Without such new parking, the reuse of the old Library and commercial buildings may not be viable.
- For pedestrian and traffic safety, improve the Still River Rd. / Massachusetts Ave. intersection by diminishing paved areas, narrowing turning radii, providing curbing to define road edges, and providing crosswalks.
- For pedestrian safety, provide several new pedestrian pathways in the Center along road shoulders.

- Provide off-road trail connections throughout the Center, particularly for school children, to link Bare Hill Pond and school playfields in the south all the way through the Center to the conservation areas and recreation fields in the north near the Highway Department on Depot Rd.
- Provide attractive new landscape improvements in several key areas around the Center – primarily in front of the General Store and around Town Hall where the extent of asphalt there should be diminished and replaced with attractive plantings.

Conclusion

Today, many things are obviously changing in Harvard Center; many properties are “in-play”; and the urgency to plan for those changes grows. Therefore it is now time for Harvard’s Boards, Committees and citizens to actively “get ahead” of these changes so that they reflect the community’s vision of what it wishes the Center to be. Taking no action remains an option. But if it is the path chosen, change will nevertheless occur – perhaps not always to the community’s liking.



Figure 1: Town Center Aerial View

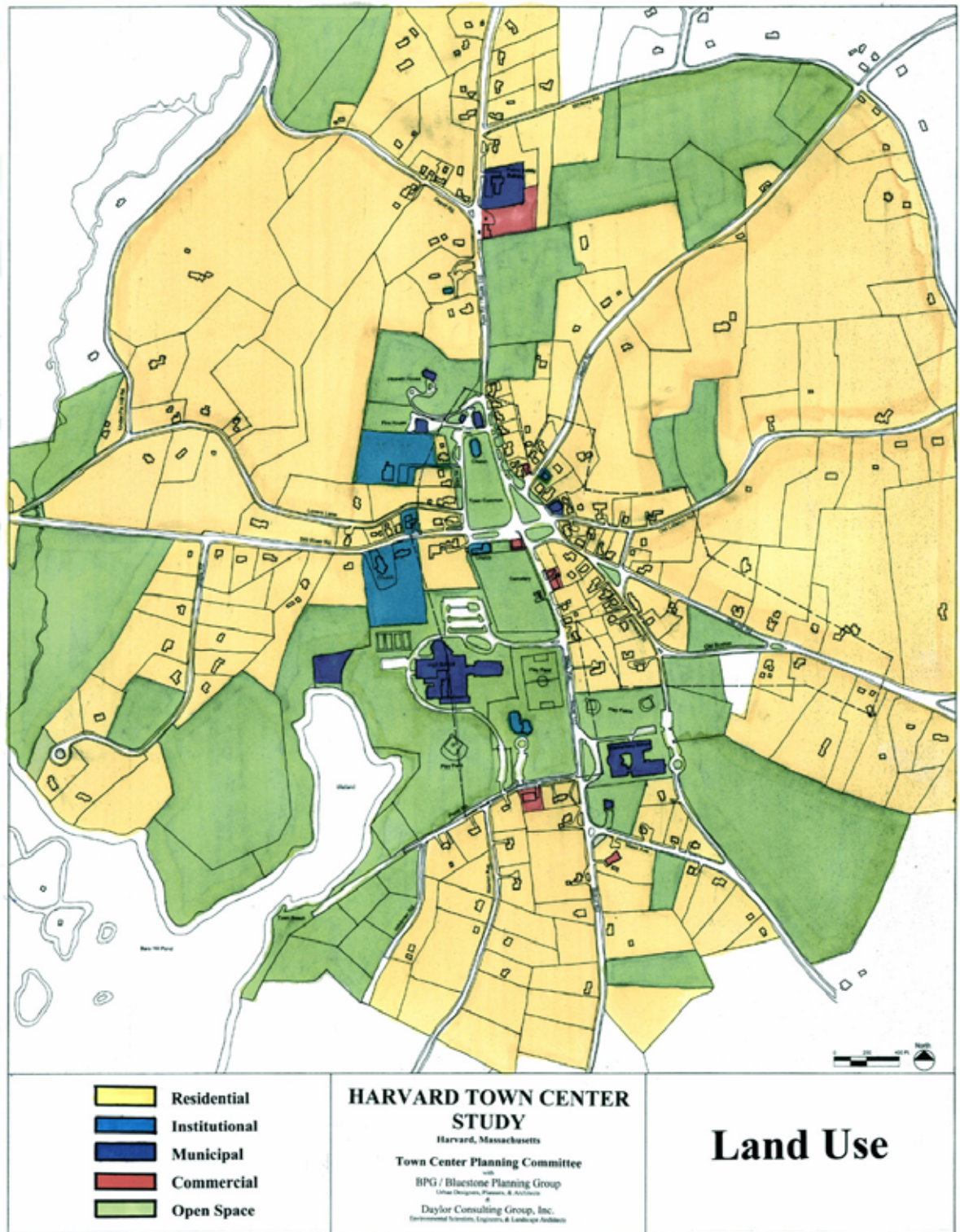


Figure 2: Harvard Center Land Use Plan
BPG / Bluestone Planning Group

1.0 Study Purposes & Process

This Action Plan: (1) outlines issues that currently need to be addressed and opportunities that can be captured, (2) then looks ahead to the changes that may come to the Center; and (3) provides recommendations to steer those changes so that they support community desires. It is a Plan also based on a solid foundation of earlier studies and recommendations – many of which pointed in the same direction as the conclusions of this Plan. Given that the recommendations of previous studies pointed in similar directions but were largely not implemented, why undertake this Action Plan *now*? What forces are at work today that require action to be taken? The answers are several:

Why undertake this Action Plan now? What forces are at work today that require action to be taken? The answers are several.

1.1 Study Purposes: Why Consider Undertaking Initiatives in the Center Now ?

- There is an uneasy sense among many Harvard citizens that the Center's past vitality is slowly being lost, and that without action, that vitality will continue to wane. In recent years, for example, the Center has lost its Post Office and valued businesses such as the pharmacy. Looking back further, other businesses and gathering places that once thrived, such as the restaurant at the Wickman House or the old Inn, are gone as well. Therefore, many believe that the Center's supporting infrastructure of water supply, septic capacity, parking, land availability for needed expansions, and zoning are no longer adequate and that they must be respectively augmented and revised to encourage new vitality and preserve that which remains.

- Many changes can soon be expected in the Center and several properties and projects are now "in-play". For example, the new Library will be built at Old Bromfield; and, reuse options must be identified for the old Library *if* its septic capacity can be made compliant and its parking capacity will successfully allow its reuse. At some point in the future, the Harvard Elementary School is likely to relocate from the Center as well as its enrollment gradually increases. That, too, will alter how the Center is used and where people gather and congregate. A desire for new community uses, such as a senior center, a Youth Center, and an Arts Center, has been expressed. New housing sites have recently been identified by both the Harvard Housing Authority and the Conservation Trust. Several community institutions in the Center are planning for expansions, and several key private properties in the Center are now on the market. Many if not all of



Reuse options must be identified for the current Library which will be vacated.

these initiatives are likely to advance. They should therefore be anticipated and planned for.

- The current expansion plans of valued community institutions in the Center, such as the Congregational Church, have sometimes been placed in doubt due to questions about the Center's septic capacity to support expanded facilities. Also, any viable reuse option for the old Harvard Public Library is probably in jeopardy if its extremely limited existing septic capacity and available parking cannot be expanded. If these limitations are not remedied, the old Library will likely remain vacant and prove to be a "white elephant" for the Town. If these are to remain in the Center and not be forced to relocate or close, the Center's septic capacity must be increased to allow these needed expansions. If they were forced to relocate or close, the Center's vitality and place of community gathering would further erode.
- Individual septic systems in many homes in the Center have failed or are in threat of failing. As a result, unattractive mounded systems have been required. Remedies need to be provided to avoid future failures and unsightly solutions.
- Many see the increase in traffic through the Center, the lack of adequate parking for new uses at the old Library, and pedestrian safety along the Center's roads and at intersection crossings as an immediate concern.
- In general, if the Center is to continue to thrive, a supporting infrastructure network must be put in place to allow for continued vitality. That network of infrastructure may include new pedestrian pathways, better parking, improved road intersections to provide better margins of safety, storm water runoff protection for Bare Hill Pond, and an expansion of septic capacity to support existing households, businesses and institutions as well as desired changes in the future. Also, improvements in the landscape can add to the Center's beauty and open up and maintain sweeping vistas of the Pond and surrounding fields that visually link the compact village core to the surrounding natural and cultivated landscapes that define Harvard's rural character.

1.2 The Study Process

TCPC / Town Center Planning Committee Vision

The need for stewardship of the Center and a recognition of the issues facing the Center have long been documented. For example, in 1985, the League of Women Voters issued a remarkably prescient and thoughtful report on town center issues. In

2000, the Town Center Committee, and the Town Center Septic Task Force, both predecessors of the current Committee, also thoroughly documented the Center's existing conditions, issues and opportunities in two separate reports. Most recently, in 2003, the TCPC (Town Center Planning Committee) was charged by the Planning Board to address all of these recognized issues and opportunities in a comprehensive manner and commission an Action Plan to address them with widespread public participation. The TCPC is comprised of Planning Board members, representatives from the Board of Selectmen, Library Trustees, Community Preservation Committee, the Conservation Trust, and Center residents. Invited representatives from the School Committee, Water Commission, Parks and Recreation Commission, and Council on Aging also participated in TCPC discussions.

2003 Harvard Master Plan: Recommended Follow-Up Town Center Studies

In 2002, the Planning Board completed the *Harvard Master Plan* – a blueprint or guidance document for the future preservation and growth of the entire town. Among its many valuable suggestions for the town as a whole and for the Center in particular was a recommendation for conducting two specific follow-up studies where issues of the Town Center could be addressed in more detail. Those recommended studies were for a *Public Realm Plan* and a *Waste Water Feasibility Study*.

In 2003, the Town voted to utilize some of its Community Preservation Fund to commission those studies in conjunction with each other and the TCPC was charged with initiating those studies with the assistance of consultants. In the spring of 2004, the Town and the TCPC engaged Bluestone Planning Group and Daylor Consulting Group, Inc. to conduct these two studies in a coordinated and integral manner.

Community Outreach: Three Public Community Meetings

During the course of this Study in 2004, three well-attended public community workshops and meetings were held to invite public input and ideas for the Center. The first half-day Saturday morning Workshop was held in May 2004 to define goals and suggest ideas. It was accompanied by an exhibit on the Town Center at the Library where exhibit viewers were asked to fill out cards seeking their ideas for the Center. The second meeting was held in July 2004 where alternative recommendations crafted by the TCPC and their consultants were presented for public comment. The third and final public meeting was held in December 2004 to present final recommendations.



During the course of this Study in 2004, three well-attended public community workshops and meetings were held to invite public input and ideas for the Center.

Advice from Town Departments, Boards, and Organizations

A number of phone conversations, meetings and solicitations for input from various Town Boards and Committees, as well as knowledgeable citizens, were undertaken to gain their advice. Among the Departments and Boards who actively participated and provided valuable advice were the School Committee, Board of Health, Water Commission, Council on Aging, and the Department of Parks and Recreation. Advice from the Conservation Trust, Pond Committee, Police Department, Fire Department, and Highway Department also provided valuable insights.

1.3 Other Recent Town Center Study Conclusions

[See Appendix 3 for complete list of previous studies.]

A number of recent studies have addressed the town center, either directly or indirectly. They include, among others, the '2002 Harvard Master Plan', the '2000 Wastewater Treatment & Disposal Alternatives for the Bromfield School', and the '1998 Report to the Harvard Planning Board by Town Center Task Force'. As noted above, most of the findings of this Action Plan are not new. They stand on a solid foundation of these earlier studies. *The major conclusions cited in these reports are summarized below:*

- Plan for the Center's future in a coordinated rather than piecemeal fashion.
- Build a town-wide coalition to support the Town Center.
- Preserve the historic beauty and views of the rural landscape of the Town Center. Enhance that beauty where possible.
- Strengthen the vibrancy of the Center and provide and attract additional community gathering places and businesses to support a village-like atmosphere. Provide a critical mass of activity to keep the Center vibrant.
- Add additional housing in the Center to provide increased vibrancy and a greater diversity of housing options.
- Retain municipal facilities and functions in the Center to maintain the Center as the primary locus of town-wide government and community activity.
- Create a 'walkable' pedestrian-friendly village environment. Increase pedestrian safety and provide increased pedestrian linkages between gathering places and recreational resources.

- Provide the infrastructure capacity necessary to support, maintain, and allow increased vibrancy.
- Amend local regulations to support increased vibrancy, a diversity of housing, and the historic village character.

2.0 Harvard Town Center Yesterday: The Roots of Today's Town Ethos [See Appendix 1 for greater detail.]



The old Harvard School House once stood next to what is now the General Store.



Rural fields, forests, orchards, and landscapes historically have characterized Harvard, and continue to do so even today.

Harvard Center is one of three historic village centers in town, but it has long been the central gathering place for local government and community meetings. Originally, the Nashaway Indians inhabited the area. Then, European settlers arrived to cultivate the land. By 1732, the town was incorporated but remained rural and agricultural in character. In that year, there were 325 residents – a sufficient population to support a Meeting House. Thus, the core of Harvard Center was born. Since the Center was located at a crossroads, a few businesses came to the Center as well. However, the Center never became a commercial hub.

In recent decades, the rural community of Harvard began to grow into a commuter suburb of Boston, and consequently, Harvard's population increased. This population growth, along with increased land values, put pressure on farm and orchard owners to sell their property for residential development. This growth trend is one that Harvard's citizens resist while they strongly fight to preserve their rural character. As a result, they support large lot residential zoning, policies to limit growth and new businesses, and measures to protect open lands and historic village areas. This preservation ethos has become Harvard's primary policy. To carry out this policy to preserve Harvard's rural character, significant parcels of land are being bought by the Town, Conservation Commission, and Conservation Trust to put them into protected conservation status. [Interestingly, lands are *not* being purchased for future *town* needs – such as schools and housing.]

Although Harvard has considerably grown, the immediate Center's size and population have remained somewhat stable. However, use of the Center has significantly grown because of the concentration of public schools and municipal facilities there. In spite of this increased usage, the Center only provides a small municipal water supply system and a small municipal septic treatment facility that only serves the schools and planned Library. Because the Center's septic capacity is limited by poor soils, public and private septic systems have begun to fail or have little or no ability to comply with Title V requirements. This raises concerns about the future of the Center. Because capacity for growth is limited, and because market forces are changing, some valued institutions, such as the Post office and pharmacy have left, the current Library may not be reusable, and the Harvard Elementary School may need to relocate because of lack of available expansion land. All these recent events and losses have cumulatively raised concerns about the health and future of the

Center's vibrancy and its continued role as the town's central gathering place.



3.0 Harvard Town Center Today

[See Appendix 2 for greater detail.]

In spite of the more hectic lives most of us live, and ever new opportunities for placeless digital communications, *place still matters*, and occasions for coming together and meeting neighbors takes on an even more valued role. Harvard's citizens deeply understand this and highly value the community gathering role, beauty, and sense of history that Harvard Center has and continues to provide. With its classic compact village form, town hall, churches, general store, town cemetery, and older homes all clustered around the historic Common, Harvard Center is a place to be sustained and supported so that it remains the town's vital center and meeting ground.

3.1 A Town-Wide Gathering Place of Vitality

Harvard Center remains the central focus of community life and its community gathering places. Remarkably, Harvard Center hosts over twenty gathering places – mostly town municipal functions and institutions such as churches, schools, and recreational venues. There is also a smattering of small businesses that are few, but nevertheless vital to the Center's vibrancy.

[See Figure 3]

Town Municipal Facilities & Services in the Center

Most of Harvard's municipal buildings and services remain clustered in or near Town Center. These include Town Hall, the Public Library, Old Bromfield, Hildreth House, Fire Station, and new Public Safety Building for the Police Department and Ambulance Service to the north on Ayer Road. With the exception of the Highway Department Yard / Transfer Station on Depot Rd. and a Teen Center at Devens, this concentration of municipal functions helps maintain the Center as the heart of municipal and civic life.

Public Schools, Other School Department Properties, and Wastewater Treatment Facility

Harvard's High School and Middle School – both located at the Bromfield School, the Harvard Elementary School, and administration building at the Bromfield House, are all located to the immediate south of the Center on a 59 acre school "campus" or "precinct" to either side of Massachusetts Avenue. The town owned North parking lot now primarily serves the Bromfield School. The campus is adjoined by the Wastewater Treatment Facility, now operated by the School Department, which was brought on-line with a permitted capacity to service all the schools



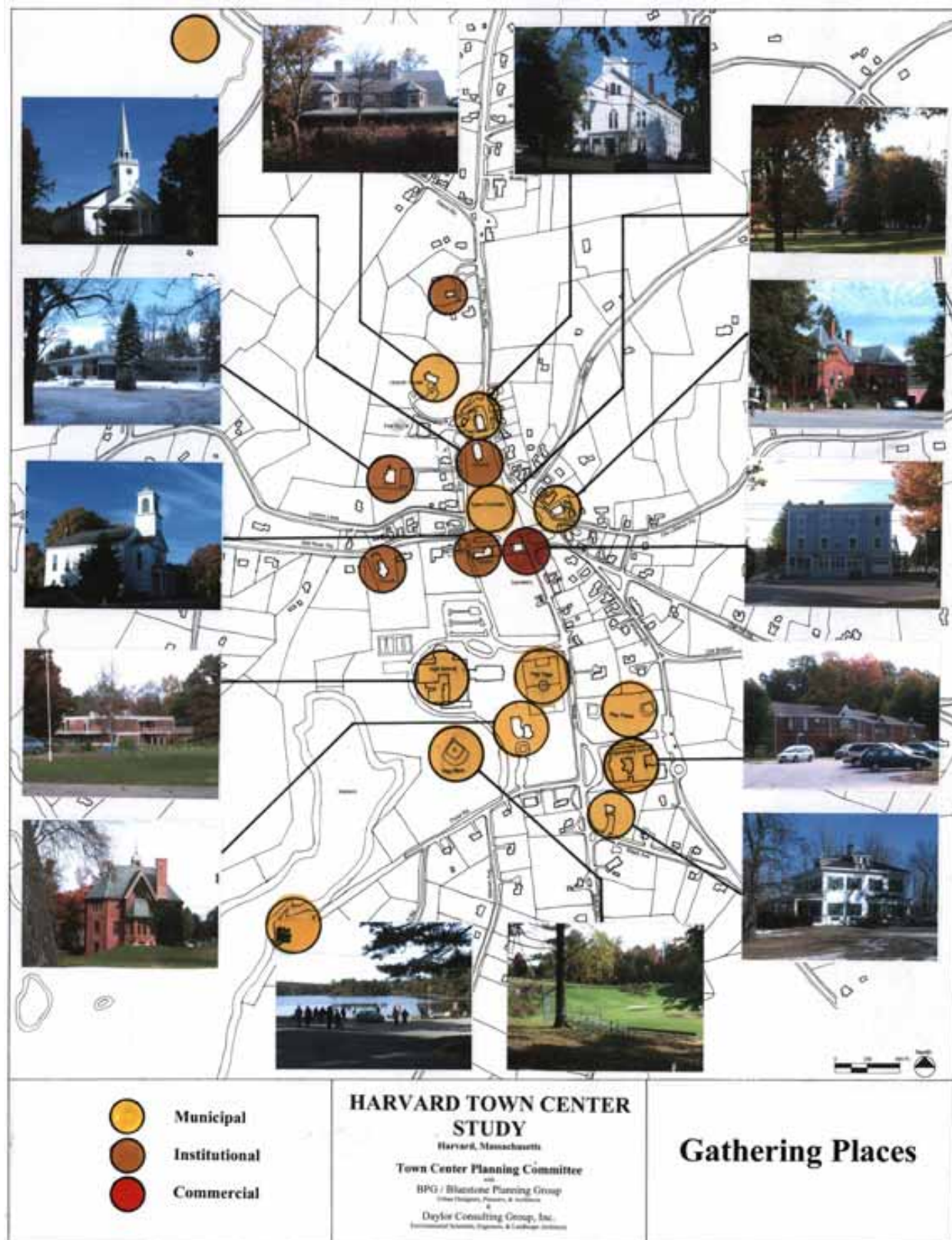


Fig. 3: Gathering Places

and the new library to be built at Old Bromfield well into the future. Today, *actual* septic flow volumes to the plant are approximately only one-third of the facility's design and permitted capacity. Therefore, even allowing for future enrollment increases, it is likely that some excess capacity will remain that could be used to meet the wastewater demands of other additional uses in the Center.



Harvard Elementary School is now one of the largest elementary schools in the Commonwealth. Its present grounds and supporting facilities do not meet current school facility standards for an enrollment of its size and the facility itself is approaching design capacity. Therefore, it is anticipated that a new elementary school will eventually need to be constructed – probably at a different location.

Public Recreational Venues

A number of outdoor recreational venues abound in the school campus precinct immediately south of the Center and at Bare Hill Pond in addition to the gymnasias at the schools themselves. They include playfields, tennis courts, the amphitheater at Bromfield School, and Town Beach at Bare Hill Pond.

Churches and Other Community Institutions

Many of the town's significant religious and community institutions are clustered tightly around the Harvard Common and Center and contribute significantly to Harvard Center's community image and vitality. As host to not only religious services, but also community events, meetings and activities, these institutions are vital to the Center's continued vibrancy. These churches include the Congregational Church, Unitarian Universalist Church, Unitarian Church Fellowship Hall, and St. Theresa's Catholic Church. At present, the Congregational Church plans to expand adjacent to their current building and the Unitarian Church has begun to explore renovation options for Fellowship Hall. The Center's limited septic capacity may influence their ability to expand.



Businesses

Harvard Center is not a commercial retail center as are many other town centers in the Commonwealth. Instead, Harvard's primary business cluster is located on Ayer Road north of Route 2. Nevertheless, the Center is Harvard's historic crossroads where shops, an inn, and its Post Office once stood. Today, the Center still hosts several businesses that are small, yet vital, as meeting places of chance encounter. Most of Harvard Center's businesses are located at or near the southeast corner of the Common on Still River Road or Massachusetts Avenue. Although a small Business B zoning district does exist at the northeast edge of the Common



along Littleton Rd., most existing businesses are not within it and are therefore 'grandfathered' nonconforming uses. Should these businesses ever move out, new businesses may not be able to occupy these buildings under present zoning without receiving a "use" variance. Present businesses include the General Store / Harvard Camera, Fiber Loft/Harvard Cleaners, Harvard Realty, Harvard Antique Store, Verizon Central Office, a dental office, and a commercial building on Pond Rd. that includes four businesses.

Town Center Festivals & Public Gatherings

Harvard Center and Harvard Common remains *the* locus of town vitality in no small measure because of the many public town-wide events and festivities held on the Common or elsewhere around the Center. Just some of these many events include the Apple Blossom Festival, the Memorial Day and Fourth of July parades, Christmas Tree Lighting, the Flea Market, and Apple Festival.

3.2 How the Center Presently and Historically Has Functioned: The Overlapping Zones of Activity

To plan for the future of the Center and the strengthening of its future activity patterns, it is important to understand how the Center now works and how it worked historically since these current and historical activity patterns can act as a foundation to build upon. And so, when the current activity patterns of Harvard Center are examined by location, several clear activity sub-zones become evident. These activity zones, shown in Figure 5, are:

- The Historic Village Residential Core [yellow]
- The Civic / Institutional District [blue]
- The Business District [red]; and
- The Schools & Recreational Campus [green]

The Historic Village Residential Core - is the locus of historic houses clustered tightly and compactly around the edges of the Common and along Fairbanks Rd. It is the sub-area of the Center that might be called the "village". The lot sizes for these houses range from approximately a 1/3 to 3/4 acres – a much tighter lot pattern than the 1.5 +acre lot pattern that current AR zoning requires. Beyond this compact cluster, lot size rapidly increases as one travels down roads such as Old Littleton or Ayer Rd. and residential density rapidly decreases as farmsteads and natural stream valleys begin to predominate in the landscape. [See Figure 4: Existing Compact Village Building Pattern.]



The Harvard Antiques Store is the only business in the Center's 'legitimate' Business B zoning district.

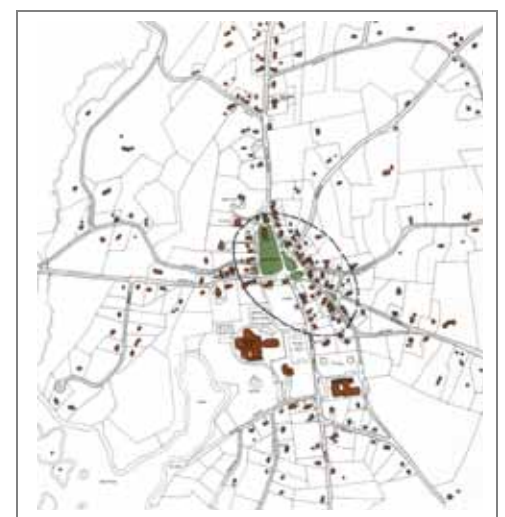


Fig. 4: Existing Compact 'Village' Building Pattern focused around Harvard Common.

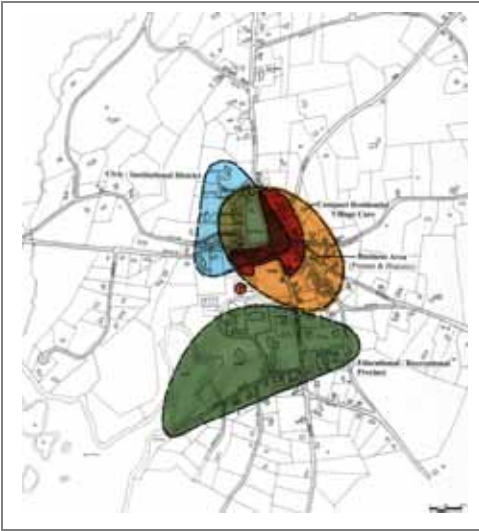


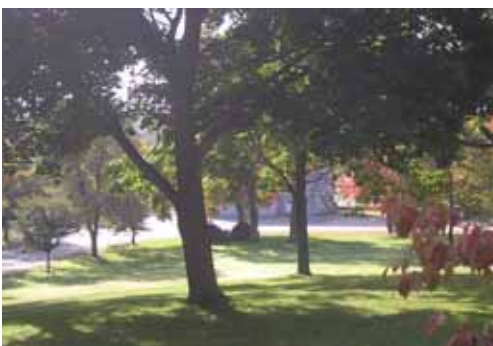
Fig. 5: The Four Overlapping Zones of Activity

The Civic / Institutional Core - is that sub-area of the Center - tightly around the Common - where the town's churches, municipal buildings, and other institutions cluster.

The Business District - is that sub-area of the Center to the immediate south and east of the Common (not to be confused with the official Business B zoning district northeast of the intersection of Littleton Road and Fairbanks Street) where the town's primary roads all converge and where today's small businesses, and those of the past, including the former Inn, are mostly located.

The Schools & Recreational Campus - is that sub-area of the Center where Harvard's schools, playfields and Bare Hill Pond are located – primarily in an area south of Town Cemetery to Pond Rd. and to either side of Massachusetts Ave. Of the four sub-areas, this Campus district is the most independent and isolated from the others.

From *Figure 5*, it can be seen that the first three sub-zones overlap in varying pairs around the Common. At the southeast corner of the Common, all three of these sub-zones overlap. This highly overlapping area can be read as a visual interpretation of the area of most community interaction, vitality and commerce. It is no accident that this corner of the Center, where Harvard's primary roads converge, is where historically, most of the center's commerce, its Inn and its civic gathering places clustered. This pattern of overlapping activity sub-zones, and the opportunities it provides for chance and planned encounters between Harvard's citizens, may serve as the basis for identifying where activities should be clustered in the future as well.



3.3 A Place of Natural Beauty and an Historic District

Harvard Center is not only a place of activity and gathering, it is also a place of landscaped tranquility, beauty and historic homes and churches that visually connects with surrounding open fields, conservation lands, scenic vistas, and the quiet waters of Bare Hill Pond. The historic Common is the focal point of this landscape and local historic district which Harvard's residents recall with fondness and seek to preserve and protect. [See *Figure :Local Historic District*] [For a complete description of the area's natural resources and town-owned lands, see the "2003 Harvard Open Space and Recreation Plan"]

3.4 The Center's Multi-Family Housing Stock & Harvard's Non-Profit and Agency Housing Development Organizations

The Center is one of the few areas in town that provides a bit of diversity of housing type and affordability in a town otherwise comprised almost exclusively of increasingly expensive market

rate single family homes sited on large lots. This diversity includes some affordable apartments, senior apartments, privately rented apartments, and in-law apartments scattered about Town Center. Most of this diverse housing is located on the eastern edge of the Common and most notably includes four affordable senior apartments at the old Harvard Inn which is owned and operated by the Conservation Trust.

As of 2004, there are approximately forty (40) multi-family units in the vicinity of the Center: comprised of 13 two-families, 2 three-families, and 2 four-family residences. All of the Center's multi-family apartments are now located in older large homes (with the exception of the four rental units at the old Harvard Inn) rather than in new developments, and are therefore visually indistinguishable from the traditional single family historic homes surrounding the Common.

Several quasi-governmental and non-profit housing organizations exist in town with the organizational capacity or potential organizational capacity to initiate and develop new affordable and senior housing as well as operate such housing developments. They include the Harvard Conservation Trust, The Harvard Housing Authority / HHA, and the Harvard Housing Partnership / HHP.

3.5 Traffic & Parking

Traffic

Harvard Center is at the crossroads of two state-numbered highways – Routes 110 and 111 – that connect the Center to Route 2, I-495, and the neighboring towns of Ayer, Bolton and Boxborough. Although traffic is still relatively light, traffic volume through the Center has increased in recent years. This has raised concerns about both traffic and pedestrian safety in the Center. There is particular concern about the Ayer Rd. / Still River Rd. / Massachusetts Avenue intersection (the Route 110 / 111 intersection) which is controlled only by a flashing red light in the north / south direction and a flashing yellow light no in the east / west direction. Additionally, the further convergence at this intersection of local streets such as Fairbanks St., Oak Hill Rd., and the short connector between Massachusetts Ave. and Fairbanks St., known as Common Street, - all with limited signage, striping, or traffic control - further exacerbate the confusing conditions at this crossroads.

In addition to increased through traffic, the concentration of the town's schools along Massachusetts Ave. immediately south of

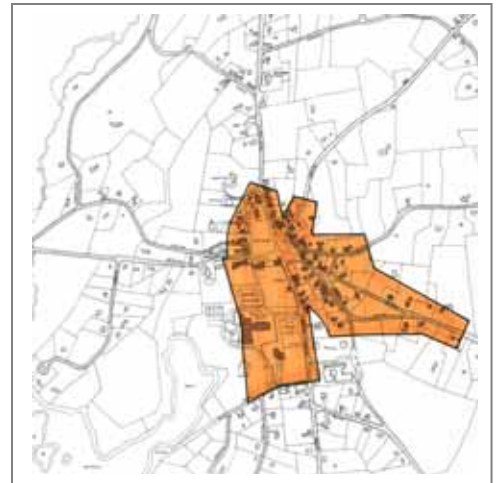


Fig. 6: Local Historic District



Old Harvard Inn / Senior Apartments



A sea of asphalt and undefined street edges with poor pedestrian crossings characterize the Route 110 / 111 intersection in the heart of the Center.

the Center's core also exacerbates traffic problems, particularly during the morning rush hour due to the arrival of school buses and drop-offs of school children by family members.

Parking

Harvard Center is the hub of many activities – municipal facilities, churches, schools, playfields, and several small businesses. There are over a dozen large and small off-street parking lots in the Center with close to 500 parking spaces, in total. [See Figure 7.] The largest ones are municipal and school related and are concentrated around Town Hall, along the Bromfield School Drive, and at the Town's municipal North Lot, which is used and perceived by many as the school's exclusive parking lot. When the Library relocates to the Old Bromfield building, a new parking lot will be built there to accommodate the Library's patronage.



The total number of available off-street parking spaces in the Center is entirely adequate for much of the day and week. However, several venues in the Center are clearly now underserved by their own currently limited available parking, even under average use conditions. For example, the existing Public Library only has several spaces along Fairbanks St. and the Congregational Church on Still River Road has only a limited number of spaces at its front. Consequently, during peak demand times or during large events or meetings, such as during Sunday morning church services, parking overflows from these limited lot spaces onto surrounding streets. Also, when after-school or League games are being held at the schools' playfields, parking will overflow to the shoulders of Massachusetts Avenue and Pond Road.

Although there are many parking spaces or lots throughout the Center, many destinations are just beyond perceived comfortable walking distance from one another, particularly when there are few sidewalks or controlled crosswalks at road intersections connecting those destinations to provide safety. As a result, few people walk between reasonably close-by destinations on a multi-errand trip, but instead make short drives between them. The result is not a particularly "pedestrian friendly" center.

The Town's municipal North Lot, now largely used by school staff during weekdays, is a potentially valuable public parking resource for shared use to support many town center functions and multi-errand trips because of its considerable size and its central location within convenient walking distance to the schools, playfields, the Congregational Church, St. Theresa's Church, and most of the Center's small businesses.

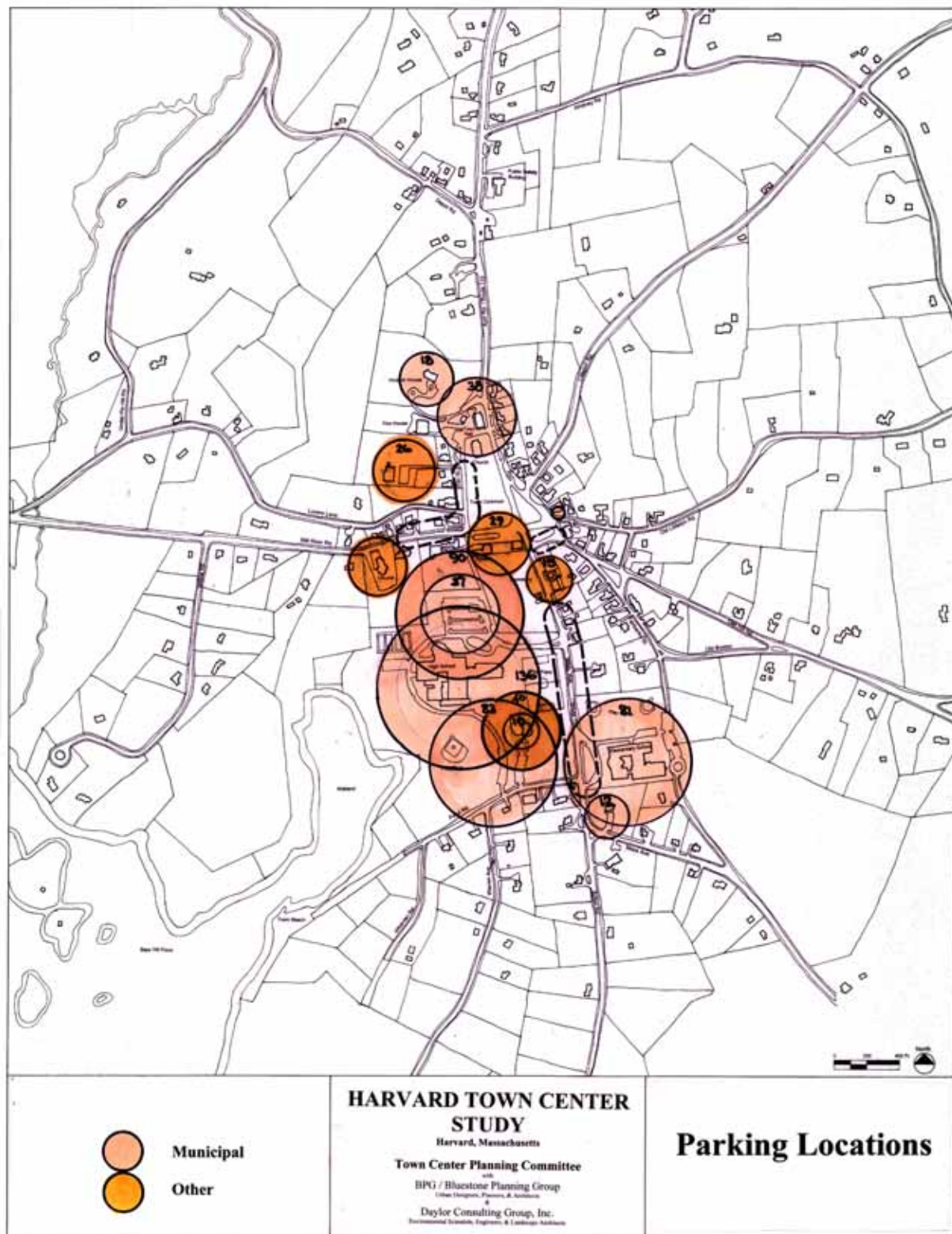


Figure 7: Existing Parking Lots and Informal Roadside Parking [Area of circles indicates # of spaces.]

3.6 Existing AR Zoning: You Can't Build the Village You See

Harvard Center is a mixed-use village core consisting of historic houses, churches, businesses, and municipal institutions on small lots with minimal setbacks whose collective village character is admired by all. However that character could not readily be replicated today under the current protective zoning bylaw. Almost the entire Center, like most of Harvard, is zoned for residential use, specifically the "AR/Agricultural Residential District" which primarily allows single-family homes on a minimum lot size of 1.5 acres. Many current lot sizes are only 1/3 to 1/2 acres in size.

■ AR / Residential District

The AR / Agricultural – Residential District is the predominant zoning district throughout town and in the Center and contributes to the town's rural image. The AR District primarily permits detached single family homes and agricultural uses. The minimum lot size is 1.5 acres. Minimum required front setbacks, and minimum lot widths vary and are complicated to assess, but in many instances current setback requirements would not allow many of the historic homes to sit as close to the street as they now do.

Although Harvard does not have a multi-family zoning district in town which would permit new multi-family housing, *conversions* of existing single-family residences and their accessory structures into "multiple residences" are allowed by Special Permit in the AR District if certain stringent site standards are met. These standards are set rather high, particularly the additional lot area requirement of 0.5 acres per dwelling unit. Consequently, not many of the small parcels in the Center could meet these standards. The 2002 Master Plan recommended amending the bylaws to accommodate such a conversion of properties within the Center.

■ B / Business District

The small 5 acre 'Business B' District located on Littleton Road allows retail businesses, indoor eating establishments, banks, real estate offices, professional offices, and personal service establishments. Ironically, almost all town center businesses, with the exception of Harvard Antiques, are located *outside* the B District and are therefore pre-existing, non-conforming uses. There are few places new businesses could move to in the Center today even if they so desired.



Many historic houses in the Center, like these, with their small front yards or small lot sizes could not be built today under the rules of the existing AR / Residential District which require large lot sizes and large front yard setbacks. Hence, the historic compact village pattern could not be replicated.



Most shops in the Center, like the General Store, are not within the Center's small Business B District on Littleton Road and are therefore 'pre-existing non-conforming' uses.

3.7 Existing Water Supply

The Town of Harvard's potable water supply is primarily served by private on-site wells. Town Center is the exception, however, and is the only portion of town served by a municipal water supply. All of the Center's schools, municipal buildings, churches, businesses, and most homes are served by this public water supply. In the 1940's, the Town acquired what had been a private water company with two open reservoirs serving the village. Under municipal control, the system has been upgraded and expanded with new wells, new water mains and a water storage tank. Currently, the Water Department operates with no employees and revenues of \$18,000 / year.

The essentials of the system are three deep rock wells. The two Pond Road wells are active on a daily basis. The Bolton Rd. well serves as back-up.

NAME	DATE	LOCATION	RATE	CAPACITY	ZONE 1 ⁽¹⁾	ZONE 2 ⁽¹⁾
No. 1	1953	Pond Road	10 gpm		275 ft.	726 ft.
No. 2	1997	Pond Road	17 gpm		308 ft.	994 ft.
No. 3	1981	Bolton Road	25 gpm		319 ft.	1040 ft.

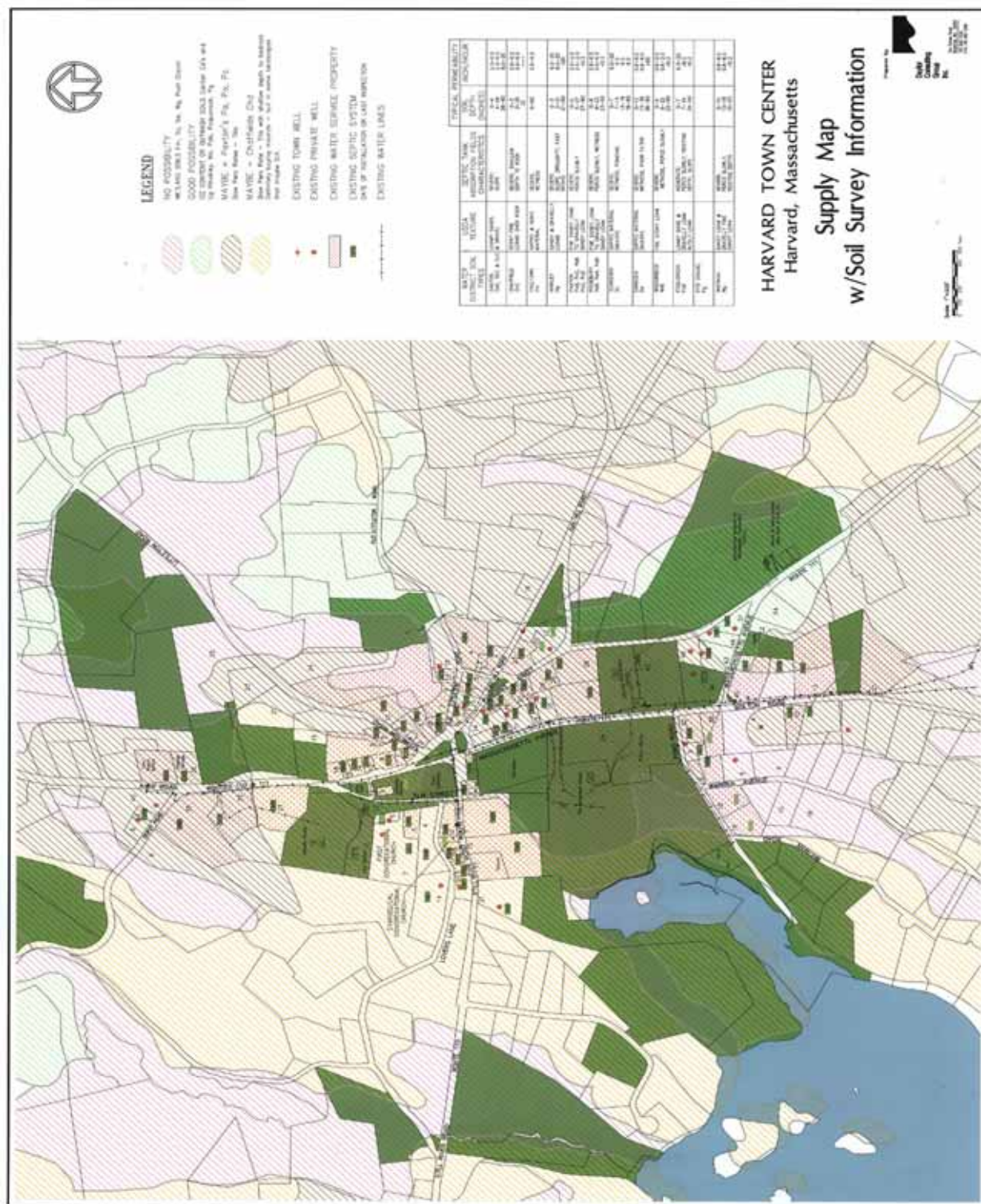
(1) Zone 1 is the theoretical immediate drawdown area of the well in operation; the given distance is the radius of the drawdown cone. Zone 2 is the area of contribution of groundwater to the pumping well; the Zone 2 distance is its theoretical radius.

There is also a 1996 well that is west of the Bromfield School. It has a rated capacity of 24 gpm and sustained pump testing capacity of 32 gpm. It would have zones 1 and 2 of 331 and 1168 feet respectively. Because of reported water quality problems, that well has not been placed in service. The Bolton Road well is used only as an emergency backup supply to the Pond Road wells because of high iron content.

As of 2001, the annual average day consumption is 20,925 gallons and the average day consumption during the peak month is 33,559 gallons. If both wells, which are normally in service, were pumped continuously at their rated capacities, they could deliver 38,880 gallons per day. The system meets its maximum day demand (about 45,000 gpd), peak hour demand, and any fire demand from the storage tank volume and probably the Pond Road wells pumping at higher than their rated capacity for peak periods. This is not unusual for systems of this size.

The combined yield of the two Pond Road wells are very close in capacity to current peak demand. However, a comparison of recent metered water usage shows a different demand situation. The 2001 DEP Report showed an annual pumpage of 7,637,726 gallons. However, the current metered consumption (May 2003 – May 2004) is only 5,755,216 gallons. The difference is “unaccounted for” water, which consists of fire flows, system testing and flushing of the water system, and leaks. Thus, while the supply capacity is close to the total demand, it can comfortably meet average daily consumptive demands of 19,890 gallons.

Residences and the schools are the largest water users in the Center. However, there is some beneficial synergy with those larger uses in that the peak summertime residential demand is offset by the low June and July demand by the schools.



3.8 Existing Wastewater Septic Capacity and Soil Conditions

Today, the Center's natural overall septic capacity is limited due to prevailing poor-to-moderate soils conditions, small lot sizes, and existing Title 5 compliance regulations. There are already some constraints on current uses, such as Town Hall's restrictions against public use of the restrooms. In addition, of course, the present Library building has severely limited septic capacity, which will severely constrain its future reuse when the library moves to Old Bromfield.

Since problems appear incrementally – one property at a time – there is no immediate threat of overall crisis. Nevertheless, limitations on capacity pose substantial risks of negative consequences for the Center over the years to come. Possible risks include: 1) limitations on the potential reuse or expansion of the Center's municipal buildings and institutions to meet their constituencies' changing goals and requirements; 2) unsightly "mounded" on-site septic systems put in place to meet current Title V wastewater regulations for municipal, institutional, or residential properties; and 3) limitations on the possibility of attracting a new desired business or two to the Center. Taken together, these risks have the potential to slowly choke the center's vitality.

In recent years, the Town of Harvard built a Wastewater Treatment Facility to accommodate the town's existing and future public school and public library requirements and to provide a potential resource for the Town more broadly. A number of property owners have also upgraded their own on-site septic systems.

By comparing Board of Health data on septic systems in the Center with lot sizes, we estimate that approximately half of the properties have systems in compliance with current regulations or have sufficient land to implement a repair of their system to achieve maximum feasible compliance status. In most of these cases there would be very little on-site ability to add an additional bedroom or otherwise increase flow.

In spite of prevailing moderate-to-poor soils conditions in the Center, there are specific sites with good soil conditions. Some of these sites, lying within a mile of the Center, offer some potential for meeting existing and future wastewater demands. However, many of these sites are on private property and would have to be acquired for a proper public purpose.

Many of these suitable soil areas were previously identified in municipal studies by Stearns & Wheeler LLC and Stephen R. Fogg, PE when sites were being investigated to meet the needs of the Center's schools and new library. These previously evaluated sites include both public and private lands within a mile of the Common:

- Coke Property on Littleton Road
- HES Property on Massachusetts Ave. (present treatment site)
- Barba Property off Still River Road
- Hazel Property on Depot Road near Ayer Road.
- Ward Property on Old Littleton Road

Although it is believed that some of these sites would only have sufficient suitable soils for flows around or under 2,000 gpd, the Coke property, which is in public ownership for conservation lands, is believed to have much greater capacity.

From these various evaluated site options, the HES / Harvard Elementary School site was chosen for the schools' disposal system for *best overall suitability* - that is, the ability to both handle the estimated 23,000 gpd demand and to provide the economic benefit of proximity to the schools. It was also already part of the school campus complex. Several of the other sites identified may also be suitable to meet wider Town Center septic needs. Several had equally favorable soils but were further from the schools or not large enough to provide all the capacity needed. Nevertheless, some of them may still be well-suited to provide incremental groundwater discharge capacity as "distributed wastewater sites" if the existing Treatment Plant were to be expanded. Perhaps most promisingly, the Coke property which is in public ownership for conservation lands, and possibly other parcels of land that are within one mile of the Town Center could meet these incremental requirements.

The schools and future Library are now served by a new advance treatment system with nitrate removal and disposal fields on school land off of Massachusetts Avenue. The system was designed for the following sewage flows in the design year 2012.

Bromfield School	880 population	17,600 gpd
New Library	21,000 sq. ft.	1,050 gpd
Harvard Elementary	640 population	<u>5,120 gpd</u>
		23,770 gpd

The system was approved by DEP in 2001 and received a groundwater discharge permit for 23,000 gpd. The design used standard DEP allowances for per capita flows from the school - 20 gpd gallons per capita per day for the high school and 8 gpd for the elementary school. However, the wastewater treatment plant has *actual flows* ranging from 8,569 gpd to 0 gpd and averages 5,360 gpd – *far less than the design and permitted flow* of 23,000 gpd. These low actual flows cause the treatment plant to run in a quite inefficient and costly manner.

There are three reasons for the difference between the designed capacity and current actual demand: (1) currently the served population is 1,405 and not the 1,520 forecast in the design, (2) the expanded Library is not yet constructed and thus contributes no flow, and (3) perhaps most significantly, DEP's design allowances are quite conservative. Current per capita flows (including the faculty) are under 5 gpd.

If the new library were in operation and the schools' combined population grew to 1520, but the per capita consumption stayed at the current maximum of around 5 gpd, *then the future demand on the current treatment facility during the maximum use month would be 7,600 gpd. In other words, the present plant and disposal field has roughly three times the capacity as its probable connected future demand.*

This excess capacity in the Town's Treatment Facility opens an opportunity to reposition its use for wider Town Center needs, as hoped for when the Annual Town Meeting approved the article authorizing initial planning for school expansion in 1999.

But what is the potential demand on that excess capacity *beyond school and library use*? The Board of Health records of on-site sewage capacities combined with the above school demand provides insight into that question. Taking the Board of Health data about designed capacity, we can collate the information by streets as one would plan a sewage collection system. In addition, we have made upgraded estimates of flows that are likely to be generated from Hildreth House, the Town Hall, churches, a modest municipal or commercial use, and community reuse of the present Public Library. The table below provides our future Center-wide demand estimate under the high demand and unlikely assumption that *every property on the water system will connect to a sewer*. This includes homeowners who have recently installed expensive septic system upgrades and properties that may have no septic problems. It is intended to be the conservative upper bound.

Future Town Center Wastewater Demand
(w/o schools and new Library at Old Bromfield)

North of the Commons

Ayer Road	5,550 gpd
Littleton Road	3,080 gpd
Elm Street	3,050 gpd
Old Littleton Road	1,760 gpd
Still River Road	3,365 gpd
Lovers Lane	<u>770 gpd</u>
<i>Subtotal</i>	<i>17,575 gpd</i>

South of the Commons

Bolton Road	2,640 gpd
Fairbanks Street	6,350 gpd
Mass Avenue (not schools)	4,190 gpd
Oak Hill Road	2,310 gpd
Pond Road	<u>990 gpd</u>
<i>Subtotal</i>	<i>16,480 gpd</i>

Total	34,055 gpd
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The total demand of the Center without the schools and new Library would be 34,055 gpd. If the school system's actual average demand is added it would bring total wastewater demand to approximately 39,400 gpd.

However, with only a few minor exceptions, all of the Center's buildings (including the schools) are served by the town's water system with metered consumption of approximately 19,900 gpd. Thus, the *real* demand (actual discharges) is significantly less than the design capacity. This reflects the fact that DEP assumptions are intended to estimate septic demand at a highly conservative figure. For example, there are not 2 people living in every bedroom generating 110 gallons per day in every house in the Center as DEP regulations assume.

But having said that, DEP is not likely to allow a future wastewater solution for the Center to be based solely on today's water meter readings. For the schools, where the use and population served are well documented, excess capacity can be estimated based upon actual figures. But homes, commercial buildings, and even institutions and municipal buildings could potentially change their future occupancy or uses. Thus for planning purposes, we can assume that the maximum demand side of the equation is roughly

42,000 gpd (34,055 gpd of on-site capacity plus the future school of 7,600), and the supply side is 23,000 gpd at the Treatment Plant plus on-site systems of various ages and compliance statuses. Section 7.6 of the report looks at how this equation might be balanced to achieve Center planning goals.

3.9 Existing Drainage & Contaminated Run-off: Pond Eutrophication



Bare Hill Pond, at the southern edge of Harvard Center, is an important natural and recreational asset for the entire town. Its future health is tied, in part, to development policies for the Center, as well as broader watershed management programs. For some years now, there has been increased concern about accelerated rate of eutrophication of the Pond. [Eutrophication is the process by which the pond becomes enriched with plant nutrients, causing the spread of unwanted invasive plant species which choke the pond's oxygen supply, cloud the water, and threaten the use of the Pond's recreation areas and Town Beach.] The Bare Hill Pond Watershed Management Committee (BHPWMC) and the Harvard Conservation Commission have been actively monitoring the condition of the Pond and its surroundings and have attempted to control these invasive plants with a combination of weed harvesting and winter drawdowns. It has been determined that these efforts alone are not enough to combat the problem. However, mechanical harvesting has proven to be an expensive process plagued by frequent breakdowns of the harvesting machine. Harvesting may manage growth of aquatic weeds in specific areas but it does not kill them or slow the underlying eutrophication process and actually seems to aid in the spread of these weeds. Although permissible by the state, proposals for chemical weed management of the Pond have not been supported by a majority of Harvard citizens. Therefore, the fundamental problem remains.

Studies conducted by the Town over for over 25 years have concluded that there are several key causes of the rate of increase of the eutrophication process. First, the development of the watershed and the land abutting the pond, results in higher than desirable sediment loading of the pond and increasing phosphorous levels. Second, the introduction and growth of invasive aquatic species has resulted in a shallower pond with more rapid plant growth. Third, is the runoff from shorelines and non-point sources into the Pond. All of these contributing sources should be addressed and considered as part of a watershed management plan to help control this problem.

With regard to the Town Center planning process, attention should be paid to sediment, nutrient and other contaminated run-off from surrounding roads. This may also be exacerbated by the state's use of sand and road salt on nearby Routes 110 and 111. The abutting recreational fields should avoid the use of fertilizer and vegetative buffers should be restored or maintained between the fields and the adjacent wetlands. Retention basins should be constructed to capture run-off and sediment to reduce their introduction into the wetlands and the Pond. Best practice run-off strategies should be used in the re-construction of roads and drainage systems in the Town Center to prevent and reduce non-point source runoff into the Pond.

The Harvard Conservation Commission has been working closely with the Pond Committee for a number of years and has identified the following additional areas of concern:

1) managing construction activities on properties abutting the pond; 2) tree and shrub clearing along the pond; 3) lawn fertilization and failing septic systems that contribute to the pond's nutrient load; 4) consistent enforcement of regulations; and 5) raising public awareness and understanding of the relationship between land use activities and the pond's health.

Members of the Conservation Commission felt a pond overlay zoning district could be a strategy to address these issues, by providing standards, a mechanism for enforcing them, and, in the process of adopting such a bylaw, further educating the public.

Currently The BHPWMC is working under a \$195,000 Federal 319 Grant from the EPA to address these concerns through different pond activities and have proposed a prolonged series of deep winter drawdowns in conjunction with continued monitoring of the watershed and the pond. The committee plans to do a watershed review under the Massachusetts Waterwatch program over the next year that would identify problem drainage sites. Completion of these surveys and assessments would make the Town eligible for additional 319 program funds if there becomes need to finance capital improvements.

In recent years, the Harvard Conservation Trust has taken long-term protective measures as well. The Conservation Trust purchased a large tract of undeveloped land to the north of the Pond and to the west of the Bromfield School from the Barba estate. Portions of this site contain wetlands and isolated vernal pools, and therefore cannot be built upon. However, much of this site also has moderate to good quality soils which could make

parts of the property quite suitable for a small housing development in the future. Under Conservation Trust protection, however, the land is now conserved and will not be the origin of future contaminated storm water run off from large-scaled development.

A policy question remains, however, whether a *small part* of this land could in fact carefully developed with a small number of affordable senior housing units to meet some of Harvard's pressing need for a greater diversity of housing types than presently exist through-out town or in the Center. If a small to modest number of senior housing units were developed here, measures would have to be put in place to insure that storm water run-off would be prevented so as to not adversely affect the Pond as the protection of surrounding natural shoreline and forests is critical to the protection of the Pond.

4.0 Harvard Center in the Future: Anticipating Changes

Harvard Center is changing. The Police Department has recently relocated to a site north of the Center on Ayer Road. The new Public Library will relocate to the newly renovated and expanded Old Bromfield. The old Library will need to find new purposes. The Congregational Church is planning to build an expanded meeting hall. The Unitarian Church's Fellowship Hall may be renovated or expanded as well, new housing may be developed by the Harvard Housing Authority on Massachusetts Avenue, improved landscapes are now taking shape around Hildreth House, parking improvements are scheduled, and, sooner or later, Harvard Elementary School is likely to relocate to a new site outside the Center if its enrollment continues to increase.

These are just some of the known or announced changes anticipated to come. Add to this mix the sale of a number of private properties now on the market, tentative inquiries about opening new shops, and community desires for a new community / youth center and arts center, and the potentials for a reinvigorated Center are many.

These changes do not come without challenges, however. Each of these initiatives is being planned, more or less, as an independently conceived project without benefit of coordination or an overview of the Center's future as a whole. Supporting physical and regulatory infrastructure must be put in place, including appropriate zoning, convenient parking, safe walkways, and improved water and wastewater capacity to allow these changes to fit comfortably within the Center's historic fabric.

4.1 A Changing Future / Municipal Projects Potentially or Actually "in play"

A number of proposed projects and initiatives in the Center are currently being discussed, planned or executed.[See Figure 9.]

- *The New Harvard Public Library at Old Bromfield* The Public Library will relocate to Old Bromfield after that building is renovated and expanded. At the 2004 Annual Town Meeting, Harvard's citizens voted to support the required local share of the construction costs for the project and accept a Library construction grant awarded by the Commonwealth. Significant additional funds have also been committed to the project by private donors and the Library Trustees.
- *Reuse of the Current Public Library* Once the Library relocates to Old Bromfield in 2007, new municipal or

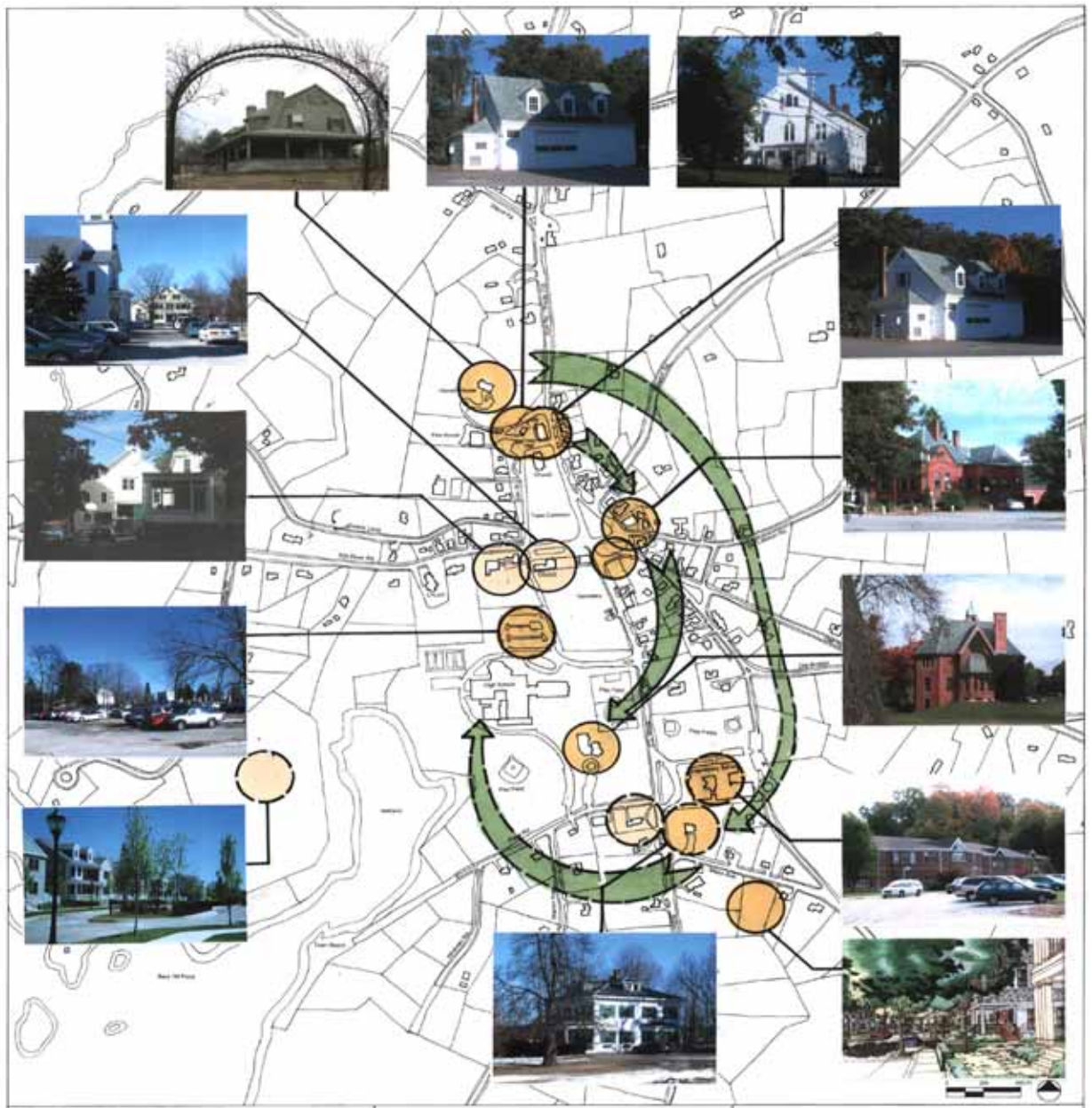


Figure 9: Projects Potentially “in-play”.

community uses need to be identified for the reuse of the current library. However, the site has limited septic capacity (rated for only 80 gpd) and minimal available parking. Therefore, viable reuse options will be almost impossible to achieve without expanding that limited capacity as any change in use would require Title V compliance for sewerage.

- *Town Hall Renovations* Town Hall has been recently renovated to include new meeting rooms, handicapped accessible bathrooms, and support space on the ground floor at the rear of the building in the space once occupied by the Police Station. The top floor, once used as a large meeting hall and performance space, is now partially utilized for the offices of town boards with the remainder of the space and small stage used for storage. The second floor is not currently accessible to the disabled. A future project may be the installation of an elevator that would allow the top floor to be used again for public meetings or events and make the offices located there fully accessible to the public.
- *New Harvard Elementary School* If current enrollment projections prove accurate, Harvard Elementary School will need to be expanded. After examining the possibility of expanding the school on adjacent property that includes the Bromfield House, the School Committee has recently concluded that that adjacent site will not be sufficient in size to accommodate the anticipated expansion since 18 to 20 acres are required by state standards. Therefore, Harvard Elementary School will likely be relocated, in phases, to an as-yet-undefined site outside the Center. When that occurs, the plan is to then relocate the Middle School from Bromfield School to the then-vacated Harvard Elementary School.
- *Potential Reuse of Bromfield House* The Bromfield House is currently used for the School Superintendent's administrative offices as well as some arts educational programs. There has been some discussion of relocating the Superintendent's office to Bromfield School. If that suggestion is carried out, then the Bromfield School could be put to new municipal or community uses – as yet undefined. In the event that the town has no designs for the building's re-use, it could be converted to affordable housing or be sold as a private residence which would reduce the Town's cost of owning and maintaining the building as well as bring in some significant revenue to the town.



- *The Teen Center at Devens* The Teen Center is leased for a nominal annual fee from MASS Development. However, the building in which it is hosted may only remain available for its present use until MASS Development is able to find a new development use for it. Therefore, the Parks & Recreation Department has been thinking about new locations for the Teen Center should it be asked to leave Devens. Although no site has been selected, a site at Town Beach is being considered.



- *Hildreth House – Senior Center* The Council on Aging has expressed their desire to remain at Hildreth House but has also expressed its need for a real Senior Center. Harvard has more than 800 residents over the age of 65. Hildreth House has limited accessibility, parking and outdated water and sewer connections. The building needs significant attention and a plan needs to be developed for the re-use of the building that would allow essential services to be provided to seniors as are offered in nearby towns.
- *Linked Pedestrian Pathways and Trails* For both recreational and pedestrian safety reasons, an alignment for a safe and continuous north-south pathway through the Center has been discussed, including a new boardwalk across the wetlands between Pond Road and the Barba property. The pathway, linking segments of existing pathways when possible, would connect Bare Hill Pond, the schools' playfields and the new Library in the south to the Center's churches and municipal facilities, and then further north to the new Police Station and playfields on Depot Road.

4.2 A Changing Future / Private and Institutional Projects Potentially "In Play"

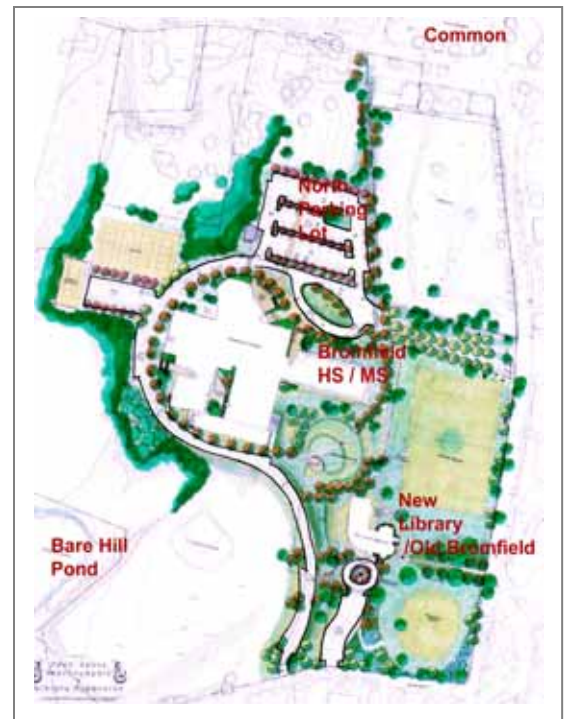
- *Congregational Church Expansion* The Congregational church on Still River Road is planning to add a new meeting hall to its facility on its western side.
- *Unitarian Church Fellowship Hall Renovations* The Unitarian Church is having discussions about renovating and/or expanding its Fellowship Hall off of Elm Street to the immediate west of the Common.
- *Harvard Housing Authority Housing Development Proposal* The Housing Authority has proposed the construction of new affordable housing on town-owned land on the south side of Massachusetts Avenue across from the Bromfield House.

- **Barba Property Housing Development Proposal**
The Conservation Trust, which owns the former Barba property north of Bare Hill Pond has been using their land for conservation purposes. However, there has been discussion of developing a small number of affordable housing units on a part of the property if financially feasible and if the site's septic capacity allows.
- **Private Properties for Sale** Several homes in and around the Center are now for sale. Most notably, the Wickman House on Still River Road next to the Congregational Church is on the market. Although the Wickman House is now a residential use that includes several rental apartments, it once hosted a restaurant as well.

4.3 A Changing Future / Landscape & Parking Improvement Initiatives

- **Hildreth House Grounds Improvements** In accordance with a design funded by a \$10,000 grant from DEM to develop an Historic Landscape Preservation Master Plan, the grounds around Hildreth House are now being selectively cleared and reshaped to provide better vistas of the Common to its south. In later phases of this initiative, new landscaping and walking trails will be added on the property.
- **New Library / Old Bromfield Grounds and Parking Improvements** The grounds, landscape, and approach drives around the new Library at Old Bromfield will be improved or reconstructed to accommodate additional parking spaces and improve the attractiveness of the site.

Figure 10: New Library / Old Bromfield : Proposed Landscaping & Parking Improvements
(Carol R. Johnson & Associates)



5.0 Issues, Challenges, & Opportunities

The initiatives described above, as well as some of the chronic problems that have long hovered over the Town's and Center's future – such as the area's limited septic capacity, the Town's limited diversity of housing types, increasing traffic and pedestrian safety issues, and parking spillovers – collectively offer both opportunities and challenges if the Center's vitality is to be maintained and its beauty and character preserved. Below are summarized some of the key issues that need to be addressed in this Action Plan and tackled by Harvard's citizens to see that they are resolved.

5.1 The Maintenance & Creation of Community Gathering Places

If Harvard Center has a singularly important role in town, it is that of “gathering place”, the primary locale where Harvard's citizens meet, congregate and have chance encounters with neighbors and friends. As described elsewhere in this report, those gathering places are many – whether they be town facilities, schools, playfields, churches, or the several small businesses that dot the landscape. In recent years, however, some of those gathering places have been lost or displaced. The Post Office has moved from the Center. The pharmacy no longer exists. The restaurant at the Wickman House is long gone; and, the town's old Inn no longer hosts visiting guests or the Tea Room. Many changes are due to market forces. Others, however, are due to lack of supporting infrastructure and space.

Furthermore, certain existing valued community institutions which serve as key gathering venues and which now need to expand, such as the Congregational Church, were initially concerned that their expansion plans could not be accommodated due to the Center's limited septic capacity. If they had not been able to successfully gain the required permits, they too might have had to move from the Center, further diminishing the Center's central role in town. And, in the future, the Harvard Elementary School may need to relocate because sufficient land for their expansion needs do not appear to be available.

Therefore, the Town needs to provide the needed infrastructure, land, and regulatory environment to support and maintain its vital institutions, allow for their future needs, and even attract additional gathering venues to maintain and enhance the Center's vitality.

The Reuse of Town Facilities as Gathering Places:

Moving the Chess Pieces around the Chess Board Squares

Due to the planned relocation of the Public Library to Old Bromfield, a set of potentially strategic and sequential relocations of certain municipal programs and services is possible – analogous to moving chess pieces (the municipal programs and services) around the chess board squares (the available sites and venues) - to meet municipal service needs for the future. And so, a window of opportunity now exists to plan for the reuse of various town facilities, and, add new municipal and community services that many in town have desired. [See Figure 11.]

The chess pieces: The desired new or expanded town services needed to provide currently underserved or unmet needs include:

- *New Library* A new Public Library, with community meeting rooms and possible additional amenities.
- *Community Center / Teen Center* Many in town have expressed a desire for a new community center, perhaps combined with a Teen Center relocated from Devens.
- *Community Arts Center* A number of town residents have expressed a desire to create a community arts center in the Center, if possible, readily accessible to both school-aged children and adults.
- *New Harvard Elementary School* The School Committee forecasts that a new expanded elementary school will be needed in Harvard over the next 5 to 10 years if enrollment continues to climb.
- *Expanded Senior Center* As Harvard's senior population grows in the coming years, as is expected, expanded senior services and facilities will be required to serve this aging population.

The available chess board squares: The potentially available municipal sites and venues available to accommodate new or expanded municipal programs and services include:

- *Existing Harvard Public Library Building* The current Library building, once the new Library relocates to old Bromfield, will be available for reuse and conversion to new uses – perhaps an Arts Center or Community Center. However, its current severely limited on-site septic capacity and extremely limited

parking may entirely prohibit viable reuse options - resulting in an unoccupied “white elephant” for the Town.

- *Hildreth House* Currently serving as headquarters for the Council on Aging, it is shared by the Cable Committee, Bridge club, and a myriad of other Boards as meeting space.
- *Bromfield House* If the school Superintendent’s Office relocates to the High School, Bromfield House could be converted to new municipal or community uses.
- *Town Beach Area* The area adjacent to Town Beach at the end of Pond Road, owned by the Parks and Recreation Department, may offer an available site for a new Teen or Youth Center.

The Municipal Chess Pieces and Chess Board Squares		
Desired Town Programs & Services [The Chess Pieces]		Available Municipal Sites & Venues [The Chess Board Squares]
New Library	↔	Old Bromfield
Community Center	↔	Bromfield House
Arts Center	↔	Existing Library
New Elementary School	↔	Town Beach
Expanded Senior Center	↔	Hildreth House
Teen Center	↔	Outside Center

○ *Schools as Gathering Places: Expansion & Siting Issues*

As discussed above, the Harvard Elementary School will probably need to expand in the future. However, the School Committee has concluded that adjacent school-owned property – such as that of the Bromfield House – is not sufficiently large to accommodate the expansion according to the state’s site requirements. As a result, the Elementary School will probably need to relocate outside of the immediate Center area. [This is contradictory to the goal of maintaining activities in the Center to keep it vital.]

Consequently, new sufficiently sized sites (approximately 20 acres in size) will need to be identified, and then acquired by the Town. If lucky, a desirable site might be donated to the Town for the school instead. Several alternative sites might prove suitable – such as the Coke site, where good soils are available to allow on-site septic solutions.

○ *Businesses as Gathering Places*

The several small businesses in the Center are gathering places where residents have the opportunity for “chance encounters” with their neighbors as they either drop off their cleaning, buy fabrics, or purchase toothpaste at the General Store. These places of “chance encounter” are important for maintaining community ties. To illustrate the importance of such chance encounters to Harvard’s citizens, many in town now lament the loss of the Post Office where many neighbors serendipitously met as they mailed packages or purchased stamps.

Today, many Harvard citizens would desire small businesses in the Center to restore some of these opportunities for encounter by chance or by intent. For example, many have expressed desires for a local restaurant, coffeehouse, small food store, or bookstore. However, most of the Center is not currently zoned to allow new businesses, and concerns about the Center’s septic capacity have limited or even shut off consideration of a new restaurant or coffee house. Therefore, the Town’s current regulatory structure and the Center’s limited infrastructure have thwarted community wishes from being fulfilled.



○ *Churches as Gathering Places: Expansion Issues*

The Center’s churches are vital institutions and community gathering places. Recently, when the Congregational Church announced plans to expand, that expansion plan was initially questioned due to issues raised about the adjacent site’s septic capacity to support the expansion. Since that initial concern, the church has successfully received its needed permits. However, if the property’s septic capacity had proven to be a true limitation, the Congregational Church may have had to consider relocating from the Center to meet its congregation’s needs. If that had occurred, it would have been a significant blow to the Center’s vitality.

Today, the Unitarian Church may be considering an expansion of its Fellowship Hall. It is not known whether septic concerns may again become an issue. However, recent experience has rung an early warning bell that the Town must get ahead of the Center’s septic limitation if it wants to maintain its valued institutions and vitality in the future.

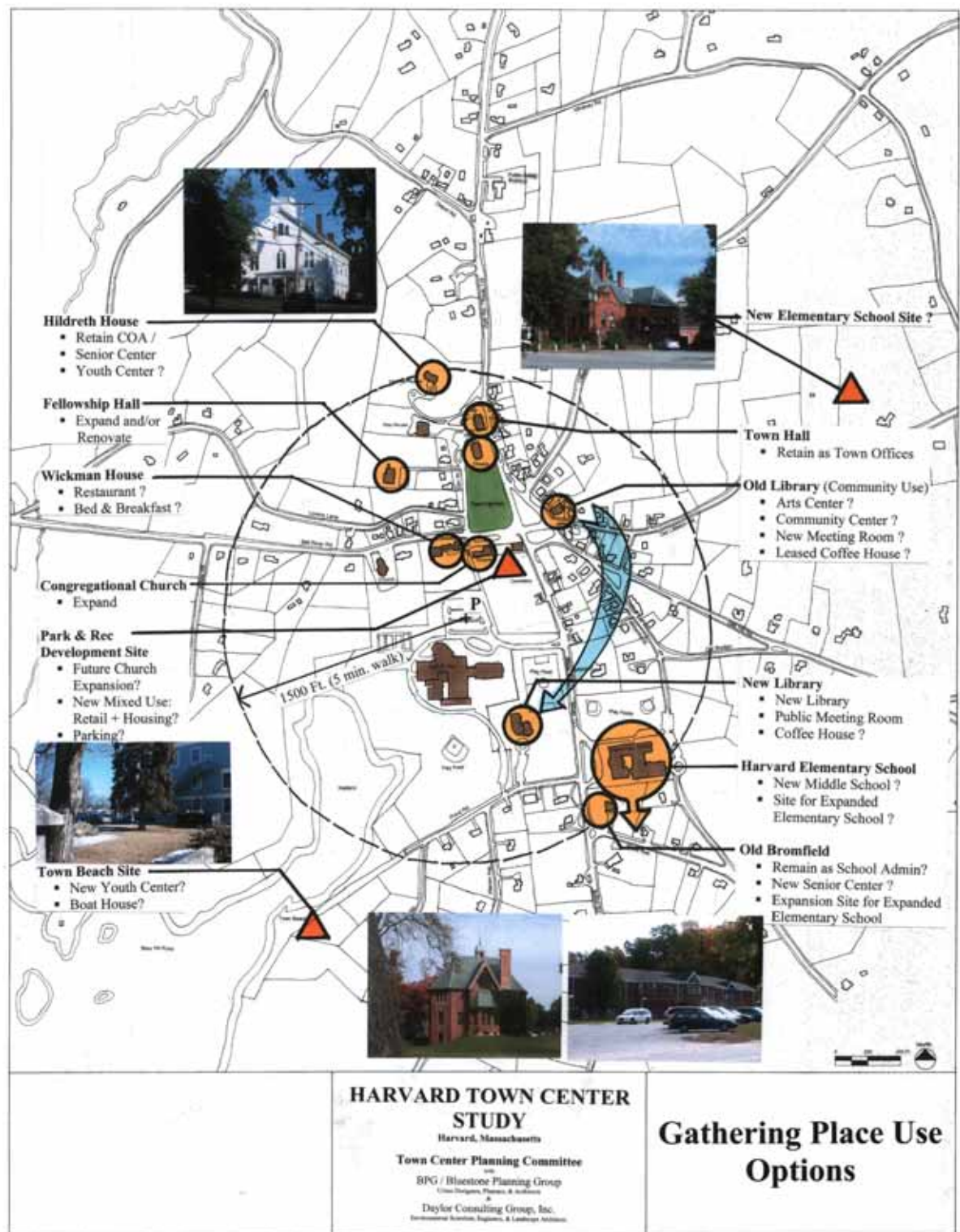


Figure 11: Gathering Place Use Options / The chess board and the chess pieces

5.2 Preserving the Center's Physical Character While Allowing Desired Changes

Harvard's citizens value the Center's history, beauty, Common, landscape, vistas, historic homes, and its compact village form. Because it is so valued, it has long been protected by both a Local Historic District and a National Historic District. However, the issues and opportunities documented above - including traffic and pedestrian safety issues, the desire for one or more new businesses, the desire for convenient parking, and the desire to meet affordable housing goals may require some alterations to the village environment. The challenge will be to make any necessary alterations in a subtle manner that is in keeping with the Center's existing character.

5.3 Desired Outcomes Limited by Perceived and Real Water and Septic Limitations

As mentioned above, many potential new opportunities for the Center's enhancement and even continued preservation as a vital place are often viewed with skepticism and dismissed even before they have the opportunity to be fully explored because many presume that the area's septic capacity limitations will preclude even the consideration of such opportunities. This presumption is based on an understandable, but perhaps unduly negative, skepticism because domestic septic systems around the Center have failed or are threatened by failure.

However, this skeptical attitude may need to change if community aspirations for the Center are to be fulfilled. There are, of course, remedies available to overcome these limitations. First, utilize the surplus capacity of the existing school system to meet new town center needs. Second, expand the treatment capacity of the school's system and develop additional leeching areas as necessary. Other remedies are available by the simple but judicious *choice and acquisition of suitable sites* for new facilities where good soils are available. Others may require *changes in local regulations* to allow shared septic systems and new technologies now allowed by Title V. Whatever combination of remedies are chosen, however, there are answers available. The question is whether the cost to implement these remedies, and the manner in which these costs are equitably borne, is acceptable to Harvard's citizens.

5.4 New Housing Opportunities

It is a goal of the community to diversify its housing stock to allow Harvard's own young adult children, town employees, and seniors to remain in town in spite of soaring house prices and values. There is no better place than in the Center to provide some share of this diverse stock since the village center has long been a place of accessory apartments and rental units.

There are at least two methods to increase the affordable housing stock in the Center: The first way is to review and possibly revise existing zoning bylaw provisions to better allow and further encourage additional accessory apartments within existing older homes as outlined in the 2002 Harvard Master Plan. The second way is to allow limited construction of new housing. Several proposals are on the table today to increase the supply of that affordable housing stock in the Center on town-owned land or on land held by the Conservation Trust.

The challenge in both instances will be to insure that the Center's septic capacity can support such new housing and that the design of new housing fits well into the existing Center's character.

5.5 Traffic & Pedestrian Safety



Pedestrians must at times walk in the roadway for lack of roadside pedestrian pathways.

During public meetings held during the preparation of this Plan, significant concern was raised by many citizens about increased auto and truck traffic through the Center in recent years and the resulting traffic and pedestrian safety issues that that increase posed.

Specifically, there was concern that the Ayer Rd. / Still River Rd. (Route 110 / 111) intersection at the crossroads of the Center had ill-defined curb edges, unclear stop lines, and poorly defined pedestrian crosswalk areas. A flashing red light at this intersection, which stops traffic only in the north / south direction, may not be a sufficient traffic control to handle increasing traffic. Also, there may be ways to install physical "traffic calming" measures at this intersection to better define the intersection, add clearly-marked pedestrian crosswalks, and to slow traffic speeds.

There was another concern that increasing truck traffic was passing through the Center. Although it is probably not possible to divert truck traffic off these two state-numbered highways, it may be possible to request limitations on hours of operation.

Also, as traffic has increased, some see the necessity to add additional pedestrian sidewalks or pathways along street edges such as Still River Rd. where pedestrians now walk only on road shoulders or in the road itself.

5.6 Availability of Adequate Parking

During most hours of the day and week there is more than adequate parking in the Center, although a few specific places, such as the existing Public Library, have inadequate parking for both its current use and any new use located there in the future.

However, during certain peak demand periods, such as Sunday morning Church services, school start and ending times, and during athletic games at the schools' play fields, overspill parking may back onto road shoulders of streets surrounding the Common and along Massachusetts Avenue.

Therefore, parking concerns need to be addressed. However, the answers do not need to be either dramatic, suggest a significant increase in supply, or suggest additional paving. Instead, what is needed is a more efficient use of existing lots and existing paved areas, and improved sign identification of parking areas.



5.7 Inappropriate Zoning for the Center

The governing zoning district in town center is the AR/ Agricultural Residential District - the same zoning district that governs almost all of Harvard. The provisions of the AR District are clearly intended to encourage single-family homes on large lots. However, the use of this same AR District, in an undifferentiated fashion, for Harvard Center does not recognize the special historic compact village character of the Center with smaller homes on smaller lots often located close to the street.

Current zoning for the Center also does not easily allow for new businesses to locate in the Center because of the small sized and remotely located existing B /Business District zone. Nor does current zoning allow for mixed use structures with apartments located over ground floor retail or business uses.

In short, the historic Town Center does not comply with current zoning; and, that zoning would not allow the beloved compact historic village to be replicated today.

5.8 Opportunities for Linking Recreational Lands and Playfields with Trails

Beyond pedestrian safety issues, there are opportunities to link and expand existing pathways and walking trails in and near the Center to allow continuous pedestrian access to the Pond, recreation lands, playfields, the schools and Library, and Town Hall and the new Police Station to the north. Some have expressed a desire to find easements for off-road alignments through town properties, conservation properties, and perhaps even some private properties for these connecting pathways to avoid traffic/pedestrian conflicts along busy road edges.

6.0 Community Goals

Over the past ten years a number of studies and surveys about the Center have been completed. After a public process in almost each instance, they have consistently come to similar goals and recommendations about the Center's future regarding vitality, preservation of the landscape, village center housing, and the regulatory tools necessary to achieve these goals. However, very few changes reflecting these recommendations have been enacted – both for fear of altering the delicate and attractive Center and for concern that the Center's limited septic capacity could not accommodate any consideration of change.

If a dominant ethos or prime directive has evolved over time within the Harvard community about the future of the Center, it is primarily one of *stewardship and preservation while simultaneously allowing small but necessary incremental changes* to maintain the Center's beauty and vibrancy for future generations. Based on this overarching ethos, the Town Center Planning Committee's Vision Statement, goals documented in earlier studies, and goals expressed by Harvard's citizens during the public participatory process for this Action Plan, the following set of goals will guide the recommendations.



- 6.1 Preserve existing town center character.
- 6.2 For the future, build upon how the town center has historically and presently functions. (See Figure 5, overlapping functional use zones.) Where these zones *overlap* are the areas of greatest potential and opportunity for 'chance encounter' and vitality. These naturally occurring areas of overlap should be reinforced and strengthened in the future as the areas of greatest planned vitality
- 6.3 Preserve and strengthen 'community gathering places'.
- 6.4 Retain existing municipal facilities and town services in the Center. Do not scatter these services and facilities outside the Center if possible. Consider bringing additionally desired town services and facilities into the Center to further increase community vitality and synergy.
- 6.5 Allow existing churches and institutions to expand.
- 6.6 Encourage a few new businesses around the Common to serve local needs, sustain vitality, and provide meeting places. Such businesses should be sufficiently proximate to one another to allow walking between them. A priority for

residents are food outlets such as a restaurant, coffee house, or small grocery shop. Desired but secondary priority uses are stores such as a bookstore, flower shop, or cleaners.

- 6.7 Consider a modest amount of new diverse housing in the Center. Encourage accessory apartments in larger houses as the most desired away to increase diverse housing. Then, as a secondary means of housing creation, consider new housing of the scale and character in keeping with the character of existing historic houses.
- 6.8 Utilize the surplus septic capacity of the school's sewage treatment facility to support existing municipal, institutional and small business users; and, provide a modest amount of new capacity to support the desired new uses, expanded institutions, and the community gathering places mentioned above. Residential properties abutting that system would have the option to connect into it if they wish.
- 6.9 Preserve compact village form. Maintain the historic village center of closely spaced houses in a compact form around the edges of the Common. Provide a sharp boundary between the compact Center and its surrounding open fields. Consider revised zoning to reflect and encourage this historic village form.
- 6.10 Preserve vistas of open lands and the Pond from the Center.
- 6.11 Make the Center more pedestrian friendly and "walkable". Improve pedestrian safety and calm traffic where possible. Do not increase traffic thru-put capacity in the Center.
- 6.12 Clearly designate the North parking lot as 'town parking lot' to serve nearby gathering places and to allow a "park once and walk" capability for visitors to the Center to walk to multiple destinations.
- 6.13 Provide roadside walkways and off-road pedestrian pathways to provide safety for pedestrians.
- 6.14 Interlink outlying recreational walking and bike trails to meet in the Center.
- 6.15 Provide small amenities, such as benches and make public bathrooms at Town Hall available after business hours.
- 6.16 Control and limit contaminated runoff from roads and adjoining properties into Bare Hill Pond.

7.0 Options and Recommendations

A Summary Framework for Recommendations

There are a wide variety of recommendations suggested in this chapter to preserve the Center's character and enhance the Center's vitality while also remedying certain concerns for safety, and enhancing recreational opportunities and linkages. In many instances, some recommendations may be implemented by the Town through regulatory and zoning changes. In other instances, state and local capital expenditures may be necessary. Fundamental to achieving still other recommendations, it must be assumed that adequate water and septic capacity will be provided. Without such adequate septic and water capacity, such recommendations cannot be achieved.

The Recommendations described in this chapter may be summarized into five broad categories:

- I. Preserving & Strengthening Gathering Places for a More Vital Center*
- II. Maintaining Town Character and Compact Village Form*
- III. Providing for Future Housing and Zoning Tools for a Compact Village*
- IV. Protecting & Enhancing the Visible Public Realm & Providing the Necessary Public Infrastructure to Support Vitality*
- V. Increasing Septic and Water Capacity and Instituting Storm-water Runoff Limitations*

7.1 Recommendations for Preserving & Strengthening the Center as the Town's Primary Gathering Place

7.1.1. Recommendations: Municipal Gathering Places / Preferred Options for Municipal Facilities & Institutions

A prevailing and consistent goal of Harvard's citizens has been to maintain the Center as the primary concentrated place of town government and services – whether for Town Hall, the Library, the schools, the Fire Department, and other community uses. Fortunately, most of Harvard's municipal services and facilities have remained concentrated in or near the Center over the years, unlike many other towns, and will continue to remain there in the

future *if* the Center's septic, parking, and available land capacity can continue to support them.

One or two other town facilities now scattered about town – such as the Teen Center at Devens – may best be located in the Center near the schools *if* a site were made available. Still other new town services and facilities that are desired, such as an Arts Center, Community Center, or Senior Center do not now exist at all. Additionally, certain existing municipal facilities are not now fully adequate or code compliant. For example, the Hildreth House is in need of renovations and is not fully accessible, the second floor at Town Hall is not handicap accessible, and the public bathroom at Town Hall is only available during business hours.

With the pending construction of the new Library and the possible reuse of the old Library and other municipal venues in the Center, new opportunities will soon present themselves to correct current deficiencies and provide new municipal services. As town services are matched with potential town-owned venues, a shifting of uses may occur much as chess pieces are moved around to new squares on a chessboard. Based on desires expressed by Harvard's citizens at public meetings, additionally desired *Municipal Programs & Services (the chess pieces)* that are not provided or well accommodated, but that may be provided in the Center in the future, include:

- Arts Center
- Youth / Teen Center
- Improved Senior Center
- Accessible community and meeting room space
- Community Center
- New Library

The potential *Candidate Places (the chess board squares)* to accommodate these desired and improved Municipal Programs & Services include:

- Public Library (existing)
- Hildreth House
- Bromfield House
- Town Hall
- Town Beach
- Old Bromfield (New Library Site)
- Town Beach

The Board of Selectmen should undertake a comprehensive '*Municipal Space Needs and Facility Inventory*' to evaluate in detail municipal program needs and the places they can best be

accommodated. The preferred options as expressed by various Town Boards and Departments are:

- 1) *Town Hall*: Maintain Town Hall as the location of all town offices. Provide an elevator so the top floor the town board offices and public meeting rooms may be made fully accessible. Resolve document storage problems in Town Hall and overcome septic capacity limitations and security issues so that public bathrooms can be made available beyond the business hours of town hall.
- 2) *Hildreth House*: Renovate Hildreth House and make it fully accessible to remain as the town's Senior Center in the years to come to accommodate Harvard's increasing senior population and their needs.
- 3) *Reuse Harvard Public Library for New Community Uses*: Reuse the old Library for new community uses. Alternative suggestions for conversion of the old library to either senior housing or affordable housing were not well supported at community meetings.

Specific suggestions for new community uses include a Community Center, an Arts Center, and a possible place for a café or coffee house. To accommodate *any* of these proposed community uses, however, both the property's septic capacity must be expanded to meet Title V compliance requirements and its currently limited parking must be increased – perhaps along the road shoulders of nearby Common Street. Without such improvements, the Harvard Public Library will be unsuitable for reuse and the town will likely have to “mothball” and maintain the vacant structure.

- 4) *Teen Center*: Relocate the existing Teen Center, which operates on a tentative tenant-at-will basis at Devens, to the Center. Candidate sites for the Center are either at a new facility at Town Beach as is being considered by the Park and Recreation Commission, or, the Bromfield House *if* the School Department operations and offices there relocate to Bromfield High School.
- 5) *Old Bromfield*: The Public Library will relocate to Old Bromfield and include all necessary library functions and meeting rooms.

7.1.2. Recommendations: Gathering Places / Alternative School Site Options

According to recent school enrollment projections, Harvard's public schools will probably need to further expand over the next decade – particularly as the elementary school population increases. Today, Harvard Elementary School is already one of the largest in the Commonwealth and its enrollment is approaching the school's current design capacity. In the next several years it is expected to exceed it. Expansion options must therefore be explored. In recent years, the Town, with considerable foresight, constructed the Sewer Treatment Plant on School Department property to specifically accommodate both the new Library at Old Bromfield and school expansion needs. That plant was fortunately designed with a processing capacity in excess of any foreseeable school expansion scenario *based on current real operating data* about *actual*, versus *initially assumed*, consumption per capita.

Faced with the need to provide elementary school expansion space, the School Committee in 2003 explored a number of expansion strategies and options. [Refer to: *Report to Harvard School Committee / Long Range Facilities Plan* by the School Growth Task Force dated March 24, 2003] The expansion siting options and phasing strategies were many. In summary, however, the strategies investigated fell into two broad categories:

- Scenario I: Expand Harvard Elementary School onto town owned and private property(ies) adjacent to the present site (including Bromfield House and some private properties along Massachusetts Ave.) Although this option is straightforward and supports the goal of keeping all schools in the Center to be near the Library and to maintain the existing "school campus" concept that includes all grade levels, the combined land size did not meet state standards for the required amount of land (approx. 18 to 20 acres), and, the school would have remained one of the largest in the Commonwealth.
- Scenario II: Relocate Harvard Elementary School from its present site. Under this scenario, after the Elementary School is relocated in gradual phases by grade level, the Middle School now at the Bromfield School would relocate to the Harvard Elementary School site, and the High School would remain the sole occupant of the Bromfield School. Under this scenario, the School Superintendent's Office might also relocate from the Bromfield House to the Bromfield School – thereby making the Bromfield House available for new municipal, community, or school program uses.

Scenario II was the strategy recently approved by the School Committee as their preferred expansion option. In order to achieve it, a new school site of approximately 18 to 20 acres will have to be identified and then acquired by the Town. Preferably, the site will be one with good soils to accommodate an on-site septic disposal system.

The primary result of this preferred strategy, as it impacts the recommendations of this Town Center Action Plan, is that the present “school campus” precinct, incorporating both the Harvard School, the Bromfield School, and their playfields, will remain a school precinct – and therefore remain fundamentally unchanged in terms of its primary use.

7.1.3. Recommendations: Gathering Places / Businesses: Business Mixed Use Overlay District

Harvard’s residents support maintaining the Center’s existing businesses and attracting one or two others to maintain and enhance the Center’s vitality – providing that they do not generate significant new traffic. The most preferred uses are a coffee shop or café, small food shop, or small bookstore. Ideally, the Center’s several businesses should cluster near one another, near other Town Center destinations, and near available parking to build ‘synergy’, and a friendly pedestrian environment that would allow patrons to “park once and walk” to multiple destinations. Historically, many of the Center’s businesses in the past clustered along the southern and eastern edges of the Common.

Today, if a new business wanted to open in the Center other than where current businesses operate as “grandfathered uses”, the hurdles are difficult. First, the only place zoned for business activity is a tiny Business District off of Littleton Rd. where the Harvard Antique Store is now located. Second, the site’s on-site septic capacity would have to prove adequate.

To remove these barriers and hurdles, proactively attract a desired business, and yet allow the Town to maintain control over which types and size of business should be encouraged and allowed, several recommendations are proposed:

- Establish a new *Business Mixed Use Overlay Zoning District* that will allow for clustered businesses and mixed-use structures (housing or offices over businesses) by Special Permit only. [See Figure 12.] Within this new *Business Mixed Use Overlay District*, carefully define the specific *types and size* of small businesses to be allowed: for example – a café, restaurant, small specialty food store, pharmacy, book store, and/or bed &

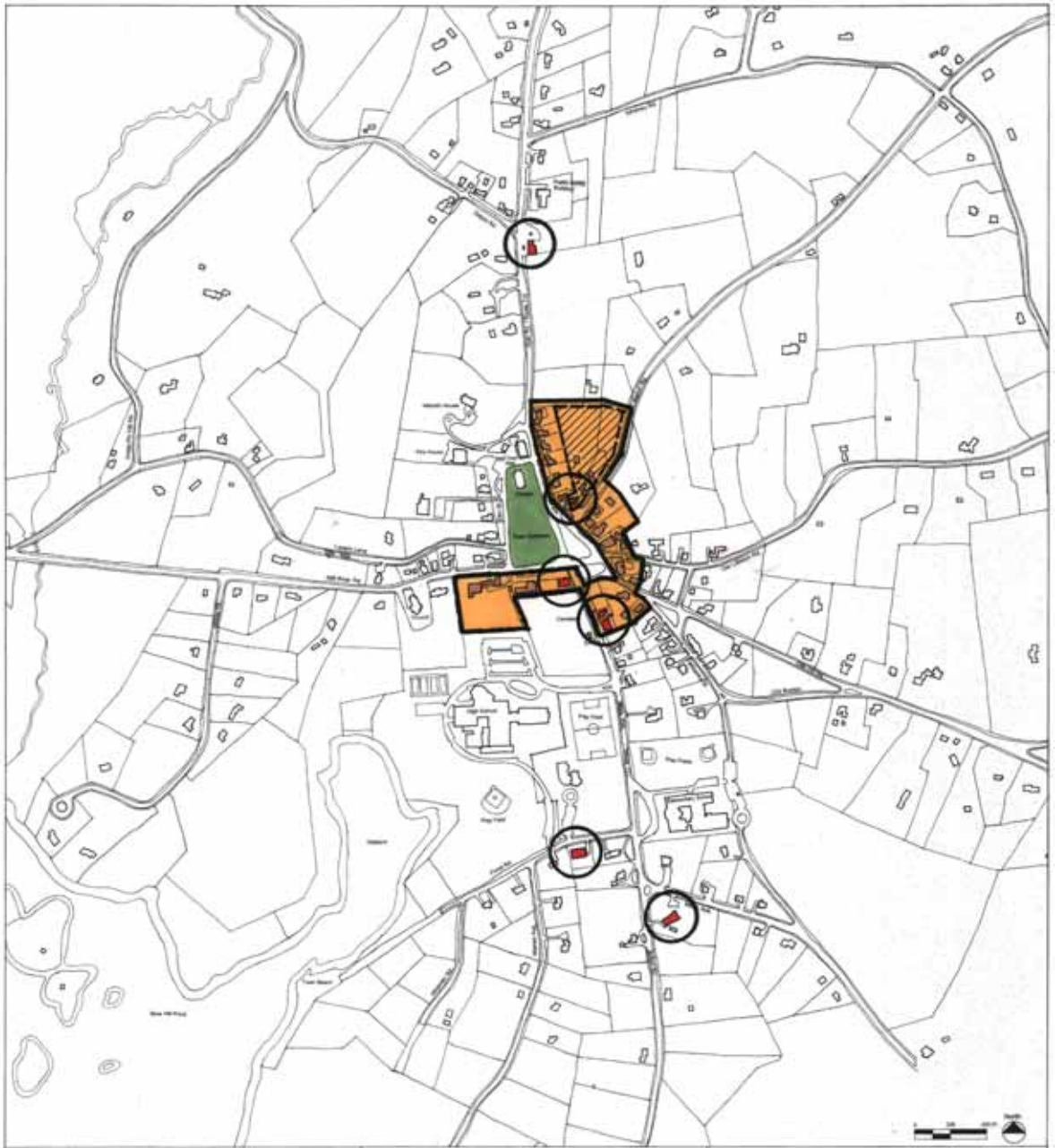


Figure 12: Suggested New Business Mixed Use Overlay Zone

[The small cross-hatched area off of Old Littleton Road is the only Business District in the Center and includes only the Harvard Antiques store. Properties in 'red' are existing businesses. Most are outside the Business District and are 'non-conforming'.]

breakfast. Also, as a condition of granting a Special Permit, evidence of adequate septic capacity would need to be documented and projected traffic and parking needs outlined.

- The Town could consider *attracting* limited new businesses to the south edge of the Common along Still River Road, within the new *Business Mixed Use Overlay District*. To achieve this, the Town could consider offering its Parks and Recreation property between the Congregational Church and General Store, for long-term ground lease to a redeveloper or non-profit housing corporation as a new mixed-use “in-fill” development site with a desired retail use on the ground floor and several units of senior housing above. As part of the redeveloper’s requirements, the new building would have to conform to the contextual design standards and scale of surrounding buildings in the Historic District. (*Note: This proposal would only be possible if the septic systems located between the General Store and the Church were abandoned and the two properties tied into a Town Center sewer system*)

7.1.4. Recommendations: Gathering Places / Community Churches and Institutions

Institutions such as the Congregational Church, Unitarian Church, Fellowship Hall, and St. Theresa’s Catholic Church are irreplaceable institutions and invaluable gathering places, not only for their own congregations, but also for the meeting facilities they generously offer others and for the events they help to sponsor. Several are now investigating their own expansion and / or renovation needs. If these expansions cannot be accommodated in the Center, either because of limited septic capacity, lack of expansion land, or limited parking, they may be forced to relocate out of the Center - thereby greatly diminishing the Center’s vitality. Therefore, the Town should seek to cooperatively work with these institutions to accommodate their requirements – both within the bounds of its discretionary review authority and with proactive plans for increasing the Center’s septic capacity.



7.2 Recommendations for Maintaining the Historic Compact Village Form

7.2.1 Recommendations for Compact Town Form

As described previously in this Plan, Harvard Center has maintained its compact village form over the centuries with rather well-defined and crisp edges between the Center’s compact built

environment and the surrounding rural countryside. This has been achieved because its historic center is surrounded, in many locations, by open fields, conservation lands, and agricultural lands as well as stream valleys to both its east and west where new development would be difficult from a regulatory perspective.

However, these factors alone may not prevent a “blurring” of some of its edges in the future by new residential development. What many townspeople consider “protected lands”, either because they are now in agricultural use, forest land, or simply owned by families who have kept their property for years in the same rural condition, are actually zoned for residential development under the Town’s AR Residential Zoning District. Some of these undeveloped lands actually have soils quite suitable for providing on-site septic fields for new housing development. Others, with today’s package treatment plant systems and new septic disposal technologies, could be developed and subdivided as large lot subdivisions or ANR lots. In fact, only the Town’s conservation lands and lands including or immediately adjoining wetlands or perennial streams are formally “protected”.

As policy, Harvard Center’s existing compact village form of closely spaced houses around the edges of the Common, and the fairly sharp edges between this built environment and the surrounding natural environment should continue to be deliberately maintained and protected rather than allowed to “creep” or “blur”.

To achieve this policy, several options are available to the Town.

- The first option is to directly acquire land for conservation purposes or for municipal facility purposes to keep them off the market when private properties are offered for sale. Harvard and its Conservation Commission and the Conservation Trust have a strong tradition of using this mechanism to preserve land. The Town could identify key properties around the periphery of the Center beforehand that they wish to add to the surrounding open space network and then negotiate a “first right of refusal” option with willing landowners if and when they decide to sell their land.
- Another option is to plan and construct a limited piped water and sewer system for the Center, linked to the existing Treatment Plant at the School Department property, that would only extend along roads to a point where compact development already exists, but no farther. This would encourage limited compact *infill* development within the village core and control new development beyond the historic Center.

7.3 Recommendations for Future Housing Opportunities & Village Residential / VR Zoning

As an acknowledged “public purpose”, many of Harvard’s citizens wish to encourage a wider variety of housing types and affordability levels in town to provide for both its growing senior population, empty-nesters, young families, and middle to moderate income families who otherwise might not be able to afford to stay in Harvard. The Center is already a location which hosts a number of apartments and accessory housing units. Because they are located both within larger houses and at the old Harvard Inn, they are not even noticeable. Providing such housing in or near the Center rather than on undeveloped sites that would consume agricultural land or open fields makes environmental sense.

7.3.1. Recommendations: Encourage New Accessory Apartments in Existing Homes

According to the wishes of many Harvard residents as expressed in several public meetings, a first priority to increase housing in the Center would be to further encourage the creation of small rental *accessory and in-law apartments in existing large homes or their accessory structures* to increase the town’s affordable housing stock. Current zoning allows such accessory housing within the prevailing AR District; however, the threshold site requirements, based on concerns for site septic capacity, are set very high and are a barrier to providing new accessory units.

- To expand the number of housing properties where accessory units may be allowed, relax the current minimum lot area requirement for an additional accessory unit in the current bylaw which many now consider to be an excessively high threshold.
- Consider incentives to preserve existing affordable units and encourage the development of new and affordable units.
- Any addition of accessory units on existing residential lots will require that sufficient septic capacity exists. Ultimately, to provide additional septic capacity for many lots sufficient to support new accessory apartment units, a limited sewer system will need to be constructed in Harvard Center.

7.3.2 Recommendations: Establish New Village Residential (VR) Zoning District to Replace the AR Zone in the Center – Thereby Preserving the Compact Historic Settlement Pattern

Ironically, the historic compact village physical form that Harvard's residents most admire about the Center – with its small residential lots, small street frontages, and the placement of a house on a lot near the street - could not be replicated today under the lot size and dimensional setback requirements of the prevailing AR Residential District. Also, under the current AR District, most existing older homes in the Center on small lots are legally non-compliant. Therefore, in order to maintain the Center's present character, zoning should be changed.

- *Re-zone* the area around the Common where the compact village center now exits from the current AR Zoning District into a new *Village Residential (VR) Zoning District* to allow smaller residential lots, smaller street frontages, and smaller front yard setbacks in keeping with the existing historic village settlement patterns. [See Figure 13.]
- Allow single family, two family, multi-family (3-4 units), and bed & breakfast residential uses in the new VR district.
- Consider expanding the geographic limits of the new *Village Residential (VR) Zone* [See Figure 13.] along certain approach roads leading into the Center, where good soils conditions exist, in order to:
 - 1) extend the compact village center to its natural “gateways” or boundaries, and
 - 2) prevent current AR district properties adjacent to the historic compact center from being developed as large lot subdivisions.

Recommendations: Create New Housing Sites [See Figure 14.]

Consider allowing a limited number of *new* compact village-scaled affordable or senior home sites immediately adjacent to the Center. Preferably, such housing should be located on town owned land or Conservation Trust property. Any new housing in the Center should architecturally fit within the Center's historic context and be of the scale and height now found in the homes of the Center's existing historic district. Exterior materials should also attempt to replicate or be compatible with the palette of materials used on existing buildings in the Center. Ideally, new housing sites should be located on properties with good soils to provide on-site septic systems. If this is not possible, however, consider connecting such properties into the Center's existing Treatment Plant, which appears to have excess capacity.

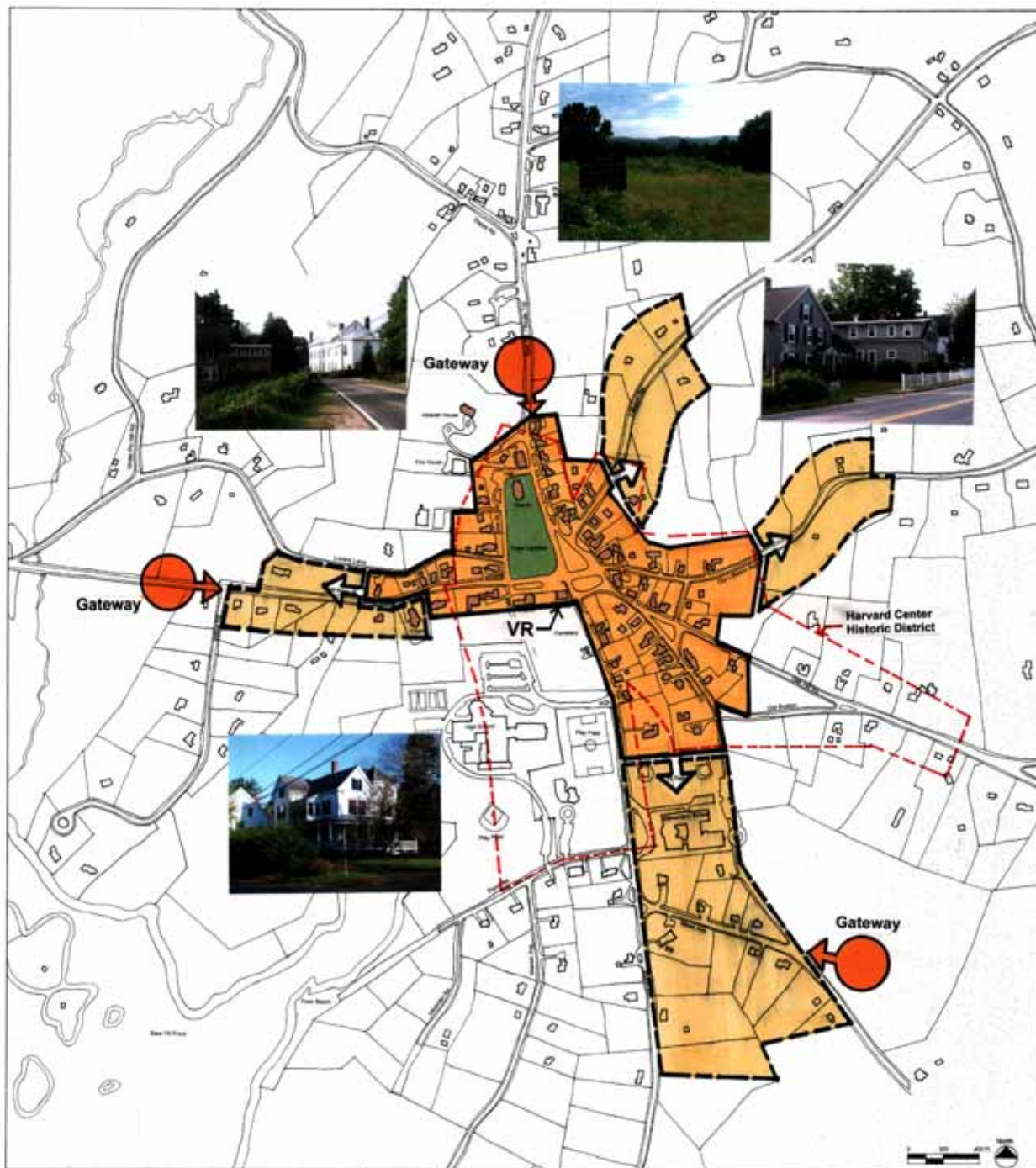


Figure 13: Village Residential (VR) Zoning District (with possible district extensions shown in lighter color.) [Orange circles indicate primary 'gateways' into the Center.]

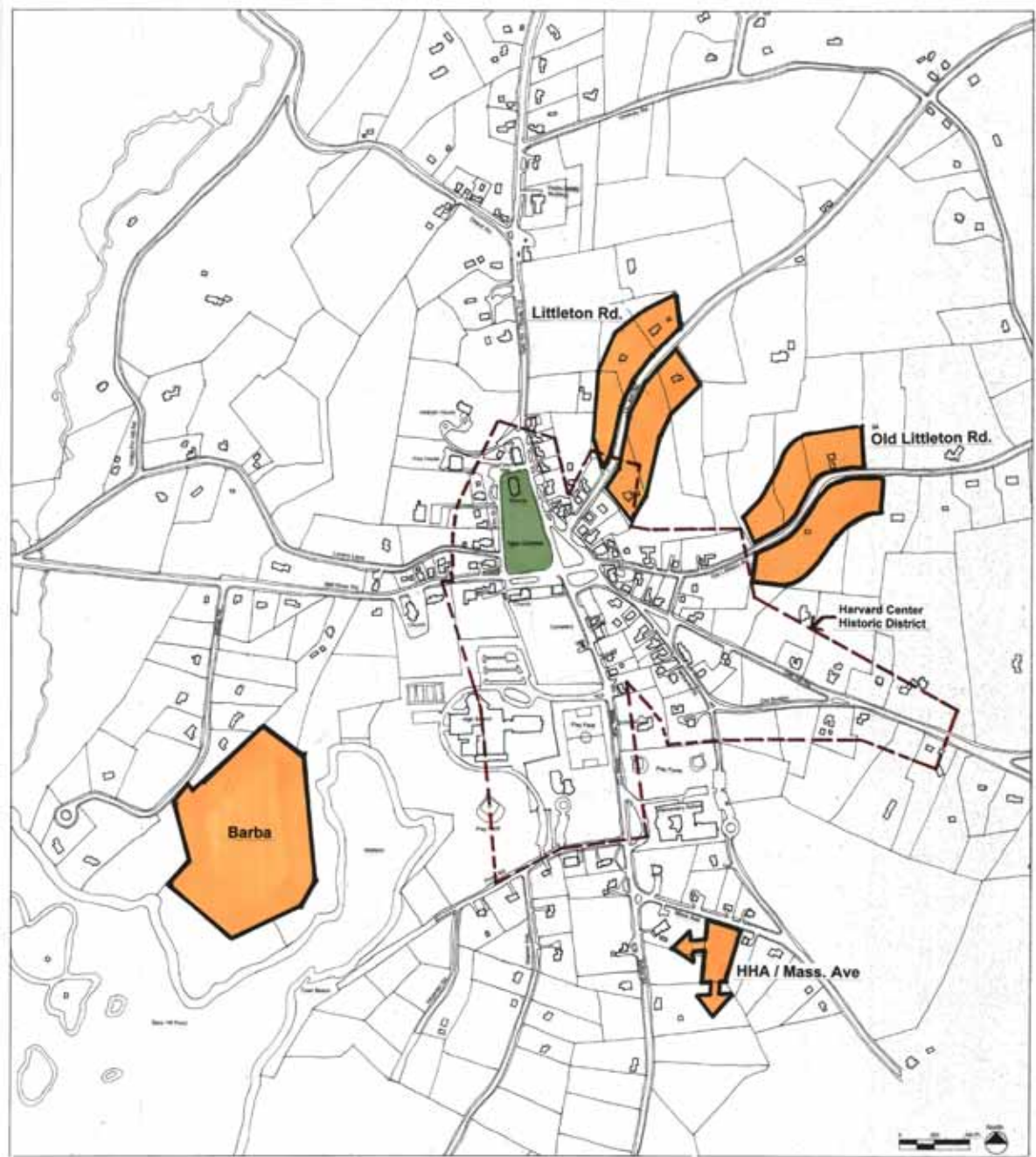


Figure 14: Some Possible Housing Sites
[Local Historic District is outlined by dashed line.]

- Allow new housing on the Housing Authority's existing Massachusetts Avenue site across from the Bromfield House as the HHA has proposed. Possibly add adjoining property to this site to allow for a more efficient scale of development.
- Consider developing a limited number of new housing units on the developable portions of the Conservation Trust's Barba property (if economically feasible). Make sure that new housing at this site does not contribute to contaminated storm water runoff to Bare Hill Pond.
- Consider the reuse of the former Reuben Reed property on Massachusetts Avenue (empty lot immediately north of Harvard Realty) for an affordable / senior housing site.
- Consider extending the proposed new *VR Zoning District* to sites along Old Littleton Rd. and Still River Rd now zoned AR to allow new traditional village-scaled housing there. [See Figure 13.]

7.4 Recommendations for Enhancing the Visible Public Realm: Providing the Necessary Supporting Infrastructure

Harvard Center, in order to sustain its vitality, requires ongoing investment in its supporting infrastructure, some of which is never seen or just barely glimpsed, such as its water distribution and septic disposal systems. Other components of its critical infrastructure network are highly visible, however, and include elements such as its pedestrian pathways, roads, parking spaces, and landscaping. Outlined below are recommendations for enhancing the visible public realm.

7.4.1. Recommendations: The Public Realm / Pedestrian Pathways and Trails [See Figure 15.]

Many Harvard residents wish to create a more "pedestrian friendly" environment within the Center by providing more roadside pedestrian pathways that provide links between destinations, parking lots, and safer pedestrian road crossings at road intersections so people can walk within the Center in safety and not along road shoulders adjacent to traffic. Such pathways could be constructed of permeable stone dust or crushed stone.

- Construct new roadside pedestrian pathways between 'gathering place' destinations in the Center to allow a more walkable environment. Specific locations include a roadside pathway on Ayer Rd. from the Center to the new Police Station, a new pedestrian pathway along the north side of Common Street

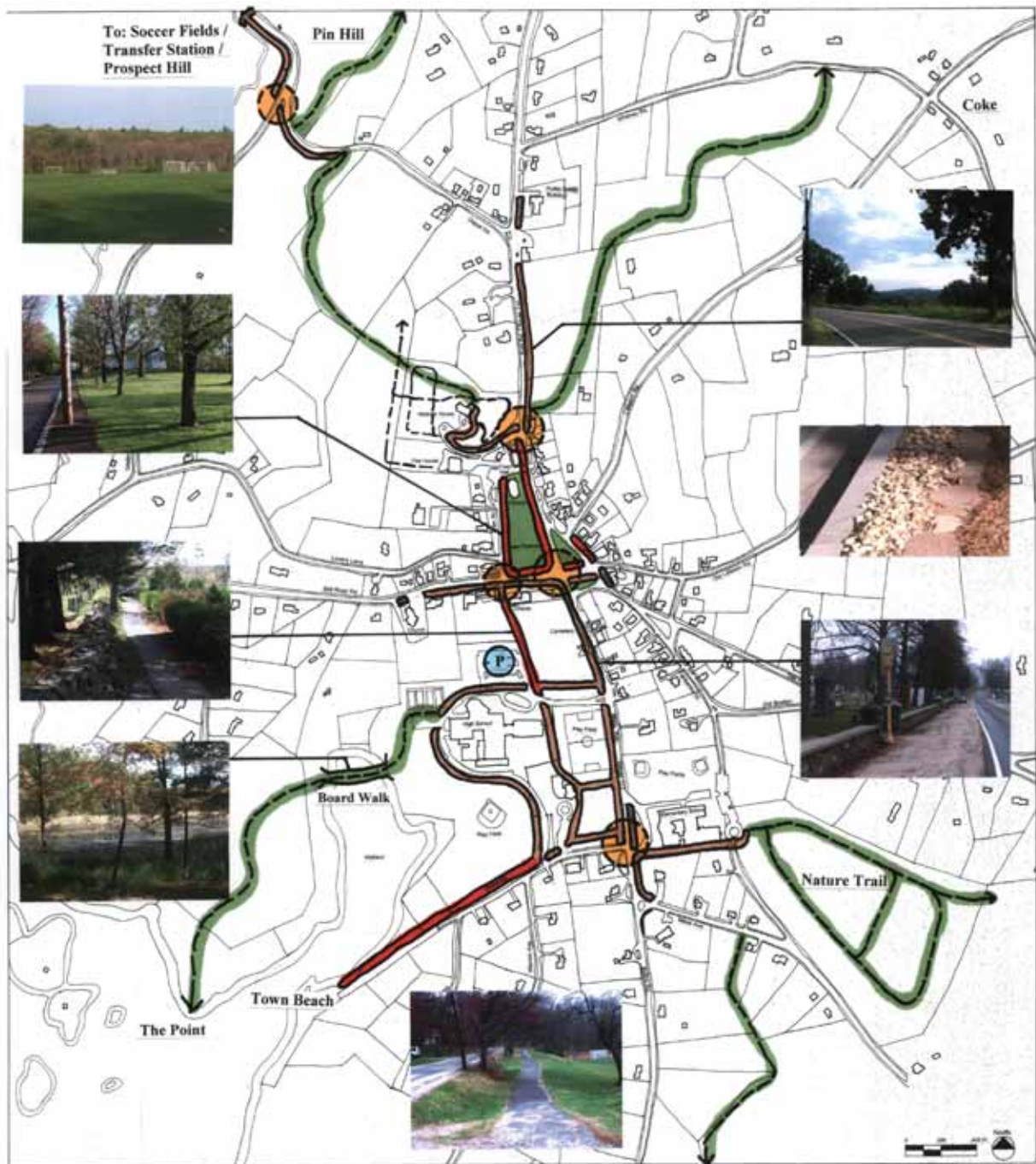


Figure 15: Pedestrian Pathways and Trails

Red = existing pathways
Brown = proposed pathways
Green = trails

leading to the old Library, and a new pathway along the southern edge of Still River Rd. in front of the Congregational Church and General Store. Other pathways could be constructed to either side of Massachusetts Avenue from Still River Rd. at the blinking traffic light to the schools and Pond Rd to the south so school children can walk in safety.

Additionally, a better defined street intersection with clear pedestrian crosswalks should be striped at the intersection of Ayer Rd and Still River Rd. (the Routes 110 / 111 intersection).

- Make better pedestrian connections between town parking lots and Center destinations. Specifically, improve the pathway from the North Lot to Still River Rd. adjacent to the Congregational Church so it is more passable in winter. Consider adding low level knee height shielded lights to illuminate this pathway in the evenings.
- Provide for an *off-road pedestrian pathway or trails* linking many destinations in and around the Center core to areas at the outlying edges of the Center and beyond that would be safely distant from traffic on busy roads. A new off -road continuous interconnected pathway through the entire Center could lead all the way from Pond Rd. in the south to the playfields on Depot Rd. in the north. Consisting of both existing and new pathway linkages, this north-south pathway would travel from Pond Rd. up along the driveway to the High school, pass by Old Bromfield and the Bromfield School, then link to North Lot and the existing pedestrian pathway leading to Still River Rd past the cemetery. From Still River Rd, it would travel up the existing Elm Street pathway adjacent to the Common, around Town Hall then up to Hildreth House where it would link to new pathways that will be constructed there. From the grounds of Hildreth House, a trail easement could be sought through woodlands on private property to link to Depot Rd. near the playfields and waste station located there.

7.4.2 Recommendations: The Public Realm / Streets & Roads

A primary concern raised by many of Harvard's citizens who participated in the Public Workshop held in May of 2004 was the increased traffic through the Center, the fast speeds at which cars traveled, and the resulting safety hazard to pedestrians and school children walking along road shoulders or trying to cross roads. To address these issues, several improvements are suggested, including intersection reconfigurations, and "traffic calming" constructions.

- *Reconfigure the Route 110 / 111 and Fairbanks Street / Old Littleton Road Intersections [See Figure 17.]*

Currently, the Route 110 / 111 intersection is a wide swath of asphalt with ill-defined edges (e.g. no curb line – particularly in front of the General Store) that is dangerous to cross for both motorists and pedestrians. In addition, similar dangers exist in front of the current Library. Therefore, traffic and pedestrian safety at these intersections should be improved by reexamining their layout and operation.

Specific improvement ideas include: 1) adjust the traffic light to provide a stop for vehicles traveling from all four cardinal directions; 2) narrow road pavement widths at the corners by extending the Common's lawn area to create smaller turning radii (making sure to confirm with the Fire Chief that the turning radii remain sufficiently large for fire apparatus and large trucks to negotiate the turns); 3) add well marked crosswalks which will be a shorter distance for pedestrians to cross since the road pavement widths will have been reduced); and, 4) install curb stone to better define the edges of the intersection, particularly in front of the General Store and Library (and correspondingly, establish a curb cut or driveway entrance to the General Store's parking area rather than leaving the broad parking apron that now exists.)

- *Improve the Pond Road / Massachusetts Avenue Intersection*

Add a crosswalk at this intersection across Massachusetts Avenue which will link the new Library, playfields and Bromfield School on the west side of Massachusetts Avenue to the Harvard School and Bromfield House on the east side of the road.

- *Reconfigure On-Street Parking and Drop-Off Area in Front of Harvard Elementary School*

- *Improve Elm Street in Front of Town Hall*

Define parking and traffic flow to address the conflicts between the needs of the Fire Department, parking for Town Hall and the Unitarian church, and access to residences. Reduce large extent of asphalt paving in front of Town Hall and add new landscaping at the Town Hall's front door.

- *Calm Traffic*

To slow the speeds of vehicles traveling through the Center and thereby increase pedestrian safety, a number of "traffic calming" techniques can be employed – some of which have been described above. These techniques include: 1) a 4-way stop at the

Ayer Rd. / Still River Rd. intersection; 2) narrowing the width of road pavement at this road intersection by reducing the currently large corner turning radii. This will decrease the crossing distance for pedestrians at crosswalks located here; 3) building a street curb in front of the General Store to prevent cars cutting across this corner while turning from Still River Rd. eastbound to Massachusetts Avenue southbound. [See Figure 17.]

7.4.3 .Recommendations: The Public Realm / Parking [See Figure 16: Suggested Parking Improvement Locations.]

As discussed previously in this Plan, the Center's parking supply is quite adequate for most days of the week and hours of the day. Parking shortfalls arise primarily on Sunday mornings, when many games are held simultaneously at the schools' playfields, and at specific venues, such as at the existing Public Library, where the existing number of parking spaces is very limited.

Solutions are possible to address all of these shortfalls without significantly adding to the current parking supply or adding more paving. These solutions include: 1) supporting 'gathering place' destinations with better marked and signed nearby parking spaces and a modest increase in parking spaces where needed; 2) emphasizing the existing 'North Lot' as the Center's primary Public Parking Lot to allow a 'park once and walk' capability for multiple errands; and 3) encouraging *shared* use of parking between municipal uses, schools, business and churches.

- *North Parking Lot:* Expand the town-owned North Lot and formally designate it as the town's primary centrally-located town public parking lot. Since this lot is thought by many to be a "school lot" rather than a town-owned lot as it actually is, advertise this lot as the Town Center's public parking lot, and sign it as such. Seek more "shared use" of this lot for weekday/weekend use and for daytime/nighttime use. Improve pedestrian pathway connections to the North Lot from Still River Road and provide directional parking signage to the lot on Massachusetts Avenue at the lot's Massachusetts Avenue entrance.

- *Common Street Parking:* Close the short segment of Common Street between Massachusetts Avenue at the General Store and Fairbanks Street in front of the old Harvard Inn as a roadway and convert it to a small Town Parking Lot to support uses at both the old Library (current and future uses) and adjacent or nearby businesses. Without adding these new parking spaces, it will be difficult to reuse the old Library for any type of new community use. Parking spaces can simply be added as parallel parking



Common Street

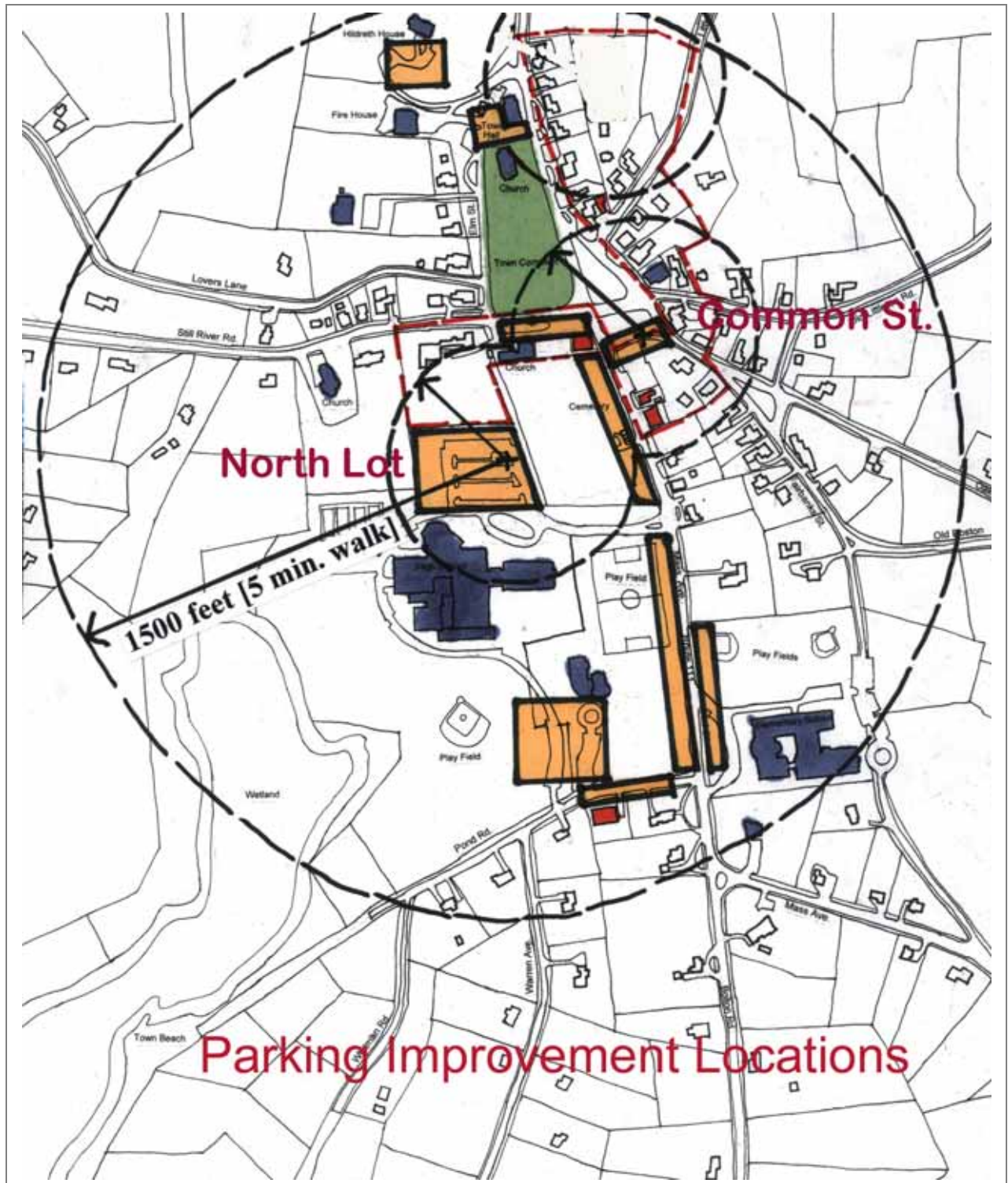


Figure 16: Suggested Parking Improvement Locations

spaces on both sides of this small street without increasing the currently paved area. Alternatively, the number of parking spaces can be increased further by using head-in parking on one side of the street. [See Figure 17.]

- *New Sunday Parking Lot at Park & Recreation Property between the General Store and Congregational Church*

The open space lot between the General Store and the Congregational Church, now used as a shared septic field for both, could be designed to be used as a shared parking lot on Sundays. This could be accomplished by used concrete “grass pavers” that could probably support cars but that would allow grass to grow within the paving blocks so the site would remain looking “green”. The underlying septic system, if it remains, may need to be ‘vented’.

- *Hildreth House & Town Hall Lots:* Expand the parking spaces at Hildreth House and Town Hall. While keeping Elm Street open as a through road and continuing to allow for ease of fire apparatus exiting at this location, parking spaces in front of Town Hall can be increased by re-striping spaces. Also, landscaping respecting historic structures like the Powder House and Town Pound should be generously added to this lot, particularly around the Town Hall’s building perimeter. [See Figure 18.]

- *Massachusetts Avenue Road Shoulder Parking Improvements:* Formalize and aesthetically improve the parking along shoulders on both sides of Massachusetts Avenue now often used by attendees to sporting events at the towns’ several playing fields located there. Add street trees approximately every three parking space lengths (60 feet) to define the length of each parking space.

- *New Library Parking at Old Bromfield:* Provide additional parking at the New Library in accordance with the site plan prepared earlier by the office of Carol R. Johnson Associates. [See Figure 10.]

- *New Pond Road Roadside Shoulder Parking:* At the request of the Park and Recreation Commission, consider adding new parking spaces along Pond Road by the town’s playfields between Massachusetts Avenue and the Bromfield School’s entry driveway. To accomplish this, move back the stone wall along the north side of the road by several feet to provide new road shoulder parking and provide safe pedestrian access along Pond Road.

7.4.4 Recommendations: The Public Realm / Possible Landscaping and Beautification Sites

As enhancements to the attractiveness of the Town Center, a number of suggestions were made by Harvard's citizens:

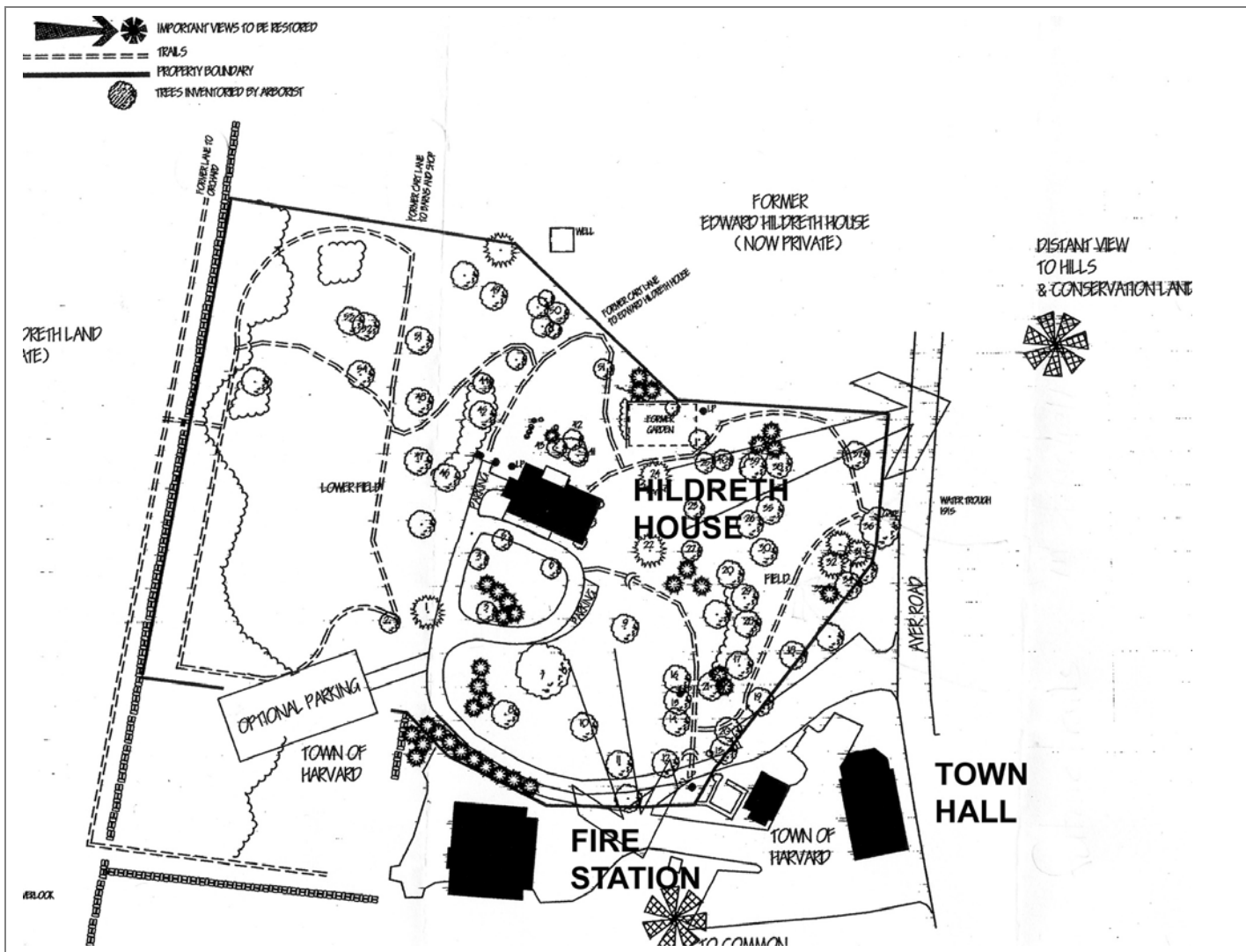
- *Improve Grounds Around Old Bromfield for New Library and Parking* in accordance with the landscape plan prepared by Carol R. Johnson Associates. [See Figure 10.]
- *Improve Grounds around Town Hall and Unitarian Church.* Develop a landscape plan in conjunction with the traffic / parking plan for this area. It should feature the Town Hall building, vault, Powder House, and Town Pound. [See Figure 18.]
- *Improve Parking Area and Landscaping Around the General Store and Congregational Church.* By adding new curbing at the Route 110 / 111 intersection to better define this intersection's edges, the parking area in front of the General Store will be converted from a parking apron to a parking lot with a clear entrance curb cut. A new landscaped buffer strip or median should separate Still River Rd. from the General Store's parking area to add a significant amount of "green space" at this intersection. [See Figure 17.]
- *Improve Road Shoulders along Massachusetts Avenue for Improved Parking and New Street Trees.* As described under the Parking Recommendations section above [Section 7.4.3], new street trees should be planted along Massachusetts Avenue.
- *Improve Grounds around Hildreth House and Open Vistas (now underway).* Improve the grounds around Hildreth House to include new landscaping, walking paths, and improved vistas from this hilltop site toward the Common to the south and the Eastview Conservation Area to the east. [See Figure 18 & 19.]
- *Improve Natural Amphitheater at Bromfield School.* The outdoor Amphitheater at Bromfield School should be improved and restored as a natural sitting area for casual gatherings and outdoor events and performances.
- *Improve Pathway to Town Beach along Pond Road.* Make improvements to the pathway along Pond Road leading to the Town Beach.
- *Improve Pedestrian Pathway between North Parking Lot and Still River Road.* The pleasant pedestrian pathway from North Lot to Still River Road adjacent to the Town Cemetery should be



Figure 17: Parking and Landscape Plan in Vicinity of Ayer Road and Still River Road Intersection



Figure 18: Parking and Landscape Plan in Vicinity of Town Hall and Hildreth House



*Figure 19: Landscape Plan for Grounds at Hildreth House
[Prepared by Hildreth House Landscape Committee]*

improved to possibly include pedestal height lighting along its length for evening use and a new surface that can be maintained and cleared of ice and snow during winter months.

- *Eventually, remove overhead wires in Town Center* and coordinate their installation underground with any construction work proposed within and adjacent to the roadways in the center.

7.4.5. Recommendations: The Public Realm / Provide Small Amenities that Contribute Significantly to the User-Friendliness of the Center

Several small-scaled improvements which could be accomplished in short order but which would significantly improve daily life in the Center include:

- *Provide Benches in the Center.* Provide new benches on the Common, in front of the General Store, along paths and trails, and on Ayer Road at the East View Conservation lands overlook.
- *Provide Public Restrooms at Town Hall.* Septic capacity should be improved to permit the use of a designated public restroom which is available during all times of the day and weekends.

7.5 Recommendations for Increasing Water Capacity in Support of Existing, Expanded and Desired New Uses

To support many of the land use and facility goals and recommendations cited above, the town's water supply for the Center may eventually need to be expanded.

7.5.1 Recommendations: Expand Water Supply

As described earlier in this report, water demands at peak demand periods today approach or exceed the output of the Town Center's two active wells and require use of the water storage tank to meet unmet needs. Therefore, if and when water demand in the Center begins to exceed the current Pond Road well supply capacity, there are two options to remedy this potential shortfall between supply and demand:

- (a) Put in regular service the existing inactive 'reserve well' - Well No. 3 - off Bolton Road near the water tank by installing treatment for its high soluble iron content. Existing Well No.3, which can produce at a rate of 25 gpm, could meet reasonable growth needs in the Center. At 25 gpm there are several commercially available

variable flow filtration systems that can be installed as a package;
or, (b) explore opening a new well site.

7.6 Recommendations for Increasing Septic Capacity in Support of Existing, Expanded and Desired New Uses

To support many of Harvard's land use and facility goals and recommendations presented in this report, we recommend that the Town consider establishing a limited and phased Town Center low pressure sewer network.

Fortunately, the Town and Board of Health had the foresight and wisdom several years ago to fund and construct a new wastewater treatment facility for the expanding schools and new library at Old Bromfield. That facility, originally designed and then permitted in 2001 by DEP almost exclusively for school and library needs (then projected to be 23,000 gpd), now appears to technically have significant excess capacity, based on evidence of actual metered flows to it, both now and into the foreseeable future. In fact, the current low and seasonally fluctuating flows to the treatment facility cause the facility to operate inefficiently. Therefore, if the Selectmen, Board of Health, Water Department, Library Trustees, and School Committee can agree that excess capacity in fact exists, based on current evidence, and that projected school and library needs will be adequately protected in the future, then the Selectmen can approach DEP to explore use of at least some of this excess capacity for additional Town Center needs.

The existing Treatment Plant represents a significant "sunk investment" of approximately \$1,250,000 dollars that has already been amortized into the Town's annual budget as part of the Bromfield School expansion. As noted above, it appears to have substantial excess capacity. If that excess capacity can be further used to support a new compact Town Center Phase 1 low pressure sewer system that will serve current and future municipal needs, it would be extremely cost effective since the only substantial new incremental capital cost would be for sewer piping and connections.

As a first phase priority, this sewer network should be designed and routed to serve all current and future municipal buildings that provide services to the entire town and help give the Center its vitality. Institutional and business uses along this route could also be supported.

As a second phase priority, the network can be extended to overcome current and future deficiencies for Town Center residential properties that the Center's current natural limited septic capacity imposes *if* additional suitable "distributed site" septic fields can be identified and attained by the Town. In most probability, the publicly-owned Coke site would be the primary "distributed site" candidate to serve this function. However, there exist several other sites within one mile of the Center which might be suitable for the location of additional septic fields to meet the needs of a distributed system. As an additional benefit, a sewer network which serves residential properties in the Center would also help reduce phosphorus loading to Bare Hill Pond – thereby reducing the eutrophication process that has been occurring there.

7.6.1 Strategic Approach for Increasing Septic Capacity

The Town of Harvard has some real opportunities to provide wastewater capacity to preserve the character of the Common area and allow some modest growth in activity to assure the long term viability of the Center. The projected maximum future septic demand for the entire Center is about 42,000 gpd if every building and home chose to abandon its on-site system. There are probably sufficient suitable soils in or near the Center to meet such a demand. Some of these soils are on town-owned lands, some are within Conservation Trust lands, and still others are on private properties.

- The logical first step in providing a viable wastewater option for the Center is to explore the municipal and institutional use of the current excess capacity of the school wastewater treatment plant. This has been recommended before. Stephen R. Fogg, P.E. in his August 21, 2002 study of wastewater disposal options for the Town Center Area met with DEP regarding potential multipurpose use of the treatment facility now under school control. He reported: *"In discussions with a DEP representative relative to the Town Center problem area, the representative expressed an opinion in favor of seeking a solution with the school system, and offered that perhaps after the system is running and actual flows are known, a revisiting of the possibility of a connection with a system serving the center of town could be done."*
- A recommended first step is for the Selectmen to meet with the potentially effected town agencies: the School Department, the Water Commissioners, the Board of Health, and Library Trustees to determine the following:

- (a) What is a reasonable projection of future demand when the new Library is built? The present flow to the Treatment Plant ranges from 4,900 gpd – 8,600 gpd; the projected uses of the new Library was estimated to generate a flow of 1,050 gpd; and the School has capacity for another 115 students.
 - (b) Is the Town willing to form a new Water and Sewer Commission with the goals of extending a first phase sewer into the Common area and transferring management of the Treatment Plant from the School to the new Board?
 - (c) Is the Town willing to form a Betterment Assessment District or other special district to enable financing of capital improvements and operating costs of the Sewer and Water Commission?
- The current school population is 92% of the 2012 design year population but the current peak flow is only 37% of the plant's 23,000 gpd design capacity. Assuming, conservatively, the reservation of an additional 50% over current peak flow for the additional 8% school population growth and the new library, that would bring the school / library peak demand to 12,854 gpd. Although that's more than double today's average demand, that still leaves approximately 10,000 gpd excess capacity in the present treatment system to serve additional Town Center needs.

7.6.2 Proposed Phase 1 Low Pressure Sewer System

- A first phase low pressure sewer system could be designed and installed in Massachusetts Avenue from the existing school sewer to Still River Road and then extending west to the Catholic Church and across the Common to the Old Library and extending up Elm Street to serve the Town Hall, Fire Station and Hildreth House (about 3,500 feet of low pressure sewer). All of the public and institutional facilities in the Center as well as existing businesses, could be served by public sewers and brought to full utilization capacity. [See Figure 20.]
- Allowing for reasonable land use and facility reuse assumptions that have been received as public comment in this study (e.g. a desire to accommodate an expanded Congregational Church, renovated Fellowship Hall, a new community / arts center at the old Public Library, and possibly a new 25 seat restaurant and a new coffee house) the projected municipal, institutional and commercial properties might generate just under 4,500 gpd. That

would still leave approximately 5,600 gpd remaining excess capacity in the plant which is only slightly less than the full Title 5 demand of the 14 residential properties and businesses along this proposed sewer route.

Table 7.6.2 Daily Sewage Flow Demands for Proposed Phase I Sewer System

A. Current Uses	Existing or Permitted Septic Capacity
Hildreth House (cesspool)	200 gpd (1)
Town Hall & Vault Building (18 employees)	300 gpd
Vault Bldg. /old Ambulance Bldg.(tight tank)	0 gpd
Fire Station	300 gpd
Current Library Building	80 gpd
Subtotal: Municipal Uses	880 gpd
Unitarian Church and Fellowship Hall	200 gpd
Congregation Church/Hall	675 gpd
St. Theresa's Catholic Church & Rectory	Not documented (1)
Subtotal: Institutional Uses	875 gpd
General Store	300 gpd
Harvard Realty	200 gpd
Fiber Loft / Dry Cleaner	200 gpd
Subtotal: Phase 1 Business Uses	700 gpd
Subtotal: Phase 1 Residential Uses	6,390 gpd
Total: All Phase 1 Properties: Excluding Schools and New Library at Old Bromfield	8,845 gpd (2)

(1) Incomplete records – Expansion of facility or change in use would require Title V compliance.

(2) Does not include existing capacity of properties with incomplete or undocumented septic systems.

Table 7.6.2 (continued)

B. Potential Expanded / New Uses Within Current Water District	Estimated Additional Capacity Required
Hildreth House (expanded as Senior Ctr.)	100 gpd
Town Hall & Vault Bldg. (w /public restrooms)	200 gpd
Community / Arts Center at Current Library	120 gpd
New Mass. Ave. Senior Housing [12 one bedroom Units] (Residences along route of pipeline may require approx.1,650 gpd in additional capacity)	1,320 - 2,970 gpd
Bromfield House (Reuse as community facility or convert to private 4 bedroom residence.)	200 - 440 gpd
Unitarian Church and Fellowship Hall (Increase to Title V compliance)	200 gpd
St. Theresa's Church and Rectory (Increase to Title V compliance)	530 gpd
Coffee House (w/o on-site food preparation)	300 gpd
15 seat Eating Establishment (w / on-site food preparation)	525 gpd
25 seat Restaurant (w / on-site food preparation)	875 gpd
Mixed Use Property between General Store and Congregational Church	300 gpd
Current Public Safety Building (New Title V system installed)	855 gpd
Remaining Businesses in Water District	1,250 gpd
Remaining Residences in Water District (204 bedrooms @ 110 gpd / bedroom)	22,440 gpd

Therefore, exploring the use of the existing Treatment Plant appears very worthwhile. Such a system would provide wastewater treatment and disposal for all existing municipal and institutional uses, serve the new Library and allow reasonable adaptive reuse of the Old Library and Hildreth House.

- The necessary steps for the Town to pursue and achieve these results are:
 1. Arrive at a consensus, among Town Boards, Commissions and Committees, about joint use of the Treatment Plant as described above.
 2. Arrange a meeting with the Office of Commonwealth Development and DEP and make the Town's case based upon actual flow data and evidence of consensus of opinion among the Town's Boards and Committees. Present the proposal under the State's "Smart Growth" and EOEA draft water policy recommendations for 'sustainable development' and 'fix-it-first' policy for maintenance of existing infrastructure.
 3. If DEP approves the plan, then prepare a Town Meeting article to petition the state legislature to form a new Harvard Water & Sewer District.
- Even if homeowners along the route of the first phase sewer decided to connect, the costs to them should be less than rebuilding their own on-site systems and paying for that maintenance. That is because the schools, municipal, institutional and business uses would still be the majority of the flow contributors and thus bear most of the O&M costs and capital recovery charges. [It is important to remember the Town is currently funding 100% of the capital and O&M costs of the existing school wastewater treatment facility.]

The Treatment Plant was financed through the SBA to serve the schools and new Library. The Town should not change those connected users until the final audit of the financing is complete - which is scheduled for FY '06 or '07. After that time, the Town may investigate using the Plant for other additional uses subject to the Plant's technical capacity and DEP approval. Given the probable time to: 1) reach consensus on the Sewer District, 2) obtain DEP, Town Meeting, and, if necessary, legislative approval to form a new Water and Sewer Commission, and 3) then obtain a subsequent Town Meeting approval to fund the sewer construction, actually charging the users of the Plant

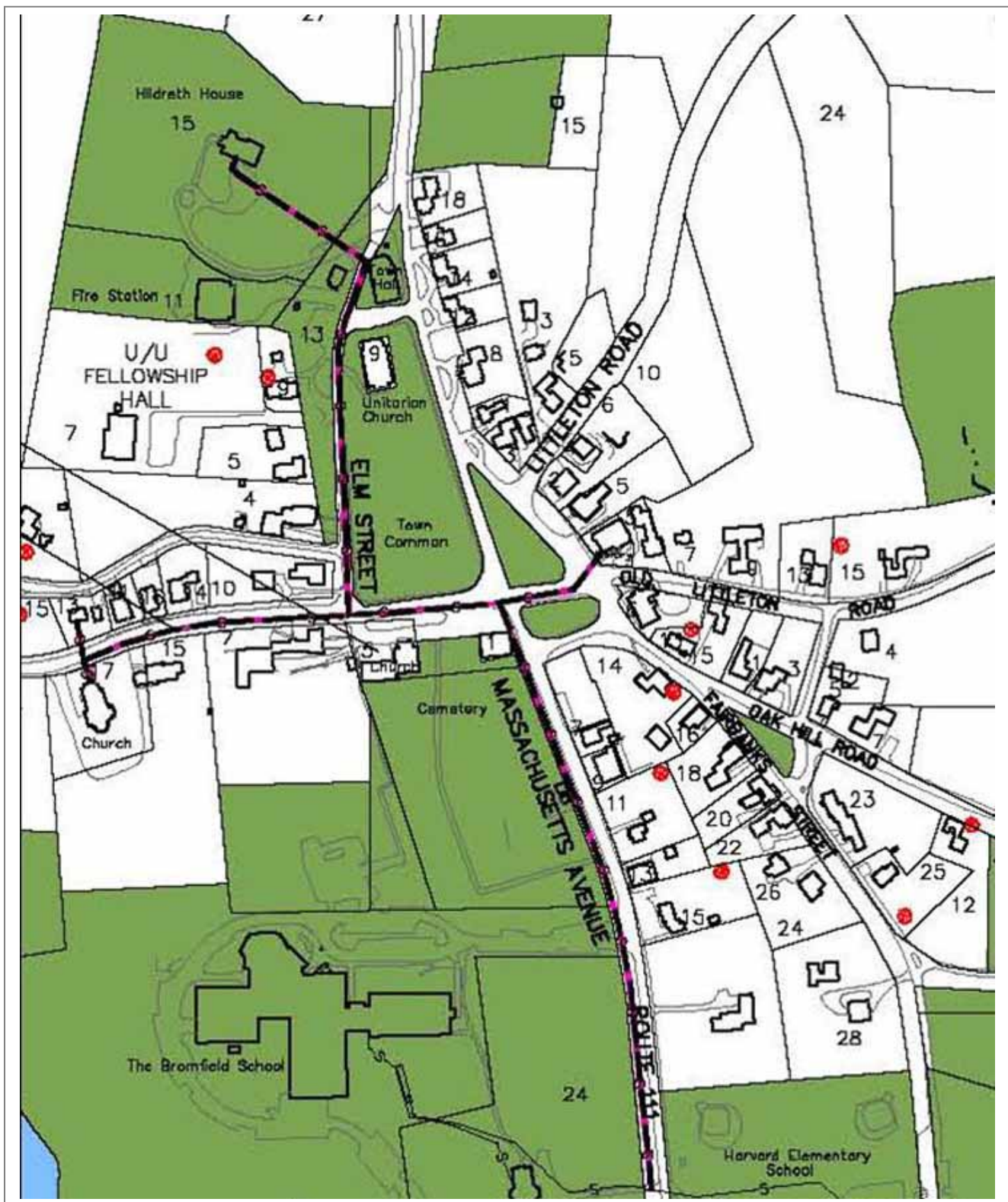


Figure 20: Proposed Phase 1 Low Pressure Sewer System

to include private properties probably could not happen before June of 2007 even if diligently pursued.

7.6.3 Potential Phase 2 Low Pressure Sewer System Extension: Distributed Site Wastewater Solution

- *If, after the Phase 1 sewer system has been put into operation, Harvard believes it further wants to extend sewers to serve the remaining residences in the Center not initially connected to the Phase I sewer system, it has several options. These would require looking at previously identified sites with potentially suitable soils (e.g. Coke property) and evaluating their actual suitability for a “distributed” wastewater solution for parts of the Center’s sewage disposal needs.*

The need if the remainder of the Center were to be sewered is roughly an additional 19,000 gpd (42,000 gpd total Center demand minus 23,000 gpd treatment plant capacity). We recognize that taking the blanket approach of planning to sewer the whole Center would have several economically questionable components such as extending a sewer up to the new Public Safety Building which has a year old Title 5 compliant system. Therefore we also evaluated those remaining properties which probably would require costly maximum feasible compliance repairs. Their flows total under 8,000 gpd and might be organized into 2 to 3 shared systems.

To achieve sewerage the whole Center or smaller critical areas, streets could be logically grouped so that any one system would require less than 10,000 gpd capacity. The critical feasibility question in this “distributed site” approach is the use of available public lands or conservation lands for these shared systems which each have less than a 10,000 gpd capacity. If such public or quasi-public lands are not available, then the potentially high acquisition costs to attain suitable private lands may prove prohibitive.

- Shared systems are under 10,000 gpd and must meet DEP’s Title 5 regulations as conventional septic systems. However, if the Harvard Board of Health deems the system to be a communal system it has a policy of requiring secondary treatment for nitrogen reduction (or at least enhanced treatment using innovative alternative applications) for shared disposal systems. *(It should be noted that if the Board of Health requires a nitrogen reduction system on shared or communal septic systems, there will be additional capital and annual operating and maintenance costs.)*

- The Board of Health believes that DEP has all but closed out the possibility for additional capacity at the present HES site at a maximum of 23,000 gpd, as evidenced by the DEP 10/15/01 approval letter which states, in part, “Any proposed flows in excess of 23,000 gpd would be unacceptable for this location”. *However, as part of a “distributed system” investigation, we recommend that the Town reevaluate the capacity of the present HES property again.*
- Given the public ownership of the HES property, the presence of proven suitable soils, the existence of the operating treatment plant, and the available monitoring well data, it would be wise to have the school’s consultant rerun their hydrogeologic model with actual flows and observed mounding to check the pre-operational modeling. If it appeared that the site could have more capacity, then they could evaluate expanding the modular Bioclere treatment plant and building a second disposal field suitably separated from the existing large disposal field and area wetlands to serve an area of Town Center south of the schools, say Pond Road, Bolton Road and Massachusetts Avenue, with a design flow of approximately 4,000 gpd.

7.6.4 Estimated Capital Costs

The current estimated construction cost and engineering design for the 3,500 foot low pressure Phase One sewer system is \$165,000. This would be a Town capital cost. The on lot costs to connect to the new sewer system will vary by the individual circumstances on the property. These variables include: the location of the present facilities (are they in the front or back, etc.), the electrical service, the age and size of the existing septic tank and its ability to be reused for new grinder pump installation, landscaping, etc.

The first phase service area would have an estimated 27 connections. We estimate that total construction costs and engineering design would be \$230,000. For all but the 5 municipal connections, this would be a property owner cost. We do not recommend that the Town or Water and Sewer District undertake work on individual systems.

For budgeting purposes, we recommend that the Town use a 20% contingency because of the preliminary phase of the planning; there is no survey or engineering design at this point.

- | | |
|---|------------------|
| • Municipal Collection System | \$165,000 |
| • 20% Contingency | <u>\$ 33,000</u> |
| Capital Budget | \$198,000 |
| • On Lot Costs – 27 connections | \$230,000 |
| probable range of individual costs \$6,500 - \$10,000 | |

7.6.5 Estimated Operating Costs

- The municipal operating costs to maintain the low pressure sewer system and the existing treatment facility will not significantly change from the present operating costs if the Town continues to use consultants to oversee the treatment facility as the School Committee now does. While there will be increased power and treatment costs from doubling the flow, many of the consultant's costs for inspection, testing, report filing, etc. will remain the same.

Individual private lot operating costs are primarily the cost of power to run the grinder pump and possible periodic trouble-shooting expense for the pump or electrical. The pumps are relatively small horse-power and are estimated to use less than \$100 of electricity annually.

7.6.6 Water & Sewer Betterment District & Operations

- We would recommend the establishment of a Betterment District for the water and sewer to coincide with the present Water Service District.
- Convert current treatment plant system operations from School Department operation to new Town-operated Water & Sewer District operation.
- Properties adjoining the new sewer alignment would not have any betterment charges until a sewer is available to them in front of their property. Then a one-time betterment charge would be assessed (usually on the property tax bill for 20 years) for a pro rata of the capital cost of the sewer and capital recovery for a pro rata share of the treatment/disposal works.
- Properties needing to connect or wishing to connect would have a one-time connection cost to recoup the Town's connection work.

- Once connected, individual properties would receive a sewer bill with their water bill for their (usually flow based) pro rata share of the treatment works operating costs. Since municipal, school, library, commercial, and institutional uses will collectively generate the majority share of flow demand and treatment works operating costs, residential properties choosing to connect would be charged relatively little on a pro rata basis.
- Should the system be expanded beyond Phase One, some properties could conceivably be connected to an innovative alternative system which is less costly to operate than the present Phase One treatment plant. We would recommend blending all the treatment and disposal O&M costs and having a single sewer charge.

7.7 Recommendations: Protect Bare Hill Pond from Contaminated Storm Water Run-Off

A number of short-term and long-term measures to slow the eutrophication process at Bare Hill Pond have been pursued by the Town. As described above, the Pond is periodically harvested. Also, as a long term protective measure, lands to the immediate north of the pond are now conserved from overdevelopment by the Harvard Conservation Trust. Further measures under consideration are draw-downs of the Pond's water elevation.

Additional measures to consider as they relate to Town Center planning policies are the following:

- Protect Bare Hill Pond from contaminated runoff by working with MHD/Mass Highway Department to reduce or eliminate the use of salt for ice removal from nearby state-numbered roads.
- Carefully examine and monitor potential future new development, such as a modest senior housing initiative at the Barba property, for drainage and run-off issues into the Pond
- If the expanded Phase 2 sewer system described in an earlier section of this report were constructed in the Center, phosphorus loading to Bare Hill Pond could also be reduced according to an earlier study on Bare Hill Pond by Whitman and Howard in 1986.

8.0 Potentially Conflicting Goals and Alternative Options in Need of Resolution

While many goals for the future evolution of the Center have been clearly articulated by many community members, some recommendations derived from those goals may contradict each other. Therefore, some of the recommendations outlined above remain only as *options* at this point in time until specific choices and priorities are established by the Town to resolve contradictions. Below are some of the options that must be prioritized and resolved.

8.1 Increased Business Vitality v. Increased Traffic

The goal of increased vitality - such as the desire for one or more new businesses - *may* conflict with the goal to limit increased traffic flow to and through the Center. A choice must therefore be made between increased vitality and possibly a few more cars.

Given the small size of businesses that are likely to be approved and built in the Center, and given that new businesses interested in opening in the Center could *only* do so under Special Permit as proposed in the new *Mixed Use Commercial Overlay District*, it is recommended that new businesses be encouraged to explore locating in the Center, subject to Town review of their proposals and traffic impacts.

8.2 Siting Option Alternatives for New Municipal Services & Venues

Certain municipal town services and programs, not now adequately provided, are desired by many members of the community. *Where* these new municipal programs and services are to be located have several options. For example, the desired new Community Center, Teen Center, or Arts Center could be located at either: a) the old Library, b) Bromfield House, c) a new building at Town Beach, or, d) outside the Center entirely. It is recommended that they be located in or near the Center to maintain and enhance the Center's "critical mass" of activity. However, the specific site chosen will need to be resolved after a comprehensive "Municipal Programs and Facilities Needs Study" is completed.

8.3 Alternative Uses Proposed for the Same Piece of Property

Certain specific sites, such as the Barba property, are being considered for several different future uses – either conservation land, a “distributed site” septic field, and/or housing. There is also concern that new residential development on the Barba property, which contains some wetlands and isolated vernal pools, may increase contaminated storm water run-off into Bare Hill Pond. Although these choices and issues may appear to represent conflicting goals, it is possible that *all* goals can be achieved at this large site while avoiding sensitive environmental areas if that is what’s desired.

The future use of other properties, such as the Town’s Park and Recreation Commission property between the Congregational Church and General Store have several potential use options as well: a) maintain as open space, b) land bank for a future Phase II Church expansion, c) use for Sunday parking, at least on an interim basis or, d) use for a new small mixed use building with a business on the ground floor and senior and/or affordable housing above. [This latter option could achieve two town goals simultaneously – several new affordable or senior housing units and a small café or food store for which many have expressed a desire.]

8.4 Alternative Sites for the Harvard Elementary School

The Harvard Elementary School eventually requires more space to accommodate projected enrollment increases. The School Committee has recently indicated its preference to relocate HES out of the Center. A choice for an 18-20 acre relocation site for the Harvard Elementary School must therefore be made. The Town needs to identify preferred school sites and reconcile them with choices for a scattered septic field site to help provide increased septic capacity for Town Center in the future.

8.5 The Need for New Parking v. No Need for New Parking

Some believe that new parking is needed in the Center to support underserved properties such as the old Harvard Public Library and parking overflows on Sundays, while others believe that parking is not an issue. In truth, parking is now adequate for most circumstances and times, but not all. For example, without new parking spaces, it may be difficult to successfully reuse the old Library.

8.6 The Need for Expanded Septic Capacity v. Doing Nothing

No one doubts that the Center's septic capacity is not only insufficient to accommodate new uses, but also inadequate to serve existing needs – as evidenced by the mounded septic systems throughout the Center.

9.0 Implementation Action Plan

Priorities & Actions Needed

Some recommendations can be easily implemented while others will require considerable effort. Certain recommendations are independent initiatives that can be undertaken on their own schedules when resources and funding are available. Still others are key links in a critical path network, that if not implemented, prevent other subsequent linked recommendations from advancing.

In the Summary Implementation Table which follows the implementation action descriptions immediately below, critical path recommendations will be highlighted so focus can be placed by the Town's Boards, Committees and Departments on these priority initiatives.

9.1. Implementation: Zoning Initiatives

- 9.1.1 Create new Village Residential (VR) Zoning District (as-of-right district)
- 9.1.2 Create new Business / Mixed Use Zoning Overlay District (Special Permit only district)
- 9.1.3 Allow greater flexibility to construct "shared" septic systems
Allow shared septic systems within the existing AR District, but preferably, just within the newly established VR District that jurisdictionally would include the Center only. Also, possibly reduce large acreage requirements for additional accessory units *if* septic capacity could be otherwise successfully provided.
- 9.1.4 Lower threshold requirements for adding accessory housing units town center properties within the new VR zoning district in order to encourage affordable housing.

9.2 Implementation: Make Use of Existing Septic Treatment Plant Excess Capacity To Serve Some Town Center Wastewater Needs/ Then Consider Expanding Water Supply and Septic Capacity

- 9.2.1 Expand water supply by activating "back-up" well, filtering it of iron deposits, and getting it permitted by DEP.

- 9.2.2 Seek DEP approval to utilize available excess septic capacity at the expandable Treatment Facility for a new Phase 1 Center sewer system. Verify whether new septic fields can be added at the School Department's HES site for a future Phase 2 system.
- 9.2.3 Identify phased sewer plan: Phase 1: (for municipal, school, institutional and business facilities); and Phase 2: (additional existing private property owners overburdened on-site systems).
- 9.2.4 Identify and acquire, if necessary, other small "distributed" site" septic field locations to accommodate existing and new septic users. First seek to acquire or use town-owned or quasi-public conservation land properties for such purposes. Only if such public lands are not available, then seek to acquire private property(ies).

9.3 Implementation: Municipal Facilities Expansions and Relocations

- 9.3.1 Appoint a Municipal Facilities Program Committee
- 9.3.2 Fund a comprehensive "Municipal Facilities Program and Space Needs Study". Specific attention should be focused on identifying new community uses for the old Harvard Public Library and identifying an alternative location for the Teen Center.
- 9.3.3 Hire consultants to undertake a detailed "Municipal Facilities and Space Needs Assessment"
- 9.3.4 Allocate funds to repair and renovate Hildreth House which continues to deteriorate.

9.4 Implementation: Potential Land Acquisitions and Easement Purchases

- 9.4.1 The Town should identify and acquire an 18 to 20 acre site for a new Harvard Elementary School.
- 9.4.2 The Town should seek to acquire site(s) immediately adjacent to the Housing Authority's existing Massachusetts Avenue property to assemble a larger housing site.

- 9.4.3 The Town or Harvard Conservation Trust should consider either making friendly acquisitions or seeking “first right of refusal” positions for ‘unprotected’ privately owned lands with good soils in and around the Center that could, in the future, be otherwise converted to large lot subdivisions under the current AR Zoning District.

Such Town acquisitions would maintain the Center’s clear compact village urban form by preventing the “muddying” of the existing village center’s clear boundaries between compact development and surrounding open fields.

[Alternatively, rezone such lands for more compact Village Residential development with the backlands of such properties conserved as open space.]

- 9.4.4 The Town, Conservation Trust, and/or Conservation Commission should seek to acquire off-road access easements for walking and hiking trails.
- 9.4.5 The Town should consider acquiring one or more properties with good soils as “distributed site” / shared septic field sites *if* the School Committee’s HES septic field site cannot be further expanded to accommodate expanded Town Center septic needs. Such candidate properties recommended in the past have included the Ward property, Coke Farm, Barba property, etc.

9.5 Implementation: Land Dispositions and Street Closures

- 9.5.1 Consider offering for surplus the Park & Recreation property adjacent to the General Store for development as either a new mixed-use building within a new Business / Mixed Use Overlay Zone, or, offer the site for sale to the Congregational Church for its eventual Phase 2 expansion. [N.B 1: A 2/3 vote of the State Legislature may be required to allow the surplus of this property that may be protected under Article 97 of State Laws *if* this land is considered “open space and/or recreation”. Historically, such votes are readily achieved *if* the measure is supported by the Town’s local elected state representatives.] [N.B 2: This suggested action is only possible if a Center sewer system is installed to replace the local septic field now located on this property.]

- 9.5.2 The Town may wish to close Common Street as a public thoroughfare and convert its shoulders to municipal parking – either as parallel parking or head-in parking.
- 9.5.3 Consider the sale of Bromfield House located on Massachusetts Avenues to the private sector. If the Superintendent's office moves to the High School Campus, and the Town determines that the building does not fill any public or municipal need, it could be sold and converted to a private residence thereby reducing annual maintenance and operational costs to the town while adding significant revenues to the Town resulting from its sale.

9.6 Implementation: Roadway Improvements, Parking Improvements, and Roadside Pedestrian Pathways

- 9.6.1 Design and construct intersection improvements for Massachusetts Ave. / Still River Rd. and Fairbanks / Old Littleton intersections
- 9.6.2 Improve parking, traffic and pedestrian safety at Elm Street between the Unitarian Church, Fire Station and Town Hall.
- 9.6.3 Identify locations and construct new roadside pedestrian pathways.
- 9.6.4 Improve and expand North Parking Lot as Center's primary centrally located Public Parking Lot. Improve pathway from lot to Still River Rd. and improve signage.
- 9.6.5 Improve parking around Town Hall with new landscaping.
- 9.6.6 Provide new parking along north shoulder of Pond Rd.
- 9.6.7 Add parking to Commons Street to support new community uses at Harvard Public Library.

9.7 Implementation: Landscape & Beautification Improvements

- 9.7.1 Improve landscaping around Town Hall.
- 9.7.2 Improve streetscape and tree plantings along shoulders of Massachusetts Ave.

- 9.7.3 Investigate feasibility of removing overhead wires throughout Town Center and coordinate their installation underground with proposed construction and repair projects under and along the roadways in the Center.

9.8 Implementation: Protect Bare Hill Pond from Contaminated Storm Water Run-off

- 9.8.1 Monitor any future development around Bare Hill Pond to ensure that contaminated runoff is not allowed to flow toward the Pond. Identify problem drainage sites and perform a watershed review under the Massachusetts Waterwatch program.
- 9.8.2 Support construction of sewer system in the Center that would help diminish contaminated wastewater and reduce nitrogen rich groundwater flows to the Pond.
- 9.8.3 Require that zoning be amended within the Bare Hill Pond Watershed that would require new development to the use of state of the art drainage technology and that the Town improve the condition and location of the existing culverts and storm drains to minimize impact upon the Pond.
- 9.8.4 Consider new regulations for a Watershed overlay district for activities in and around the Bare Hill Pond by providing standards and a mechanism for enforcing them that address the following concerns: 1) construction activities on properties abutting the pond; 2) tree and shrub clearing along the pond; 3) lawn fertilization and failing septic systems that contribute to the pond's nutrient load. Consistent enforcement of regulations and raising public awareness and understanding of the relationship between land use activities and the pond's health are essential components of a comprehensive watershed management plan.
- 9.8.5 Design, facilitate and properly permit a series of deep winter drawdowns to kill invasive aquatic weeds in conjunction with continued monitoring of the watershed and the pond as part of the EPA grant to the Bare Hill Pond Watershed Management Committee. Seek additional 319 program funds if there becomes need to finance future capital improvements that would benefit the watershed and improve the condition of the Pond.

9.9 Implementation: Consider Potential Municipal Organizational Changes

- 9.9.1 Consider advantages of transferring existing septic plant system operations from School Department to newly created Town Water and Sewer District Commission ownership and operation.
- 9.9.2 Establish Water & Sewer Betterment District and define how users will pay.
- 9.9.3 Establish Municipal Facilities Needs Assessment Committee and Prepare 'Facilities Needs and Assessment Plan'.

9.10 Implementation: Provide Incentives to Attract a Desired Business(es) to the Center

- 9.10.1 Create new Business / Mixed Use Zoning Overlay District (Special Permit only district)
- 9.10.2 Consider allowing at least one beer and wine license in Harvard Center to attract a restaurant.

9.11 Implementation: Subsequent Studies Required

- 9.11.1 Municipal Needs assessment Study
- 9.11.2 Betterment District Fiscal and Financial Analysis
- 9.11.3 Capital Budgets for Desired Improvements

9.12 Summary Implementation Table

Summary Implementation Table

(Priority Ranking: [1], [2], or [3])

(“L” = linked task on a critical path; “I” = independent task.)

Recommendations	Responsible Parties	Priority /Linked Critical Path	Year of Implementation
9.1 Zoning Initiatives & Amendments			
9.1.1 Create VR/ Village Residential District	Plan. Bd. / Town Meeting	[2] / L	Center sewer system must first be installed.
9.1.2 Create Business Mixed Use Overlay District	Plan. Bd. / Town Mtg.	[1] / I	[2005]
9.1.3. Allow shared septic systems in new VR District	Plan.Bd. / Town Meeting / Bd. Of Health	[2] / L	[2005]
9.1.4 Lower req'ts. for accessory housing units in AR District or new VR Zoning District	Plan. Bd. / Town Meeting	[1] / L	Center sewer system must first be installed.
9.2 Land Acquisitions & Attainment of Easements			
9.2.1 Acquire New Elementary School Site	School Comm. /Town Meeting	[1] / I	[2007]
9.2.2 Acquire additional senior housing sites adjacent to existing HHA Mass. Ave. site	Harvard Conservation Trust	[2] / I	
9.2.3 Acquire “unprotected” AR properties	Selectmen / Conservation Commission / HCT Town Meeting	[3] / I	As \$ resources are available.
9.2.4 Acquire Off-Road Pedestrian Easements	Selectmen / Conservation Trust	[2] / I	As \$ resources are available.
9.2.5 Acquire Addition- al Town Septic Sites	Selectmen / Town Meeting	[2] / L	Phase 2 sewer collection system
9.3 Land Dispositions & Street Closures			
9.3.1 Surplus Park /Rec Site at Cong. Church for redevelop.	Selectmen / State Legislature	[3] / I	As need arises.

9.3.2 Close Common St. for parking to support reuse of Harvard Public Library for new community uses	Selectmen	[1] / I	[2006]
9.4 Municipal Space Needs Assessment & Facility Reuse Plan			
9.4.1 Appoint Facilities & Space Needs Comm.	Selectmen	[1] / I	[2005]
9.4.2 Fund 'Municipal Facilities Space Needs & Reuse Study'	Town Meeting	[1] / L	[2005]
9.4.3 Undertake Space Needs Study	Facilities Space Needs Comm.	[1] / L	[2005-2006]
9.4.4 Renovate Hildreth House	Selectmen/ Town Meeting/ COA	[1] / L	[2005-2006]
9.5 Roads, Parking, and Pedestrian Improvements			
9.5.1 Ayer Rd. / Still River Rd. Intersection		[1] / I	[2006]
9.5.2 Elm St / Town Hall Area: Improve intersection		[2] / I	
9.5.3 New pathways	Town, Conservation Trust	[2] / I	As \$ resources become available
9.5.4-9.57 Improve North Parking Lot & Others	Selectmen / Highway Dept.	[1] / I	[2005]
9.6 Landscape & Beautifications Improvements			
9.6.1 Improve landscape around Town Hall		[2] / I	As \$ resources become available
9.6.2 Improve road shoulders along Mass. Ave.		[3] / I	As \$ resources become available
9.6.3 Remove Overhead Wires	Selectmen	[3] / I	As \$ resources become available
9.7 Bare Hill Pond Stormwater Runoff Protection Measures			
9.7.1	Pond Committee		
9.7.2	Pond Committee		
9.8 Water / Septic Capacity Expansion			
9.8.1 Activate backup well on Bolton Rd.	Water Dept.	[3] / L	As required

9.8.2 Seek DEP approval to use excess capacity of Treatment Facility for additional Town Center septic needs.	Selectmen w/ support of Bd. of Health, School Comm., Library Trustees, and Water Dept.	[1] / I	[2005]
9.8.3 Prepare phased sewer plan	New Water & Sewer Comm.	[1] / L	[2006]
9.8.4 Acquire additional "distributed" site septic fields for town use	Selectmen, Water & Sewer Comm., Town Meeting.	[2] / L	[2010 >]
9.9 Municipal Organizational Changes			
9.9.1 Transfer Treatment Plant Operation from School Comm. to new Water & Sewer Commission	Selectmen / School Comm./ DEP approval	[1] / L	[2006]
9.9.2 Establish Water & Sewer Commission & Betterment District	Selectmen/ Town Meeting	[1] / L	[2006]
9.9.3 Appoint Municipal Facilities Needs Assessment & Reuse Committee	Selectmen	[1] / I	[2005]
9.10 Incentives to Attract Business(es)			
9.10.1 Establish new Business / Mixed Use Zoning District	Plan. Board/ Town Meeting	[1] / I	[2005]
9.10.2 Authorize and then Issue beer & wine license	Town ballot	[1] / I	
9.11 Subsequent Studies Required			
9.11.1 Municipal Needs Assessment Study	Mun. Needs Assessment & Reuse Comm.	[1] / I	[2005]
9.11.2 Water & Sewer District Betterment District Fiscal & Financial Analysis	Water & Sewer District Commission	[1] / L	[2006]
9.11.3 Capital Budget Estimates for Municipal Capital Improvements		[1] / I	[2005-2006]

APPENDICES

Appendix 1

Harvard Town Center Yesterday

[Summarized from the 2003 “Harvard Open Space and Recreation Plan”]

Harvard Center is just one of three historic village centers in town, but it has long been the central gathering place for local government and community meeting because it is at the central crossroads of this rural community.

Before European settlers arrived, the Nashaway Indians inhabited the area and lived off the plentiful forested land as hunter-gatherers. They burned off grasslands near their small villages to encourage habitats for berry growing. This practice created land open and ready to cultivate which was of great appeal to European settlers and farmers to come.

In 1642, the Nashaway sold some large land holdings to a few European settlers. In 1683, the Town of Stow was created out of the unappropriated lands between Groton and Lancaster. In 1730, villagers in the Bare Hill area filed an article at Lancaster town meeting to create the new town of Harvard. In 1732 the town was incorporated. At that time, there were 325 residents – a sufficient population to support a minister and build a Meeting House. A training field, a burying ground, and land for “other publick uses” were established at what is the present day Harvard Center. Thus, the core of Harvard Center was born.

Because the town center was bounded both to its east and to its west by two north-south river valleys and wetlands, the settlement pattern in the center remained compact and did not sprawl.

The town witnessed several but short-lived attempts to establish industries, and in 1848, the railroad came to Harvard with depots at both Still River and just northwest of the town center at what is now Depot Road. However, neither industry nor the railroads had significant impact on the formation of town center itself.

Instead, agriculture developed as the major livelihood for the town in the eighteenth and nineteenth century. Orchards, although they existed in town for centuries, did not become large businesses until the late nineteenth century. By 1940, Harvard was the state’s largest producer of apples.

In the meantime, Harvard Center continued to grow into a robust center of Harvard activity. The Meeting House evolved into the seat of town government. Churches located in the Center and the town public library was built. Later the US Post office located here, and performances and dances were held in the upper floor meeting hall at Town Hall.

The first school house (now demolished) - located just south of the Common between the present day general store and Congregational Church - was built and eventually, the Old Bromfield School on Massachusetts Avenue became the kernel around which a 59 acre public school campus grew.

Since Harvard Center was located at a crossroads, a few businesses came to the Center as well, and at various times included a butcher, ice cream shop, pharmacy, and restaurant. For years, Harvard Inn accommodated visitors and its Tea Room hosted many informal gatherings. However, Harvard Center never became a commercial town center.

In more recent decades, the rural communities of Harvard and surrounding towns began to grow into commuter suburbs of Boston when Route 2 opened in 1950. That trend continued as employment belts stretched along Routes 128 and later I-495 just to the east of Harvard developed. Harvard's population began to increase as a consequence. This population growth, along with increased land values and resulting increased property taxes, began putting pressure on farm and orchard owners to sell their property.

These growth trends are directions that Harvard's citizens resist. Over recent years, Harvard's citizens have fiercely resisted becoming a densely settled commuter suburb and strongly wish to preserve their rural agricultural character. As a result, they have supported, and continue to support, large lot residential zoning, policies to limit growth and new businesses, and measures to protect open lands and historic village areas such as Harvard Center. This preservation ethos has become Harvard's primary policy directive.

To carry out this policy directive, combat market trends, and help preserve Harvard's rural character and historic roots, significant parcels of land are being bought by the Town, Conservation Commission, and Conservation Trust to put agricultural lands, forest lands and open fields into protected conservation status. [Interestingly, lands are *not* being purchased for future town needs – such as schools and housing.] In 1975 the local Harvard Commons Historic District was established to protect the historic fabric of the Center's core. Later, in 1977, the National Harvard Center Historic District was created. It geographically incorporated all of the local historic district and added adjacent properties such as the Hildreth House.

Although Harvard has considerably grown, the immediate Center's size and population have remained somewhat stable. However,

use of the Center has significantly grown over the years – primarily because of the concentration of public schools just south of the center’s core and the location in the Center for a variety of town-wide facilities – such as the Library and Town Hall. In spite of this increased usage, the Center only provides a small municipal water supply and distribution system for all town center properties who choose to use it, and a small municipal septic treatment plant that only serves the schools and planned Library at Old Bromfield. All other properties depend upon their own on-site septic disposal systems.

Because the Center’s septic capacity is limited by poor soils, public and private septic systems have begun to fail or have little or no ability to comply with Title V requirements. This raises concerns about the future of the Center.

Because capacity for growth and expansion is limited, and because market forces are changing, some valued institutions and businesses are leaving the Center. In recent years, the Post Office has left and the pharmacy closed. Just recently, questions were raised about whether the Congregational Church could successfully accomplish its current expansion plans in the Center or whether it might have to relocate from the Center. Also it appears that the Harvard Elementary School may eventually need to relocate as well because of lack of available expansion land. All these events have cumulatively raised concerns about the health and future of the Center’s vibrancy and its continued role as the town’s central gathering place.

Appendix 2

Harvard Town Center Today

In spite of the more hectic lives most of us live these days and ever new opportunities for fast digital communications with others in this increasingly wired world, *place still matters* and occasions for coming together and meeting neighbors takes on an even more valued role. Harvard's citizens deeply understand this and highly value the community gathering role, beauty, and sense of history that Harvard Center has and continues to provide.

To Harvard's citizens, Harvard Center is still a *place that matters* with its classic compact village form, town hall, churches, general store, town cemetery, and older homes on small lots all clustered around the Town Common. Because the Center's compact built core is bordered immediately on many sides by open lands, stream valleys, forests, fields, and old farmsteads - rather than sprawling housing subdivisions - the clarity of the village center as *a distinct and compact place* is even more evident. [See Figure 4]

A2.1 A Town-Wide Gathering Place of Vitality

Harvard Center remains the central focus of community life and its community gathering places. Remarkably, Harvard Center hosts over twenty gathering places – mostly town municipal functions and institutions such as churches, schools, and recreational venues. There is also a smattering of small businesses that are few, but nevertheless vital to the Center's vibrancy.

[See Figure 3]

Town Municipal Facilities & Services in the Center

Most of Harvard's municipal facilities remain clustered in or near Town Center. With the exception of the Highway Department Yard / Transfer Station on Depot Rd. and a Teen Center leased from the MASS Development at Devens, that concentration of municipal functions helps maintain the Center as the heart of municipal and civic life.

- **Town Hall**
The historic woodframe Town Hall, two stories in height, hosts the administrative functions of town government, primarily on the first floor. The second floor, once a public hall used for large public gatherings and performances, is used today for town offices and storage. However, there is no elevator to provide public access. The Police Department, formerly located at the rear of Town Hall, together with the Town's

Ambulance Service, has moved a quarter mile north on Ayer Rd. into new facilities. As a result, the former Police Station space is now being renovated for municipal offices, small meeting rooms, and two fully accessible ADA compliant restrooms. Storage space is at a premium, and Harvard lacks a climate controlled record vault as required by State regulation. Town Hall is surrounded largely by asphalt pavement used for municipal parking, access to the Fire Station, and the Elm Street right-of-way which loops in front of it connecting Ayer Rd. with Still River Rd.

- *Harvard Public Library*

The Public Library, which includes a reading room, meeting room, circulation desk, a Children's Library, and administrative space is a beautiful brick Victorian landmark in the Center. The Library is overcrowded and has only several parking spaces to support it. Recognizing these limitations, the Town applied for a State Library Construction Grant, which it won in 2001, to construct a replacement facility. Subsequently, at the 2004 Town Meeting, local funds were approved to provide the local funding share. The Library will move to the renovated and expanded Old Bromfield in 2007 and reuse options must be identified for its reuse.

With this planned relocation, the Library will be vacated and new municipal and community uses need to be identified to occupy this historic and valuable town resource after its septic capacity is made compliant with current Title 5 regulations, which it currently is not.

- *Old Bromfield School*

Old Bromfield, originally a private school, is owned by the Bromfield Trust to be used for educational purposes. It is a beautiful brick Victorian structure sited on 6.4 acres that has been leased to the public schools over many years. Today, it is slated to be the home of the new Public Library after it is renovated and a new wing is added. The new Library will include modern library facilities, new meeting rooms, and community gathering places.

- *Harvard Fire Department / Former Ambulance Building*

The Harvard Fire Station sits on a knoll to the immediate west of Town Hall and its access apron opens to Elm Street immediately in front of Town Hall. At the foot of the knoll is the former Ambulance Building. Since the Ambulance service was relocated to the new Police Station in 2003, the former Ambulance Building is now used for storage by the Fire Dept.

- ***New Police Department / Ambulance Service***
A new Police Headquarters and Ambulance service building was constructed and recently opened just north of the Center on Ayer Rd. near its intersection with Depot Rd.
- ***Hildreth House / Senior Center***
Hildreth House, a former summer home overlooking Town Hall from atop a hillock, is today used as the town's Senior Center and the offices of the COA / Council on Aging. Its meeting rooms are also used extensively by other Town Boards and Committees. In recent years, the facility has been slowly deteriorating. To accommodate expected increasing demands for its services by Harvard's growing senior population and to remedy this deterioration, the COA is beginning to plan for renovations to this handsome structure. Additionally, the Town is now under-taking a phased re-landscaping plan for the grounds of Hildreth House – primarily to make the grounds more attractive, provide walking trails, and clear now-obstructed views to the historic Harvard Common below it to the south.

Public Schools & Other School Department Properties

Harvard's High School, Middle School, Elementary School, and administrative building are all located to the immediate south of the Center on a 59 acre school "campus" or "precinct" to either side of Massachusetts Avenue. Current cumulative enrollment for 2004/5 is now 1,254 students and is projected to grow to an enrollment of 1,520 students in 2012. The current campus can only accommodate a maximum of 1357 students.

- ***Bromfield High School / Middle School***
Bromfield School, which hosts the High School and Middle School from grades 6 through 12, was recently expanded and is sufficiently large to accommodate expected enrollment for approximately the next decade. Current enrollment for 2004/5 is 698 students. The campus includes tennis courts and playing fields – some of which are leased from the Bromfield Trustees. Parking is provided along its approach roads and at the town-owned North Parking Lot.
- ***Harvard Elementary School (HES)***
Harvard Elementary School is a modern facility with the 2004/5 enrollment of 556 students from grades K-5. It is now one of the largest elementary schools in the Commonwealth. Its present grounds and supporting facilities do not meet current school facility standards for an enrollment of its size and the facility itself is approaching design capacity.

Therefore, it is anticipated that a new elementary school will eventually need to be constructed.

The school's present grounds and other school property adjoining it have been determined by the School Committee not to be of sufficient size to allow expansion at or immediately adjacent to the present site [Approx. 20 acres are required]. Therefore, it is likely that an entirely new site will need to be identified and then purchased for this relocation. The relocation is likely to occur in phases with two or three grade levels relocated at any given phase. Eventually, the relocation plan calls for the Middle School to be relocated to the vacated Harvard Elementary School, thereby leaving Bromfield School as the town's High School.

- *Bromfield House*

Bromfield House, to the immediate south of HES on Massachusetts Avenue, is owned by the School Department and hosts the School Department's Superintendents' administrative offices and adult education program. There has been discussion in the past of relocating the Superintendent's Office to the High School although no decision has been made to do this. If this were done, however, Bromfield House may become available for other needed municipal or community functions and services.

- *Treatment Plant and Septic Field at Fairbanks and Massachusetts Avenue*

The School Department now owns and operates a modular wastewater treatment plant and adjoining septic disposal field along Massachusetts Avenue and Fairbanks Street that has been designed to provide septic capacity for all of Harvard's schools in the Center as well as the new Library scheduled to move to Old Bromfield. Its capacity has been built to accommodate present enrollments and future enrollments. Today, actual septic flow volumes to the plant are approximately only one-third of the plant's design capacity as licensed and permitted by DEP. The treatment plant itself was designed in a modular fashion so it could be expanded to meet future needs.

Public Recreational Venues

A number of outdoor recreational venues abound in the school campus precinct immediately south of the Center and at Bare Hill Pond in addition to the gymnasias at the schools themselves.

- *Playfields*

A number of school playfields and ball fields adjoin either side of Massachusetts Avenue adjacent to the schools.

- *Amphitheater at Bromfield School*
- *Bare Hill Pond and Town Beach*
Bare Hill Pond and the Town Beach at the end of Pond Rd. provide swimming and boating opportunities during warm weather months.

Churches and Other Community Institutions

Many of the town's significant religious and community institutions are clustered tightly around the Harvard Common and Center and contribute significantly to Harvard Center's community image and vitality. As host to not only religious services, but also community events, meetings and activities, these institutions are vital to the Center's continued vibrancy.

- *Congregational Church*
The Congregational Church on Still River Rd. across from the southern edge of the Common is a vital institution that offers community programs and meeting rooms for a variety of activities and organizations. The Church has plans to expand its meeting hall facilities on the west side of its present facility. These expansion plans for the Church, which shares a septic field with the General Store on the open land between them on Park and Recreation Department property, was at first questioned due to some doubts about the septic field's capacity to accommodate the expansion. However, the Church has now been successfully permitted by DEP for its building plans.

Nevertheless, the questions initially raised about septic capacity, and the potential consequences of the Church possibly needing to relocate from the Center to fulfill its expansion requirements if septic issues could not be resolved, raised cautionary flags about further losses of vitality in the Center unless septic capacity issues were addressed by the Town.

- *Unitarian Universalist Church*
The Unitarian Church is located atop the Common at its northern end across from Town Hall and offers the classic icon of the white steepled church on the prototypical New England town common. It, like the Congregational Church, offers community activities and programs as well as church services.
- *Unitarian Church Fellowship Hall*
Fellowship Hall off of Elm Street on the western edge of the Common is operated by the Unitarian Church and offers a variety of programs, classes and meeting spaces for its own

programs as well as other organizations. Currently, there are discussions that have begun for either renovating and/or expanding this facility.

- *St. Theresa's Catholic Church*

St. Theresa's is located on Still River Rd. at the western-most gateway to Harvard Center. St. Therese includes the church property itself as well as a large adjoining Archdiocesan property that extends southward to the Bromfield School.

Businesses

Harvard Center is not a commercial retail center as are many other town centers in the Commonwealth. Instead, Harvard's primary business cluster is located on Ayer Road north of Route 2. Nevertheless, the Center is Harvard's historic crossroads where shops, an inn, and its Post Office once stood. Today, the Center still hosts several businesses that are small, yet vital, as meeting places of chance encounter.

Most of Harvard Center's businesses are located at or near the southeast corner of the Common on Still River Rd. or Massachusetts Ave. in the AR Agricultural / Residential zoning district. Although a small business zoning district does exist at the northeast edge of the Common along Ayer Rd., most existing businesses are not within it and are therefore 'grandfathered' non-conforming uses. Should these businesses ever move out, new businesses may not be able to occupy these buildings under present zoning without receiving a use variance.

- *General Store / Harvard Camera*

The General Store occupies the ground floor, and the Harvard Camera the upper floor of this two story wood framed building at the southwest corner of Still River Rd. and Massachusetts Avenue. This store is perhaps Harvard center's primary commercial 'chance encounter' meeting place as people quickly stop in for sundries or a cup of coffee. Many of the community's youth also congregate at the General Store after school or athletic games.

- *Fiber Loft / Harvard Cleaners*

These two businesses occupy a small building on the eastern side of Massachusetts Avenue across from the Town Cemetery.

- *Harvard Realty*

Harvard realty occupies a small building immediately north and adjacent to the Fiber Loft / Harvard Cleaners Building.

- **Harvard Antique Store**
This small antique store occupies a portion of a building northeast of the intersection of Littleton Road and Fairbanks Street. It is the only commercial business located within the Center's small Business B zoning district.
- **Verizon Central Office**
Located on the south side of Littleton Road, the colonial style brick building houses Harvard's telephone switching facility.
- **Dental Office / James Hammond DMD**
Locates across from Bromfield House at the intersection of Massachusetts Avenue and Bolton Road, the office occupies a portion of a single family residence.
- **Harvard Woodworking, John Walker DMD Orthodontist, Alpha Associates – Counseling**
Located on Pond Road across from Old Bromfield, this single commercial building is currently occupied by three tenants.

Town Center Festivals & Public Gatherings

Harvard Center and Harvard Common remains *the* locus of town vitality in no small measure because of the many public town-wide events and festivities held on the Common or elsewhere around the Center. Just some of these many events include:

- Apple Blossom Festival (on Common)
- Memorial Day Parade
- Fourth of July Parade
- Flea Market (in front of Old Bromfield on Columbus Day)
- Apple Festival (on Common)
- Story Telling Festival (in buildings and tent around Common)
- Trick or Treat (throughout Town Center / Common area)
- Sledding Hill on Common
- Christmas Tree Lighting (on Common)
- Christmas Pageant (in Unitarian Church)
- Lunch w/ Santa and Church Christmas Fair (Congregational Church)
- Town Band Concerts
- Picnicking on Common
- Warner Free Lectures (various venues around Town Center)
- Harvard Schools Trust Dinner & Theater Gala (at Bromfield)

A2.2 How the Center Presently and Historically Has Functioned: The Overlapping Zones of Activity

To plan for the future of the Center and the strengthening of its future activity patterns, it is important to understand how the Center now works and how it worked historically since these current and historical activity patterns can act as a foundation to build upon. And so, when the current activity patterns of Harvard Center are examined by location, several clear activity sub-zones become evident. These activity zones are: [See Figure 5]

- The Historic Village Residential Core
- The Civic / Institutional District
- The Business District; and
- The Schools & Recreational Campus

The Historic Village Residential Core - is the locus of historic houses clustered tightly and compactly around the edges of the Common and along Fairbanks Rd. It is the sub-area of the Center that might be called the "village". The lot sizes for these houses range from approximately a 1/3 to 3/4 acres – a much tighter lot pattern than the 1.5 +acre lot pattern that current AR zoning requires. Beyond this compact cluster, lot size rapidly increases as one travels down roads such as Old Littleton or Ayer Rd. and residential density rapidly decreases as farmsteads and natural stream valleys begin to predominate in the landscape

The Civic / Institutional Core - is that sub-area of the Center, tightly around the Common, where the town's churches, municipal buildings, and other institutions cluster.

The Business District - is that sub-area of the Center to the immediate south and east of the Common (not to be confused with the official Business B zoning district northeast of the intersection of Littleton Road and Fairbanks Street) where the town's primary roads all converge and where today's small businesses, and those of the past, including the former Inn, are mostly located.

The Schools & Recreational Campus - is that sub-area of the Center where Harvard's schools, playfields and Bare Hill Pond are located – primarily in an area south of Town Cemetery to Pond Rd. and to either side of Massachusetts Ave. Of the four sub-areas, this Campus district is the most independent and isolated from the others.

From *Figure 5* it can be seen that the first three sub-zones overlap in varying pairs around the Common. At the southeast corner of

the Common, all three of these sub-zones overlap. This highly overlapping area can be read as a visual interpretation of the area of most community interaction, vitality and commerce. It is no accident that this corner of the Center, where Harvard's primary roads converge, is where historically, most of the center's commerce, its Inn and its civic gathering places clustered. This pattern of overlapping activity sub-zones, and the opportunities it provides for chance and planned encounters between Harvard's citizens, may serve as the basis for identifying where activities should be clustered in the future as well.

While the schools and recreational venues certainly draw high levels of activity for children, youth, and their families, they form a campus or precinct unto itself that does not appear to significantly contribute to or overlap with the Center's other activity zones.

A2.3 A Place of Natural Beauty and an Historic District

Harvard Center is not only a place of activity and gathering, it is also a place of landscaped tranquility, beauty and historic homes and churches that visually connects with surrounding open fields, conservation lands, and the quiet waters of Bare Hill Pond. The Common is the focal point of this landscape which Harvard's residents recall with fondness and seek to preserve and protect. *[For a complete description of the area's natural resources and town-owned lands, see the "2003 Harvard Open Space and Recreation Plan"]*

- *Harvard Town Common, Civil War Common, and Little Common and their Surroundings*
Harvard Main Common, with its rolling lawn and mature trees, Civil War Common with its memorials, and Little Common together are the heart of Harvard Center and are surrounded by many historic homes. The actual boundary of the 2 acre Main Common legally includes the front yard of many surrounding homes on Elm St. and Ayer Rd. By agreement with the Town, these front yards are maintained by the individual residents.

These three Commons are the heart of both the local "Harvard Common Historic District" and the national "Harvard Center Historic District" which was listed on the National Register in 1977. *[See Figure 6, Harvard Common Local Historic District]* They are also the locus of the Center's many institutional and municipal buildings including Town Hall immediately to its north, the Unitarian Church at the top of its slope, the Public Library on Fairbanks and Old Littleton, and the Congregational Church to its immediate south. Also, near

the Common's southern and eastern edges are where the Center's few remaining businesses are clustered.

Three significant historic sites remain relatively hidden within the Center. They include the Powerhouse adjacent to the firehouse, the stonewall Town Pound enclosure for errant livestock - behind the Town Vault (former ambulance building), and the Cattle Path extending from Still River Road (next to the Congregational Church) to the Bromfield campus. These crumbling remnants of Harvard's colonial residents are still to be rediscovered and restored.

- *Bare Hill Pond / Town Beach*

Bare Hill Pond, approximately 321 acres in size, is visible from the Center and is a place of natural beauty. It is classified under the Massachusetts General laws as a 'Great Pond' by the Commonwealth. This gives the general public access to it for boating and fishing. The Pond and Town Beach are places where Harvard's residents enjoy a variety of recreational water sports year round.

For over 25 years, the Town has studied and there has been concern about the Pond's continued health and increasing rate of eutrophication. Eutrophication is the shift in the balance of the ecology of the Pond from a balance of plants, animals, water and sunlight to one with an excessive quantity of plant life that results in diminished dissolved oxygen, a loss of animal life, and a deterioration of water quality. While eutrophication is a natural and likely irreversible process in all lakes and ponds, the rate of eutrophication is heavily influenced by the level of nutrients in the Pond. Nutrient loading, and phosphorous loading in particular, are primary contributors to the problem. In 1999, the State listed Bare Hill Pond on its list of lakes and ponds that exceed acceptable levels for phosphorus. In addition to nutrient loading, the other principal contributor to the acceleration of eutrophication in the Pond are the invasive aquatic plant species (milfoil, fanwort, water chestnut, etc.) Unlike native plant species that have more moderate growth rates and natural predators, invasive aquatic species rapidly expand, if not controlled, and lead to accelerated eutrophication. Moreover, they also result through annual growth cycles in a more rapid rate of filling of the pond with nutrient loaded sediment as they decompose each winter.

- *Bare Hill Pond Wetlands*

At the pond's northern end, stretching up to the rear of Bromfield School, is a beautiful wetland area.

- *North-South Stream Valleys / Wetlands*

Harvard Center is bounded to both its east and west with north/south stream valleys and adjoining wetlands which help maintain a sense of open spaces and undeveloped lands around the compact village core, thereby providing distinct edges between the built core and the natural surrounding landscape.

Bowers Brook, on the western edge of the Center, and running parallel to Under Pin Hill Road, travels from Bare Hill Pond in the south, under both Still River Road and Depot Road to a series of old mill ponds in the north. It is surrounded by an extensive forested wetlands system for most of its length which provides a clear and distinct boundary between the built town center and its undeveloped wetlands.

To the east of the Center, another series of disconnected smaller stream valleys running in a north-south direction, together with some adjoining pockets of wetlands, also provide a boundary between the built town center and natural undeveloped lands.

- *Surrounding Conservation Lands and Open Spaces*

A series of conservation lands, some owned by the Conservation Commission and others by the Harvard Conservation Trust immediately surround the Center. These lands visually connect the built village core to the town's heritage – its rural landscape.

The singularly most visible and prominent conservation land as visitors approach the Center from the north along Ayer Road is the East View Conservation Area with its sweeping scenic views eastward over hills, valleys, fields, forests and orchards.

- *Scenic Vistas*

There are many scenic views and roads around Harvard Center. However there are three long-range views that should be protected and enhanced where possible.

The View from Hildreth House to Town Common

The view from atop the hill at Hildreth House to the Common exists but has been obscured by overgrowth in recent years. Currently, a landscaping initiative is underway at the Hildreth House grounds. This first phase has cleared away much of the overgrowth and the vista to the Common is available once again.

View from Massachusetts Avenue and New Library to Bare Hill Pond

The view from Massachusetts Avenue in the vicinity of the Bromfield School, across playfields and Old Bromfield property, offers long-range glimpses of Bare Hill Pond in the distance and should always be preserved. [When the new Library is constructed at Old Bromfield, views from the upper floor of the new wing will also provide new sweeping vistas of the Pond from a closer distance and elevated height.]

View Across East View Conservation Area from Ayer Road

The view eastward from Ayer Road, just north of Town Hall at the northern gateway into the Center, offers sweeping panoramas of fields, forests, hills, valleys and orchards. It is this dramatic contrast between open rolling landscapes juxtaposed immediately with the edge of the built Center, that perhaps most clearly defines the edge between the compact built village form at the rural landscape which surrounds it.

A2.4 The Center's Multi-Family Housing Stock & Harvard's Non-Profit and Agency Housing Development Organizations

The Center is one of the few areas in town that provides a bit of diversity of housing type and affordability in a town otherwise comprised almost exclusively of increasingly expensive market rate single family homes sited on large lots. This diversity includes some affordable apartments, senior apartments, privately rented apartments, and in-law apartments scattered about Town Center. Most of this diverse housing is located on the eastern edge of the Common and most notably includes four affordable senior apartments at the old Harvard Inn which is owned and operated by the Conservation Trust.

Multi-Family Housing Stock

As of the spring of 2004, there are approximately forty (40) multi-family units in the vicinity of the Center - comprised of 13 two-families, 2 three-families, and 2 four-family residences.

All of the Center's multi-family apartments are now located in older large homes (with the exception of the four rental units at the old Harvard Inn) rather than in new developments, and are therefore visually indistinguishable from the traditional single family historic homes surrounding the Common.

In the future, as Harvard's senior population continues to grow, demand for senior housing is anticipated to significantly increase.

Because of severe current limitations on the septic capacity of most private properties under the state's Title V regulations, it is unlikely that many additional new apartments will be developed in the Center unless and until new, innovative, or expanded septic systems are utilized.

Harvard's Housing Development Organizations

Several quasi-governmental and non-profit housing organizations exist in town with the organizational capacity or potential organizational capacity to initiate and develop new affordable and senior housing as well as operate such housing developments.

- ***The Harvard Conservation Trust***
In addition to conserving open land, the local non-profit Conservation Trust has developed affordable housing apartments at the old Harvard Inn. It also owns the Barba property just north of Bare Hill Pond which is now being held in trust for conservation land. However, there has been discussion of the Trust developing a portion of this property, if financially feasible.
- ***The Harvard Housing Authority / HHA***
HHA, a quasi-independent governmental agency, was established in 1988, but due to lack of state and federal funding, has not yet developed any units. The HHA has recently suggested developing several affordable senior rental apartments on Town land on Massachusetts Avenue almost across from and a bit east of the Bromfield House. To achieve this, the HHA has suggested that this proposed development be able to tap into the School Department's Sewage Treatment Plant across the street to meet the site's septic requirements.
- ***The Harvard Housing Partnership / HHP***
The Harvard Housing Partnership is an organization, appointed by the Selectmen, and has been actively promoting and pursuing the development of affordable housing. They have been active participants, representing the interests of the town, in negotiations with private developers who have been permitting Chapter 40B housing developments.

A2.5 Traffic & Parking

Traffic

Harvard Center is at the crossroads of two state-numbered highways – Routes 110 and 111 – that connect the Center to

Route 2, I-495, and the neighboring towns of Ayer, Bolton and Boxborough. Although traffic is still relatively light, traffic volume through the Center has increased in recent years. This has raised concerns about both traffic and pedestrian safety in the Center. There is particular concern about the Ayer Rd. / Still River Rd. / Massachusetts Avenue intersection which is controlled only by a flashing red light in the north / south direction and a flashing yellow light no in the east / west direction (the Route 110 / 111 intersection). Additionally, the further convergence at this intersection of local streets such as Fairbanks St., Oak Hill Rd., and the short connector between Massachusetts Ave. and Fairbanks St., known as Common Street, - all with limited signage, striping, or traffic control - further exacerbate the confusing conditions at this crossroads.

In addition to increased through traffic, the concentration of the town's schools along Massachusetts Ave. immediately south of the Center's core also exacerbates traffic problems, particularly during the morning rush hour due to the arrival of school buses and drop-offs of school children by family members.

Parking

Harvard Center is the hub of many activities – municipal facilities, churches, schools, playfields, and several small businesses. There are over a dozen large and small off-street parking lots in the Center with close to 500 parking spaces, in total. [See Figure 7 and Table A2-1 below].The largest ones are municipal and school related and are concentrated around Town Hall, along the Bromfield School Drive, and at the Town's municipal North Lot, which is used and perceived by many as the school's exclusive parking lot. When the Library relocates to the Old Bromfield building, a new parking lot will be built there to accommodate the Library's patronage.

The total number of available off-street parking spaces in the Center is entirely adequate for much of the day and week. However, several venues in the Center are clearly now under served by their own currently limited available parking, even under average use conditions. For example, the existing Public Library only has several spaces along Fairbanks St. and the Congregational Church on Still River Road has only a limited number of spaces at its front. [Fortunately, the Unitarian Church can share spaces with Town Hall since demand for usage of the Town Hall parking lot differs by time and day.] Consequently, during peak demand times or during large events or meetings, such as during Sunday morning church services, parking overflows from these limited lot spaces onto surrounding streets such as Still River Rd., Elm St., Massachusetts Ave., and elsewhere.

Also, when after-school or League games are being held at the schools' playfields, parking will overflow to the shoulders of Massachusetts Ave. and Pond Rd.

Although there are many parking spaces or lots throughout the Center, many destinations are just beyond perceived comfortable walking distance from one another, particularly when there are few sidewalks or controlled crosswalks at road intersections connecting those destinations to provide safety. As a result, few people walk between reasonably close-by destinations on a multi-errand trip, but instead make short drives between them. The result is not a particularly "pedestrian friendly" center.

The Town's municipal North Lot, now largely used by school staff during weekdays, is a potentially valuable public parking resource for shared use to support many town center functions and multi-errand trips because of its considerable size and its central location within convenient walking distance to the schools, playfields, the Congregational Church, St. Theresa's Church, and most of the Center's small businesses.

Table A2-1 : Harvard Center Parking: Existing Off-Street Supply	
<i>Place</i>	<i>Spaces</i>
<i>Municipal & Schools</i>	
Town Hall Lot (also shared with Unitarian Church)	38
Library	5
Hildreth House Lot	18
Harvard Elementary School Lots & Drives	81
Bromfield School Lot	136
Bromfield School – Pond Rd. Drive	83
North Lot	37
Bromfield House Lot	12
Old Bromfield Lot	10
Subtotal	420
<i>Institutional & Businesses</i>	
General Store / Congregational Church Lot	29
Unitarian Church Fellowship Lot	26
Harvard Real Estate / Cleaners	15
Subtotal	70
Total	490
Source: Town Center Task Force Report to Harvard Planning Board 8/98	

A2.6 Existing AR Zoning: You Can't Build the Village You See

Harvard Center is a mixed-use village core consisting of historic houses, churches, businesses, and municipal institutions on small lots with minimal setbacks whose collective village character is admired by all. However that character could not readily be replicated today under the current protective zoning bylaw. Almost the entire Center, like most of Harvard, is zoned for residential use, specifically the "AR/Agricultural Residential District" which primarily allows single-family homes on a minimum lot size of 1.5 acres.

Of all the Town Center's businesses, only Harvard Antiques is located in the small Business B District which exists in the Center at the northeast corner of Littleton Road and Fairbanks Street.

Harvard's predominant commercial district, the "C District", is located elsewhere in town north of Route 2 on Ayer Road.

▪ AR / Residential District

The AR / Agricultural – Residential District is the predominant zoning district throughout town and in the Center and contributes to the town's rural image. The AR District primarily permits detached single family homes and agricultural uses. Home occupations and providing room and board to non-transients by the resident family are allowed as secondary uses.

The minimum lot size is 1.5 acres. Depending on lot "type", lot sizes vary from 1.5 to 4.5 acres in size. [Harvard's large-lot zoning has been based upon legitimate environmental concerns that reflect Harvard's limited water and wastewater infrastructure and poor soils. Although the State has now developed a list of approved alternative septic technologies that could make additional lands available for development and existing lots less susceptible to septic failure, Harvard only allows the use of these technologies for repairs to existing systems. Minimum required front setbacks, and minimum lot widths vary and are complicated to assess, but in many instances current setback requirements would not allow many of the historic homes to sit as close to the street as they now do.

Although Harvard does not have a multi-family zoning district in town which would permit new multi-family housing, *conversions* of existing single-family residences and their accessory structures into "multiple residences" are allowed by Special Permit in the AR District, providing, among other provisions that: the dwelling will remain in undivided ownership; the external character of the premises will continue to be that of a customary one-family

residence; that the lot area be able to accommodate 0.5 additional acres for each dwelling unit beyond the first; and, the septic system meets the regulations defined in the bylaw. These standards are set rather high, particularly the additional lot area requirement of 0.5 acres per dwelling unit. Consequently, not many of the small parcel lots in the Center could meet these standards. The 2002 Master Plan recommended amending the Bylaws to accommodate such a conversion of properties within the Center.

Additionally, an “in-law apartment” within a single family residence may be allowed by Special Permit in the AR District. Institutional uses (educational, religious, parks, conservation lands) are also allowed.

▪ *B / Business District*

The small 5 acre Business District located on Littleton Road allows retail businesses, indoor eating establishments, banks, real estate offices, professional offices, and personal service establishments. It is doubtful that there is sufficient parking or septic capacity to support these allowed businesses within the B District. All town center businesses, with the exception of Harvard Antiques, are located outside the B District and are therefore pre-existing, non-conforming uses. There are few places new businesses could move to in the Center today even if they so desired.

Ironically, the beloved historic homes surrounding the Common, which define the Center’s much admired compact village center image, and an integral mix of some nearby businesses, could not be built today under current zoning requirements. For example, many of the Center’s historic homes are on lots no larger than 1/3 to 1/2 acre in size. However, current zoning requires, at a minimum, lots of at least 1.5 acres in size. Therefore, the current compact village form could not be replicated today under current zoning bylaws and local septic regulations and most houses in the Center are dimensionally non-conforming.

Because the current Business District zone on the north side of Littleton Road is only a very small and remote section of the Center, most of today’s businesses, which are not located within this small district, are non-conforming uses; and, there are few places new businesses could move to in the Center today even if they so desired.

A2.7 Existing Water Supply

The Town of Harvard's water supply is primarily served by private on-site wells. Town Center is the exception, however, and is the only portion of town served by a municipal water supply. All of the Center's schools, municipal buildings, churches, businesses, and most homes are served by this public water supply. In the 1940's, the Town acquired what had been a private water company with two open reservoirs serving the village. Under municipal control, the system has been upgraded and expanded with new wells, new water mains and a water storage tank. Currently, the Water Department operates with no employees and revenues of \$18,000/year.

The essentials of the system are three deep rock wells:

NAME	DATE	LOCATION	RATE	CAPACITY	ZONE 1 ⁽¹⁾	ZONE 2 ⁽¹⁾
No. 1	1953	Pond Road	10 gpm		275 ft.	726 ft.
No. 2	1997	Pond Road	17 gpm		308 ft.	994 ft.
No. 3	1981	Bolton Road	25 gpm		319 ft.	1040 ft.

(1) Zone 1 is the theoretical immediate drawdown area of the well in operation; the given distance is the radius of the drawdown cone. Zone 2 is the area of contribution of groundwater to the pumping well; the Zone 2 distance is its theoretical radius.

There is also a 1996 well that is west of the Bromfield School. It has a rated capacity of 24 gpm and sustained pump testing capacity of 32 gpm. It would have zones 1 and 2 of 331 and 1168 feet respectively. Because of reported water quality problems, that well has not been placed in service. The Bolton Road well is used only as an emergency backup supply to the Pond Road wells because of high iron content.

The distribution system consists of a 310,000 gallon storage tank at the south end of the system (near the old Hildreth System Reservoirs) and an interconnected 6 inch and 12 inch water main in Bolton Road, Mass Avenue, and Ayer Road extending up to and around the Common. The old 6 inch main continues up to the new Public Safety Building at the north end of the system. The system serves 10 school and municipal buildings, 3 churches, 5 commercial customers and 60 residences.

Table 3.7.1 below shows the 2001 monthly water consumption (total pumpage) and Figure 3.7a shows the same data graphically. The annual average day consumption is 20,925 gallons and the

average day consumption during the peak month is 33,559 gallons. If both wells, which are normally in service, were pumped continuously at their rated capacities, they could deliver 38,880 gallons per day. The system meets its maximum day demand (about 45,000 gpd), peak hour demand, and any fire demand from the storage tank volume and probably the Pond Road wells pumping at higher than their rated capacity for peak periods. This is not unusual for systems of this size.

Table 3.7.1 Town of Harvard – DEP Water Consumption Report		
January 2001 - December 2001		
Month of Reading	Monthly Water Use	Percent of Monthly Water Use
Jan-01	607,580	8.0%
Feb-01	710,268	9.3%
Mar-01	450,344	5.9%
Apr-01	606,372	7.9%
May-01	335,237	4.4%
Jun-01	806,905	10.6%
Jul-01	645,508	8.5%
Aug-01	1,040,327	13.6%
Sep-01	401,317	5.3%
Oct-01	732,087	9.6%
Nov-01	466,251	6.1%
Dec-01	835,530	10.9%
Totals	7,637,726	100.0%

Monthly Median	=	626,544
Monthly Maximum	=	1,040,327
Monthly Average	=	636,477

Annual Average Day	=	20,925
Peak Month Avg. Day	=	33,559

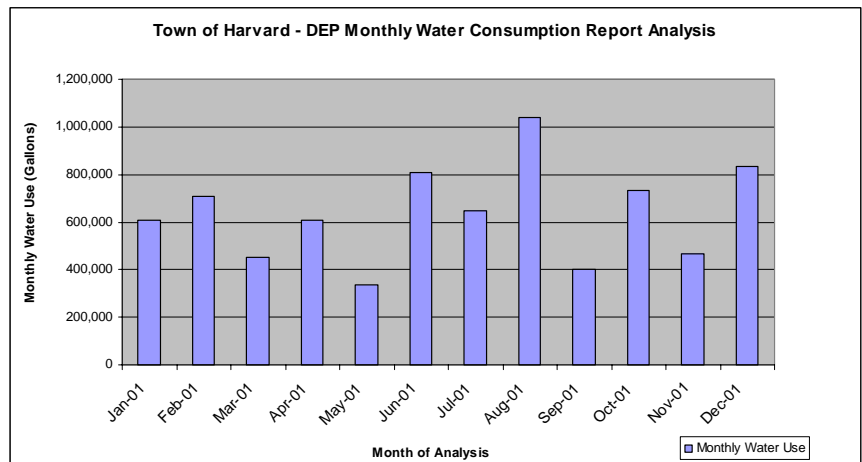


Figure 3.7a

One can see that the combined yield of the two Pond Road wells are very close in capacity to current peak demand. However, a comparison of recent metered water usage shows a different demand situation. The 2001 DEP Report showed an annual pumpage of 7,637,726 gallons. However, the current metered consumption (May 2003 – May 2004) is only 5,755,216 gallons. The difference is “unaccounted for” water, which consists of fire flows, system testing and flushing of dead end portions of the water system, and leaks. Thus, while the supply capacity is close to the total demand, it can comfortably meet average daily consumptive demands of 19,890 gallons.

Tables 3.7.2 and 3.7.3 below show the annual and monthly consumptive uses by categories. The residential and school demands are the largest and there is some beneficial synergy with those larger uses in that, the peak summertime residential demand is offset by the low June and July demand by the schools.

Table 3.7.2: Harvard Water Department - Metered Water Usage			
May 9, 2003 – May 5, 2004			
	No. of Connections	Annual CF Usage	Annual Gallon Usage (GPY)
Town Buildings	7	15,487	115,858
Churches	3	30,449	227,789
Schools	3	227,029	1,698,404
Commercial	5	26,307	196,803
Residential	60	470,039	3,516,362
Totals	78	769,311	5,755,216

Table 3.7.3: Town of Harvard - Projected Monthly Water Usage per Customer Category

[Based Using Known Monthly Usage versus January 2001 - December 2001 Demand]

	Town Bldgs.	Churches	Schools	Comm	Residen	Total
Jan-01	9,217	18,121	130,638	15,656	279,726	453,357
Feb-01	10,774	21,183	162,999	18,302	327,003	540,261
Mar-01	6,831	13,431	237,824	11,604	207,336	477,026
Apr-01	9,198	18,085	177,875	15,624	279,170	499,952
May-01	5,085	9,998	143,877	8,638	154,341	321,939
Jun-01	12,240	24,065	53,676	20,792	371,494	482,267
Jul-01	9,792	19,252	0	16,633	297,188	342,864
Aug-01	15,781	31,027	128,862	26,806	478,960	681,436
Sep-01	6,088	11,969	171,742	10,341	184,764	384,903
Oct-01	11,105	21,834	182,954	18,864	337,048	571,805
Nov-01	7,073	13,906	187,700	12,014	214,659	435,351
Dec-01	12,674	24,919	120,258	21,529	384,673	564,053
Total	115,858	227,789	1,698,404	196,803	3,516,362	5,755,216
Monthly Median =	9,504	18,686	153,438	16,144	288,457	479,647
Monthly Max. =	15,781	31,027	237,824	26,806	478,960	681,436
Monthly Avg. =	9,655	18,982	141,534	16,400	293,030	479,601
Annual Avg. Day =	446	1,460	7,720	631	9,634	19,890
Peak Mo. Avg. Day =	612	2,005	11,891	866	12,383	27,758

Notes:

- 1.) Town Buildings assume 5 days of operation per week (260-days).
- 2.) Churches assume 3 days of operation per week (156-days).
- 3.) Schools assume 5 days over 44 weeks of operation per week (220-days).
- 4.) Schools monthly water consumption is based using the percent monthly use from the Monitoring Discharge report for the WWTF.
- 5.) Commercial assume 6 days of operation per week (312-days).
- 6.) Residential assumes 7 days of operation per week (365-days).

In summary the two Pond Road wells can deliver approximately 39,000 gallons per day which is more than sufficient to meet average daily demands on the system. Maximum daily demand and peak hour demands are currently met by a combination of pumping from the two wells and drawing water from the storage tank.

A2.8 Existing Wastewater Septic Capacity and Soil Conditions

Today, the Center's natural overall septic capacity is limited due to prevailing poor-to-moderate soils conditions, small lot sizes, and existing Title 5 compliance regulations. There are already some constraints on current uses, such as Town Hall's restrictions against public use of the restrooms there. In addition, of course, the present Library building has severely limited septic capacity, which will severely constrain its future reuse when the library moves to Old Bromfield.

Since problems appear incrementally – one property at a time – there is no immediate threat of overall crisis. Nevertheless, limitations on capacity pose substantial risks of negative consequences for the Center over the years to come. Possible risks include: 1) limitations on the potential reuse or expansion of the Center's municipal buildings and institutions to meet their constituencies' changing goals and requirements; 2) unsightly “mound-ed” on-site septic systems put in place to meet current Title V wastewater regulations for municipal, institutional, or residential properties; and 3) limitations on the possibility of attracting a new desired business or two to the Center. Taken together, these risks have the potential to slowly choke the center's vitality.

In recent years, the Town of Harvard built a Wastewater Treatment Facility to accommodate the town's existing and future public school and public library requirements, and to provide a potential resource for the Town more broadly. A number of property owners have also upgraded their own on-site septic systems.

By comparing Board of Health data on septic systems in the Center with lot sizes, we estimate that approximately half of the properties have systems in compliance with current regulations or have sufficient land to implement a repair of their system to achieve maximum feasible compliance status. In most of these cases there would be very little on site ability to add an additional bedroom or otherwise increase flow.

Therefore, of the 72 properties served by the Water System, we estimate that 41 are compliant with Title 5, have made maximum feasible repairs since the regulations changed in 1995, or have sufficient lot area to make such repairs. These properties would not need public sewer service. The remaining 31 properties are non-compliant and would require costly lot construction to reach maximum feasible compliance. No expansion of their septic

structures would be feasible. Therefore, approximately 43% of residential septic systems in the Center either are non-compliant or in a doubtful state of compliance.

This study of the present potable water and wastewater systems uses past studies and the most current data provided by the Town Center Planning Committee, the Board of Health, the Water Commissioners and the School Department, and is supplemented by field observations, but is not a comprehensive engineering evaluation. This Study, in the 'recommendations' sections of the re-port, provides the Town of Harvard with options and a conceptual action plan to achieve its goals for the future of the Center and address current septic capacity limitations. These options are crafted to be implemented in incremental phased measures so that they can stay ahead of critical needs and be accomplished within the fiscal capacity of the Town.

Unlike the Center's public water supply, the Center's sewage disposal is primarily achieved by private on-site septic systems. Most of these are on small lots and serve older and historic homes. The exception is the town-owned Wastewater Treatment Facility (the Treatment Plant plus nearby disposal field) both operated by the School Department. This municipal system was designed to serve both the present and projected needs of the Bromfield School, the proposed new Library at old Bromfield, and the Harvard Elementary School. In addition, the 1999 Harvard Annual Town Meeting approved funding to begin planning the school expansion contingent on the requirement that "the septic component of the plan shall consider the septic requirements of the Town". Therefore, the Treatment Plant was designed in a modular fashion so that it could be efficiently expanded at a future date.

The Board of Health has records on most of these systems and they range from systems installed or last inspected in 1946 to new (2003) Title 5 compliant systems for the new Town Public Safety Building. While many of these systems have not "failed", it would be very costly – if not impossible – for some lots to be totally compliant with current Title 5 Regulations or to have repairs made enabling them to meet Maximum Feasible Compliance using an on-site solution. In many cases, an all on-lot solution would also not be in keeping with the preservation goals of the Center since it could result in an unsightly "mounded" system. Several such mounded systems have been installed over the last few years.

Underlying native soil characteristics compound the on-site sewage disposal Title 5 compliance issues created by small lots. In general, the Center is built upon dense glacial till soils with slow

percolation rates, largely Paxton soils or Chatfield soils with shallow depths to bedrock. These soil types are predominant in the hilltops or ridgelines of Harvard. The valley bottoms have predominantly post-glacial soils of organic and inorganic sapric and hemic matter (muck). These soils are saturated and support wetland plant communities. They are totally unsuitable for wastewater disposal.

However, the valley sides (or shoulders) often have glacial retreat outwash or unconsolidated ice contact soil deposits of sands, gravels and loams. These Canton, Hinkley and Poquonock soils are suitable for wastewater disposal. The school's treatment plant and disposal field are located in exactly that type of suitable land form along the western shoulder of a small stream valley. Similar suitable deposits lie further north on that same stream valley between Old Littleton Road and Littleton Road. These deposits are indicated on the enclosed Supply Map with Soil Survey Information. *[See Figure 1 bound in Appendix.]*

Sites including these suitable soils and located within a half mile of the Center offer some potential for meeting existing wastewater demands or future town needs. However, many of these sites are on private properties and would have to be acquired for a proper public purpose - such as a new school site.

Many of these suitable soil areas were previously identified in municipal studies by Stearns & Wheeler LLC and Stephen R. Fogg, PE when sites were being investigated to meet the needs of the Center's schools and proposed new library. These previously evaluated sites include both public and private lands all within a mile of the Center:

- Coke Property on Littleton Road
- HES Property on Massachusetts Ave. (present treatment site)
- Barba Property off Still River Road
- Hazel Property on Depot Road near Ayer Road.
- Ward Property on Old Littleton Road

Although it is believed that some of these sites would only have sufficient suitable soils for flows around or under 2,000 gpd, the Coke property, which is in public ownership for conservation lands, is believed to have much greater capacity.

From these various evaluated site options, the HES / Harvard Elementary School site was chosen for the schools' disposal system for *best overall suitability* - that is, the ability to both handle the estimated 23,000 gpd demand and to provide the economic benefit of proximity to the schools. It was also already part of the

school physical complex. Several of the other sites identified may also be suitable to meet wider Town Center septic needs. Several had equally favorable soils but were further from the schools or not large enough to provide all the capacity needed. Nevertheless, some of them may still be well-suited to provide incremental groundwater discharge capacity as “distributed wastewater sites” if the existing Treatment Plant were to be expanded. Perhaps, most promisingly, the Coke property which is in public ownership for conservation lands, as well as some other privately owned sites within one mile of the Center, could meet these incremental requirements.

The schools are now served by a new advanced treatment system with nitrate removal and disposal fields on school land off of Massachusetts Avenue (Route 111). The system was designed for the following sewage flows in the design year 2012.

Bromfield School	880 population	17,600 gpd
New Library	21,000 sq. ft.	1,050 gpd
Harvard Elementary	640 population	<u>5,120 gpd</u>
		23,770 gpd

The system was approved by DEP in 2001 and received a groundwater discharge permit for 23,000 gpd. The discharge permit was based upon the submitted design and the geohydrologic study of the disposal area’s characteristics and mounding analysis.

Since the system was located in an area of sand and loamy sand type soils all with percolation rates under 5 min/in., the limitations under the groundwater permit were largely controlled by so-called “mounding analyses”. That is, when a system handles a large flow in a relatively small area, the effluent mounds up the saturated soils over normal groundwater levels. If not limited, such mounded groundwater could break out (i.e. discharge to the surface) in some downhill slope, thereby possibly creating nuisance conditions or a public health threat. To assure no breakout, DEP requires 5 foot separation from the bottom of the disposal field to the top of the calculated mounded ground-water level at the maximum design discharge.

The breakout analyses performed as part of the submission to DEP showed the system could adequately handle up to 23,000 gpd given the soils, topography and hydrology. Thus, the groundwater discharge permit was approved.

The design used standard DEP allowances for per capita flows from the school - 20 gpd gallons per capita per day for the high school and 8 gpd for the elementary school. However, as Table 3.8.1 shows, the wastewater treatment plant has *actual flows* ranging from 8,569 gpd to 0 gpd and averages 5,360 gpd – *far less than the design and permitted flow* of 23,000 gpd. DEP may be approached to review actual flows and determine if excess capacity exists. Any such excess capacity could be a resource to address septic needs beyond the schools and library.

There are three reasons for the difference between the designed capacity and current actual demand: (1) currently the served population is 1,405 and not the 1,520 forecast in the design, (2) the expanded Library is not yet constructed and thus contributes no flow, and (3) DEP's design allowances are conservative. Current per capita flows (including the faculty) are under 5 gpd.

Table 3.8.1 Town of Harvard School Department Monthly Discharge Monitoring Report Analysis January 2003 - March 2004			
Number of Students =		1243	
Number of Faculty (FT/PT) =		162	
Total School Population =		1405	
As of October 1, 2003			
Month of Reading	Average GPD	Average GPD/Student	Percent of Monthly Water Use
Jan-03	4,707	-	7.7%
Feb-03	5,873	-	9.6%
Mar-03	8,569	-	14.0%
Apr-03	6,409	-	10.5%
May-03	5,184	-	8.5%
Jun-03	1,934	-	3.2%
Jul-03	0	-	0.0%
Aug-03	4,643	-	7.6%
Sep-03	6,188	-	10.1%
Oct-03	6,592	4.7	10.8%
Nov-03	6,763	4.8	11.1%
Dec-03	4,333	3.1	7.1%
Jan-04	4,620	3.3	
Feb-04	4,882	3.5	
Mar-04	4,349	3.1	
61,195			
Median =	4,882	3.4	
Maximum =	8,569	4.8	
Average =	5,003	3.7	

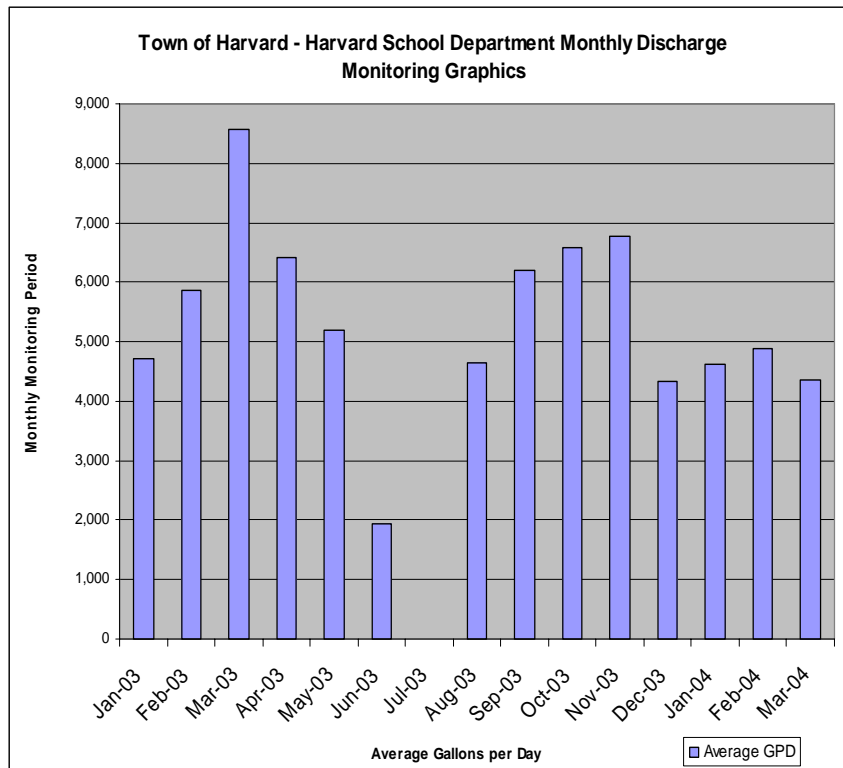


Figure 3.8a

We can readily make estimates to address the first two reasons observed flows are so much lower than approved flows. If we assume the new Library were in operation and the schools' combined population grew to 1520, but the per capita consumption stayed at the current maximum of around 5 gpd, *then the future demand on the current Treatment Facility during the maximum use month would be 7,600 gpd. In other words, the present plant and disposal field has roughly three times the capacity as its probable connected future demand.*

This excess capacity in the town's treatment plant opens an opportunity to reposition its use for wider Town Center needs as hoped for when the Annual Town Meeting approved the article authorizing initial planning for school expansion in 1999.

But what is the potential demand on that excess capacity beyond school and library use? The Board of Health records of on-site sewage capacities combined with the above school demand provides insight into that question. Taking the Board of Health data about designed capacity, we can collate the information by streets as one would plan a sewage collection system. In addition, we have made upgraded estimates of flows that are likely to be generated from Hildreth House, the Town Hall, churches, a

modest municipal or commercial use, and reuse of the present Public Library. The table below provides our future Center wide demand estimate under the high demand and unlikely assumption that *every property on the water system will connect to a sewer*. This includes homeowners who have recently installed expensive septic system upgrades and properties that may have no septic problems. It is intended to be the conservative upper bound.

<u>North of the Commons</u>	
Ayer Road	5,550 gpd
Littleton Road	3,080 gpd
Elm Street	3,050 gpd
Old Littleton Road	1,760 gpd
Still River Road	3,365 gpd
Lovers Lane	<u>770 gpd</u>
	17,575 gpd
 <u>South of the Commons</u>	
Bolton Road	2,640 gpd
Fairbanks Street	6,350 gpd
Mass Avenue (not schools)	4,190 gpd
Oak Hill Road	2,310 gpd
Pond Road	<u>990 gpd</u>
	16,480 gpd

The total demand of the Center without the schools would be 34,055 gpd. If the school system's actual average demand is added it would bring today's total wastewater demand to approximately 39,400 gpd. However, with only a few minor exceptions, all of the Center's buildings (including the schools) are served by the town's water system with metered consumption of approximately 19,900 gpd. Thus, the *real* demand for septic capacity (actual discharges) is significantly less than the design capacity. This reflects the fact that DEP assumptions are intended to estimate septic demand at a high and conservative figure. For example, there are not 2 people living in every bedroom generating 110 gallons per day in every house in the Center as DEP regulations assume.

But, having said that, DEP is not likely to allow a future wastewater solution for the Center to be based solely on today's water meter readings. For the schools, where the usage and population served are well documented, excess capacity can be estimated based upon actual figures. But homes, commercial buildings and

even institutions and municipal buildings could potentially change their future occupancy or uses. Thus for planning purposes, we can assume that the maximum demand side of the equation is roughly 42,000 gpd (34,055 gpd of on-site capacity plus the future school of 7,600), and the supply side is 23,000 gpd at the Treatment Plant plus on-site systems of various ages and compliance statuses. Section 7.6 of the report looks at how this equation might be balanced to achieve Center planning goals.

A2.9 Existing Drainage & Contaminated Run-off: Pond Eutrophication

Bare Hill Pond, at the southern edge of Harvard Center, is an important natural and recreational asset for the entire town. Its future health is tied, in part, to development policies for the Center, as well as broader watershed management programs.

For some years now, there has been concern about Bare Hill Pond's continued health due to high phosphorus levels in its sediment and contaminated run-off from surrounding roads, exacerbated by the state's use of road salt on nearby Routes 110 and 111. As a result, the Pond is in the process of eutrophication in which the pond becomes enriched with plant nutrients, causing the spread of unwanted invasive plant species which choke the pond's oxygen supply, cloud the water, and threaten the use of the Pond's recreation areas and Town Beach.

The Town and the Pond Committee have studied the Pond, identified the issues, and have taken some measures to protect it. For example, as a stop-gap protective measure to combat the spread of unwanted plants, mechanical harvesting has been undertaken - although it is an expensive process and frequent breakdowns plagued the harvesting machine. But harvesting just manages the growth of aquatic weeds and does not kill them or slow the underlying eutrophication process. Therefore, the fundamental problem remains.

In recent years, the Harvard Conservation Trust has taken long term protective measures as well. The Conservation Trust purchased a large tract of undeveloped land to the north of the Pond and to the west of the Bromfield School from the Barba estate. Some of this site has wetlands and isolated vernal pools, and therefore cannot be built upon. However, much of this site also has moderate to good quality soils which could make parts of the property quite suitable for a small housing development in the future. Under Conservation Trust protection, however, the land is now conserved and will not be the origin of

future contaminated storm water run off from large-scaled development.

A policy question remains, however, whether a *small part* of this land could in fact be developed with a small number of affordable senior housing units to meet some of Harvard's pressing need for a greater diversity of housing types than presently exist throughout town or in the Center. If a small to modest number of senior housing units were developed here, measures would have to be put in place to insure that storm water run-off would be prevented so as to not adversely affect the Pond.

Appendix 3

Previous Planning Studies

Listed below are a number of studies that have addressed the town center, either directly or indirectly. As noted above, most of the issues, opportunities and findings of this Action Plan are not new. They stand on a solid foundation of earlier studies and recommendations prepared under the leadership of Harvard's committees and boards.

3A. Web Resources: Town of Harvard Website

www.harvard.ma.us

See "Master Plan Documents"

- Harvard Massachusetts Master Plan, November 2002
- 2002 Master Plan Executive Summary

Draft Harvard Open Space and Recreation Plan Feb 2003 – Feb 2008;
Prepared by the Harvard Conservation Commission and Park & Recreation Commission

3B. Reports and Studies Available from the Harvard Planning Board

Report to the Harvard Planning Board 08/01/1998

Prepared by the Town Center Task Force. A report to consider Town Center septic, water system, parking, traffic flow, pedestrian traffic and utility concerns. Include Appendices H, S1, S2, S3, T, B & U

Summary of Workshop held on July 8, 2000 Hosted by the Town Center Planning Committee.

Report investigates community values, concerns and opportunities for identifying and preserving the character of Town Center.

Preliminary Town Center Septic Inventory

Prepared by Mary Essary, 5/20/03. Partial inventory of properties, Title V septic requirement, system types, lot areas and other relevant data

Aerial Topographic Survey of Harvard Center

- Aerial Photographs of Harvard Center dated 12-09-98
- Aerial Topography/Assessors Map Overlay Plan – Town Center.
Prepared by GPR March 2000 project # 98.217
- Conceptual Town Center Layout – Site Plan A Harvard MA.
Prepared by GPR June 2000 project # 98.217
- Conceptual Town Center Layout – Site Plan B Harvard MA.
Prepared by GPR June 2000 project # 98.217

Excerpts from the Harvard Public Library Construction Grant Application (dated January 2001)

Prepared by the Library Trustee representative to the Town Center Planning Committee for the Town Center Public Realm Plan and Waste water Feasibility study. July 2003

Report to the Harvard School Committee: Proposed Long Range Facilities Plan, March 24, 2003

A report concerning school population growth and how the town could accommodate that eventual increase. Defines a strategy for both short and long term needs: population trigger points and analysis of existing capacities.

Harvard Habitat The common and its neighbors.

Newsletter/Town mailing published by the League of Women Voters in 1985 and redistributed in 1998 with additional inserts. An informative summary of perceptions and concerns over the past 18 years as well as a re-evaluation of the 1985 newsletter's findings.

3C. Historical and Planning Resources Available at the Town Library: Harvard Planning Records and Studies

Harvard Massachusetts Master Plan, November 2002

Prepared by Community Opportunities Group Inc., Community Planning Solutions and Abend Associates. Adopted by the Planning Board,

Harvard town plan, 1988 / prepared by the citizens of the Town of Harvard, Massachusetts; with assistance from Connery Associates, Planning Consultants ; adopted by the Harvard Planning Board.

Planning for Harvard, Massachusetts : Report for Harvard Planning Board / prepared by Charles W. Eliot, Planning Consultant. IMPRINT [S.l.: s.n], 1970.

Harvard Public Library Construction Grant Application

January 2001

Prepared by the Harvard Public Library and the Library Trustees for construction of a new library and the renovation of Old Bromfield located on the school campus.

Open Space and Recreation Plan / Town of Harvard.

IMPRINT Harvard, Mass: The Town, 1996.

DESCRIPT 1 v. (various pagings) : maps ; 28 cm.

NOTE "August 28, 1995 (Reissued April 17, 1996."

Harvard Open Space Plan / prepared by the Harvard Conservation Commission ; [environmental planner and graphic designer: David Raphael ; editor: Sarah Hamill ; photographs : Edward Dillard, Eugene Marteney, David Raphael ; line drawings: J. Streeter Fowke].

AUTHOR Harvard (Mass.). Conservation Commission.
IMPRINT Harvard, Mass. : The Town, 1979.

Planning for Harvard's Rural Landscape: Case Studies in

Historic Conservation, a report of the Harvard Rural Historic Landscape Committee / prepared by Shary Page Berg and Claire Woodford Dempsey ; with technical assistance from Wesley T. Ward.
IMPRINT [Mass.?], 1997.

Freedom's Way Heritage Area Feasibility Study. Part 1 :

Summary Report / prepared for Freedom's Way Heritage Association and Massachusetts Department of Environmental Management by ICON Architecture, Inc. IMPRINT Devens, Mass. : Freedom's Way Heritage Association, 1997.

3D. Natural Resource Studies and Reports

An Atlas of Massachusetts River Systems, Environmental Designs for the Future

AUTHOR Mass Dept of Fish and Wildlife and Environmental Law Enforcement

1990 Analysis of the various watersheds in Massachusetts. Featuring the rehabilitation of the Nashua River Watershed. Detailed maps and hydrological history of the region.

1995 to 2020 Vision for the Nashua River Watershed

AUTHOR Nashua River Watershed Association

1995 Planning study for the region outlining an action plan to restore, repair and preserve the Nashua River watershed. Recommends actions to various towns as a regional planning tool Including actions to be taken within the boundary of Devens

Diagnostic / Feasibility Study for Bare Hill Pond

AUTHOR Bare Hill Pond management Committee.

1987 Detailed study outlining conditions at the pond and outlines objectives for the management and preservation of water quality (phosphorus and weed control being a priority)

3E. Harvard's History of Growth and Daily Life

Memoirs of Old Harvard days, from 1863 to 1924, also the men and women and their descendants who made old Harvard what it is today ; published by the author, F. S. Savage, Sr.

AUTHOR Savage, Frederick Schillow, 1858
IMPRINT Still River, Mass., 1924.

History of the Town of Harvard, Massachusetts. 1732-1893.

AUTHOR Nourse, Henry S. (Henry Stedman), 1831-1903.

IMPRINT Harvard, W. Hapgood, 1894.

Directions of a Town

AUTHOR Robert C. Anderson

1976, documents the History of Harvard

3F. Historic Structures and Places in Harvard

The Harvard Album

AUTHOR Dianne M. Newton

Historic Harvard homes and photographs prepared by the Harvard Historical Society

The Black Freedom Trail in Harvard MA

AUTHOR Nancy Reifenstein

Booklet and map included of the history and sites of homes used in the underground railroad.

Comprehensive Historic Survey of Harvard

AUTHOR Clarire W. Dempsey

A compendium of documentation surveying all the structures existing or to have previously existed in the town of Harvard. An incredible resource for those interested in preserving their historic homes.

Historic and Archaeological Resources of Central Massachusetts

AUTHOR Massachusetts Historical Commission

A survey of Historical areas of significance in Harvard and the surrounding region. Documenting the history, settlement and history of economic development in Central Mass.