

# ALSTEAD 2007 MASTER PLAN UPDATE



## BASIC STUDIES FEBRUARY 2007

# Alstead Master Plan Update 2007

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## **REGIONAL CONTEXT**

### **INTRODUCTION**

While other chapters of this Master Plan address conditions and issues specific to the Town of Alstead, or within the Town's control to some extent, this chapter surveys the region of which Alstead is a part. Alstead's Master Plan will be stronger when it accounts for regional development patterns and trends; the geographic distribution of homes, jobs, shopping and services; the water, soil, forests and wildlife that blanket the hills around Alstead without regard for political boundaries; the highway network; regulations and policies of neighboring towns; and the often far-reaching social networks of residents. While development within New Hampshire's Monadnock Region and Upper Valley are affected by local regulations, services and infrastructure, it is driven by the central New England economy and strongly influenced by the Merrimack Valley and central and eastern Massachusetts.

This chapter is included in Alstead's 2007 Master Plan update to encourage consideration of the regional conditions that create limitations and opportunities for private and public enterprise within Alstead and shape opinions and ideas of Alstead residents.

Principles of sustainable development are based in the ability to adapt to change and seek innovative solutions to recurring problems. The better we are at adapting to change the better we can protect our assets and opportunities.

#### **October 2005 Flood Event<sup>1</sup>**

Remnants of Tropical Storm Tammy and Subtropical Depression #22 merged with incoming continental cold fronts to produce torrential rains from October 7 until October 9, 2005. The flooding killed 7 people, caused the evacuation of approximately 1,500 across the State and caused millions of dollars in damage to homes and infrastructure. The flooding prompted a Presidential Disaster Declaration and the declaration of a State of Emergency. The hardest hit areas were Alstead, Keene, Hinsdale, Stoddard and Walpole. About 500 National Guard troops were dispatched throughout the State, including 100 in the Keene area. Following the rains, 57 miles of state roads were closed on October 9<sup>th</sup>, opening gradually for local and emergency vehicles in the days after. About 2,000 residents in Peterborough, Jaffrey, Rindge and Sharon were without power for a number of hours during the rain. Keene had to shut down power for about 1,000 people for a few days in order to make repairs: streets along Beaver Brook through the center of Town flooded to waist-high depths and caused damage to basements and the first floors of a number of homes and businesses.

The most severe and widespread damage occurred in Alstead along Routes 123 and 12A. Flash floods from Warren Brook and Cold River sent water flowing through Town, destroying homes and washing out roads (several hundred feet in one segment). An historic peak discharge at the gage in Drewsville was well in excess of the 500-year flood. Acres of farmland on both sides of Warren Brook and the Cold River were stripped of topsoil and littered with flood debris. Several homes were completely washed away, leaving only concrete foundations where homes once stood. The velocity of the moving water was so intense in some instances, boulders were moved and the upper layer of fractured bedrock was swept away. The stream channel was rerouted in some places to where the roads once were. 36 buildings were completely destroyed, and 71 homes sustained varying degrees of damage.

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<sup>1</sup> Flood information gathered from: 1) "The Flood of 2005: Sizing up the infrastructure damage." Richard Lane, NH DOT. 4/3/2006. New Hampshire Highways Magazine, 2) [en.wikipedia.org/wiki/northeast\\_u.s.\\_flooding\\_of\\_october\\_2005](http://en.wikipedia.org/wiki/northeast_u.s._flooding_of_october_2005) and 3) [www.sentinelsource.com](http://www.sentinelsource.com)

## **THE SOUTHWEST REGION**

The landscape of the Southwest Region, a 36-town area in Cheshire, western Hillsborough, and Sullivan counties, is mostly forested with rural and suburban residential development dispersed between village centers. More than 98,000 people lived in 42,066 households in the 1,031-square-mile Region of 36 towns in 2000. Town populations ranged from 22,563 in Keene to 201 in Windsor; with the regional average being 2,171 excluding Keene. Population density region-wide grew from 64 persons per square mile in 1970 to 95 persons per square mile in 2000. For comparison, Hillsborough County's population density in 2000 was 422 persons per square mile, Cheshire County was 100, and Sullivan County was 73.

The vast majority of the Region's land area has one house for every ten or more acres. Between 1990 and 2000 there was a very small increase in the percentage of land in the Region with household densities ranging from 2 to 10 households per acre and a small decrease in the percentage of U.S. Census Blocks with high densities, less than 1 acre per household. Map 1-1: Regional Household Density, depicts Census Blocks shaded by household densities from the 2000 census. The variations in the size of Census Blocks makes further analysis difficult – the distribution of densities from low to high is informative in and of itself. The trend in housing densities observed during recent decades is slight but consistent: no increase in density in the existing high-density areas; a slow expansion of the edges of the existing high density areas; increasing densities in the medium-density areas; and little change in the existing low-density areas. This dynamic may have three basic causes: 1) new residents and residents whose changing economic status allows them to relocate to larger properties choose new homes on moderate lot sizes (more than 1 acre, less than 10 acres); 2) our traditional development centers may be approaching development capacity given existing zoning and infrastructure; and 3) new development in the lower density areas tends to be within 1,000 feet of existing municipal and state roads.

The Region's natural and historic rural landscape is prized by residents and considered an asset to be guarded and managed. About 15% of the Region's land area is encumbered against development through deed restrictions, conservation easements and public ownership for protection - including Mount Monadnock and New Hampshire's largest State Park, 13,000-acre Pisgah State Park. There is a strong ethic in the Southwest Region for environmental protection and preservation of the visual community character. Pressure to exercise public or private control over the rates and kinds of growth the Region might experience is persistent.

Most of the land area in the Region is zoned for low density residential use, with a variety of agricultural and commercial uses allowed by right or special exception, and typically requires from two to five acres as a minimum lot size. A relatively small proportion of the land in Southwest Region towns is zoned for medium or high density (smaller than 2-acre lots) residential, commercial or mixed uses and these areas are usually existing village centers and downtowns. There are few and small areas zoned exclusively for commercial or industrial use.

Historic development patterns in the Connecticut River valley create a socio-economic geography of sub-regions: one dominated by Keene as an employment, commercial, and population center at the intersection of NH routes 9, 10, 12, and 101; and a more linear configuration of Connecticut River towns with population and employment centers in Claremont and further north in Lebanon and Hanover, NH on the NH 10 and 12 corridors and Brattleboro, Bellows Falls, and Springfield, VT on the VT 5 and I-91 corridors. The Region's commerce and employment is dominated by light manufacturing, business and service industries. Tourism, retail and resource extraction are also important sectors of the economy. There are about 40,000 workers employed in the Region. Almost half of these employees work in Keene (18,000+) and the average number of jobs in the remaining towns is about 300 in each. The Region has recently experienced two periods of rapid growth: in the early 1970's and again in the late 1980's. Both

episodes brought substantial increases in population, commerce and demand for housing and public services.

While a strong sense of local identity defined by town boundaries prevails, there is great variety in the “personal geography” of residents. That is, the map people carry in their minds determined by where they work and shop, where they have social connections, and where they spend leisure time. The Region is as connected with Vermont and Massachusetts, socio-economically, as it is with the rest of New Hampshire. And the Region’s population is as highly mobile as any in the U.S. Most residents work and shop outside their towns of residence. Sixty-four percent of the Region’s households owned two or more cars in 2000. Southwest Region residents travel for an average of 27 minutes one way for work each day with most (79%) driving alone. Nationwide, the average commute time is 25.5 minutes with a 76% drive alone rate.

The Region’s residents and visitors have reasonable access to interstate highways and major airports. Interstates 89, 91 and 93 can be reached from most parts of the Region within an hour. Three international airports are also within convenient driving range: Manchester International Airport: 55 miles from the center of the Region; Logan International Airport (Boston): 95 miles; and Bradley International Airport (Hartford): 95 miles.

Currently, two electric companies service southwest New Hampshire: National Grid (formerly Granite State Electric) and Public Service of New Hampshire (PSNH). Parts of Alstead and Marlow and all of Surry are serviced by both companies. Langdon and Walpole are serviced only by National Grid. The remaining towns in the Southwest Region are served by PSNH.

Wireless and high speed communications including cell phone towers and high speed internet access are gradually becoming integrated throughout the Southwest Region. These services are available in Keene, Peterborough, and other surrounding towns. Comcast and Verizon provide limited high speed internet access for parts of Alstead; the Town lacks a cell phone tower.

Some towns in New Hampshire belong to Solid Waste Districts while others have been granted single town status. Towns to the north of Alstead (Langdon, Acworth and others) belong to the Sullivan County Regional Refuse Disposal District. Alstead along with 21 other Towns in the Southwest Region have been granted single town status. Antrim, Bennington and Frankestown belong to the Tri-Town Solid Waste Management District. Hancock, Peterborough and Sharon belong to the Contoocook Valley Solid Waste District. Mason, Greenville, Greenfield and Temple belong to the Wilton Solid Waste District. Winchester and Richmond belong to the Winchester Solid Waste District.

The Southwest Region is many things: natural beauty, historic villages, Yankee tradition, good jobs, strong economy, and, perhaps most importantly, a community of capable residents. All of these things that residents enjoy and take pride in are, in part, products of change. Change has come to the Region by design and by chance, bringing good fortunes and misfortune. While residents have many different visions and hopes for the future, there seems to be consensus that protecting the good things we have and improving our community are priorities.

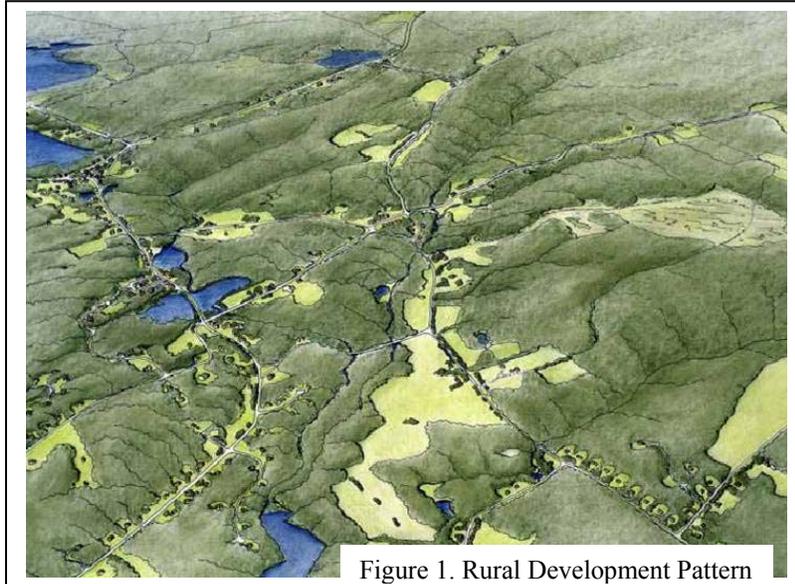


Figure 1. Rural Development Pattern

The development of forests and fields along town and state roads may be the single most common concern among residents and local governments in our region today. There are many opinions about how the ongoing development of new homes and commercial sites affect our community character, services and infrastructure, our social fabric, our economic vitality, and our natural resources. Figure 1 is a hypothetical bird's-eye view of the New England landscape most of us envision for the Monadnock Region and want to preserve.

Figure 2. shows a different version of that same view developed for housing using medium-sized lots conventional subdivisions. Whether arising one new house at a time or in large developments, this suburban development pattern is what most of the region's rural residential zoning is creating.

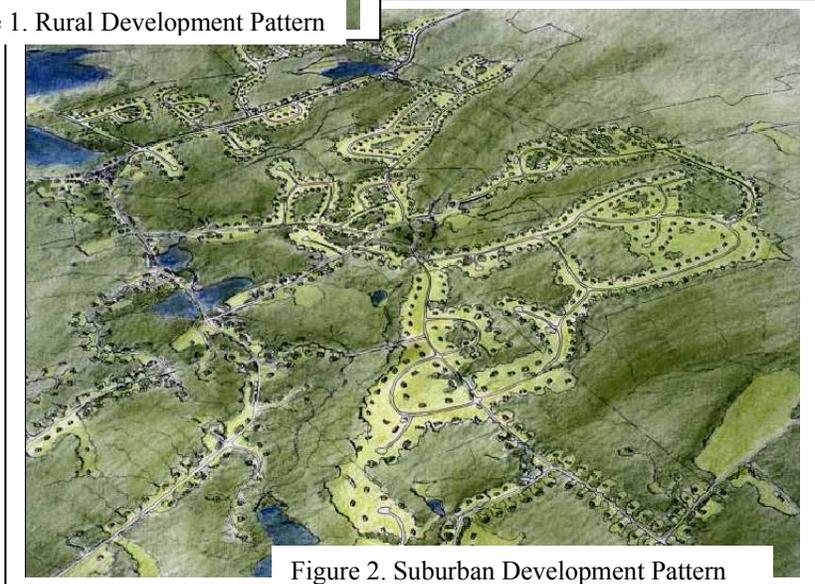


Figure 2. Suburban Development Pattern

The Monadnock Region's lower cost of living, economic vitality, scenic beauty, access to outdoors, and appeal of small town life will continue to attract new residents

and drive the development of new homes and commercial sites. Managing development to create opportunities for positive change while protecting against loss is a principal challenge for the entire Region today. To adequately prepare for continued development it is important to understand that the Southwest Region is on the edge of very powerful engine of change to the south and east – powerful in terms of numbers, number of people, dollars, households, commercial floor space, and jobs.

Figure 3 depicts the urban areas in New England and eastern New York State after the 1990 U.S. Census. Figure 4 shows urban areas designated by the 2000 Census. Figure 5 illustrates the frontier effect on the edge of the urbanizing areas to the south and east that is driving much of the change in our Region by mapping the densities of households using 2000 U.S. Census data.

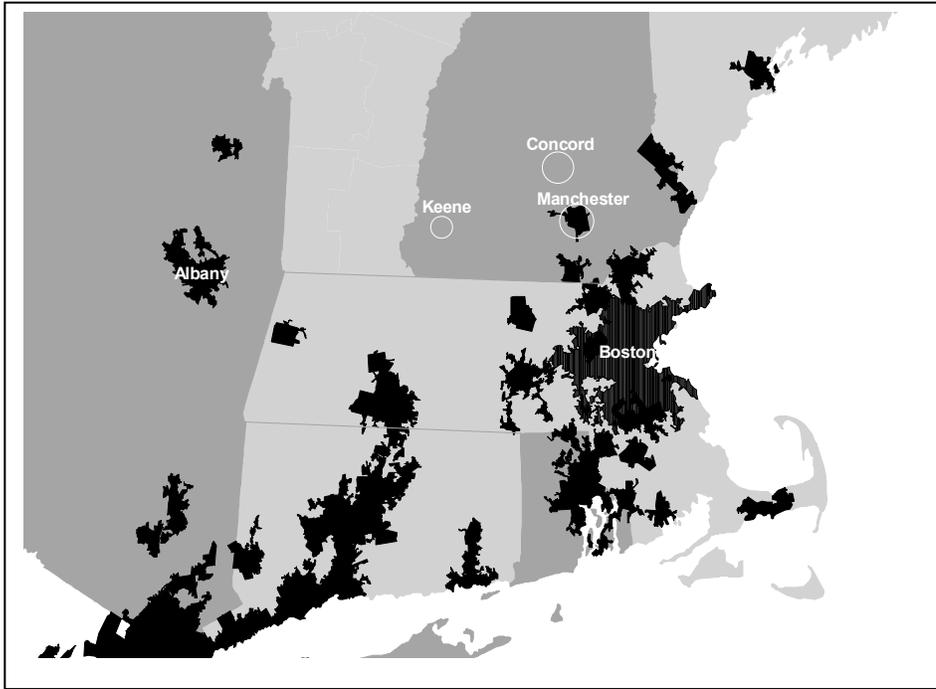


Figure 3. Urban Areas in New England Designated by the 1990 U.S. Census



Figure 4. Urban Areas in New England Designated by the 2000 U.S. Census

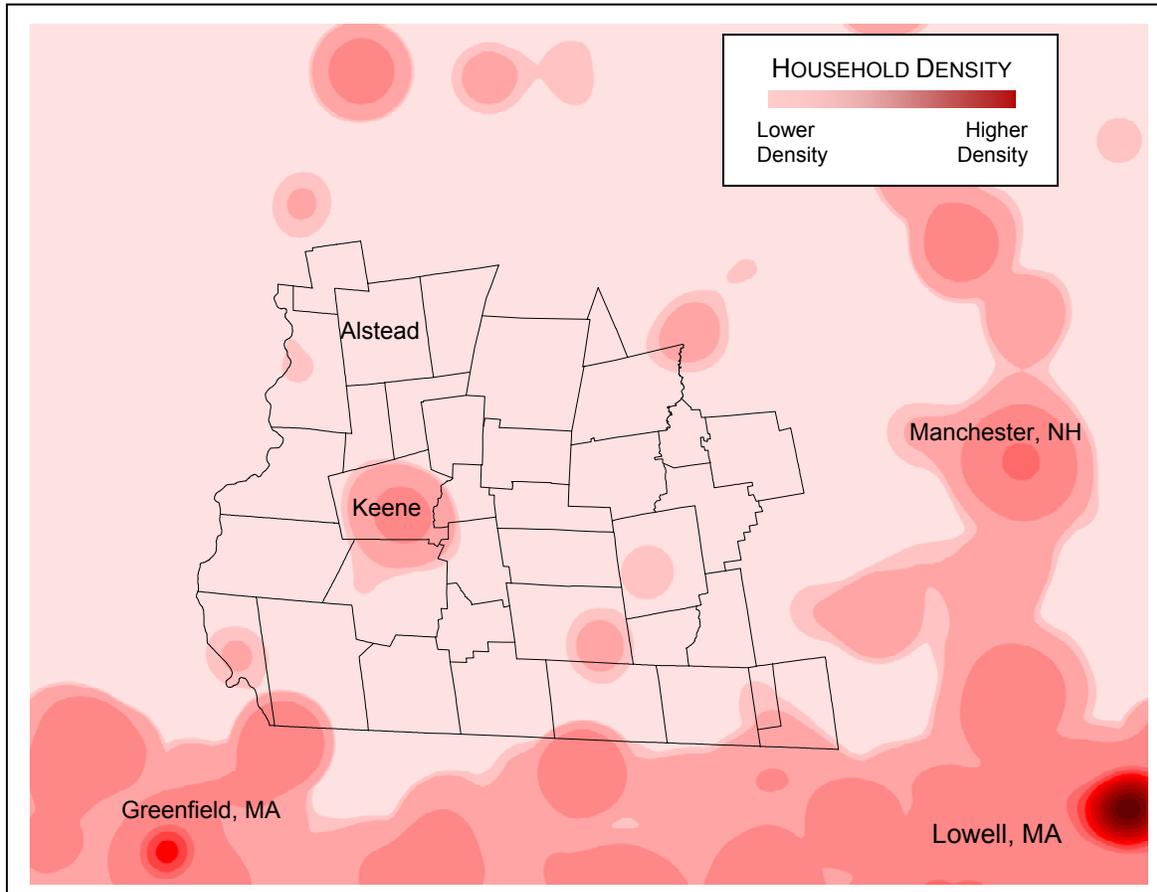


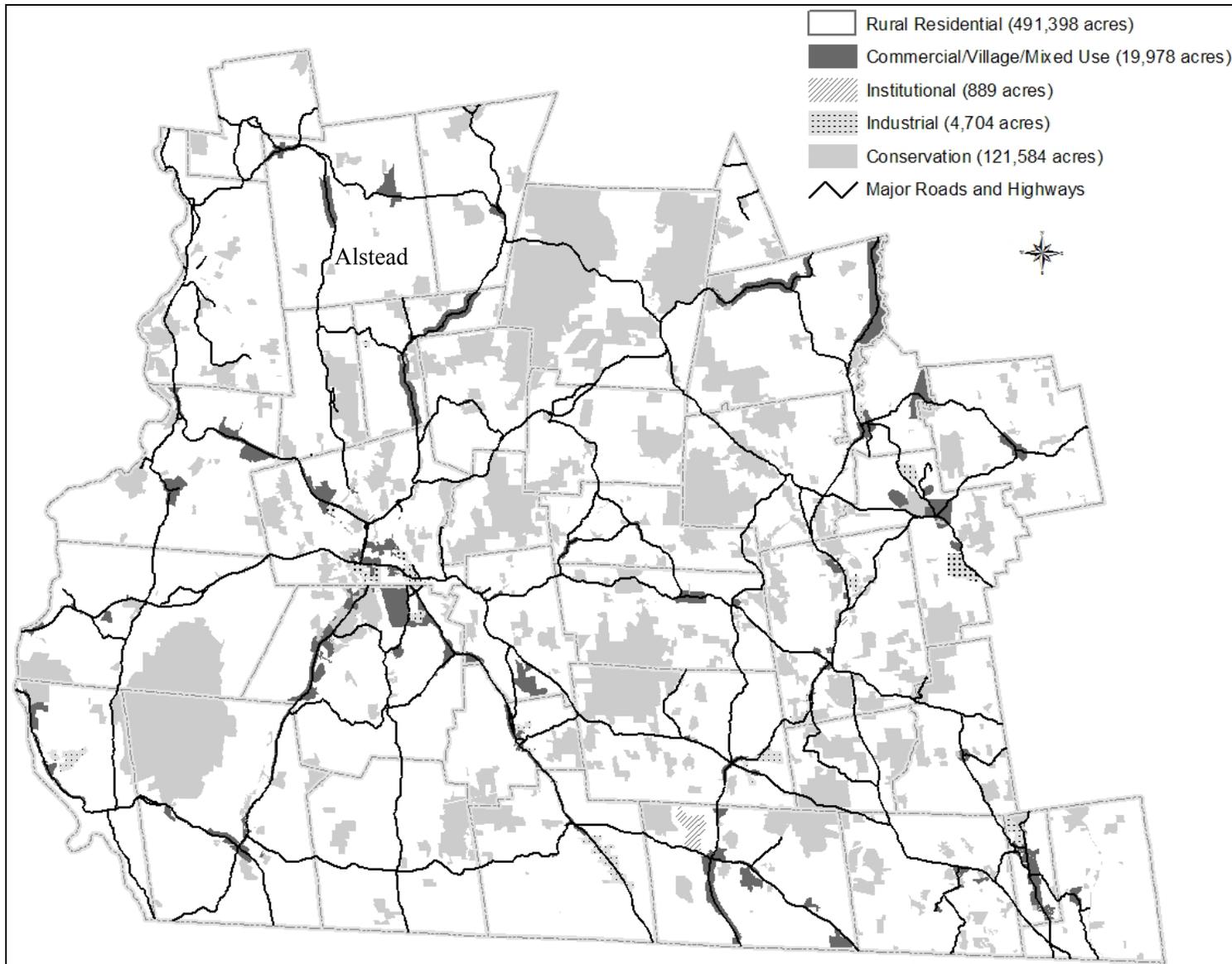
Figure 5. Household Densities in Central New England based on 2000 U.S. Census Block Data

As the regional economy waxes and wanes with national business cycles and regional advancements and downturns, the principal determinants of development patterns are highway access, public infrastructure and services, and municipal zoning.

The Region's 36 municipal zoning and capital spending plans are our future land use plan. Figure 6 on the following page is a map of zoning districts in the Southwest Region. While there are 124 unique districts among the 36 towns, they have been generalized as rural residential, village, commercial, industrial, and institutional. The map also shows conservation land – land permanently protected against development through legal stipulations. The vast majority of the land in the Southwest Region is zoned for medium or low density residential use with a variety of commercial uses allowed by right or special exception. The availability of road frontage and public sewer and water is an important determinant of development density. While there are only seven municipal sewer and water systems in the Region, more than half of the households on the Region are served by those systems.

The current distribution and future development of highway access, public infrastructure and services, and municipal zoning will have immediate effects on land values, development patterns, traffic patterns, distribution of jobs versus housing, demand for public services and infrastructure, and the quality of our natural resources ranging from scenic beauty and biodiversity to water supply and clean air.

FIGURE 6- MUNICIPAL ZONING DISTRICTS AND CONSERVATION LAND



The Southwest Region Planning Commission (SWRPC) publishes studies and reports to provide a more developed regional perspective for use by municipal governments. Several of the Commission's reports and research, which are available on the SWRPC website ([www.swrpc.org](http://www.swrpc.org)) or by contacting the Commission, are described below:

### Guiding Change, The Southwest Region at the Beginning of the 21<sup>st</sup> Century (2002)

Guiding Change, The Southwest Region at the Beginning of the 21<sup>st</sup> Century, is the Region's Master Plan. RSA 36:45 requires regional planning commissions to prepare plans for their respective regions ... "taking into account present and future needs with a view toward encouraging the most appropriate use of land, such as agriculture, forestry, industry, commerce, and housing; the facilitation of transportation and communication, the proper and economic location of public utilities and services; the development of adequate recreational areas; the promotion of good civic design; and the wise and efficient expenditure of public funds."

This Plan, prepared by Commission staff and the SWRPC Board of Directors with input from municipal officials and citizens, considers those qualities and attributes which residents thought defined the Southwest Region, and were considered important to preserve. This list includes the physical environment, the historical and cultural richness, a strong economy, and the public spirit of citizens who have worked together for years to preserve these qualities in the Monadnock Region. The Regional Plan will be updated every five years.

### Southwest Region Trends and Conditions (June 2003)

The Southwest Region Housing Trends and Conditions report presents 1) a brief discussion of housing as a community development issue, including an overview of housing related information at the national, state, regional and municipal levels, and 2) an array of data and statistics relevant to housing and prevailing socioeconomic conditions in the Southwest Region.

### Southwest Region Housing Needs Study (September 2004)

The Southwest Region Housing Needs Study 1) provides a detailed analysis of housing trends and housing cost burdens by income level based on US Census data for the Southwest Region, and 2) develops an approach to estimating future housing production needs for the Southwest Region. The report highlights housing needs and trends in the Southwest Region and its counties, as well as statewide totals. The report uses Census data to analyze changes in population, households by tenure, vacancy rates, and housing cost burden for renters and single family homeowners, and estimates the range of and demand for housing production for the 2000-2010 period.

### Southwest Region Natural Resources Inventory (October 2003)

The Southwest Region Natural Resources Inventory provides a basic analysis of natural resources and landscape fragmentation on a regional scale that can be used "as is" by municipalities as their first edition NRI, or used as a template to be enhanced with original local research and local knowledge. While a set of topographic maps annotated with information by residents about the character of the forests and ponds, movement of wildlife and viewscapes that define their town is a perfectly acceptable starting point for conservation planning, the Planning Commission offers this analysis of available GIS information. It is hoped that this project can provide a common point of departure for the development of municipal NRI's in the Southwest Region.

### Southwest Region Transportation Plan (2007 update)

The Regional Transportation Plan presents policy and technical information relevant to local, regional, and state activity of the planning and management of the transportation system. The Plan facilitates a regional approach among local and state decision makers to planning and decisions regarding transportation, land use, and community development.

### Comprehensive Economic Development Strategy for Southwest New Hampshire (2005)

The purposes of the Comprehensive Economic Development Strategy (CEDS) for Southwest New Hampshire are to promote greater coordination among communities and economic development interests and to establish eligibility for federal assistance through the U.S. Economic Development Administration. The current CEDS was developed through a year-long effort by the CEDS Advisory Committee, with input from interested stakeholders at a series of public meetings and support from experts in such fields as workforce development, vocational training and housing. The Committee reviewed and analyzed existing trends and developed goals and objectives to help the Region control its destiny and protect its competitive advantage in New England and the global economy in the coming years. The CEDS will be updated annually and revised every five years.

## **ALSTEAD'S ROLE IN THE REGION**

Located in the southwestern area of New Hampshire's Monadnock Region, there are a number of outside influences that affect Alstead, but which the community has little control over. For many of these issues, Alstead can similarly affect other communities with its own actions. This section highlights the primary areas that Alstead should be concerned about and offers suggestions on how the Town can work toward addressing the issues. The Town's awareness of these issues will help to ensure that Alstead is prepared to deal with issues as they arise and that Alstead is a good neighbor to its abutting communities.

### Environment

#### *Upper Ashuelot River Watershed*

The Ashuelot River watershed, which comprises 268,800 acres in southwestern New Hampshire, is a remarkably diverse and ecologically significant river system. The river and its tributaries, which flow through 25 New Hampshire and two Massachusetts towns, provide clean water, extensive wildlife habitat, abundant wetlands, productive forests and outstanding recreational resources. The Ashuelot River watershed is the largest watershed in southwestern New Hampshire, and comprises a major tributary of the Connecticut River basin.

While the river does not flow through the Town of Alstead, a significant portion of southwestern Alstead is located within the Upper Ashuelot River Watershed. As Alstead and the region grow and change, it is critical that the type and location of development be considered in relation to the significant role of the watershed both within and beyond the region.

Recommendation: The Town of Alstead should collaborate with the Ashuelot River Local Advisory Committee to outreach and provide educational materials to local officials and residents about the importance of protecting the Ashuelot River watershed.

#### *Walpole-Hinsdale Tributary Watershed of the Connecticut River*

The Connecticut River, New England's largest river, flows 410 miles from its source at Fourth Connecticut Lake just yards away from the Canadian border, to Long Island Sound. New Hampshire and Vermont share some two thirds of the river's length, or 271 miles with 53 towns bordering the river, 26 in Vermont and 27 in New Hampshire, and 114 Vermont towns and 93 New Hampshire communities within the Connecticut River Watershed, including Alstead. In 1998, the White House designated the Connecticut as an American Heritage River.

The river is a valuable resource within the landscape that provides habitat for wildlife including abundant wetlands and productive forests; supports fisheries and agriculture; and, tells the story of the region's

historic and cultural heritage. Today, several entities exist with the mutual purpose of protecting the river: Connecticut River Joint Commissions which maintains a River Corridor Management Plan and promotes communication about the river in the New Hampshire and Vermont river corridor; the Connecticut River Watershed Council which advocates for the conservation and protection of the entire river; and, the Cold River Local Advisory Committee which implements its own River Management Plan.

In addition to the resources identified above, the Connecticut River provides tremendous recreational and economic opportunities for its bordering communities. Public access points to the river for boating, swimming, or fishing exist within many of the communities bordering the river in southwest New Hampshire including Walpole. Many other public access points exist in the regional communities through which the river flows. Economic benefits of the river include regional tourism encouraged by the many activities promoted along the river as well as the attraction of businesses to the region due in part to its unique resources, including the river.

The Shoreland Protection Act, New Hampshire's state law, protects the New Hampshire shoreline of the river, while local ordinances protect the shoreline in Vermont. Municipal zoning ordinances in some communities also help to enforce the state shoreland protection requirements.

Recommendation: The Town of Alstead should collaborate with the several entities working to protect the river in order to conduct outreach and provide educational materials to local officials and residents about the importance of protecting the Connecticut River and its watershed for the many natural, recreational, and economic opportunities it provides.

### *Cold River Watershed*

The Cold River, which begins in Acworth and Unity at Crescent Lake, runs a 23.5 mile course through Lempster, Alstead and Walpole where it reaches its confluence at the Connecticut River. The River's corridor includes stone bridges and stone walls illustrative of the historic settlements once present in the river valley, including the McDermott Covered Bridge in Langdon listed on the National Register of Historic Places. The Atlas of the Cold River and the Cold River Watershed, published by the Cold River Local Advisory Committee, can be found at the end of this chapter.

Due to the river valley's steep sloping topography, the area has remained largely untouched by modern development. As a result, the area serves as an excellent resource for wildlife including turkeys, moose, weasels, and juvenile Atlantic salmon. The nationally listed endangered bald eagle and peregrine falcon have been sighted at the mouth of the river along with many other raptors such as the cooper's hawk and osprey, both of which are listed as threatened species.

The nature of the river's corridor has changed drastically with the intrusion and movement of material, release of contaminants, and reconstruction work following the October 2005 flood. Alstead should seek to restore this once pristine corridor which made it an ideal location for a variety of recreational activities including canoeing and kayaking, fishing, bird watching, cross country skiing and snowmobiling.

A consultant hired by the NH Department of Environmental Services (NH DES) is preparing a Restoration Plan for the Cold River, Warren Brook, and Bowers Brook. This Restoration Plan will be broken down into five tasks. The first is a Fluvial Geomorphic Assessment which will provide the data on which the restoration designs will be based. The second task is the Identification and Prioritization of Areas of Concern. A draft list will be distributed to NH DES, NH Fish and Game (F&G), Natural Resources Conservation Service (NRCS) and boards of selectmen of the affected municipalities for comment. All comments will be considered prior to developing a final ranking of priority sites. The third task is Restoration Design and Wetland Permitting. The specific details of this task are conceptual until

the second task is complete because the specific areas of priority are not yet known. Task four involves Information Sessions which will be held at various points throughout the project. The final task is the Development of the Final Restoration Plan which will include options for both active restoration and passive management. Once the aforementioned State Agencies comment on the draft plan, a final plan will be prepared.

The Natural Resources Conservation Service (NRCS) is working with approximately \$9.8 million for bank stabilization projects in the towns of Acworth, Alstead, Gilsum, Hinsdale, Keene, Langdon, Marlow, Walpole and Washington. A majority of the proposed projects are for bank stabilization along the Cold River and Warren Brook. With an approximately 25% match from the towns (with the exception of Alstead, which is exempt from this match), NRCS will begin with debris removal in the Fall/Winter of 2006 followed by projects which will protect stream banks, direct flow away from sensitive areas and where soils have been disturbed, revegetate. Much effort will be put into providing clean fill, free from invasive species during the revegetation process.

While the NH DES Restoration Plan is still at its planning states, the NRCS work is currently underway. NRCS will take the Restoration Plan under consideration and try not to conflict with the plan's recommendations. It should be noted, however, that stream stabilization is not stream restoration, so these two projects remain separate in nature.

Recommendation: The Town of Alstead should collaborate with the Cold River Local Advisory Committee and State and Federal agencies to provide outreach and educational materials to local officials and residents about the importance of protecting the Cold River watershed. The Town's Zoning Ordinance should be reviewed periodically to ensure that local zoning adequately balances potential development with protecting the river corridor.

### Transportation

#### *NH 12A and NH 123*

Alstead is located between the larger communities of Keene and Claremont New Hampshire, and Bellows Falls Vermont, with NH 12A, which runs north to south, and NH 123, which runs east to west, dividing the community. NH 12A is a minor arterial route that links NH 9/10/12 in Keene with NH 12 in Charlestown. NH 123 is a minor arterial route that runs from Walpole to Peterborough, linking these towns and Alstead with the towns of Marlow, Stoddard, Antrim, and Hancock, serving as a link between NH 12A in Alstead and NH 202 in Peterborough. Both of these routes provide for efficient travel between the major regional centers for employment and shopping. In addition, the scenic routes are accessed by seasonal tourists traveling through southwest New Hampshire to access the region's lakes, mountains, and other attractions. As the region grows, increased use of NH 12A and NH 123 for accessing Keene and Claremont as major employment and shopping centers should be expected, and may require improvements or increased maintenance of the roads in coming years.

Parts of both NH 12A and NH 123 were damaged during the October 2005 flood event. NH DOT plans for major reconstruction along NH 123 from NH 12A to Mill Hollow are being finalized. These plans include widening and realigning the road in some places along with replacing bridges and culverts. The project schedule is located in the Traffic and Transportation Chapter of this Master Plan.

### Recreation

#### *Vilas Pool*

Vilas Pool is a multi-use recreation area owned by the Town of Alstead. The Pool, fed by the Cold River, was built in 1925 and donated to the Town by a resident philanthropist in 1926. The dam that created Vilas Pool is 31 feet high and 135 feet long, forming a 6 acre pool for recreational purposes.

Today, the facility provides swimming, boat rentals, picnic areas, swings, pavilions, and a refreshment stand. The Pool is open from July 1<sup>st</sup> to Labor Day during select days and times, and staffed by a life guard. Various weekend events are planned at the Pool each summer. This regional recreational area attracts residents and visitors from surrounding communities including Walpole, Langdon, Acworth, and Keene. A build-up of sediment in the impoundment has prohibited swimming in the pool in recent years.

Currently, NH DES is planning to undertake a number of inspections of and repairs to the Vilas Pool Dam. Included is a plan which describes the control of impoundment levels, monitoring and maintenance procedures, and identification of emergency contact personnel; repairs of the cracking concrete surfaces in various locations; securing the services of a consulting engineer to investigate and design modifications to the dam to address several inadequacies of the dam; and continuous monitoring of the crack running completely through the left abutment.

Recommendation: The Town should seek assistance from NH DES to regularly update the dam management plan as required. The Plan should consider solutions for routine sediment removal in a manner which does not create an adverse water quality impact. In addition, the Pool's function as an important source of water for fire-fighting should also be considered.

#### *Lake Warren*

Lake Warren is one of the regions largest and most spectacular fresh water lakes. At 186 acres, Lake Warren provides habitat for wildlife including a variety of fish such as brown trout, rainbow trout, small mouth bass, chain pickerel, and horned pout. The Lake is one of the state's "trophy" lakes for local and out-of-state fishermen.

In addition to its many natural resource values, the Lake has a long history of serving as a resort area for seasonal respite – a legacy that continues today. Public access allows local residents and visitors to boat on the Lake, though there is no public beach. Much of the development that exists today around the Lake is seasonal dwellings, though many dwellings are beginning to be converted to year-round use.

Recommendation: Review the Alstead Zoning Ordinance periodically to ensure that its requirements adequately protects the Lake while providing opportunities for residents and visitors to engage in swimming, boating, and other forms of recreation. Work toward acquiring public swimming access now that the Town owns the Lake Warren Dam.

## **REGIONAL RESOURCES**

The following regional and state groups, organizations and agencies are key resources for implementation of the Master Plan:

### Ashuelot River Local Advisory Committee

The Ashuelot River Local Advisory Committee (LAC) is one of six LAC's in Southwestern New Hampshire convened by the Rivers Management and Protection Program of the NH Department of Environmental Services. The main responsibilities of this citizen advisory committee is to develop and implement a local river corridor management plan and advise local, state, and federal governing bodies and agencies of activities which may affect the water quality or flow of the protected river or segment. The DES offers the committee technical assistance in developing and implementing the management plan.

### Cold River Local Advisory Committee

The Cold River Local Advisory Committee (LAC) is one of six LAC's in Southwestern New Hampshire convened by the Rivers Management and Protection Program of the NH Department of Environmental Services. The main responsibilities of this citizen advisory committee is to develop and implement a local river corridor management plan and advise local, state, and federal governing bodies and agencies of activities which may affect the water quality or flow of the protected river or segment. The DES offers the committee technical assistance in developing and implementing the management plan.

### Connecticut River Joint Commissions

New Hampshire's Connecticut River Valley Resource Commission, created by the legislature in 1987, and Vermont's Connecticut River Watershed Advisory Commission, similarly created in 1988, were directed to cooperate with each other to preserve and protect the resources of the Connecticut River Valley, and to guide its growth and development. They have met together as the Connecticut River Joint Commissions since 1989. Both Commissions are advisory and have no regulatory powers, preferring instead to advocate and ensure public involvement in decisions which affect their river and their valley.

### Connecticut River Watershed Council

The Connecticut River Watershed Council is a broad-based citizen advocate for the environmental well-being of the entire Connecticut River. The Council's primary mission is to promote improvement of the water quality and the restoration, conservation, wise development and use of the natural resources of the Connecticut River watershed.

### Heading for Home – A Regional Housing Coalition

Heading for Home is a regional Workforce Housing Task Force convened in 2003 by the Greater Keene Chamber of Commerce to respond to a growing lag in housing production and a growing disparity in area wages and housing costs throughout the Monadnock Region. The Coalition is a partnership between area finance and business leaders including Keene State College, Antioch New England, City of Keene, Keene Housing Authority, Southwestern Community Services, Cheshire Housing Trust, and the Southwest Region Planning Commission. The Coalition's efforts are focused on the development of a unified and consistent voice for addressing the region's housing problems. Workforce housing applies to all income groups, not just low income groups. Both the rental market and owner-occupied dwellings are impacted.

### Monadnock Conservancy

The Monadnock Conservancy is a regional non-profit land trust that assists land owners and municipalities with protecting land through easement, donation or purchase of land. Preservation efforts may include farmland; productive forest; open space; recreational trails; water supply; wildlife corridors; scenic ridgelines above the City of Keene and the Ashuelot River Valley; floodplain, aquifer and wetlands

along the Contoocook River; and, scenic forests along the Wapack Trail and the Monadnock-Sunapee Greenway.

### Monadnock Business Ventures

Monadnock Business Ventures (MBV) is one of 15 Non-Profit Regional Economic Development Corporations located throughout New Hampshire. MBV provides the following services to 16 communities in the Contoocook Valley region:

- Assist business start-ups, expansions and relocations.
- Advise businesses and communities about state programs available for economic assistance.
- Operate a 70,000 square foot "incubator" facility for new business start-ups.
- Maintain a database of available commercial and industrial property
- Initiate, process and receive Community Development Block Grants (CDBG) for local governments to create employment opportunities.
- Operate a revolving loan fund for new and expanding businesses.
- Work with others to market the region for the creation of jobs.

### Monadnock Economic Development Corporation

Monadnock Economic Development Corporation (MEDC) is one of 15 Non-Profit Regional Economic Development Corporations located throughout New Hampshire. MEDC is a private, not-for-profit regional development organization committed to the creation of jobs and the broadening of the tax base for New Hampshire's Monadnock Region communities. The Board of Directors and staff of MEDC concentrate their efforts on business retention, relocation, expansion, and recruitment projects, as well as downtown revitalization and rehabilitation projects. In addition to its revolving loan fund, its USDA Rural Development Intermediary Re-lending Program and its network of financial institutions, MEDC has access to state and federal funds earmarked for economic development.

### NH Department of Environmental Services

The goals of the NH Department of Environmental Services (NH DES) are to protect and promote wise management of the State's environment. The Department's responsibilities include ensuring high levels of water quality for water supplies, regulation of the emissions of air pollutants, fostering the proper management of municipal and industrial waste, and managing water resources for future generations.

### NH Department of Resources and Economic Development

The Department of Resources and Economic Development (NH DRED) consists of four divisions: Forest and Lands, Parks and Recreation, Travel and Tourism Development, and Economic Development. The Division of Forests and Lands protects and promotes the values provided by trees, forests and natural resources (and includes the Natural Heritage Bureau) while Parks and Recreation aims to protect historic and natural resources. Promoting New Hampshire as a travel destination is the mission of Travel and Tourism Development. Similarly, Economic Development promotes businesses and the expansion of existing businesses.

### NH Municipal Association of the NH Local Government Center

The New Hampshire Municipal Association was established in 1941 to serve member cities and towns. NHMA has evolved into a service and action arm for New Hampshire local governments. The Association prides itself on its ability to meet the ever-changing educational and training needs of municipal officials and employees, as well as the flexibility to develop new programs designed to meet the needs of local governments. Today, NHMA represents 233 of the 234 Granite State Communities and offers legal and technical assistance, legislative representation, training, workshops, and personnel services.

### **NH Office of Energy and Planning**

The NH Office of Energy and Planning (NH OEP), formerly known as the Office of State Planning, is based in Concord and is legislatively required to plan for the orderly development of the State and the wise management of the State's resources. NH OEP compiles, analyzes, and disseminates data, information, and research services to advance the welfare of the State; encourages and assists with planning, growth management, and development activities of cities and towns; administers select Federal and State grant-in-aid programs; and, participates and advises in matters of land use planning regarding lake and river management programs. NH OEP typically does most of its work with communities through the regional planning commissions.

### **Southwestern Community Services**

Southwestern Community Services (SCS) is one of six community action agencies throughout NH, and part of the larger network of 70 agencies in New England and nearly 900 agencies nationwide. SCS advocates for and assists citizens in need through a variety of program areas including Head Start, fuel assistance, developmental services, economic development, elderly services, weatherization, homeless services, housing rehabilitation, affordable housing, health and nutrition, and workforce development.

### **Southwest Region Planning Commission**

The Southwest Region Planning Commission (SWRPC) currently serves 36 member-municipalities in Cheshire, western Hillsborough, and Sullivan Counties. SWRPC provides local assistance on a wide range of planning issues to member municipalities through activities including community master planning, site plan review, capital improvement planning, subdivision reviews, ordinance preparation, interpretation of state and local planning requirements, grant administration, cartographic support, and geographic information system (GIS) applications. The agency has a diverse work program made up of six major program areas: Local Planning Assistance, Natural Resources Planning, Community and Economic Development, Transportation Planning, Emergency Management Planning, and Regional and Geographic Information Systems.

### **U.S. Environmental Protection Agency, Region I**

The goal of the Environmental Protection Agency Region I (New England) is to protect human health and safeguard the natural environment where people live, learn, and work in the six New England states: Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, and Vermont. One way to help accomplish this goal is to ensure that communities have access to accurate information sufficient to effectively participate in managing human health and environmental risks. This federal agency is a resource for information on environmental regulation, resource protection, and human health protection.

## **CONCLUSION**

The information presented in this chapter offers Alstead the opportunity to work closely with abutting communities and communities of the greater Monadnock Region to accomplish together what they could not accomplish alone due to funding, resources or the sheer size of the goal. The regional concerns identified in this chapter could have a greater impact on the Town of Alstead if the Town takes an isolated approach to addressing the issues.

The larger regional context, as described in the identified resources prepared by the Southwest Region Planning Commission, provides a basis for Alstead to more fully understand the problems at hand, in order to better plan for the changes to come. In addition, the resources identified in section IV can assist the community, and its neighbors, with addressing forthcoming pressures or problems. Establishing a relationship with abutting communities and regional groups will ensure that the Town is in the best possible position to handle each demand that comes its way.

## COMMUNITY FACILITIES

### INTRODUCTION

This Section of the Master Plan identifies public and semi-public facilities that serve the residents and property owners of Alstead. RSA 674:2:III.c recommends including a community facilities section which *“identifies facilities to support the future land use pattern..., meets the projected needs of the community, and coordinates with other local governments’ special districts and school districts, as well as with state and federal agencies that have multi-jurisdictional impacts.”*

An important function of town government is to provide residents and property owners with a level of service, commensurate with taxes and fees paid, that meet the current needs of the populace. In Alstead's case, these include public safety (police, fire and ambulance), public works (roads, solid waste disposal, parks and recreation, and cemetery maintenance), schools, cultural facilities, and town government operations (selectmen, property maintenance and assessment).

The degree to which these facilities are developed has a significant impact on the quality of life and general character of a community. This Section of the Master Plan presents an inventory of such existing facilities and services, an assessment of the adequacy of the current level of service and any plans or recommendations to expand, improve, or add to an existing facility or service. See Map 2-1: Community Facilities for a visual inventory of the Community Facilities mentioned in this chapter.

### COMMUNITY FACILITIES

#### *Town Hall/Town Government*

The Town Hall, built in 1967, is located at 9 Main Street and shares quarters with Alstead’s Fire and Ambulance Departments. The single-story, metal structure is used for town hearings, annual meeting, Friendly Meals (held Tuesdays and Thursdays, 10am – 1pm), wedding receptions, alumni meetings, elections, and other events. The Town Hall is open only during scheduled events and can be rented for a nominal fee.

The Town offices are located at 15 Mechanic Street in the Municipal Building, which was constructed in 1967. The building is a two-story, brick-faced, frame building which was taken in the early 1990s for tax purposes and converted into offices. In 1999, the Selectmen’s Office, Town Clerk and Tax Collector were moved to this location from a temporary office in the Village Center. The Town’s Administrative Assistant and Clerk/Tax Collector have access to computers and use MuniSmart and BMSI programs which are designed for municipal accounting and tax preparation and billing.

The Municipal Building is open Monday through Wednesday 8:00am – 4:00pm and Thursday 8:00am – 6:00pm. The Town Selectmen’s meetings are held in the Municipal Building on Tuesdays at 7:00 pm. Other town meetings regularly held at the Municipal Building include: Planning Board, Zoning Board of Adjustment and the Conservation Commission. The Municipal Building also houses the Police Department, a Historical Society Room and a conference room. Additional community services, welfare and home health care are also provided at the Municipal Building by Town staff. Both the Town Hall and Municipal Building are handicapped accessible.

### *Future Needs and Plans*

Lack of space, including storage, is an issue for both Town buildings. The Town Hall has inadequate parking as well as limited room for holding elections. Lack of adequate storage space, and subsequent use of the meeting space within the Hall for storage has cramped meeting room thus limiting actual space available for meetings. Similarly, storage space is also limited in the Municipal Building for the Town Clerk, Tax Collector, and Selectmen's Office. There is a specific need for fire protected storage space.

Staffing for municipal offices may become an issue as the community grows. Currently, Alstead's Administrative Assistant and Town Clerk/Tax Collector process all of Alstead's paperwork. In the coming years, additional office support staff may be needed.

### ***Police Department***

The Alstead Police Department, located at 15 Mechanic Street, is housed in the Municipal Building and can be found on the lower level of the building. During the October 2005 flood event, the Police Department was completely lost, along with all records, computers and the main server. Insurance covered the replacement of two computers and the server following the flood, and the location was completely renovated and restructured for use.

Police protection is afforded by a full-time Police Chief, one full-time officer, one part-time officer, one part-time secretary, and one part-time Animal Control Officer. The Police Department does not provide 24-hour coverage. Alstead's two police officers are on duty and on-call an average of 112 hours per week. Additional police coverage is provided in Alstead by the New Hampshire State Police. All officers attend eight hours of in-service training yearly as required by New Hampshire State Standards as well as additional training required to maintain various certifications.

Dispatching is handled by the Cheshire County Sheriff's Department in Keene. Calls for police assistance can be made either directly to the police station, or through the Sheriff's Department. The Department has mutual aid agreements with the following towns for police assistance: Marlow, Walpole, Surry, Gilsum, Stoddard, Sullivan, Westmoreland, Keene, Nelson, Roxbury, Harrisville, Chesterfield, Swanzey, Marlborough, Dublin, Troy, Jaffrey, Hinsdale, Winchester, Richmond, Fitzwilliam, Rindge, Charlestown, Langdon, Acworth, and Bellows Falls, VT. In the last five years, Alstead's Police Department has responded to 145 Mutual Aid incidents. The number of incidents for which the Alstead Police Department received Mutual Aid is not readily available. Table 1 lists current equipment.

**TABLE 1- POLICE EQUIPMENT**

<b>Equipment</b>	<b>Year Purchased</b>	<b>Condition</b>
Crown Victoria Cruiser	2003	Excellent
Ford Explorer Cruiser	2002	Excellent
Panasonic Tuff Boxes (2)	2004	Excellent
Taser (2)	2004	Excellent
Kustom Radar Unit (2)	2004	Excellent
Zoll Defibrillator	2003	Excellent
Digital Base Radio	2005	Excellent

According to annual records, police activity has varied in the last five years (see Table 2). In 2004, due to staffing limitations, greater police coverage may have been provided by the New Hampshire State Police rather than the Alstead Police Department. For this reason, it is difficult to accurately calculate the true change of service calls in the area. The records were lost in the October 2005 flood event which flooded the police department. Recently, a new system was set up to track calls for service.

**TABLE 2- CALLS FOR SERVICE, 2000-2004**

<b>Year</b>	<b>Calls for Service</b>
2004	555
2003	916
2002	743
2001	441
2000	175

*Future Needs and Plans*

Radio capabilities for the Department have been a challenge as portable radios do not have reception in 75% of the town. Due to funding constraints at town and county levels, it has not been possible to improve radio reception. The National Law Enforcement and Technologies Center will provide an analysis of the Department's current radio system and make recommendations on how to improve radio reception in Alstead. However, continued funding constraints may hamper the Department's ability to implement any recommendations made.

The reengineering of the Department facilities that occurred after the flood greatly improved the Police Department, providing additional storage space, excellent security and a private interview room. There is still a need for a temporary holding area for prisoners.

The addition of another full-time officer along with increased secretarial hours may be necessary in order to meet Alstead's policing needs. Under current service demands, the Chief has indicated that the Department does not have the time to offer proactive activities to the community, such as spending time in schools and offering drug awareness programs. The Chief also noted that the Department needs assistance with drug enforcement.

***Fire and Rescue Services***

Fire protection is provided by a part-time on-call Chief, a part-time Assistant Chief and 16 on-call volunteers. Each volunteer is compensated on a per call basis. The State of New Hampshire has suggested, but not required mandatory training for members of volunteer fire departments. Rather, training requirements are determined on a town-specific basis; the Alstead Fire Department does offer training opportunities to its volunteers. Training workshops are attended by Department members at various locations throughout the region including Alstead, Keene, Fitzwilliam, Sullivan, Meadowood and York, ME. The Department operates out of two stations, Village Station and East Station. Neither station functions as a primary station for the Alstead Fire Department.

Village Station (9 Main Street) shares a 40 x 100 foot metal framed building with a rubber membrane roof building with Alstead Town Hall and the Ambulance Department. A 40 x 40 foot section of the building shared with the Ambulance Department has 2 handicapped-accessible bays and presently houses a 1987 Ford Pumper with 1,000 gallon storage capacity and 1250 gpm pumping capacity. The pumper is in fair condition. This building has one office, one bathroom, one dayroom, a radio room and a boiler room.

East Station is located on North Street in East Alstead and occupies a 64 x 48 foot, wood frame building with three bays (one of which is full length and houses two trucks). East Station houses the following pieces of equipment, listed in Table 3:

**TABLE 3- FIRE DEPARTMENT EQUIPMENT**

<b>Equipment</b>	<b>Storage Capacity</b>	<b>Pump Capacity</b>	<b>Condition</b>	<b>Hose</b>
2000 Pierce Pumper	1000 gal	1250 GPM pump	Good	1,600 ft (4in); 400 ft (2.5in); 1000 ft (1.75in)
1984 Ford Tanker	2500 gal		Poor	
1984 GMC Rescue			Fair	
1967 Kaiser Brush Truck	200 gal		Fair	

Alstead is a member of the Southwestern New Hampshire Fire Mutual Aid, which is headquartered in Keene. Fire Mutual Aid is a dispatch center for member towns, receiving all emergency calls for fire, police and ambulance service. In addition, Mutual Aid is tied into the Fish and Game Department and the County Sheriff’s communications bands, and can dispatch these services when necessary. The Mutual Aid system is under the direction of a Chief Coordinator, providing 24-hour service. When a call is received by Mutual Aid for Alstead, the alarm is activated for the fire station and at the fire stations of neighboring towns. The alarm can also be activated at the fire station itself. Once at the emergency location, the Fire Department may call for additional aid and equipment as necessary through the Mutual Aid system.

Dry hydrants and fire ponds are used by the Department as supplements to the water supply carried by the tankers to fight fires. Both resources draw water from local ponds and brooks. Water levels and seasonal access to these resources can be limiting factors to their use. The Fire Chief noted that there are several areas in Alstead that have limited access to water for fire fighting purposes. These areas, like Rogers Road and Walpole Valley Road, tend to be upland areas with no accessible water for pumping purposes.

There are seven fixed dry hydrants in Alstead. These hydrants are located on: Millot Green (1), Hill Road (1), Porter Road (1), Forest Road (2), Pine Cliff Road (1), and Gilsum Mine Road (1). Additional dry hydrants have been proposed for Vilas Pool and Moran’s Pond. Emergency water access locations that currently exist in Alstead include:

Alstead Center Road (1)	Gilsum Mine Road (1)	Pratt Road (1)
Bennett Road (1)	Hill Road (3)	Rhoades Road (1)
Camp Brook Road (1)	Homestead Road (1)	South Woods Road (2)
Cold River (1)	Lake Warren (7)	Thayer Brook Road (2)
Comstock Road (1)	Macleam Road (1)	Vilas Pool (1)
Darby Brook (1)	March Hill Road (1)	Walpole Valley Road (1)
Duffy Lane (1)	Newell Pond Road (1)	Forest Road – Acworth (1)
Forest Road (4)	Pine Grove Road (1)	

Fire Department responses in the last six years are shown in Table 4 below:

**TABLE 4- FIRE DEPARTMENT CALLS FOR SERVICE**

<b>Year</b>	<b>Calls for Service</b>
2005	72
2004	66
2003	72
2002	61
2001	57
2000	59

The Fire Chief indicated that continued growth and development in Alstead will have an impact on the Fire Department. While the number of structure fire calls has remained somewhat consistent during the last five years, the Chief indicates that calls for assistance with other emergencies are increasing. The construction of new housing developments could pose a challenge as people are choosing to build in areas that are difficult for the Fire Department to access (i.e. ridgeline development) especially during winter months.

### *Future Needs and Plans:*

The Fire Chief indicated that future concerns for the Fire Department include increased equipment costs and radio coverage. Maintaining an adequate number of volunteers in the Department also poses a challenge, as there is a limited number of town residents willing to volunteer. Alstead is primarily a residential community and finding emergency coverage during working hours is difficult. The responsibility of daytime emergency coverage falls to the few volunteers who work in Alstead. At some point in the future, a full-time Fire Department, or increased cooperation between other local towns, may be necessary to meet Alstead's emergency needs. Increasing equipment costs will be an issue as equipment needs to be replaced.

As with the Police Department, the Fire Department is concerned with radio reception throughout Alstead. According to the Fire Chief, Alstead's current radio tower is located on Cobb Hill on privately owned property. Use of the property to run radio signal is provided in good faith between the landowner and the Town. If, for some reason, the current agreement were to end, and the Town was unable to run radio signal from this location, dispatch ability for emergency purposes in Alstead would be severely impacted. Possible solutions to the problem include negotiating an easement on the property for radio use or outright purchase the land from the landowner. If the property were owned by Alstead, radio improvements could possibly fall under the Mutual Aid network upgrades.

Finally, given the magnitude of recent natural disasters which have occurred both in the Town and on a broader scale, the Fire Chief has voiced concern over Alstead's lack of a suitable evacuation center. During the October 2005 flood event, the Fire Stations were both used as evacuation centers for citizens. The Library was used as the Emergency Operations Center and the Vilas School was used as a center for the National Guard. Currently, both the Village and East Alstead Stations are listed as Alstead's primary evacuation centers. The Fire Chief's main concern is the ability to supply water and power to the facilities in the event of a power outage. While the Village Station has a small back up generator, this generator did fail during the flood event. No other location has a generator. In addition the Vilas School does not have shower facilities, which excludes it from being a proper shelter. Another concern is supplying water for the Village Station which could be problematic as the Station's water supply is provided from a private well some distance from the building. Both fire stations do not have the proper connections for running generators. The Fire Chief mentioned that in another disastrous event, the Emergency Operations Center would be most likely moved to the Vilas School. It is important that a Red Cross approved shelter be identified in the near future.

### *Ambulance Service*

Alstead Ambulance Service provides ambulance service for the Town of Alstead and surrounding mutual aid communities. The Town's ambulance service is located at 9 Main Street in Alstead Village and shares space with Alstead's Fire Department and Town Hall. The single-story building is metal framed, with a rubber membrane roof, and is 40' x 40' in size, has two bays, and is handicapped accessible. Equipment owned by Alstead Ambulance includes:

<b>Equipment</b>	<b>Condition</b>
2000 Ford S350 Ambulance	fair
2004 Zoll Defibulator	excellent
2005 Styker Cot - 550 lb capacity	excellent

Staff consists of one part-time Chief, nine part-time EMT's, and four part-time Advanced First Aiders. New Hampshire requires a minimum of 24 hours of training per year for volunteers to maintain basic EMT status with additional training required to maintain any other certifications. Training is provided in-house as well as through outside programs.

The Ambulance Service provides coverage for 39.7 square miles and responds to fires, home and auto accidents, as well as other emergency situations. Call volunteers are paid on a per call basis. Department funds are provided through local taxes and private contributions to the Ambulance Association.

Data showing Alstead ambulance service's calls for service for the years 2000-2005 is in Table 5 below. From 2000-2004, there was an average 126 calls per year. In 2005, the number of calls for service jumped to 163. This sharp increase was a result of the October 2005 flood.

**TABLE 5- AMBULANCE CALLS FOR SERVICE**

<u>Year</u>	<u>Calls for Service</u>
2005	163
2004	130
2003	134
2002	130
2001	123
2000	114

*Future Needs and Plans*

With additional funding provided through funds donated to the Ambulance Association, the Ambulance Department has met its current equipment needs. In five years, the Department's ambulance will be in need of replacement. No space issues were noted by the Ambulance Chief.

While equipment and facilities used by Alstead's Ambulance Department are adequate for the Department's current needs, staffing is always a concern. Given the nature of serving as a "call-volunteer," the volunteer members of Alstead Ambulance are providing a vital community service while balancing additional (often full-time) jobs, family and personal needs. Given daily demands on their time, maintaining an adequate number of trained volunteers is difficult. At this time, the Ambulance Chief has indicated that there is a need for 4-5 additional volunteers with basic EMT certification. It is likely that in the future Alstead Ambulance will need to staff full-time employees or contract additional ambulance services to meet the emergency response needs of the Town, to supplement existing services.

***Highway Department***

The Alstead Highway Department is presently located at 596 Forest Road and is part of Alstead's Department of Public Works as of March 2005. The Highway Department occupies a 1 story, 4,760 sq.ft., wood-frame building constructed in the 1980s. Highway Department staff consists of three full-time employees including the Director of Public Works (also serving as the Road Agent) and five part-time employees. Equipment maintained by the Department includes the following, presented in Table 6:

**TABLE 6- HIGHWAY DEPARTMENT EQUIPMENT**

<b>Equipment</b>	<b>Year Purchased</b>	<b>Capacity</b>	<b>Condition</b>
Sterling L-8500	2005	8 yard	New
CAT 426 CIT Backhoe	1997	1 ¼ yard	Good
INT 4900	1994	8 yard	Fair +
JD – 672B Grader	1994		Fair +
Ford L-8000	1989	8 yard	Poor

*Future Needs and Plans*

The Director of Public Works indicated that acquiring the proper equipment, especially a front-end loader, is a concern. Currently, the majority of the Department’s equipment is over ten years old and is in need of replacement. In an ideal situation, the Director of Public Works indicated that equipment and trucks should be replaced after ten years of use in order to lower maintenance costs expended to keep older equipment in working condition.

***Solid Waste Disposal***

The Town of Alstead operates a Transfer - Recycling Center located at 168 High Street. The transfer – recycling center is run by the Department of Public Works and is operated by two part-time employees. Hours of operation for the transfer station are: Wednesdays 1:00pm – 6:00pm and Saturdays 8:00am – 5:00pm. Disposal fees are charged for items that are not easily disposable such as refrigerators, air conditioners and roof shingles. Fees charged cover the facility’s costs to properly dispose of the hazardous materials contained in household items.

Four buildings are located at the site. The first is a 36 x 72 foot concrete and wood, open shed which is used for recycling materials. The second, a 24 x 24 foot building, houses the Alstead “Thrift” Shop. Money earned from the thrift shop is used for Alstead’s Friendly Meals program. Attached to the Thrift Shop is a smaller 16 x 30 foot building which provides waste oil heat for the thrift shop. The fourth building is a control building which is 10 x 12 foot.

<u><b>Equipment</b></u>	<u><b>Year Purchased</b></u>	<u><b>Capacity</b></u>	<u><b>Condition</b></u>
Compactor – Ram Jet	2001	12 ton	Fair

*Future Needs and Plans*

There are no plans at this time to make any changes as existing facilities are meeting the Town’s needs.

**Water & Sewer System**

There is no municipal water or sewer provided on a town-wide level in Alstead. All water and sewer needs are met through private systems with the exception of Alstead Primary School, Alstead Vilas School, the Orchard School and the Pine Needles Estates, which have public water supply wells. Alstead’s geomorphology, soils and geology present severe limitations to ever have municipal water and sewer services.

### ***Library***

The Shedd-Porter Memorial Library, located on Main Street in the Village Center, is a two-story, granite masonry structure built in the Beaux-Arts style designed by Boston architects McLean & Wright. The building was originally constructed in 1909 as a gift to the Town of Alstead by Mr. John Shedd, a native of Alstead who later became President of Marshall Fields in Chicago, IL. The domed ceiling is supported with sienna marble columns, which resembles a modestly scaled Greek temple. The original floor mosaic remains in front of the circulation desk to this day. The circulation desk and all the tables and chairs are the original mahogany furniture from 1909. Four fire places feature the original Vermont green marble, and stenciling around the ceiling has been preserved. Downstairs, there is a stage in the children's room which was most likely a place for performances and entertainment for the townspeople.

Library staff consists of one full-time Library Director and two part-time staff. Administration is carried out by a five-member elected Board of Trustees, who set library policy and serve as a link between the library and the community. The library hours of operation are: Wednesdays 12:00pm – 4:00pm and 6:00pm – 8:00pm, Thursdays 12:00pm – 6:00pm, Fridays 12:00pm – 6:00pm, and Saturdays 9am - 12noon. During the summer, the library offers a children's reading program and other special interest programs. Librarians also deliver books to teachers at Alstead's schools and local shut-ins.

The resources of the library include 32,000 books, 25 magazines, and various CDs, DVDs, videos and books on tape. The lower level of the library houses the children's collection, children's reading room (which doubles as a meeting space) and periodical room. The library has no audio-visual or computer resources for the public and maintains a card catalog system for referencing books. One photocopier is available for use by library patrons. While the operation of the library may be "old fashioned," the library is highly used and valued by local residents. As a result, the library has the highest circulation rate among libraries of similar size in New Hampshire.

At the time of its construction, Mr. Shedd initiated a \$100,000 trust fund for the library so that its resources could be freely accessible to the residents of Alstead and Langdon. The use of trust fund monies is reserved for the purchase of books and other resource materials. The town processes payroll for the library and currently provides \$30,000 in annual support.

### ***Future Needs and Plans***

While existing facilities and staff are adequate, shelving is in short supply. The Library Board of Trustees is planning a fundraising effort to cover material and construction costs for the new shelving.

Other future needs regarding the library have to do with maintenance issues. Given the flat roof design of the structure, the library constantly faces roof and ceiling problems. Water damage needs to be repaired in one room on the upper floor and the ceiling needs re-painting from prior problems. The dome and roof also need to be re-sealed in the next year.

Sometime in the future, the copper roof will need to be replaced. At the time of its gifting, Mr. Shedd requested that the library be kept as it was built which may prove difficult for roof replacement as the cost of copper is prohibitive. Additionally, the furnace will need to be replaced in the next five to ten years.

### ***Recreation***

The provision of adequate recreation facilities is an important function and responsibility of local government. Attractive and conveniently-located recreation facilities serve to enhance a community's appeal as a desirable place to live. They can also be a positive factor in influencing people and businesses

when they need to make decisions regarding where they want to locate. From a community standpoint, “recreation” can be an important factor in contributing to its continued growth and development. Adequate and attractive recreational facilities provide a positive image and can be instrumental in attracting new residents, businesses, and industry. This attraction stems from the generally-accepted premise that communities with good recreational facilities and programs are progressive, dynamic, and viable, and thus, are desirable places in which to live, work and play.

“Recreation” is a commonly-used word, but it is also an imprecise word. A blanket definition might be “any activity that people perform for entertainment in their leisure time.” This could include movies, bowling, tennis, hiking, team games, sporting events, a walk in the country, or a host of other activities as varied as the individual interests of Alstead’s residents.

Although the benefits of recreation are always present, they are usually intangible and immeasurable. Recreation is often viewed as an individual matter, and when provided as a public service may lead to high costs. For these reasons, municipal officials commonly feel they cannot justify recreation expenditures to their taxpayers, and therefore recreation is almost always a low priority item. But this need not, and should not, be the case.

Recreation should be considered an important community service for several reasons. First, leisure-time activity is one of the most important needs of modern man. People need to enjoy life and relieve the tensions of the work-all-day world. In fulfilling this function, recreation is as important to human existence as education, sanitation, transportation, and protection. Recreation should be viewed, therefore, as one of the necessary services every community should provide, just as schools, sewers, streets, and police and fire protection are provided. Secondly, good recreation facilities provide a community with a positive image. When people and businesses consider locating in a community, they have certain questions in mind, such as:

- Where will the children play?
- What leisure-time activities are available?
- Where can adults go for recreation?
- How close am I to open space?
- How attractive and well-kept are the public open spaces?

In short, individuals and families recognize and appreciate communities that have established well-rounded recreation facilities and programs that serve the leisure-time needs of various age and interest groups. Recreation facilities in the Town of Alstead are maintained by the Parks and Recreation Department which is a part of Alstead’s Department of Public Works. Within Alstead, the two primary recreational facilities are Vilas Pool and Millot Green.

Vilas Pool is located off N.H. Route 123A and offers the following activities: swimming, boating, horseshoes, a playground, and craft and entertainment opportunities. Vilas Pool is open to the public seasonally for the months of July and August. Hours of operation during the summer are Wednesday – Sunday 12:00pm – 5:00pm. Vilas Pool is run by a part-time director and two part-time employees (a lifeguard and a snack bar attendant). The following equipment is also available for use at Vilas Pool: rowboats (3), pedal boats (3), ping-pong table (1), foosball table (1), horseshoe pits (2), swing set (1), and Little Tikes plastic play structures (2).

There are five structures located at Vilas Pool, a main pavilion, snack bar, boat house, stone bell tower, and storage/office building. Several renovations have been made to the facilities at Vilas Pool. New railing has been installed along the patio of the main pavilion. Decking for the handicap access ramp has been replaced along with roofing on the building’s bell tower. The majority of funding for renovations

and activities at Vilas Pool is provided by a private trust fund, donations and proceeds from the snack bar although some public funds are also used. No fees are charged to use the facility.

The facilities at Vilas Pool were not damaged in the October 2005 floods, but the sign was washed away and debris was washed into the Pool. Currently, the water becomes murky often. During the summer of 2006, the facilities were not as busy as previous summers due to the condition of the water.

Millot Green is located in the center of Alstead Village directly behind the Municipal Offices. The Green, and its facilities, were destroyed in the October 2005 floods. Once offered at the Green were a baseball field with dugouts, a horse arena, basketball court, snack bar and open fields which were used for organized baseball and soccer games, basketball, horseshoes and community fairs.

### *Future Needs and Plans*

At Vilas Pool, the condition of existing facilities, equipment and staff is adequate to meet current needs. In the next five years, the roof of the main pavilion will need to be replaced, along with the bell tower timbers. The town is looking into installing a new sluice gate.

In order to provide more recreational opportunities, the Director of Vilas Pool has indicated that the facility would like to gain road access to an upper field, acquire more playground equipment and install a wading pool for young swimmers. Vilas Pool does have additional space that may be developed for future recreational needs. Currently, a group of citizens is working on brainstorming ways to better use and improve the existing facilities.

In July 2006, the Town of Alstead was awarded a \$20,020 federal grant, provided by the National Parks Service's Land and Water Conservation Fund to aid in the reconstruction of the Millot Green facilities that were destroyed in the flood.

The Parks Department has indicated both of its mowers will need to be replaced in the next five years.

### ***Education***

Alstead is a member of the five-town Fall Mountain Regional School District run by School Administrative Unit (SAU) 60, which also serves Acworth, Charlestown, Langdon, and Walpole.

Fall Mountain Regional School District is a comprehensive program offering Pre-School through Grade 12. The facilities consist of 12 school houses: an elementary school in Acworth; three schools in Charlestown, three schools in Langdon, including Fall Mountain Regional High School (FMRHS); and three schools in Walpole. The remaining two schools within Fall Mountain Regional School District are located in Alstead: Alstead Primary School and Vilas Middle School

FMRHS is located at 134 FMRHS Road in Langdon and serves pupils from Grades 9-12 from all five member towns. FMRHS is located in a two story building built in 1965. As of October 3, 2005, the FMRHS had 678 students enrolled, approximately 100 of which were residents of Alstead. Staff for FMRHS includes 59 full-time teachers, 20 teacher's aides, 3 full-time administrative staff members, one full-time and one part-time nurse, and 11 full-time and 5 part-time support staff (including secretaries, food services employees and custodial staff). The school has 35 classrooms as well as a library, auditorium, gymnasium, cafeteria, early learning center, barn, green houses, a field house, athletic fields, offices, maintenance area, and assorted sheds. Renovations in the last ten years include the addition of two classrooms and two bathrooms in 1998, and a media center in 1993.

According to FMRHS's Principal, each of the school's ten departments has access to its own TV/VCR/DVD unit. Also, each classroom is equipped with a TV as the school used to participate in the Channel 1 program. The student to computer ratio is less than the 5:1 standard set by the State; FMRHS is equipped with mobile i-book and pc units. There are plenty of clubs and activities for students to participate in after school, including seven sports teams for boys and nine sports teams for girls.

Vilas Middle School is located at 82 Mechanic Street and has 134 students enrolled in sixth through eighth grade. Approximately 70 of the students attending Vilas Middle School are from Alstead, the remaining 67 students are either from Acworth or Langdon. Vilas Middle School employs 9 full-time teachers, 4 shared part-time teachers, 5 teacher's aids, and 6 other staff members, including administrative staff and a school nurse.

The building that houses Vilas Middle School was constructed in 1934 and is a three-story brick building totaling 12,112 square feet. The school has 12 classrooms, space for necessary offices (including the school nurse, special education and a conference room), a cafeteria, library, gymnasium, locker rooms, media centers, and four bathrooms. Equipment available at the school includes 4 TV/VCR's and 44 computers. Extracurricular activities at the school include various sports teams and a drama club.

Alstead Primary School is located at 58 Mechanic Street. As of July 1, 2005, the Alstead Primary School had 117 pupils enrolled, providing education from kindergarten through fifth grade, 86 of which were residents of Alstead and 31 students were from Acworth or Langdon. Staff consists of 9 full-time certified teachers, 4 shared part-time teachers, 13 teacher's aides, 1 full-time administrative staff member and 2 other staff. The one-story, timber framed building, constructed sometime during the 1970s, totals 27,518 square feet and has five classrooms. Other rooms in the school are used for offices, including a nurse's office and guidance office, custodial needs, a Title I room, a resource room, and an all purpose room. Equipment includes 3 TV/VCR's, 18 computers, and various outdoor playground equipment. For library facilities, the Primary School has access to the Shedd-Porter Memorial Library. Extracurricular activities include a Latch Key after-school program and Choir Club.

Information on school enrollments and costs per pupil for Fall Mountain Regional School District and its neighboring school districts is presented in Table 7:

**TABLE 7- SCHOOL DISTRICT ENROLLMENTS AS OF OCTOBER 2005**

GRADE LEVEL:	School Districts		
	Fall Mtn. Regional	Keene	Monadnock Regional
Pre-Kindergarten	22	89	51
Kindergarten	105	196	156
Elementary	1,135	957	962
Middle School/Jr High	n/a	766	360
High School	678	1,817	846
<b>TOTAL</b>	<b>1,940</b>	<b>3,735</b>	<b>2,375</b>

SOURCE: NH DEPARTMENT OF EDUCATION

Within its immediate region, Keene is the largest school district, with more than 3,800 students. Monadnock Regional is the second largest with almost 2,400 students. In the Monadnock and Keene District, the largest group of students is in the elementary and high schools.

**TABLE 8- COST PER PUPIL, 2004-2005**

GRADE LEVEL	School districts			
	Fall Mtn. Regional	Keene	Monadnock Regional	New Hampshire
Elementary	\$9,642	\$12,309	\$11,471	\$9,406
Middle School/Jr High	<i>n/a</i>	\$9,792	\$9,925	\$8,558
High School	\$10,256	\$9,214	\$12,173	\$8,982
Average (K-12)	\$9,727	\$10,347	\$11,466	\$9,099

SOURCE: NH DEPARTMENT OF EDUCATION

Per pupil costs for education by grade level within this selected sub-region range from just over \$9,200 to more than \$12,300. All of the regional totals are above the state average.

Money to fund public education in New Hampshire comes primarily from local property taxes. Costs for public education are currently at the center of a major state-wide debate, in the Court as well as in the Legislature. The Legislature has authorized a state education tax that collects money in the form of a surcharge on property tax and disburses it to towns that meet the criteria for need. This tax has been in place for several years, but is the subject of challenge, and it is unclear at this time what the result will be.

In addition to the public education choices mentioned above, The Orchard School is a private, non-profit preschool-kindergarten and childcare center located at 114 Old Settlers Road in East Alstead which provides programs for children ages 2.5-6 during the school year. The School is located in an approximately 2,500 square foot schoolhouse built in 1991. The schoolhouse features a great-room upstairs (which also functions as the kindergarten classroom), and two preschool classrooms, a kitchen and art space downstairs. As of September 2006, there were 11 kindergarteners and 44 preschoolers at the school. 8 staff work at the Orchard School: 7 teachers and 1 assistant. For five weeks during the summer, the school offers programs to 3-14 year olds, and the number of staff increases to 45, including 15 area teenagers. The Orchard School is open from 7:30-5:30 during the week to provide care for children of working parents. The tuition varies with the number of days a child attends.

The Orchard School curriculum provides multicultural, environmentally based learning and encourages children to celebrate their creativity, individuality and competency. Through arts, crafts, music and movement, the Orchard School encourages children to explore the world and all it has to offer. Creating community among families is one goal of the School, which offers family festivals and seasonal celebrations. The School strives to create a vision for the world in which the magic of childhood is nurtured and preserved. The School works together with nearby public schools to develop plans for special needs children who enroll in the Orchard School.

While the School was not damaged in the October 2005 flood event, and despite not having electricity or water, the facility provided daycare for children ages 3-11 from schools that were closed.

In addition to Alstead's Primary School, Fall Mountain Regional High School, and The Orchard School, residents of Alstead have access to childcare/learning centers in the area and post-secondary education offered by two colleges in Keene (Antioch New England and Keene State College), one in Rindge (Franklin Pierce College), and branches of New Hampshire Community Technical College in Claremont and Keene.

Home schooling has some popularity in the region. In the 2005-6 school year, there were 63 home school enrollments in the Fall Mountain Regional district, 29 enrollments in the Keene School District, and 101 enrollments in the Monadnock Regional district.

### *Future Needs and Plans*

#### Fall Mountain Regional High School

The FMRHS Principal indicates that the current equipment, facilities and staff at the high school are adequate to meet the School's needs. Potential issues that may arise in the next five years will be replacing the roof, and resurfacing both the track and school parking lot. There are no plans for change at FMRHS at this time.

#### Vilas Middle School

At this time, current staffing, facilities and equipment at Vilas Middle School meet its educational needs. The only future issues noted by the Principal pertain to necessary electrical wiring to meet technological needs and possible replacement of older plumbing fixtures to prevent occasional blockage of the schools plumbing system.

#### Alstead Primary School

The Principal of the Alstead Elementary School indicates that existing facility, equipment and staffing meets the elementary schools current needs. However, the Principal mentioned concerns regarding the school's ability to meet the requirements of the *No Child Left Behind Act* and is considering extending kindergarten classes to a full day to provide time for an early intervention reading and math program. If a full day kindergarten program is instituted, another kindergarten teacher would need to be hired and fifth grade classes will need to be moved to Vilas Middle School to provide adequate space.

#### The Orchard School

The Orchard School's Center Director indicated that while the current facility meets the School's needs, the Board of Directors is working to clarify goals of an approximate 5-year plan to add greenhouse space and a dedicated movement/studio space. This fall, a building project to repair the back wall of the school house will require the help of volunteers, and the School will continue to ask for support from the community. The School hopes to offer vacation camps during the school year starting in 2006.

### ***Cemeteries***

There are seven cemeteries in Alstead maintained by the Cemetery Commission. These cemeteries are:

**TABLE 9- CEMETERIES**

<b>Cemetery</b>	<b>Location</b>	<b>Acreage</b>
Maple Side	Mechanic Street	2
Pine Grove	Pine Grove Cemetery Road	3 ¾
West Cemetery	Route 123 – East Alstead	3
North Cemetery	North Road – East Alstead	1 +
Rust Cemetery	¼ miles from Pratt Road	1
Slade Cemetery	Jct. Pratt and Walpole Valley Roads	1 ½
Alstead Center Cemetery	Route 12 A	2 +

The precise number of burial plots is unknown for Alstead's cemeteries. Pine Grove Cemetery, West Cemetery and Alstead Center Cemetery are known to have plenty of space for future burials. Maple Side Cemetery and North Cemetery are thought to have a few burial plots remaining although few burials have taken place in either cemetery during past years. Rust Cemetery and Slade Cemetery have no remaining

burial plots. In the last few years, the Cemetery Commission has begun a program of repairing and straightening stone markers. Initially, funds for this project were included in the Cemetery budget. Current funds allocated to the Cemetery Commission in the Town Budget are largely used for payroll purposes. Other maintenance and equipment costs are covered with money from the Cemetery Commission's Trust Funds.

### *Future Needs and Plans*

In order to continue repairing and straightening stone markers, the Cemetery Commission plans to submit Warrant Articles yearly to the Town to request project funding for the next five years. The Cemetery Commission was able to receive project funding in this manner last year. While additional cemetery space is not an issue now, the Cemetery Commission has initiated a Capital Reserve Fund to set aside funds for land acquisition in the future. The Commission has identified abutting properties to Alstead Center Cemetery which may allow for expansion.

### *Postal Service*

The Post Office, located at 42 High Street, was relocated in the early 1980s into a remodeled house after a fire destroyed the prior postal facility in 1978. The building is leased, not owned by the US Postal Service and also services the neighboring Town of Langdon. Staff consists of one full-time Postmaster, two part-time postal clerks, three part-time rural carriers, and one substitute carrier. The Post Office hours of operation are 8:00am to 12:00pm and 1:00pm to 4:30pm, Monday through Friday, and 8:00am to 11:00pm on Saturdays. Post office boxes are accessible from 6:30am to 5:00pm, Monday through Friday, and 6:30am to 12:00pm on Saturdays. The facility has approximately 478 post boxes available, 330 of which are presently rented. There are no General Delivery customers and the rural route serves 879 households. Alstead was renumbered in accordance with the E911 system in the late 1990s, to support emergency response efforts.

### *Future Needs*

The Postmaster indicates that space in the Post Office is becoming an issue. While the Postal Service has no plans for renovating or expanding the facility in the next five years, the Postmaster is concerned that continued growth in the Town will further cramp the working and storage space of the crowded facility.

## **UTILITIES and PUBLIC SERVICES**

### **INTRODUCTION**

Presence and availability of adequate utilities is vital to the welfare of the community, in particular for meeting the health, safety, and security needs of the citizens, and in general for meeting their desires for comfort, entertainment, and quality of life. Further, the availability of certain utilities can support the community's goals for economic development.

To meet these needs, utilities presently being provided in the Town of Alstead include electricity and 3-phase power; telecommunications infrastructure (broadband, cable television, telephone/wireless communications, internet service); and solid waste service. Because of their diverse nature, each of these, as well as private service not currently provided such as gas, is considered separately in the following sections. Due to the rural nature of the Town, not all utilities are available throughout the community, such as 3-phase power and broadband. However, electricity and certain telecommunications services being somewhat easier to distribute, are available virtually everywhere in the Town. Public sewer and water services are not currently provided. There are not presently any municipal or private systems for general distribution of either natural gas or propane, within the Town of Alstead.

### **WATER AND SEWER**

The community does not currently provide public sewer and water, and there are no plans to develop such infrastructure systems in the next five to ten years. Residents and businesses are served by private water and sewer systems.

### **ELECTRICAL INFRASTRUCTURE**

#### **Electricity**

National Grid is the main electricity supplier for the Town of Alstead and serves more than 38,000 customers in 21 New Hampshire communities. Headquartered in Salem NH, National Grid is a wholly-owned subsidiary of National Grid Transco, an international, London-based company.

In Alstead, National Grid provides service to approximately 1,056 customers, or "accounts," which include homes, commercial and industrial businesses and streetlights. Distribution and transmission lines, which are placed along roadways, carry power throughout the Town to the individual customers. The voltage from these lines is stepped down to the voltage that is used by the specific customer by way of transformers.

Electricity provided to Alstead by National Grid is distributed through a major substation, the Vilas Bridge Substation, located in Bellows Falls, Vermont. The Vilas Bridge Substation has two circuits, the 12L1 and the 12L2. These two circuits serve the National Grid territory within the Towns of Walpole, Alstead, Langdon, Acworth, Surry, and Marlow. The 12L1 circuit is the normal feed for the National Grid territory within Alstead. The primary voltage on the 12L1 circuit is 13.2kv.

National Grid does not have plans to expand existing facilities serving Alstead in the next five to ten years. Any expansion of facilities would be driven by area load growth.

Public Service of New Hampshire (PSNH) also supplies electricity to customers in the southeast corner of Alstead. PSNH is the State's largest electric utility, providing service to more than 447,000 homes and businesses. PSNH is a wholly-owned subsidiary of Northeast Utilities, a utility holding company based in Connecticut. With three fossil-fuel fired generating plants and nine hydroelectric facilities, PSNH has over 1,110 megawatts of generating capacity.

In Alstead, PSNH provides service to approximately 32 customers, or "accounts," which include homes, commercial and industrial businesses and streetlights. Distribution and transmission lines, which are placed along roadways, carry power throughout the Town to the individual customers. The voltage from these lines is stepped down to the voltage that is used by the specific customer by way of transformers.

Electricity provided to Alstead by PSNH is distributed through a major substation located in Keene. The 1<sup>st</sup> circuit fed from Keene runs on Alstead Road along the Alstead/Gilsum town line towards Kidders Pond. This section includes approximately 1.5 miles of 3-phase power and ¼ mile of single phase power. The 2<sup>nd</sup> circuit fed from Keene runs on NH 12A along the Alstead/Surry town line toward Bald Hill. This section includes approximately 1 mile of single phase power. The 1<sup>st</sup> circuit carries 12,470 Volts three phase and 7,200 Volts single phase. The 2<sup>nd</sup> circuit carries 4,800 Volts single phase.

PSNH does not have plans to add another substation or any new circuits in Alstead in the next five to ten years.

### **3-Phase Power**

GSE provides 3-phase power to the Town of Alstead along the River Road coming into the Town from Langdon, through the Village, down Route 12A toward Acworth, along Route 123 to East Alstead, ending in the vicinity of the Route 123 / North Road / Gilsum Mine Road intersection. The availability of 3-phase power provided by GSE could be expanded in Alstead upon the request of new or existing customers. All line extension construction costs, whether for single or 3-phase power, less a factor for expected revenue, are assessed to the requesting customer as determined by GSE's operating tariff on file with the NH Public Utilities Commission.

As noted above, 3-phase power is currently available from PSNH on a 1.5 mile section of Alstead Road. PSNH indicates that 3-phase power could be provided to new customers on the section of Alstead Road it currently serves, though customers requiring a system greater than 500 to 1,000 kW would require a major system upgrade. PSNH can easily serve a 500 kW customer with minimum upgrade requirements. If the customer were accessing this service where 3-phase already exists, the cost to the customer would be minimal. If additional infrastructure were required, such as an overhead 3-phase line further up Alstead Road, PSNH would consider the cost versus the potential revenue the customer would generate and determine the cost for providing this expanded service on a customer-specific basis. Any underground utility infrastructure provided by PSNH is installed at the expense of the customer.

## **TELECOMMUNICATIONS INFRASTRUCTURE**

Comcast, formerly Adelphia, currently provides cable television and broadband internet services to Alstead. The current contract ends in 2007 and before renewal, the Town will negotiate greater services coverage throughout the town.

**Broadband Internet**

**Understanding Broadband (a.k.a. High-Speed Internet) Technology**

*What is Broadband?*

Broadband is the common term for a high bandwidth internet connection one that can send or download information many times faster than with a standard telephone and modem. You can do everything you want to do online more quickly and more easily with broadband including logging-on, working from home through network connections, downloading files and music, and more.

*Who Provides Broadband?*

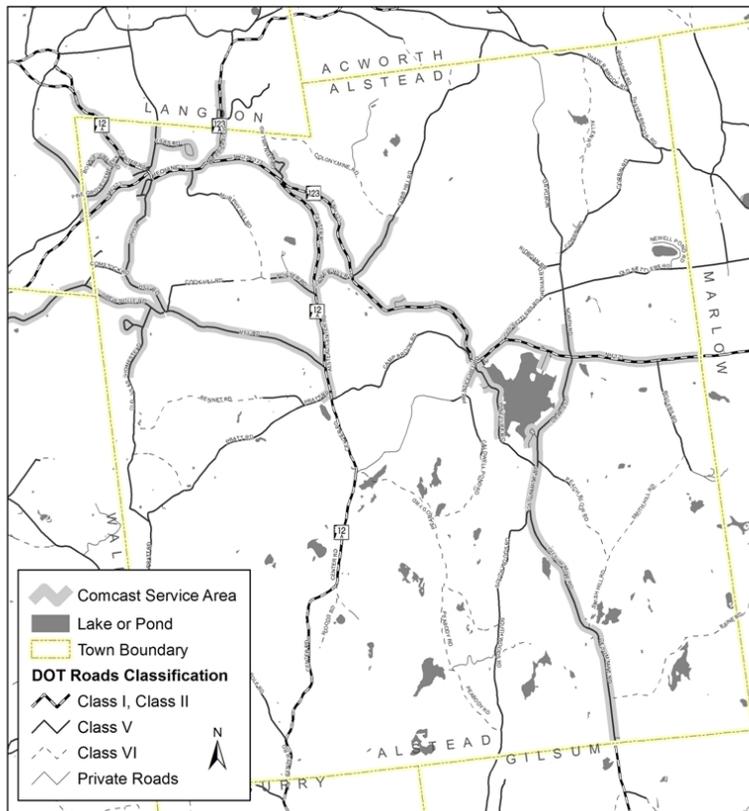
There are different ways of delivering broadband services over telephone lines, cable connections, via one or two way satellite systems and even by radio and there are many companies who offer these services. High speed or Broadband Internet connectivity, when locally available, is provided through either a Local Exchange Carrier (LEC), typically a phone carrier or an Internet Service Provider (ISP).

*Is Broadband Available in Alstead?*

The capability of existing infrastructure in the Town of Alstead to provide broadband service such as DSL (Digital Subscriber Line) through telephone and cable service, satellite cable, and wireless to individual homes and businesses is described in the sections below.

Currently high speed internet is available from both Verizon and Comcast. Availability of Verizon is limited to an approximately 2-mile radius from the Verizon office on Library Avenue. Broadband services from Comcast are available in only certain parts of Alstead as shown in the map below. The Town is currently seeking ways to expand Broadband availabilities. The Town Offices are currently using Broadband.

**Comcast Cable Internet Service Areas**



### **Cable Television**

Comcast provides service to Alstead and neighboring communities. Analog cable is available town-wide, though service may be limited in the more remote areas of the community. Comcast's basic analog package includes 70 channels (channels 2-77 and 99) with options for receiving HBO, Showtime, and the Movie Channel at an additional cost. Digital cable television is also available town-wide through Comcast, though this service may also be limited in the more remote areas of the community. High-Definition Television (HDTV), an improved image-processing method that lends itself particularly to large-screen displays, is currently available in the Town of Alstead. HDTV provided by Comcast includes the 70 standard channels and 7 broadcast, with additional channels available depending on the level of service selected by the customer.

The cable distribution system serving the Town of Alstead is presently comprised of coaxial wire from the master station to neighborhoods and into individual homes or other customer sites served by Comcast.

Satellite cable television is available to individual residences and businesses throughout the community, provided a southeasterly exposure is available, and is an alternative to cable service for those areas not served with advanced cable options by Comcast. There are a number of satellite cable providers and installers serving the area. Channels available through satellite cable may differ from those available through service provided by Comcast.

### **Telephone and Wireless Communications**

Landline phone service is provided for new and existing residences and businesses in Alstead by Verizon. Long distance calling service through landline phones is available through a number of service providers. A list of Authorized Toll Providers is available from the NH Public Utilities Commission at <http://www.puc.state.nh.us/Telecom/telecom.htm>. In addition, Verizon and various other telecommunications companies provide cellular and personal wireless service to the area.

Based on the 2003 US FCC Towers database distributed by the New Hampshire Office of Energy and Planning, there is currently no wireless facility in Alstead. In 2003, the Town adopted a Telecommunications Facilities Ordinance in order to establish guidelines for the siting of towers and antennas in accordance with Federal and State laws.<sup>2</sup> Currently, telecommunications facilities may be permitted in all districts, provided that they are camouflaged, hidden, or disguised.

Federal law regulates the placement of cellular towers in a given community; however, emphasis has been placed on balancing the need for telecommunications infrastructure with a community's desire to maintain community character. The Telecommunications Act of 1996 preserved state and local regulatory authority for the placement, construction or modification of wireless facilities. However, local zoning and regulations may not prohibit wireless services within the community or address the potential effects of non-ionizing electromagnetic radiation and unreasonably discriminate among providers of functionally equivalent services.<sup>3</sup>

### **Internet Systems**

Dialup connections (56k) over telephone lines are universally available. Digital Subscriber Line (DSL) high-speed computer internet service is the most widely available high-speed telephone connection type in the region. DSL phone service may be available to individual residential and business customers in

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<sup>2</sup> Source: Alstead Zoning Ordinance, 2003.

<sup>3</sup> Source: Telecommunications Act of 1996, 47 U.S.C. 332(c)(7).

Alstead through local phone service providers. Availability will depend on the residential or business location in proximity to a central office or substation of the service provider (DSL broadband has a limited service area of 18,000 feet from the central office or substation providing service).

High speed or Broadband Internet connectivity, when locally available, is provided through either a Local Exchange Carrier (LEC), typically a phone carrier or an Internet Service Provider (ISP). LECs typically provide bandwidth and contract with ISPs to market and sell connectivity. ISPs also typically offer value added products including web-hosting space, web design assistance, email and access to news groups and other services. For competitive reasons, LECs and ISPs offering services in Alstead change frequently. An up-to-date list is provided by the NH Public Utilities Commission at <http://www.puc.state.nh.us/Telecom/internetbroadband.htm>.

Fixed wireless broadband is a mesh network in which every station is fixed. It is ideal for distributing data between buildings (i.e. for multi-site companies). It is not a practical technology for the home or workplace as devices and actions can block or interfere with the radio paths.

### **NATURAL GAS**

Natural gas is a private, for-profit utility that does not currently service the Town of Alstead. NH Gas Corporation, based in Keene, provides limited service of a propane/air mix to approximately 1,000 customers within the City of Keene. Expansion of such service for private utility providers is costly. NH Gas Corporation does not anticipate the expansion of its service area to include the Town of Alstead in the coming years. An up-to-date list of providers is maintained by the NH Public Utilities Commission at <http://www.puc.state.nh.us/Gas-Steam/gas-steam.htm>.

Propane gas is also a private, for-profit utility used for cook stoves and hot water, and to a limited extent, home heating. Several private companies provide service to residents of Alstead and other communities in the region.

### **SOLID WASTE**

#### ***Solid Waste Disposal***

The Town of Alstead operates a Transfer - Recycling Center, located at 168 High Street, which is operated by the Department of Public Works. Recycling is mandatory and fees are charged for the disposal of large items such as refrigerators and washing machines. Hours of operation are Wednesdays 1:00pm to 6:00pm and Saturdays 8:00am to 5:00pm.

Additional information about the Town's solid waste facilities is included under the Community Facilities chapter of the Master Plan.

## TRAFFIC AND TRANSPORTATION

### INTRODUCTION

The state statute that deals with Master Plans, RSA 674:2, VI, calls for a transportation section that shows “. . . *the location and types of facilities for all modes of transportation required for the efficient movement of people and goods into, about, and through the community.*” Good transportation planning is important because of its capital-intensive nature: streets and highways typically represent the most significant public investment in a town’s infrastructure. Outside of school taxes, the highway budget is usually the largest percentage of a town’s operating costs.

The primary goal of this section is to identify current issues and/or needs crucial to orderly development and the safe and efficient movement of traffic. A corollary purpose is to assist the Town of Alstead in fully participating in all levels of transportation planning. Transportation infrastructure is heavily dependent on public funds, and the NH Department of Transportation (NH DOT) sets priorities for spending through the development of a statewide Transportation Plan and Transportation Improvement Program. Both plans are required under federal legislation that prescribes federal disbursements to states. In order for New Hampshire to qualify for its full allocation of funds, the NH DOT must comply with federal planning requirements.

To achieve federal compliance, the NH DOT requires the nine regional planning commissions in the state to develop a regional transportation plan that describes the existing conditions of state roads within their regions, identifies problems and concerns, declares goals and objectives for the regional network, and makes specific recommendations for improvements or new construction. Any local concerns relative to state-maintained roads must be addressed through the Regional Transportation Plan in order to be included in the State Plan. This section, therefore, takes regional issues into account in the process developing local goals for a safe and efficient transportation network.

### ROAD CLASSIFICATIONS

#### A. STATE CLASSIFICATIONS

Public roads are defined by NH DOT by the type of service they provide and/or by the funding that is available to build, maintain, and repair them. New Hampshire statute RSA 229:5 specifies the following roads within the state system:

- ♦ Class I: Trunk Line Highways. These belong to the primary state highway system, and the state assumes full control and responsibility for construction and maintenance.
- ♦ Class II: State Aid Highways. These belong to the secondary state highway system. The NH DOT assumes full control and responsibility for construction and maintenance.
- ♦ Class III: Recreational Roads. These consist of all roads leading to and within state reservations designated by the NH Legislature. The NH DOT assumes full control and responsibility for construction and maintenance.
- ♦ Class III-a: Boating Access Roads. These consist of roads that lead to public waters from any existing highway. The NH DOT assumes full control and responsibility for these roads.

- ◆ Class IV: Town and City Streets. These consist of all sections of road that fall within urban compact areas of towns and cities with populations greater than 7,500. The municipality assumes full control and responsibility for construction and maintenance.
- ◆ Class V: Rural Highways. These consist of all other maintained roads that are not in the state system. They are town-owned and maintained.
- ◆ Class VI: Unmaintained Highways. These are all other existing public roads that are not maintained by the town and have not been maintained for at least five years. The road may be closed subject to gates and bars, but it continues as a public roadway.<sup>4</sup>

Of these seven state road classifications, Alstead roads fall into five, which are: Class I, which includes Route 123 (River Street/Mechanic Street) from Langdon town line to Route 123A (Acworth Road) and Route 123A (Acworth Road) from Langdon town line to Route 123 (Mechanic Street/Forest Road); Class II, which includes Route 123 (Forest Road) and Route 12A (High Street/Alstead Center Road); Class III, which includes the boat landing road to Lake Warren; all other roads in town are Class V and Class VI town roads. These are illustrated on *Map 4-1: Transportation Infrastructure and Functional Classification*, and the number of miles comprised by each classification is described in Table 1.

TABLE 1: ROAD MILEAGE BY STATE CLASSIFICATION

<b>Class</b>	<b>Mileage</b>
Class I	2
Class II	13
Class III	Lake Warren Boat Landing
Class V:	46
Class VI	18
<b>Total Mileage</b>	<b>79</b>

SOURCE: NH DOT

## **B. FUNCTIONAL CLASSIFICATION**

A functional classification system identifies roads by the type of service provided and by the role of each highway within the state system. The functional classification system is based on standards developed by the US DOT. The purpose of utilizing such a system is to correlate land planning and traffic planning functions of the Master Plan. Recognition of the principal function that any road is intended to serve can reduce potential conflicts between land use activities and traffic movements. For rural areas such as Alstead, the following categories are identified by the US DOT:

- ◆ **Other Principal Arterial/Controlled Access**

These are Interstates and some primary state routes. They are designed to move large volumes of truck and car traffic through and between population centers without disturbing local traffic and land uses. Controlled Access is a means of minimizing the number of curb cuts, thereby controlling the amount of turning movements along the roadway.

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<sup>4</sup> The Class VI designation is applied to roads that have been abandoned or discontinued. A vote of Town Meeting is required to formally discontinue a road rendering it no longer a public right of way. A discontinued road reverts to abutting landowners. A Class VI road can be also closed subject to gates and bars if voted at Town Meeting. The road remains a public right of way but landowners can install gates and bars that will still allow public access.

*Within Alstead there are no Other Principal Arterials. Within the Southwest Region Routes 9, 12 south of Keene and 101 are Other Principal Arterials.*

♦ **Arterial System – Major and Minor.**

These are the streets and highways that connect communities and regions. They are designed to move large volumes of traffic to and from large traffic generators without disturbing local traffic and land uses. Minor arterials distribute traffic to smaller geographic areas, and place more emphasis on providing land access than the major arterials.

*Within Alstead there are no Major or Minor Arterials. Within the Southwest Region Routes 202, 10 south of Keene, and 12 north of Keene are Minor Arterials.*

♦ **Collector System – Major and Minor.**

Major Collectors are designed to move medium traffic volumes at low speeds between or within communities. They differ from the Arterial system in that collector streets go through residential neighborhoods, distributing traffic from the arterials through the area to its ultimate destination. Minor Collectors provide alternate routes to Major Collectors.

*Within Alstead, Routes 123 and 12A are classified as Major Collectors. Route 123A and Mine Road are Minor Collectors.*

♦ **The Local Street System.**

This consists of all streets not classified in one of the other higher systems. Its primary function is to provide direct access to abutting properties and to other roads and highways. It offers the lowest level of mobility.

## **C. SCENIC ROADS**

In addition to the state and federal classifications, RSA 231:157 allows towns, by a vote at Town Meeting, to designate any road other than a Class I or II highway as a Scenic Road. The effect of this designation is that, except in emergency situations, there shall be no tree cutting or alteration of stone walls within the right-of-way without approval of the Planning Board, after a duly-noticed public hearing. The law does not affect the rights of individual property owners; nor does it affect land uses as permitted by local zoning. The statute also authorizes towns to adopt provisions dealing with Scenic Roads that are different from, or in addition to, those that are spelled out in the law. At this time, only Camp Brook Road (1.9 miles) has been designated as a scenic road.

## **TRAFFIC PATTERNS**

### **A. TRAFFIC COUNTS**

Information on traffic volume is collected by the NH DOT through the placement of traffic counting devices at various locations around the state. Some of these are permanently installed under the roadway and provide figures based on a full year count, while others are set out on a rotating basis for varying lengths of time – generally during the months of May to October for a seven-day period. Permanent counters are used only on state roads, while the temporary counters will be used on both state and local roads. Table 2, on the following page, presents averaged annual daily traffic (AADT) counts for fifteen counters located throughout Alstead. The types of counters varied each year, so it is not possible to compare all counters over the same time period. Some 2005 data is not available due to a number of

automatic traffic data recorders being lost in the 2005 flood. The 2005 data that has been collected by the SWRPC has not yet been reviewed by the DOT. As such, it can not be compared accurately to counts from previous years.

Counters placed near the vicinity of Alstead Village have registered the highest AADT counts over time. Counter locations that have registered the highest counts in Alstead Village are: 9077, located on NH123 (River Street) on Alstead's town line with Langdon; 9074, located on NH 123 (Forest Road) just east of NH 123A (Acworth Road); 9011, NH 12A (High Street) north of NH 123 (River Road); and NH 123A (Acworth Road) north of NH 123 (Forest Road).

Table 3 shows 2005 traffic volume for the 15 locations plus four additional locations numbered 1-4. The data is broken into daily weekday counts, plus Saturday and Sunday counts. Finally, an overall average for all the days of the week is given. The location with the highest weekday volume is NH123/NH12A in the center of Town. According to the data, the average volume during the week is 3,108 vehicles. There is a noticeable change in traffic volumes between weekday data and Saturday and Sunday data. However, it is important to note that while weekday data was averaged for Tuesday-Friday of the same week, only one weekend's worth of data was collected at each location.

Table 4 shows Class Count average daily traffic count data for location 9053, Gilsum Mine Road at the Gilsum Town Line. The most notable change is the difference between Class 1 (motorcycles) on weekdays and weekends. The average daily volume increases greatly on weekends. Class 5 vehicles (including certain trucks, RV's, motor homes, etc) traffic data also decreases on weekends, and most decreases on Sunday.

### **B. TURNING MOVEMENTS**

Figure 1: Turning Movements on Page 42 shows the morning and afternoon peak traffic for three Alstead intersections. Turning movements were collected from 6:30-9AM (AM) and 3:30-6PM (PM). The total turning movements for these times are shown in Figure 1.

TABLE 2: AVERAGE ANNUAL DAILY TRAFFIC COUNTS, 1990-2005

Counter	Location	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005 <sup>5</sup>
9011	NH 12A (High St.) <i>N. of</i> NH 123					1,600				2,200	1,500			1,300			
9051	NH 123 (Forest Rd) @ Marlow TL	500	500	530	500		530		550		550		580		530		848
9052	NH 12A (High St.) @ Langdon TL	1,200	1,100	960	950				980		1,100		920		1,000		1,098
9053	Gilsum Mine Rd. @ Gilsum TL	600						570			570			300			786
9054	Walpole Valley Rd. <i>W.</i> <i>of</i> NH 12A							440									
9055	Hill Rd. <i>W. of</i> NH 12A							260									
9056	Hill Rd. <i>S. of</i> NH 123							610									
9057	NH 123 (Forest Rd.) <i>N.</i> <i>of</i> Camp Brook Rd.			980				1,000						1,000			
9058	NH123A (Acworth Rd) <i>N. of</i> NH 123			960				1,200			1,000			1,200			1,260
9059	Drewsville Rd. @ Darby Brook			220				260			320			290			419
9074	NH 123 (Forest Rd.) <i>E.</i> <i>of</i> NH 123A	1,900	2,000	1,900				2,000						1,900			2,251
9076	Gilsum Mine Rd. <i>1 mile</i> <i>S. of</i> NH 123	390	300			350			400			460			600		496
9077	NH 123 (River St.) @ Langdon TL	1,900			2,000			2,200			2,100			2,200			2,737
9078	NH 12A (Alstead Ctr. Rd.) <i>over</i> Thompson Brook			700				820			700			820			818
9079	Thayer Brook Rd. <i>0.5</i> <i>miles S. of</i> Acworth TL			140				160			170			200			187

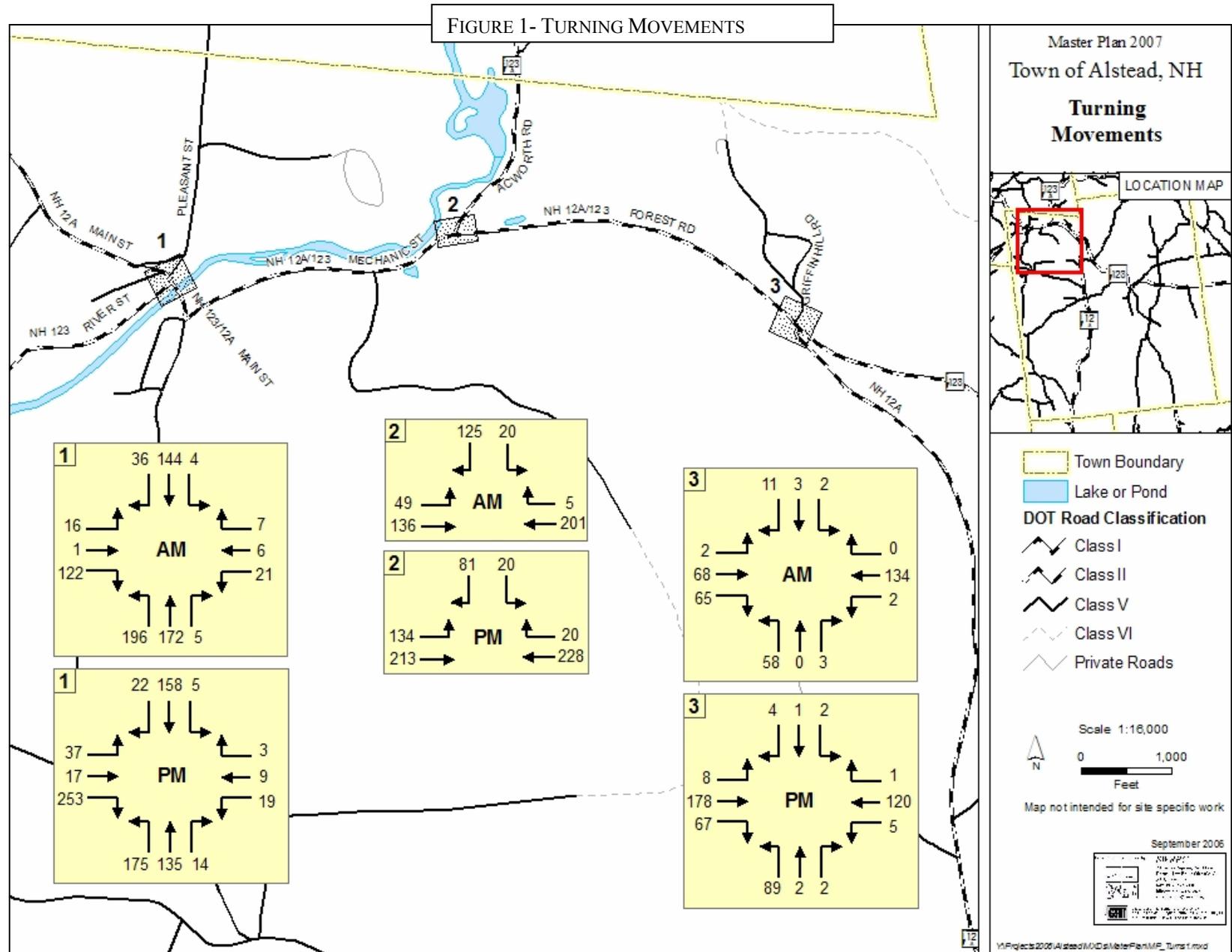
<sup>5</sup> 2005 traffic counts have yet to be reviewed by NH DOT and cannot be accurately compared to previous years' counts.

**TABLE 3:  
2005 AVERAGE DAILY TRAFFIC VOLUMES  
WEEKDAY, SATURDAY, SUNDAY AND 7-DAY**

Counter	Location	Weekday	Saturday	Sunday	Weekly
9011	NH 12A (High St.) north of NH 123	1866			
9051	NH 123 (Forest Rd) @ Marlow TL	742	845	957	848
9052	NH 12A (High St.) @ Langdon TL	1094	1338	864	1098
9053	Gilsum Mine Rd. @ Gilsum TL	871	823	665	786
9055	Hill Rd. west of NH 12A	374			
9056	Hill Rd. south of NH 123	409			
9057	NH 123 (Forest Rd.) north of Camp Brook Rd.	1366	1628		
9058	NH123A (Acworth Rd) north of NH 123	1219	1462	1101	1260
9059	Drewsville Rd. @ Darby Brook	392	527	338	419
9074	NH 123 (Forest Rd.) east of NH 123A	2344	2803	1608	2251
9076	Gilsum Mine Rd. 1 mile south NH 123	535	520	435	496
9077	NH 123 (River St.) @ Langdon TL	2763	3163	2286	2737
9078	NH 12A (Alstead Ctr. Rd.) over Thompson Brook	888	838	728	818
9079	Thayer Brook Rd. 0.5 miles south of Acworth TL	205	202	154	187
1	12A at Surry Town Line	1510			
2	123 North of Gilsum Road	903	934	911	916
3	123 South of Gilsum Road	770	792	810	790
4	123/12A at the Ballfield (Alstead Village)	3108			

**TABLE 4:  
2005 AVERAGE DAILY TRAFFIC VOLUMES- CLASS COUNT  
9053- GILSUM MINE ROAD AT GILSUM TOWN LINE**

Class	Description	Weekday	Saturday	Sunday	All Days
1	Motorcycles	2	20	15	12
2	Passenger Cars	609	579	502	563
3	Other two-axle, four-tire single unit vehicles (pickups, vans, campers, etc)	215	190	137	181
4	Buses (including school buses)	8	2	0	3
5	Two-axle, six-tire, single-unit trucks	21	16	6	14
6	Three-axle single unit trucks	3	0	0	1
7	Four or more axle single-unit trucks	2	0	1	1
8	Four or fewer axle single-trailer trucks	2	8	3	4
9	Five-axle single-trailer truck	1	0	0	0
10	Six or more axle single-trailer trucks	1	0	0	0
11	Five or fewer axle multi-trailer trucks	0	0	0	0
12	Six -axle multi-trailer trucks	0	0	0	0
13	Seven or more axle multi-trailer trucks	0	0	0	0
***	Unspecified	9	8	1	6



**C. TRAFFIC GENERATORS**

The majority of Alstead’s traffic is residential, which reflects the Town’s primary land use – housing. Truck and commercial traffic is also present, providing transportation of goods and services to local businesses as well as traveling through Alstead to and from other towns. In Alstead, Route 123 carries a significant amount of through traffic.

Alstead has few large traffic generators. According to data provided in the Economic Development chapter of Alstead’s Master Plan, Blanchflower Lumber and Fuller Machine Company are the Town’s top employers.

Frequent destinations in town are: Town Hall, Alstead’s schools, Alstead Post Office, Transfer Station, Thrift Store, Shedd-Porter Memorial Library, the Municipal Offices, and the Village store. All of these destinations are located in or near Alstead Village, which may support high traffic counts in the area.

**D. COMMUTING PATTERNS**

The US Census collects information on commuting patterns of the labor force – that is, where people go to work from their town, and where people come from in order to work in a particular town. According to these 2000 Census figures, Alstead has an estimated 1044 workers; of these, 830 (79.5%) commute out of town to work. The number of all people who work in Alstead, regardless of residence, is 470; of these, 256 (54.5%) commute into Alstead from somewhere else. Table 3, following, illustrates the top three locations where Alstead residents go to work, and where nonresidents working in Alstead come from.

**TABLE 3:**

**COMMUTING PATTERNS, 2000**

COMMUTING OUT TO:	#	COMMUTING IN FROM:	#
Keene	347	Walpole	41
Walpole	110	Keene	31
Charlestown	38	Langdon	22

SOURCE: US CENSUS BUREAU

As Table 3 illustrates, 42% of Alstead’s workers travel to Keene for work. After Keene, there is a sharp decrease in the percentage of Alstead’s workers that commute to other places. Only 13% and 4% of commuting workers travel to Walpole and Charlestown respectively, which are the second and third most common commutes. Without more detail, it would appear that Routes 123 and 12A carry the greatest amount of commuter traffic each day - both in and out of town. Reference to the traffic count data seems to support this assumption.

**E. EMERGING TRENDS IN CHANGES OF LAND USE**

The decade of the 1980s saw vast growth in America’s suburbs, not only in terms of residential development, but also in terms of mixed-use development dominated by employment-based activity centers. As rapid improvements in telecommunications allow companies greater flexibility in location, companies are no longer tied to downtown locations to access finance, government, and other business sectors. As a result, many companies have been able to relocate into lower-density rural areas in order to enjoy the many amenities a rural environment offers.

Employment growth in suburban and rural areas has far outstripped employment growth in central cities. This employment trend appears to be continuing and is by far the greatest challenge across the nation that our transportation systems face today. While Alstead's land use patterns are not experiencing a shift towards greater commercial and industrial development, conversion of land for residential housing is increasing. While it is difficult to ascertain if Alstead's land use change is due to a shift in business locations from urban to rural, the increased ease of telecommunications, or due to a combination of both job location and telecommunication factors, the continued conversion of land for residential use will have an impact on Alstead's transportation network in the future.

Other changes which continue to take place and which also affect our transportation system include the increase in older Americans as a result of improved medical care, greater affluence and therefore increased mobility needs for our elderly population; a continuing increase in the number of women in the labor force; and a decreasing household size.

## **ROAD NETWORK**

### **A. SURFACE WIDTHS & CONDITIONS**

Roads in Alstead are of varying widths and surface conditions. The wideness of a road is not necessarily related to the ownership – i.e., the state roads are not always wider than the town roads, although they are more likely to have wider shoulders.

The NH DOT has developed standards for road construction, published in April of 1995 and titled "Minimum Geometric & Structural Guides for Local Roads and Streets". The specifications recommended for minimum width and materials are based on average daily traffic – in other words, the more traffic a road carries, the wider the traveled way and shoulders, the deeper the base and top coat, etc.

According to these standards, the minimum width for the least-traveled road (less than or equal to 50 vehicle trips per day) should be 18 feet, plus a two-foot shoulder. Most town roads do not meet this standard and, even with new construction, many small towns will approve an 18-foot width for a Class V town road carrying more than 50 vehicle trips per day.

Pavement width varies from 8-22 feet for Class V roads and from 6-12 feet for Class VI roads. Pavement on all state roads is between 18-24 feet wide plus a varying shoulder width.

According to the 2005 Town Report, there are 48.35 miles of Town maintained roads: 31.15 miles are gravel and 17.20 are paved.

### **B. ACCIDENT LOCATIONS**

NH DOT collects data on traffic accidents throughout the state. The most current data from the State is available is through 2002. According to NH DOT records, there were 114 traffic accidents in Alstead during the five year period between 1998–2002. No fatalities resulted from any of these accidents. Roads with the highest accident occurrences during the period are: Route 123; Route 12A; Walpole Valley Road; and Gilsum Mine Road. The majority of collisions occurred with fixed objects (46%) or other vehicles (32%). No correlation can be made from the data about the cause of accidents in regards to road and weather conditions, or speed. The break down of total traffic accidents by road per year, as recorded by NH DOT, is provided below in Table 4.

**TABLE 4: TRAFFIC ACCIDENTS BY ROAD/YEAR**

<b>Road</b>	<b>2002</b>	<b>2001</b>	<b>2000</b>	<b>1999</b>	<b>1998</b>	<b>Total</b>
NH 12A	2	6	8	2	4	<b>22</b>
NH 12 A (Alstead Center Rd)	1	0	0	3	2	<b>6</b>
NH 12A (High St)	1	0	1	0	0	<b>2</b>
NH 123 (Forest Rd/Mechanic St/ River St)	6	7	1	3	8	<b>25</b>
NH 123A (Acworth Rd)	0	0	0	1	1	<b>2</b>
Barnett Hill Rd	0	0	0	0	1	<b>1</b>
Camp Brook Rd	2	0	0	1	0	<b>3</b>
Cooper Hill Rd	1	0	0	0	0	<b>1</b>
Corbin Road	2	0	0	0	1	<b>3</b>
Drewsville Rd	0	2	0	1	0	<b>3</b>
Gilsum Mine Rd	2	4	1	0	2	<b>9</b>
Hill Rd	0	0	0	2	0	<b>2</b>
Maclean Rd	0	0	1	0	0	<b>1</b>
Main St.	1	0	1	0	0	<b>2</b>
Mine Rd	1	0	0	0	0	<b>1</b>
North Rd (NH 123)	0	0	2	1	0	<b>3</b>
Old Settlers Rd	0	0	1	1	0	<b>2</b>
Pine Cliff Rd	0	1	0	2	2	<b>5</b>
Pine Grove Rd	0	1	0	0	1	<b>2</b>
Pine Needle Trailer Park	0	0	1	0	0	<b>1</b>
Pratt Rd	2	0	0	1	0	<b>3</b>
Vilas School Parking Lot	0	0	0	1	1	<b>2</b>
Walpole Valley Road	4	3	1	1	0	<b>9</b>
<i>Total</i>	<i>26</i>	<i>24</i>	<i>18</i>	<i>20</i>	<i>23</i>	<i>111</i>

SOURCE: NH DOT

There was one fatality in 2005 from an accident on Thayer Brook Road. Other accidents in 2005 including Alstead Center Road (3), Drewsville Rd (1), Hill Rd (1) and Pratt Rd (1). Data is unavailable for the years 2003 and 2004 due to the loss of local police records in the October 2005 flood event. In an effort to reduce the number of traffic incidents, the Alstead Police Department began aggressively enforcing local speed limits in 2004. The department has indicated that with strict enforcement, the occurrence of traffic accidents has fallen by 40-50% within the year.

**C. BRIDGES**

Bridges present an ongoing maintenance and repair concern for all towns, oftentimes accounting for a large portion of local highway budgets. Bridges also present the potential for a number of safety hazards in instances where they are severely deteriorated or are significantly narrower than the road they serve. Bridges are rated by the NH DOT, using a system based on federal standards for type of construction, widths, surface conditions, ability to handle traffic volumes, etc. Alstead has fifteen bridges, the locations of which are identified on *Map 4-1: Transportation Infrastructure and Functional Classification*. Table 5, found on page 11, shows the current status of Alstead’s bridges as provided by NH DOT.

TABLE 5: Status of Bridges, 2005

Bridge	Location	Red Listed Status	Last Inspection Date	FSR* (%)	Owner	AADT (year)	Type**	Width of Bridge (Road)	Length (feet)	Recommended weight limit posting***	Year Built
046/141	Comstock Rd over Darby Brook		Oct-05	63.2	Alstead	220(1992)	IB-W	16(12.2)	22	E2	1982
058/132	Drewsville Rd over Darby Brook		Oct-06	100	Alstead	220(1992)	MP	n/a(28)	16	E2	1979
058/136	Hill Rd over Darby Brook	Municipal Redlist	Jan-04	86	Alstead	220(1992)	MP	n/a(28)	19	E2	1974
059/134	Hill Rd over Darby Brook	Functionally Obsolete	Oct-05	50.4	Alstead	220(1992)	IB-BP	24.1(23.5)	30	E2	1970
060/159	NH 123 over Cold River		Oct-05	88.7	NHDOT	1900(1992)	CRF	40(30)	68	NPR	1958
073/163	NH 123A over Warren Brook	State Redlisted; Structurally Deficient	Oct-05	59	NHDOT	960(1992)	CTB	29.1(26.7)	34	C1	1935
077/047	NH 12A over Thomson Brook		Oct-05	91.6	NHDOT	700(1992)	CRF	29.6(26)	18	NPR	1961
086/158	Griffin Hill Rd over Warren Brook		Oct-05	75	Alstead	200(1984)	CS	20(18.5)	35	NPR	1920, 2004
087/155	NH 123 over Warren Brook		Oct-05	68.9	NHDOT	1800(1992)	IB-C	31.6(28)	22	E2	1936
096/136	Cooper Hill over Warren Brook		Oct-05	40	Alstead	60(1985)	MP	n/a(24)	10	BRC	1970
097/142	NH 123 over Brook		May-03	100	NHDOT	980(1992)	MP	n/a(26.9)	11	NPR	1962
107/130	NH 123 over Warren Brook		Oct-05	96.8	NHDOT	980(1992)	MP	n/a(28)	10	NPR	1970
111/129	NH 123 over Warren Brook		Oct-05	96.9	NHDOT	980(1992)	MP	n/a(24)	10	NPR	1969
135/119	NH 123 over Hale Brook		May-03	88.7	NHDOT	500(1993)	CS	28.5(26.3)	14	E2	1926
148/175	North Rd over Brook		Feb-04	96.9	Alstead	140(1992)	MP-B	n/a(21)	10	NPR	1991

SOURCE: NH DOT BRIDGE DESIGN, BRIDGE SUMMARY 2005

\*The FSR (federal sufficiency ratings) are based on criteria relating to traffic capacity, safety of the bridge approach, the integrity of structural components, and bridge surface. Using a maximum sufficiency rating of 100%, the NH DOT has determined that a rating less than 60% is indicative of a disproportionate share of deficiencies. A rating of less than 40% indicates a bridge in very poor or severely deteriorated condition.

\*\* IB-W- I Beam with Wood; MP- Metal Pipe; IB-BP- I Beams with Bridge Plank; CTB- Concrete Tee Beam; CRF- Concrete Bridge Frame; MP-B- Metal; CS- Concrete Slab; IB-C- I Beams with Concrete Deck.

\*\*\*The NH DOT has taken the position that Towns/Cities are responsible for evaluating their own bridges. Until all bridges are evaluated, the NH DOT recommends that bridges are posted E2.

**D. PROBLEM AREAS**

In general, the roads in Alstead range from poor to good condition. The Director of Public Works and Alstead Police Department indicate that the intersection of NH Route 123, Main Street, and Library Ave in Alstead Village poses a variety of safety issues. Narrow roads, poor visibility, and a 90 degree curve make the intersection difficult to navigate at posted speeds. When entering the intersection on Route 123 drivers often cross into the oncoming traffic lane in order to navigate the 90 degree curve. Tractor trailers typically take up both traffic lanes to make the corner. The current speed posted for the intersection is 30 mph; however the only way to safely navigate the corner is at a much lower speed than what is posted. Route 123 is State maintained and there are no plans to improve the intersection at this time.

Another problem area in Alstead is the lower section of Walpole Valley Road. This section of the road is extremely dangerous during winter weather due to its steep grade, a lack of guardrails, and sharp drop-offs and embankments on either side of the roadbed. Walpole Valley Road has a high volume of commuter traffic from Walpole to Keene and is also seeing increased use from continued development in the southwestern portion of Alstead. During the winter, Alstead road crews plow and salt Walpole Valley Road first to try and minimize dangers caused by winter weather. However, this section of road has the highest occurrence of traffic accidents in Alstead. In order to alleviate the problem, the Public Works Director suggested that the road be regraded and widened, which could cost the Town upwards of \$500,000.

Specific problem areas, other than those mentioned above, are dangerous corners on Corbin Road, Pine Cliff Rd., and Pratt Road. Also, segments of Pine Cliff Road and Thayer Brook Rd are in need of being rebuilt. Table 6, found on pages 15-20, indicates problem areas indicated by the Director of Public Works and Police Department. Beyond the specific road issues mentioned, Alstead's road network is able to safely handle current traffic volumes. Nonetheless, both the Director of Public Works and Police Department indicate future concerns over the condition of Alstead's road network and its ability to safely manage the increased traffic volume that is expected to accompany population growth.

**TABLE 6:  
PROBLEM AREA MATRIX**

<b>Problem</b>	<b>Location</b>	<b>Description</b>	<b>Additional Comments</b>	<b>Possible Solutions</b>
<b>Road Width</b>	Jct. NH 123/Main St/Library Ave. - Village Center	Roads are too narrow to safely carry cars/trucks/trailers around 90 degree corner. Cars have to move into other lane of traffic to navigate turn. Visibility in intersection and around the corner is also poor.	Tractor trailers take up both traffic lanes when making the 90 degree turn. The utility pole located in the grassy space at the middle of intersection is a concern - if the pole were to be hit by a vehicle, the village center may lose power. A bad dip and storm grate in the westbound lane (NH 123) also forces drivers into oncoming lane. The intersection is State maintained. There are no plans to change traffic flow at this time.	Purchase and remove white apartment complex, on N. side of intersection along NH 123, in order to widen the intersection. Conduct feasibility study to investigate other possible solutions, such as a roundabout.
<b>Road Width</b>	Gravel Roads - all gravel roads	The gravel roads are too narrow for commercial vehicles and school buses to safely navigate.		
<b>Road Width</b>	Mechanic St. (NH 123) near Schools - Village Center	Traffic lanes are too narrow	Hazardous for children who walk to school, especially in winter months.	Build a sidewalk on one side of the street.
<b>Road Width</b>	All roads Village Center	Village buildings originally built too close to roadways leaving no room to widen roads or create pedestrian walkways.		
<b>Surface Type and Vehicle Class</b>	All gravel roads	Gravel roads were not built with the proper base to support commercial vehicles or school buses during mud season.	Alstead Highway Department closes gravel roads to commercial vehicles seasonally in order to preserve gravel roads.	Continued closing of gravel roads to commercial vehicles during mud season.
<b>Surface Type</b>	All paved roads	Funding has not been available during previous years to maintain paving schedule.	Ten year paving cycle put on hold during the past three years due to funding issues. Deferred costs will make roads more costly to repair and maintain. Public funding is difficult to ensure.	Pursue grant money. Educate Public.

**TABLE 6:  
PROBLEM AREA MATRIX**

<b>Problem</b>	<b>Location</b>	<b>Description</b>	<b>Additional Comments</b>	<b>Possible Solutions</b>
<b>Speed Limit</b>	NH 123/Main St./Library Ave. - Village Center	Speed limit posted at 30 mph, however at such a speed, there is no way to safely navigate 90 degree turn. Speed limit needs to be reduced to 15 mph for safe navigation around corner.	The corner is very dangerous - especially if driver is unfamiliar with road and does not realize that it is necessary to slow down.	Post reduced speed limit.
<b>Snow and Ice</b>	Lower section Walpole Valley Rd.	A steep grade makes the lower portion of Walpole Valley Rd extremely dangerous in inclement weather. Sharp drop-offs and embankments on either side of the roadway increase danger as road lacks guard rails to stop cars from skidding off.	The lower section of Walpole Valley Rd has the highest occurrence of accidents in Alstead. Walpole Valley Rd sees high volume of commuter traffic from Walpole to Keene, as well as from increased housing developments in S.W. Alstead. During the winter, Town maintenance crews plow and salt Walpole Valley Rd first to try and minimize danger, but intensity of storm/weather is a major factor.	Widen and regrade road. Add guardrails. Director of Public Works estimates cost of fixing the lower section of Walpole Valley Rd to be near \$500,000.
<b>Accident</b>	Lower section Walpole Valley Rd.	See above.	See above. - Strict enforcement has lowered accidents in Alstead by 40-50% in the last year. However, roads and traffic patterns are not designed well. Increased traffic volume due to growth may lead to greater number of traffic accidents in the future.	
<b>Bridge Deficiencies</b>	All Bridges	All area bridges are too narrow.	Griffin Hill Road and Pine Cliff Rd bridges were recently upgraded.	Continue with bridge maintenance as funding is available.
<b>Drainage</b>	Gilsum Mine Rd.@ stream feeding Warren Lake	Failed culvert.		Remove culvert and replace with bridge.

**TABLE 6:  
PROBLEM AREA MATRIX**

<b>Problem</b>	<b>Location</b>	<b>Description</b>	<b>Additional Comments</b>	<b>Possible Solutions</b>
<b>Drainage</b>	All gravel roads	Culverts on gravel roads often fill with debris creating drainage problems along roads.		Continued culvert maintenance.
<b>Pedestrian Access</b>	School Zone - Mechanic St. (NH 123) - Village Center	There is no safe place for children to walk to school along roadway. Winter is especially dangerous because children must walk on plowed roadway.	Signage and enforcement is good in school zone, but warning lights are often missed by drivers.	Build sidewalk on one side of roadway. Install new warning lights to draw attention to school zone (similar to Walpole) that have a higher intensity bulb.
<b>Pedestrian Access</b>	Pleasant St./High Street - Village Center	Near the Historical Society there is a stone wall/steep bank that forces pedestrians to share the traffic lane.	The buildings in this area have been sited right on the streets. Their locations make it difficult to alleviate the problem.	Move Post Office to downtown location.
<b>Pedestrian Access</b>	Village Centers		Very few pedestrian paths or sidewalks in local centers. Narrow roads and building locations in these areas create many unsafe situations for pedestrians.	
<b>Parking and Accident</b>	Village Store - Village Center	Layout of parking spaces requires drivers to back into traffic lanes of NH 123. (Spaces are pull in spaces perpendicular to traffic lanes.)	Elderly drivers often have highest number of crash incidents at this location, due to difficulty seeing oncoming traffic when backing out.	
<b>Parking</b>	Main St. - Town Hall	There is limited parking at Town Hall. When parking lot overflows, cars are parked along both sides of Main St, which is very narrow.	Large events such as Friendly Meals, elections, & annual meetings create parking problems. Town Hall is shared with Ambulance and Fire Departments who have difficulty leaving station if called during any of these events.	

**TABLE 6:  
PROBLEM AREA MATRIX**

<b>Problem</b>	<b>Location</b>	<b>Description</b>	<b>Additional Comments</b>	<b>Possible Solutions</b>
<b>Dangerous Curves</b>	Intersection Camp Brook Rd/NH 123 - Mill Hollow	Sharp turn.	Road recently widened to try and alleviate dangerous turn. Road widening not very successful due to layout of intersection and roads.	
<b>Visibility</b>	NH 123/North Rd/Gilsum Min Rd - E. Alstead	Poor line of sight over rise at intersection makes it difficult to see turning onto NH 123 from North Rd or Gilsum Mine Rd.		Removal of trees on adjacent properties. Remove flower beds and regrade lawns.
<b>Other Safety Hazard</b>	Gilsum Mine Rd. @ Smith Hill Rd, Corbin Road	Area is riddled with old mine shafts - locations and conditions are unknown. Some mine shafts are located under road beds.	The presence of mine shafts is a concern because the depth between road surfaces and shafts is unknown. The ability of the shafts to withstand increased vehicle weight and road vibration may become a problem as population density increases in this area.	None at this time.
<b>Other Maintenance Issues</b>	Road Banking - various Town roads	Many Town roads are improperly banked due to previous construction methods.		
<b>Other Maintenance Issues</b>	Road Network	The road network is laid out on previous carriage/early vehicle network and is not designed to carry increased traffic volume or larger vehicles.	Increased population growth will heighten all traffic safety issues and put increased strain on road network	

### **PUBLIC/ALTERNATIVE TRANSPORTATION MODES**

#### **A. PUBLIC TRANSPORTATION**

Public transportation plays a very small role in Alstead's overall service network. There are presently no bus routes that serve Alstead. Many human service agencies in southwestern New Hampshire provide transportation to elderly, low-income and disabled residents. Most of the need is to access agencies' services or for employment, medical appointments, shopping, etc. Agencies such as Home Health Care, Red Cross, New Hope/New Horizons provide such transportation. Agency transportation service is limited to clients due to the costs associated with frequency of service (service is usually weekdays only) and geographic coverage (residents in outlying communities cannot be as frequently transported).

Additionally, Vermont Transit Line, which provides bus service throughout the Northeast, is accessible to Alstead residents in Keene and Bellows Falls, VT. Amtrak's Vermonter route, with service from Washington D.C to St. Albans, VT, also stops in Bellows Falls. For a complete description of other available transportation services in the region, please refer to the Southwest Region Transportation Plan – 2006 Update.

#### **B. BICYCLE/PEDESTRIAN TRAVEL**

The focus of this analysis has been on vehicular, private transportation. Alternative travel is limited in this region, although it has certainly seen resurgence over the last several years. Most roads were designed and built with little or no consideration for anything but vehicles; pedestrians and bicyclists must share the road with cars and trucks. In recent years there has been an increase in both pedestrian and bicycle traffic, and with it a recognition of the potential dangers of mixing these activities with vehicular traffic. These issues can be partly addressed at the local level by designing new roads with attention to alternative traffic. With existing road problems are more difficult to alleviate, since the Director of Public Works is dealing with a circumscribed width in most case and limited building setback requirements; warning signs and speed limits are the traditional techniques for ameliorating pedestrian/traffic conflicts, although not always effective.

Route 123, Route 12A (north of Alstead Village), Walpole Valley Road, and Gilsum Mine Road have been designated by the State as regional bike routes. Roads designated as state routes can receive funding for pedestrian improvements when reconstruction occurs. The plan considers all roads in the system to be the best available roads for bicycling to major destinations. Although indicated as part of a biking network, bicyclists using these routes do share the road with motorized vehicles. Shoulders along the roadways vary from wide to none and caution while biking is recommended.

#### **C. TRAILS**

The closest rail/trail for Alstead residents is an abandoned railroad line located along the Connecticut River in Walpole. Constructed in 1850, the Cheshire Branch rail road ran from South Ashburnham, MA to Bellows Falls, VT. The present day recreational rail trail runs from Fitzwilliam to North Walpole and is 42 miles long. The railroad bed is maintained as a multi-use recreational trail. The NH Department of Resources and Economic Development is responsible for overseeing the trail management; however, the local interest and user groups also provide maintenance.

A large network of snow mobile trails winds throughout Alstead and surrounding towns. The Tri-Town Trail Blazers, Inc., maintains a trail system encompassing the State Corridor 5 and local trails servicing the towns of Alstead, Acworth and Langdon. The State Corridor 5 trail runs from Walpole northeast through over Cook Hat Hill, through the Vilas Pool area and into Acworth. Trail 393 runs in a east-west

direction from its departure from Corridor 5 at Darby Brook eastward across NH 12A, south of Lake Warren, over Smith Hill, south of Lily Pond and into Marlow. Other local trails lead to Lily Pond, Caldwell Pond, Prentice Hill, Lake Warren and Colony Mine, with additional connections between Corridor 5. The snow mobile trails map provided by the Tri-Town Trail Blazers is located at the end of this chapter.

### **D. SIDEWALKS**

Pedestrian mobility in the Village area has been a difficult issue due to the lack of adequate walking paths and sidewalks. Pedestrians often have to share traffic lanes or walk on the edge of the roadway to get around village areas. In many locations, the provision of sidewalks is infeasible due narrow roadways and building locations (most buildings are sited at the edge of the roadway).

## **ROAD IMPROVEMENT PROGRAM**

### **A. STATE PROJECTS**

Due to damage along the NH 123 corridor during the flood of October 2005, the state is currently planning a major reconstruction project for the flood damaged areas. The project schedule is below.

- Alstead (14541H) - Precast Concrete Culvert completed on 9/25/2006
- Alstead (14541I) - Cobb Hill Road area – out to bid on 11/14/2006 with completion in Fall of 2007
- Alstead (14541J) - NH 123 from NH 12A to NH 123A - out to bid in February 2007 with completion in Spring of 2008
- Alstead (14541K) - NH 123 bridge over Cold River by Millott Green - out to bid in April 2007 with completion in Fall of 2007
- Alstead (14540M) - NH 123 from Lake Warren to NH 12A intersection - out to bid in February 2008 with completion in Fall of 2008
- Alstead (14540W) - NH 123A from Vilas Pool to NH 123 intersection - out to bid in February 2008 with completion in Fall of 2008 (may need to be advanced due to FEMA regulations.)

### **B. LOCAL PROJECTS**

The Highway Department has instituted a ten year repaving cycle in order to maintain Alstead paved roads. According to the Director of Public Works, approximately 1.25 miles of road is usually repaved annually, although the actual length of road repaved yearly depends on the amount of available funding and materials. By maintaining a repaving cycle, the Highway Department defers maintenance costs by minimizing the need to fully reconstruct roads.

Other road improvement projects routinely undertaken by the Highway Department are the replacement of road drains and culverts and the upgrading of gravel roads. Drains and culverts are replaced as problems arise. The upgrading of gravel roads consists of raising the road bed to the proper height and widening narrow portions.

The Director of Public Works also indicated that Thayer Brook Road and Pine Cliff Road are in need of complete reconstruction. At this time, there are plans to undertake both projects.

## **TECHNIQUES FOR ADDRESSING TRANSPORTATION ISSUES**

### **A. PLANNING STRATEGIES**

#### **FOCUS DEVELOPMENT IN THE VILLAGE.**

Provide for mixed uses and higher densities in the Village rather than in the outlying parts of Town.

#### **IDENTIFY APPROPRIATE LAND USES.**

Existing land uses can be monitored and the Zoning Ordinance consulted to ensure that development will be compatible with the road system. Applications for development must always be reviewed with the scale of proposal relative to the road network and abutting land uses in mind.

#### **PLAN FOR PEDESTRIAN AND BICYCLE CONNECTIONS.**

The Town can make sure that it is always at the table when the NH DOT is considering plans involving the state routes, and make every effort to see that all due consideration is given to the accommodation of non-motorized traffic. The Town should ask NH DOT to consider funding for bicycle routes and road widening along the planned NH 123 reconstruction areas mentioned in the previous section.

#### **DEVELOP AND ADOPT A ROAD POLICY.**

The Planning Board, in conjunction with the Board of Selectmen, can develop a road policy that would guide development in town based on the status of existing roads and any future plans for roads. This can go far to ameliorate potential questions and problems when applications are submitted for the upgrading of a road, or for a building permit on a Class VI road.

#### **CAPITAL IMPROVEMENTS PROGRAM.**

A Capital Improvements Program (CIP) that sets forth the planned capital expenditures over a six year period can also help to guide road development. In conjunction with a Road Policy, the CIP can set the schedule as well as the degree and type of road improvements.

#### **SWRPC TRANSPORTATION ADVISORY COMMITTEE**

Participation in this Committee provides an opportunity for the Town to be involved in the development of the Region's 10-Year Highway Plan.

### **B. REGULATORY STRATEGIES: SUBDIVISION AND SITE PLAN CONSIDERATIONS**

#### **ACCESS MANAGEMENT TECHNIQUES**

Access management is a set of guidelines and standards for the design and location of driveways, major entrances, and new roads intended to reduce conflicts between traffic turning into and entering from roadside development and through traffic. By integrating these techniques for road and driveway standards into Alstead's Site Plan and Subdivision Review Regulations, the Town will ensure that future development will not negatively affect the transportation network, and will increase safety for bicyclists, pedestrians and motorists. Once the access management techniques become part of the Town's regulations, the NH DOT and Alstead can enter into a Memorandum of Understanding (MOU) by which

the NH DOT will communicate with the Town regarding proposed curb cuts along state routes. The NH DOT will not grant permits without communicating with the Town and will look to the Town's access management regulations to make sure the proposed curb cut complies.

### ○ **ROAD STANDARDS**

Included in the Subdivision Regulations administered by the Planning Board are standards for road construction. These address such things as width of the traveled way, width of shoulders, type of materials to be used and depth of each level. The Board also has the option, through a waiver procedure, of accepting plans for new roads with modified standards: for example, approving a graveled road rather than a paved road for developments of low traffic impact. Integrating access management principles into Alstead's existing road standards can contribute to a safe and efficient road network, and ensure safety for bicyclists, pedestrians and motorists. Some of these principles include:

- aligning roads either opposite one another or offset them by a safe distance;
- constructing an internal road system with access to new parcels rather than providing access from an arterial or collector roadway;
- designing a coordinated street network for subdivisions which provide rights of way or stubs for future connections to adjacent subdivisions;
- providing dedicated turn lanes where appropriate; and
- considering frontage and/or backage roads which provide alternative access to parcels adjacent to main roadways

### ○ **DRIVEWAY STANDARDS**

The Planning Board is allowed by state statute to adopt and administer regulations for the construction and permitting of driveways. The NH DOT regulates curb cuts on state roads; towns are allowed the same authority for town roads. A local driveway regulation, however, can cover all aspects of driveway construction for the entire length, not just the access area off of the road. While Alstead currently has local driveway regulations, further integrating principles of access management into these standards can contribute to safe and efficient transportation corridor management for bicyclists, pedestrians and motorists. Some of these principles include:

- reducing the number of curb cuts along a road;
- not allowing more than one entrance and one exit drive on any lot (where appropriate);
- separating curb cuts and intersections;
- aligning residential driveways and major entrances either opposite one another or offset them by a safe distance;
- addressing sight distance from the access point. Adequate sight distance will depend on the road classification and traffic volumes, but ideally, sight distance should be at least 11 times the speed limit;
- relating residential driveway and major entrance design such as width, length and curb radii, to travel speed and traffic volumes;
- requiring two-way driveways to intersect the road at an angle of 75-90 degrees;
- requiring shared access and parking where appropriate; and
- avoiding curb cuts on sharp hills; and
- limiting driveway grades within 20 feet of the road to no more than 3% uphill and 6% downhill.
- prohibiting parking that requires backing out onto the road.

○ **PARKING LOT LOCATION AND DESIGN**

The location and design of parking lots also contributes to an efficient transportation network, and driver, pedestrian and bicycle safety. Some techniques that can be used are:

- locating the building(s) close to the road and putting the parking on the side or in the rear of the parcel;
- requiring shared parking, when feasible;
- requiring interior circulation between adjacent parking;
- planning for future shared parking by designating reserved areas on the plan;
- accommodating pedestrians and bicyclists by integrating sidewalks and bike lanes;
- prohibiting parking and loading that requires backing out onto the street; and
- including the use of vegetative buffers between parking lots and roads.

During the subdivision or site plan review process the Planning Board has an opportunity to review all proposals based on the transportation issues identified in this section. Some of the pertinent issues include:

○ **VIEWING THE WHOLE PARCEL**

It is always important to step back from an individual plan and look at it in relation to the neighboring properties and land uses. If the lot fronts on more than one road, decisions can be made about which roads would better serve as access, how the parking should be laid out, etc.

○ **LOT LAYOUT**

When the opportunity presents itself through a multi-lot subdivision, the subdivision design should consider shared driveways or an interior street, with lots fronting off of the interior rather than the main roads. While the Town has addressed this, the Planning Board should continue to monitor future subdivision designs.

**C. ADDITIONAL CONSIDERATIONS**

○ **DEVELOPMENT OF BACKLOTS**

Backlot development is a zoning technique that allows the subdivision and/or development of lots that cannot meet the frontage requirement for the district. Allowing for this type of development gives towns the opportunity to set standards for the roads that serve these backlots, and require that the backlot share an access with the front lot, when appropriate, etc.

○ **SCENIC ROADS**

Alstead has one town road designated as Scenic (Camp Brook Road). This designation, in and of itself, does not affect land use or traffic along the road, but it could serve as the basis for developing a Scenic Road Corridor, in which land use and traffic would be reviewed in concert with the objectives of the designation.

## POPULATION AND HOUSING

### INTRODUCTION

The examination of population and housing statistics is a critical element of a Master Plan. The state statute that addresses the purpose and description of a Master Plan (RSA 674:2.III) calls for a “*housing section which assesses local housing conditions and projects future housing needs of all levels of income and ages in the municipality and the region as identified in the regional housing needs assessment performed by the regional planning commission pursuant to RSA 36:47,II, and which integrates the availability of human services with other planning undertaken by the community.*”

While population studies are not specifically addressed in the enabling legislation, to plan for the impacts of population changes, as they relate to housing availability, is obviously an integral part of the master planning process. By knowing Alstead’s past population trends and projecting the future population, it is possible to estimate the future level of Town services necessary and to plan for growth to occur in an orderly manner. The Population and Housing Analysis is intended to provide this information.

An analysis of the population and housing statistics also enables the Planning Board to determine whether amendments to the zoning ordinance might be required to address any inequities made apparent through the analysis. The concept of equal opportunity housing is now firmly established in the master plan process following two important NH Supreme Court cases,<sup>6</sup> In short, every town must, through its Master Plan, address the current and future housing needs of all its residents - and in doing so must consider the housing situation in its neighboring towns as well.

### METHOD OF ANALYSIS

This analysis relies on two primary sources: the US Census Bureau and the New Hampshire Office of Energy and Planning (OEP). Information for both population and housing from the US Census encompasses the years from 1980 to 2000. Additional statistics and estimates developed by OEP are used as applicable and where available. Limited information is provided from the New Hampshire Housing Finance Authority. The time period from 1980 until present gives a good indication of relevant trends. It must be noted that the way in which Census information is collected and reported results in some sampling errors and inconsistency in the numbers; nevertheless, this is the best and most comprehensive information available for this type of report. The methodology employed will measure the absolute growth in population and housing; the percentage growth over a particular time period; and the change in percentages, resulting in a picture of any change in the composition of the population or the housing stock.

### POPULATION ANALYSIS

According to the 2000 Census, Alstead had a total population of 1,944 persons representing a 33% increase from 1980. The New Hampshire Office of Energy and Planning estimated the 2005 population as 1,995, representing just a 3% increase from the year 2000.

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<sup>6</sup> *Soares v. Atkinson*, 128 NH (1986) and *Britton v. Town of Chester*, 134 NH (1991). In both cases, the court held that the local zoning ordinance did not provide reasonable housing opportunity for low and moderate-income residents.

**TABLE 1: POPULATION TRENDS, 1980 - 2005**

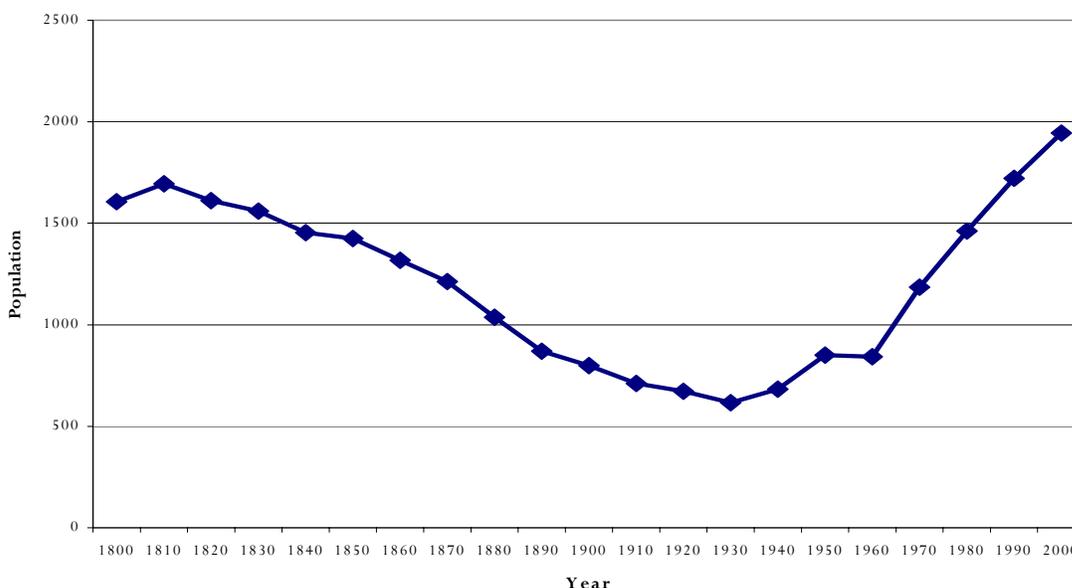
YEAR	POPULATION	% CHANGE
1980	1,461	--
1990	1,721	17.8%
2000	1,944	13.0%
2005*	1,995	3%

SOURCES: U.S. CENSUS BUREAU AND NH OFFICE OF ENERGY AND PLANNING\*

According to NH OEP population estimates, Alstead’s population density in 2005 was 51 persons per square mile. This was a slight increase from 50 persons per square mile in 2000. The population density in 1990 and 1980 was 44 and 37 persons per square mile, respectively.

The graph below presents a brief historical perspective of population change, illustrating the population from 1800 to the year 2000. As the graph illustrates, Alstead experienced a steady decline in population until about 1930, when small increases were recorded. Since 1940, the population has been steadily increasing – with the exception of the 1950s, when there was a small decline.

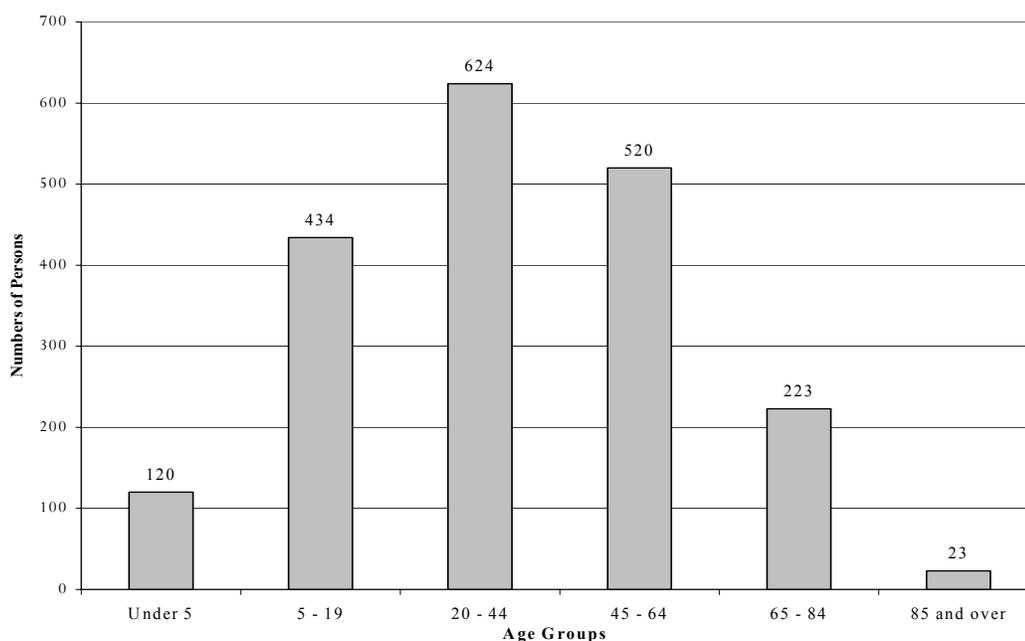
**GRAPH 1: ALSTEAD POPULATION, 1800 - 2000**



The Census breaks the population numbers out by age categories and sex, which is also of interest for planning purposes. Graph 2 illustrates the population breakdown by age grouping. The graph shows that Alstead’s population in 2000 was primarily composed of people in the work force age (20-64 years old) category, with the most populous age group being 20-44 year-olds. The median age of the total population in Alstead was 39.5 years according to the 2000 census.

The 2000 Census counted 993 males and 951 females in Alstead. However, Census information only breaks down the number of males and females into age groups for the “18 and over” and “65 and over” categories. These numbers show more females than males in both age groups. In the over 18 population, the number of males and females was 713 and 726, and in the 65 and over group, the count was 118 and 128.

**GRAPH 2: 2000 POPULATION BY AGE**



In comparing available census data from 1980-2000, the age structure of Alstead’s population appeared to shift towards the 45 – 64 year old age group. Although 22-44 year olds have continuously been the most populous age group in Alstead, the proportion of the population made up by people 45 years and older grew from 1980-2000. (Table 2)

**Table 2: Population by Age: 1980 – 2000**

Age Group	1980	% Total Population (1980)	1990	% Total Population (1990)	2000	% Total Population (2000)
Under 5 yrs old	133	9%	130	8%	120	6%
5-19 yrs old	353	24%	371	22%	434	22%
20-44 yrs old	555	38%	686	40%	624	32%
45-64 yrs old	262	18%	340	20%	520	27%
65-84 yrs old	148	10%	178	10%	223	11%
85+ yrs old	10	1%	16	1%	23	1%

SOURCE: US CENSUS BUREAU

**Percent Change: Population by Age (1980 – 2000)**

Age Group	1980-1990	1990-2000	1980-2000
Under 5 yrs old	-2%	-8%	-10%
5-19 yrs old	5%	17%	23%
20-44 yrs old	24%	-9%	12%
45-64 yrs old	30%	53%	98%
65-84 yrs old	20%	25%	51%
85+ yrs old	60%	44%	130%

SOURCE: US CENSUS BUREAU

**POPULATION CHARACTERISTICS**

Two factors affect population change: natural change, or the difference between the number births and deaths; and migration, the movement of people into or out of the community. Table 3 below presents the birth and death statistics for Alstead from 1990 to 2005. These figures show that Alstead has had a negative change – meaning more deaths than births – for the time period examined.

The data from 1990-2000 shows that Alstead had a natural decrease of 8 people during that time. If the natural decrease figures are applied to the 1990 and 2000 Census population information, a determination can be made as to the effect of in-migration on the population. The data from 2000-2005 shows a natural decrease of 14 people. Using New Hampshire Office of Energy and Planning (NH OEP) population estimates, the same determination can be made for the years 2000-2005:

**TABLE 3:  
NATURAL CHANGE**

<b>In-Migration, 1990-2000</b> (US Census Data)		<b>YEAR</b>	<b>Births</b>	<b>DEATHS</b>	<b>NATURAL CHANGE</b>
Population, 1990	<b>1,721</b>	1990	19	26	-7
Natural Decrease, 1990-2000	<b>-8</b>	1991	9	13	-4
Population in 2000, if no migration	<b>1,713</b>	1992	12	11	1
Actual 2000 Population	<b>1,944</b>	1993	8	9	-1
Therefore, increase due to in-migration	<b>231</b>	1994	9	15	-6
		1995	13	20	-7
		1996	5	10	-5
		1997	16	13	3
		1998	19	11	8
		1999	13	5	8
		2000	16	14	2
		2001	16	17	-1
		2002	17	17	0
		2003	4	13	-9
		2004	14	22	-8
		2005	24	20	4
		<b>Totals</b>	<b>214</b>	<b>236</b>	<b>-22</b>

<b>In-Migration, 2000-2005</b> (NH OEP Data)	
Population, 2000	<b>1,944</b>
Natural Decrease 2000-2005	<b>-14</b>
Estimated 2005 population	<b>1,995</b>
Therefore, increase due to In-migration	<b>65</b>

SOURCE: ALSTEAD ANNUAL REPORTS

Based on the above calculations, in-migration accounted for 97% of the population increase between 1990 and 2000, and 78% of the estimated population increase from 2000 to 2005.

Additional data gathered from the US Census reinforces the role that in-migration might play in population growth. Table 4 presents information on place of residence five years prior to the Census count. This type of information is used to determine resident mobility and stability, albeit the time period is not extensive.

**TABLE 4: PLACE OF RESIDENCE, PERSONS 5 YEARS AND OVER**

<b>PLACE OF RESIDENCE</b>	<b>1990</b>	<b>% OF TOTAL</b>	<b>PLACE OF RESIDENCE</b>	<b>2000</b>	<b>% OF TOTAL</b>
Same House in 1985	1,043	66%	Same House in 1995	1,173	64%
Different House, Same County	340	21%	Different House, Same County	353	19%
Different County, NH	37	2%	Different County, NH	82	4%
Different State	160	10%	Different State	233	13%
Different Country	11	1%	Different Country	5	0%

SOURCE: US CENSUS BUREAU

Over 60 percent of Alstead’s population lived in the same house five years prior to the 1990 Census and 2000 Census. According to the Census, the largest percentage of Alstead’s population appeared to be native to either the Town or the state of New Hampshire.

The following two tables present information collected by the Census on income and poverty levels. Table 5 contains median household and family incomes for Alstead residents in 1990 and 2000, and compares those to the incomes for Cheshire County<sup>7</sup> and the state of New Hampshire. Table 6 presents the census information on poverty levels.

**TABLE 5: INCOME INFORMATION - ALSTEAD AND CHESHIRE COUNTY, 1990 & 2000**

	<b>1990</b>			<b>2000</b>		
	<b>Alstead</b>	<b>Cheshire County</b>	<b>State</b>	<b>Alstead</b>	<b>Cheshire County</b>	<b>State</b>
Median Household Income	\$30,956	\$31,648	\$36,329	\$43,191	\$42,382	\$49,467
Median Family Income	\$32,857	\$36,556	\$41,628	\$47,311	\$51,043	\$57,575
Per Capita Income	\$13,236	\$13,887	\$15,959	\$20,444	\$20,685	\$23,844

SOURCE: US CENSUS BUREAU

<b>Percent Change 1990-2000</b>			
	<b>Cheshire</b>		
	<b>Alstead</b>	<b>County</b>	<b>State</b>
Median Household Income	40%	34%	36%
Median Family Income	44%	40%	38%
Per Capita Income	54%	49%	49%

Overall, Alstead residents compared favorably with the average county and state incomes, both in 1990 and 2000. Income levels in Alstead increased at a rate greater than county and state levels. However in dollar values, Alstead’s income levels were still slightly lower than county and state levels. Information on poverty levels gives a slightly different picture. Between 1990 and 2000, the poverty rate among non-elderly residents rose 2 percentage points while the number of elderly living below the poverty line decreased 6 percentage points.

<sup>7</sup> The Census defines a family as a householder and one or more persons in the same household who are related by birth, marriage or adoption. A household, on the other hand, includes all unrelated persons who occupy a housing unit, and may consist of just one person.

**TABLE 6:  
POVERTY LEVELS – ALSTEAD AND CHESHIRE COUNTY, 1990 & 2000**

<b>PERSONS FOR WHOM POVERTY STATUS IS DETERMINED:</b>	<b>ALSTEAD 1990</b>	<b>COUNTY 1990</b>	<b>ALSTEAD 2000</b>	<b>COUNTY 2000</b>
Above Poverty Level	1,606	61,599	1,795	64,242
Below Poverty Level	96	4,672	153	5,550
% Below Poverty	6%	7%	8%	8%
Over Age 65:				
above poverty	172	7,918	221	8,904
below poverty	22	733	11	594
% Below Poverty	11%	8%	5%	6%

SOURCE: US CENSUS BUREAU

### SUBREGIONAL POPULATION COMPARISONS

An analysis of population is not complete without a comparison of Alstead’s population with that of its immediate neighbors – Walpole, Langdon, Acworth, Marlow, Gilsum, and Surry. Population information for Keene is also included due to its close proximity to Alstead. Statistics on percent of growth can be misleading if the towns involved in the comparison vary too greatly in population. Table 7 on the following page presents this information for the last two decades, 1980 – 2000, according to the US Census, along with 2005 population estimates from the NH OEP.

The figures in Table 7 illustrate consistent rates of growth for Alstead, and variable growth rates in its six immediate neighbors. Six of the eight immediate neighbors had more growth in the 1980s than they did in the 1990s – Walpole and Surry were the exceptions. Alstead had the fourth largest increase in the 1980’s compared to its immediate neighbors and the second largest increase in the 1990’s, after Marlow. From 2000-2005, Alstead had the smallest increase in population compared to its immediate neighbors. Despite this, Alstead has remained the third largest town in its subregion (including Keene) since 1980.

In terms of each town’s share of this subregional population, Keene ranks the highest for each of the three years examined, although the percentage has decreased since 1980. Overall, each town’s share of the subregional population has remained fairly constant. All towns though, except Langdon and Keene, have shown either a slight increase in their share of the subregional population or have remained constant.

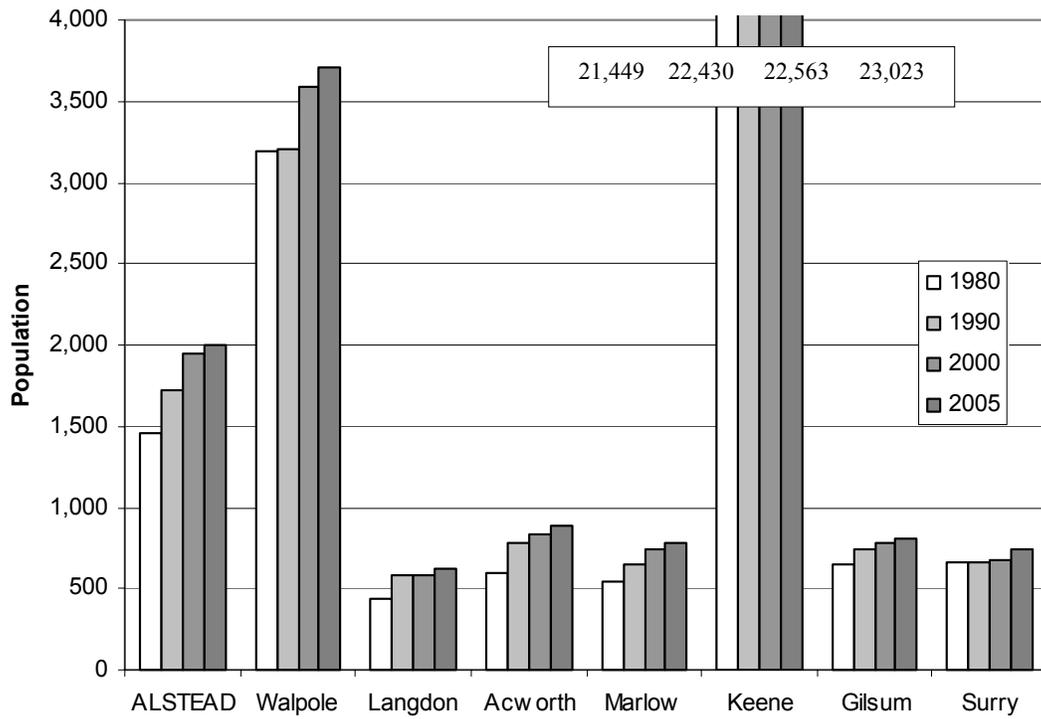
The graphs following Table 7 visually present the information contained in Table 7. Graph 2 shows the population of the towns in each year examined. Graph 3 illustrates the percentage of population increase over the twenty years. Graph 4 compares the share of each town’s population relative to the total subregional population.

**TABLE 7:  
SUBREGIONAL POPULATION COMPARISONS, 1980 – 2005\***

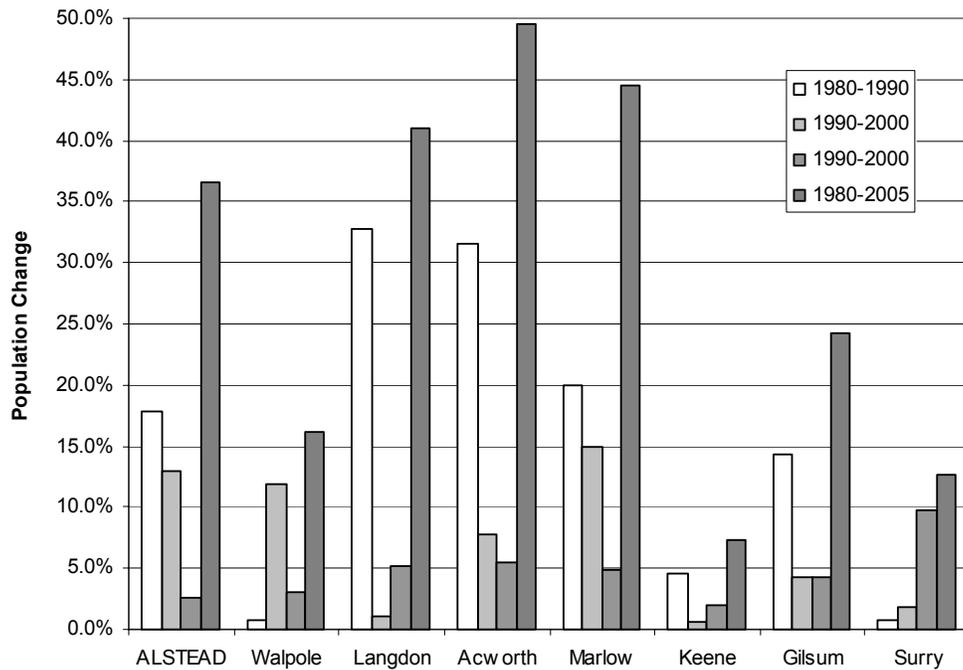
<b>POPULATION</b>				
	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2005</b>
<b>ALSTEAD</b>	1,461	1,721	1,944	1,995
Walpole	3,188	3,210	3,594	3,703
Langdon	437	580	586	616
Acworth	590	776	836	882
Marlow	542	650	747	783
Keene	21,449	22,430	22,563	23,023
Gilsum	652	745	777	810
Surry	656	661	673	739
Total	28,975	30,773	31,720	32,551
<b>PERCENTAGE CHANGE</b>				
	<b>1980-1990</b>	<b>1990-2000</b>	<b>2000-2005</b>	<b>1980-2005</b>
<b>ALSTEAD</b>	17.8%	13.0%	2.6%	36.6%
Walpole	0.7%	12.0%	3.0%	16.2%
Langdon	32.7%	1.0%	5.1%	41.0%
Acworth	31.5%	7.7%	5.5%	49.5%
Marlow	19.9%	14.9%	4.8%	44.5%
Keene	4.6%	0.6%	2.0%	7.3%
Gilsum	14.3%	4.3%	4.2%	24.2%
Surry	0.8%	1.8%	9.8%	12.7%
Total	6.2%	3.1%	2.6%	12.3%
<b>PERCENTAGE OF SUBREGIONAL POPULATION</b>				
	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2005</b>
<b>ALSTEAD</b>	5.0%	5.6%	6.1%	6.1%
Walpole	11.0%	10.4%	11.3%	11.4%
Langdon	1.5%	1.9%	1.8%	1.9%
Acworth	2.0%	2.5%	2.6%	2.7%
Marlow	1.9%	2.1%	2.4%	2.4%
Keene	74.0%	72.9%	71.1%	70.7%
Gilsum	2.3%	2.4%	2.4%	2.5%
Surry	2.3%	2.1%	2.1%	2.3%

SOURCE: US CENSUS BUREAU AND NH OEP\*

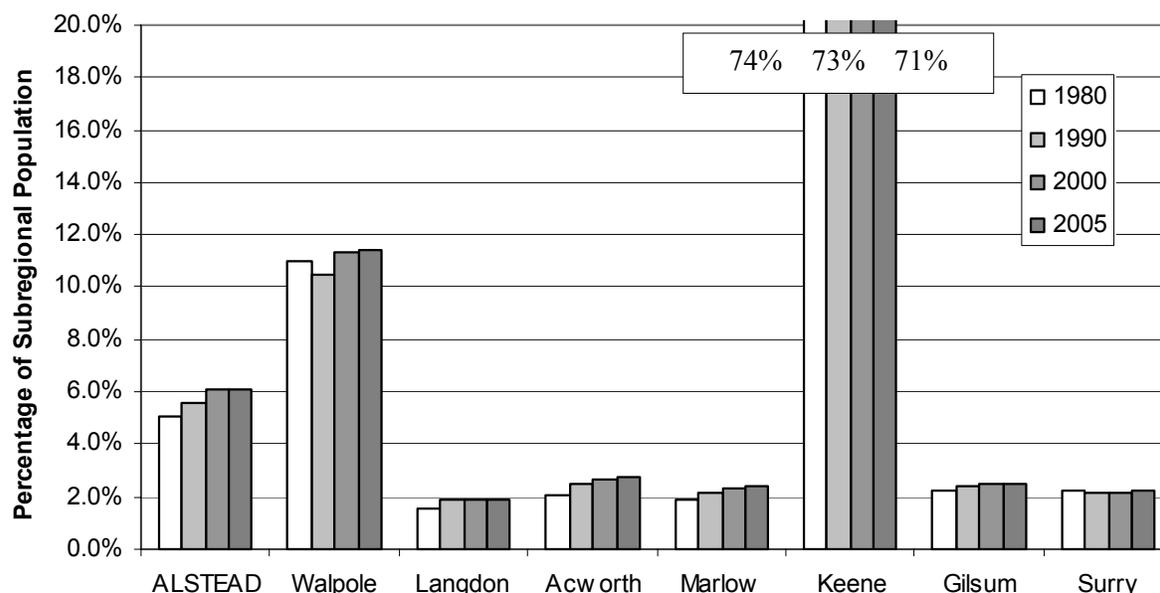
**GRAPH 2:  
SUBREGIONAL POPULATION, 1980 – 2005**



**GRAPH 3:  
PERCENT CHANGE IN POPULATION, 1980 – 2005**



**GRAPH 4:  
TOWN POPULATION AS PERCENT OF SUBREGIONAL POPULATION, 1980 – 2005**



## HOUSING ANALYSIS

### DESCRIPTION OF THE HOUSING STOCK

In this section, statistics on housing supply and type, age of housing, and various housing conditions are examined in order to describe the status of the housing supply in Alstead. Beginning with the basic number of total housing units, Table 8 below presents these numbers for the years 1980, 1990, and 2000, along with the tenure and vacancy information.

**TABLE 8:  
ALSTEAD HOUSING SUPPLY & TENURE, 1980 -2000**

	# of Units			% Change	% Change	% Change
	1980	1990	2000	1980-90	1990-00	1980-00
All Housing Units	570	843	950	48%	13%	67%
Occupied Units	508	654	781	29%	19%	54%
owners	418	526	617	26%	17%	48%
renters	90	128	164	42%	28%	82%
Vacant Units	62	189	169	205%	-11%	173%
seasonal	23	135	128	487%	-5%	457%
other vacant	39	54	41	39%	-24%	5%
% vacant	11%	22%	18%			
% owner-occupied	73%	62%	65%			

SOURCE: US CENSUS BUREAU

The increases in the total housing units were consistent with the population changes witnessed over the same time period: that the greatest growth was in the 1980s, with a dramatic slowdown from 1990 to 2000, and a decrease in vacant units. The percentage of owner-occupied units decreased from 1980 to 2000, but well over half of all units continued to be owner-occupied. The percentage of vacant units increased from 11% in 1980 to 18% in 2000.

Also of interest when examining housing issues is the type of housing units available in town. Housing stock is defined by the following types: single family, multi-family, and manufactured housing. Definitions used in this analysis come from OEP, which uses definitions developed by the US Census, but sometimes combines categories, as follows:

- Single Family* (or 1-Unit Detached): A 1-unit structure detached from any other structure. This also includes mobile homes or trailers to which one or more permanent rooms have been added.
- Two Family*. One structure containing two separate, independent housing units.
- Multi-Family*: Any structure containing 2 or more housing units; this includes the Census classification of “I-Unit Attached.”
- Manufactured Housing*: Both occupied and vacant mobile homes to which no permanent rooms have been added. (Note that once any addition is put onto a manufactured unit, the Census counts it as a single-family dwelling.)
- Other*: Any living quarters occupied as a housing unit that does not fit the previous categories, such as houseboats, railroad cars, campers and vans.

**TABLE 9: HOUSING UNITS BY TYPE, 1980 – 2000**

	<u>1980</u>		<u>1990</u>		<u>2000</u>		<u>2004*</u>		<u>% Change 1980-04</u>
	<u>Number</u>	<u>% of Total</u>	<u>Number</u>	<u>% of Total</u>	<u>Number</u>	<u>% of Total</u>	<u>Number</u>	<u>% of Total</u>	
Single Family	465	82%	649	77%	756	80%	779	80%	<b>68%</b>
Two Family	--	--	25	3%	31	3%	--	--	--
Multi-Family	49 <sup>8</sup>	9%	47	6%	48	5%	90	9%	--
Man. Housing	56	10%	115	14%	110	12%	109	11%	<b>95%</b>
Other	--	--	7	1%	5	1%	--	--	--
Total	570	--	843	--	950	--	978	--	<b>72%</b>

SOURCE: US CENSUS BUREAU AND NH OEP\*

Alstead, like most towns in the region, has more single family housing units than any other type. The percentages accounted for by each type of housing have not changed appreciably over the years: single family units account for between 77 and 82 percent; the combination of two family and multi-family remained between 8% and 9%. Although the number of manufactured units has nearly doubled, the proportion of manufactured homes in Alstead’s total housing supply has remained fairly constant since 1980.

According to the windshield survey conducted for the primary purpose of composing the Land Use chapter of this Master Plan, in 2006, there were 781 single family units, 3 two-family structures (each with two units), 15 multifamily structures (each with multiple units), and 5 seasonal single family structures. Approximately 25 structures were destroyed in the October 2005 flood event. More information on the methodology used can be found in the Land Use chapter.

The age of the housing stock is useful information in gauging whether or not to expect problems (see Table 10). There is a presumption that homes built prior to 1940 are more likely to be dilapidated or have

<sup>8</sup> Due to a change in the way the US Bureau of the Census classified data for housing supply type, two family and multi-family units could not be distinguished from each other in the 1980 Census data and are recorded together

outdated heating, water and septic systems. Even though this might be true overall, many older homes have been renovated and restored to good condition. Housing quality is also a function of age and income of the occupants, which are examined later.

**TABLE 10: AGE OF HOUSING STOCK, BY DECADE OF CONSTRUCTION**

<b>YEAR BUILT</b>	<b>NUMBER</b>	<b>% OF TOTAL</b>
Before 1940	257	27%
1940 to 1959	117	12%
1960 to 1969	102	11%
1970 to 1979	150	16%
1980 to 1989	198	21%
1990 to 1994	70	7%
1995 to 1998	50	5%
1999 to March 2000	6	1%
<b>Total</b>	<b>950</b>	

SOURCE: US CENSUS BUREAU

Table 10 shows that 27% of the housing stock was constructed prior to 1940. After that, a substantial amount of new homes were been built every decade. Sixty-one percent of Alstead's homes were built between 1960 and March 2000. The 1980s saw a housing boom in Alstead, in which 21% of Alstead's current housing stock was built. Only 13% of Alstead's homes were constructed in the 1990s.

The Census collects data that further describes housing stock by focusing on three conditions: whether or not the unit has complete plumbing & kitchen facilities; the number of rooms in each housing unit; and the number of persons living in each housing unit. In Alstead, the numbers of units lacking complete plumbing or kitchen facilities were very minimal as of 2000: out of over 800 units there were only 91 and 31 units lacking complete plumbing or kitchen facilities in 1990. In 2000, out of 950 units, the number of units lacking complete plumbing dropped to 47, while the number of units lacking kitchen facilities increased to 46.

Table 11 illustrates that all recorded categories of rooms per unit increased over time, with the exception of one and two room units which have increased in number since 1980, but have shown a decline of 19% from 1990 figures. The larger units of five or six rooms experienced the greatest increase (216% from 1980 to 2000). It is possible that many of these new units were accounted for by additions to existing housing stock. It is not uncommon that early post-war homes, typically smaller than homes built today, were converted over time, adding living and sleeping space. The average size for homes in Alstead remained fairly constant from 1980-2000 and is roughly five rooms per dwelling unit.

**TABLE 11: HOUSING UNITS BY NUMBER OF ROOMS**

	<b>1980</b>		<b>1990</b>		<b>2000</b>		<b>% Change</b>
	<b>Number</b>	<b>% of Total</b>	<b>Number</b>	<b>% of Total</b>	<b>Number</b>	<b>% of Total</b>	<b>1980 - 2000</b>
1 or 2 rooms	44	8%	64	8%	54	6%	23%
3 or 4 rooms	152	27%	227	27%	286	30%	88%
5 or 6 rooms	109 (5) <sup>9</sup>	19%	331	39%	344	36%	216%
7+ rooms	256 (6+)	46%	221	26%	266	28%	4%
Total	561		843		950		69%
Rooms per Unit	5.3		5.2		5.3		

SOURCE: US CENSUS BUREAU

### MEASURE OF HOUSING PROBLEMS

Census data relative to overcrowding and affordability are examined here, as these are two other variables that help gauge the extent of housing problems. Persons per room and the per unit occupancy are two measures the Census relies on to determine whether or not dwelling units are overcrowded.

#### Overcrowding:

Table 12 presents four categories for examining household size. The Census selects these categories on the basis of their social significance and their frequency of occurrence. The table shows that most units in Alstead were occupied by 2-4 persons during 1980-2000. However, the percentage of units occupied by a single person increased more quickly than any other household size, while the total percentage of units occupied by 3-4 people showed a slight decline. As a result, the average number of people living in each unit has declined during the past twenty years.

**TABLE 12: OCCUPIED UNITS BY NUMBER OF PERSONS**

	<b>1980</b>		<b>1990</b>		<b>2000</b>		<b>% Change</b>
	<b>Number</b>	<b>% of Total</b>	<b>Number</b>	<b>% of Total</b>	<b>Number</b>	<b>% of Total</b>	<b>1980 - 2000</b>
1 person	92	18%	128	20%	189	25%	105%
2 persons	168	33%	245	37%	273	35%	63%
3 or 4 persons	173	34%	218	33%	249	32%	44%
5+ persons	75	15%	63	10%	60	8%	-20%
Total	508		654		771		
Persons per Unit	2.88		2.63		2.51		

SOURCE: US CENSUS BUREAU

The Census defines an overcrowded unit as one that is occupied by more than one person per room. The data for Alstead, illustrated below in Table 13, indicate that overcrowding was not an issue from 1980-2000. In all three Decennial census counts examined here, nearly 100% of the housing stock had a measure of 1.00 person per room, or less.

<sup>9</sup> Due to a change in the way the US Bureau of the Census classified data for number of rooms per unit, (#) indicates the number of rooms included in the data presented when it does not correspond to the categories given.

**TABLE 13: OCCUPIED UNITS BY PERSONS PER ROOM, 1980 – 2000**

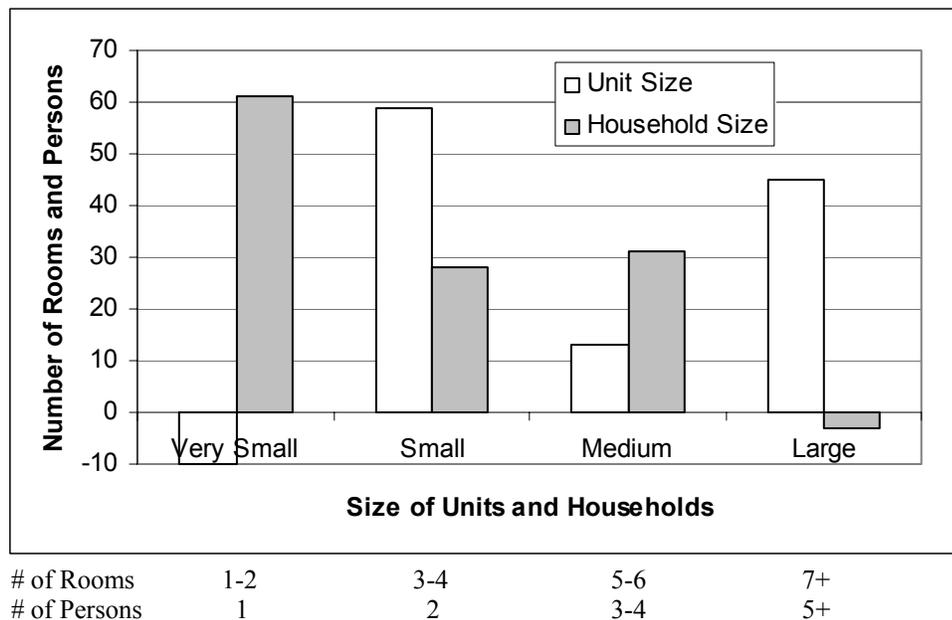
	1980	% of Total	1990	% of Total	2000	% of Total
1.00 or less	474	93%	632	97%	763	98%
1.01 – 1.50	17	3%	16	2%	8	1%
1.51 or more	17	3%	6	1%	10	1%

SOURCE: US CENSUS BUREAU

Graph 5 combines the data on number of rooms per unit with numbers of persons per unit, in order to understand further whether or not overcrowding was a problem in Alstead in the years examined. By placing the two variables together in the same graph, the effect is to dramatize the differences or similarities in two different trends.

Based on the Census criteria for overcrowding, households ideally should have between 0.5 and 1.0 person per room, as noted above. The “very small” to “large” categories for Graph 5 correspond to the number of persons per room and number of rooms per unit. The graph shows the absolute growth of households and unit size (the change from 1990 to 2000 in each category from Tables 10 & 11). It is immediately obvious that the growth in households was in the very small and small categories, of one to two persons per unit, and that the five or more-person household declined over this same time period. The greatest growth in unit size occurred in small (3-4 rooms) and large (7+ rooms) units.

**GRAPH 5:  
CHANGE IN HOUSEHOLD SIZE AND DWELLING UNIT SIZE, 1990 – 2000**



**Affordability:**

The information in this section is intended to determine how affordable and available housing is for people in Alstead. Table 14 presents the relative cost of housing in Alstead, based on Census data, compared to the median housing costs in the region. Table 14a presents the median purchase prices for homes in Alstead, Cheshire County and New Hampshire State as reported by the New Hampshire Housing Finance Authority for the years 2000-2005. Table 15 illustrates the percentage of income spent on housing, using 2000 Census data - whether this is in mortgage payments or rent; the level of income is categorized by groups, since exact income at this level of detail is not possible to obtain. Table 16 calculates the ability of people to pay for housing based on income.

**TABLE 14:  
COST OF HOUSING, ALSTEAD AND REGION, 1980 – 2000**

<b>Median Housing Cost</b>	<b>COST OF HOUSING IN ALSTEAD</b>			<b>% of Regional Median Cost</b>		
	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
House Value	\$34,900	\$91,200	\$87,900	85%	82%	83%
Contract Rent	\$163	\$436	\$617	82%	84%	104%
Regional Value	\$41,000	\$111,000	\$105,300			
Regional Rent	\$198	\$516	\$596			

SOURCE: US CENSUS BUREAU

From 1980-1990, housing costs and contract rent in Alstead nearly tripled. Between 1990 and 2000, housing costs decreased slightly while contract rent increased. Despite these changes, Alstead’s housing costs relative to the regional median housing cost remained constant during this time period. From 1980-2000, only Alstead’s median cost of rent has increased above the median value for the region.

**TABLE 14A:  
MEDIAN PURCHASE PRICES OF HOMES, 2001-2005**

	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
<b>Alstead</b>	\$95,000	\$119,000	\$159,933	\$147,500	\$159,900
<b>Cheshire Cty</b>	\$122,500	\$139,000	\$159,000	\$177,000	\$192,000
<b>NH State</b>	\$162,000	\$189,900	\$215,000	\$238,000	\$250,000

SOURCE: NH HOUSING FINANCE AUTHORITY

According to the NH Housing Finance Authority, the median purchase price of homes has increased 68% from 2001-2005 in Alstead. This is a greater increase than Cheshire County (57%) and NH State (54%).

While median rental costs since 2000 are unavailable for Alstead, according the NH Housing Finance Authority, 2-bedroom median gross rent for Cheshire County has increased 34.8% from 2001-2006, second in the state only to Belknap County. The median gross rent (including utilities) in Cheshire County was \$960 in 2006, up from \$712 in 2001.

Table 15 refines the data in Table 14 by illustrating not just what people paid for their housing, but what percentage those costs were of their income, according to the Census. It has been a fact that people in lower income brackets pay more – proportionally – for housing than do people in higher income brackets.

**TABLE 15:  
% OF INCOME SPENT ON HOUSING IN ALSTEAD, (1989 & 1999)**

	OWNERS		RENTERS	
	1989	1999	1989	1999
Less than 20%	128 (49%)	182 (55%)	39 (37%)	36 (25%)
20.0 to 24.9%	52 (20%)	42 (13%)	15 (14%)	23 (16%)
25.0 to 29.9%	40 (15%)	35 (11%)	19 (18%)	13 (9%)
30.0 to 34.9%	12 (5%)	16 (5%)	4 (4%)	4 (3%)
35.0 to or more	28 (11%)	55 (17%)	11 (10%)	43 (30%)
<i>Not computed</i>	--	--	17 (16%)	23 (16%)
<b>Total</b>	<b>260</b>	<b>330</b>	<b>105</b>	<b>142</b>

SOURCE: US CENSUS BUREAU

About 23% of owner-occupied households paid 30% or more of their monthly incomes on housing in 1999 as opposed to 16% in 1989. Approximately 33% of renter-occupied households paid 30% or more of their monthly incomes on housing in 1999 compared to 14% in 1989. The table shows that while the majority of households were paying less than 30% of their monthly income towards housing costs, the percentage of those paying more than 30% of their monthly income grew. Renters are generally most likely to pay more than 30% of their monthly income towards housing costs.

Based on the assumption that no more than 30% of a household's income should be spent on housing for that to be considered affordable, the possibilities for home ownership in Alstead are examined in Table 16 below. The property tax calculation is based on the 2000 tax rate of \$28.72.

**TABLE 16: HOME OWNERSHIP AFFORDABILITY IN ALSTEAD, 2000**

<b>2000 MEDIAN HOUSEHOLD INCOME</b>	<b>\$43,191</b>	<b>80% OF MEDIAN HOUSEHOLD INCOME</b>	<b>\$34,553</b>	<b>50% OF MEDIAN HOUSEHOLD INCOME</b>	<b>\$21,596</b>
30% of monthly income	\$1,080	30% of monthly income	\$864	30% of monthly income	\$540
Property Tax (\$2,070/year)	\$173	Property Tax (\$1,656/year)	\$138	Property Tax (\$1,035/year)	\$83
Available for mortgage	\$907	Available for mortgage	\$726	Available for mortgage	\$457
Mortgage affordable at 5.5% for 30 years	\$68,476	Mortgage affordable at 5.5% for 30 years	\$54,781	Mortgage affordable at 5.5% for 30 years	\$34,238
Plus 5% Down Payment	\$3,604	Plus 5% Down Payment	\$2,883	Plus 5% Down Payment	\$1,802
<b>Projected Affordable Home</b>	<b>\$72,080</b>	<b>Projected Affordable Home</b>	<b>\$57,664</b>	<b>Projected Affordable Home</b>	<b>\$36,040</b>

\*Source: Fannie Mae (assumes no other debts, closing costs, homeowners insurance, or other taxes)

Under the three scenarios examined in Table 16, those households earning the median household income or below in the year 2000 could not afford a median priced home (\$87,900) during the same period. As Table 14a above shows, housing prices have nearly doubled since 2000. While the current average value is related directly to supply and demand of homes sold in Alstead for the time period, it is doubtful that median income has caught up with increasing housing costs (including increases in property taxes and interest rates). Therefore, housing remains unaffordable for households with earnings at the median income level.

The last two measures examined here to complete the picture on housing conditions and the ability of residents to maintain their homes are as follows: (1) duration of occupancy (longtime occupancy indicates older residents; and (2) age of home owners.

**TABLE 17: DURATION OF OCCUPANCY, 1990 - 2000**

Number of Years in Unit	1990		2000	
	# of Units	% of Total	# of Units	% of Total
Up to 20 years	540	83%	445	79%
20 years or more	114	17%	118	21%

SOURCE: US CENSUS BUREAU

Table 17 shows a fairly large percentage of the housing stock examined was occupied by people who have been in that unit for 20 years or more as of 2000, which reflects population statistics indicating that 20-64 year olds comprised the bulk of Alstead’s population at that time. Households that have remained in the same housing unit for twenty years or more may be indicative of an aging population, but also reflects a stable community – evidenced even more so by the increase of that group over time, from 17% in 1990 to 21% in 2000.

Data on ownership by age (Table 18) indicates that those between 35 and 54 years of age represented the bulk of Alstead’s householders in 2000. The second largest percentage of households was held by those 65 years and older. Between both groups, it is easy to imagine that approximately 21% of Alstead’s households lived in the same home for 20 years or more. The two tables do show, however, that while many units were occupied by long-term residents, most homes were owned by people who are presumably still in the labor force.

**TABLE 18:  
OCCUPIED UNITS BY AGE, 2000**

	# of Units	% of Total
15-34 years	119	15%
35-54 years	399	51%
55-64 years	99	13%
65 years and over	164	21%

SOURCE: US CENSUS BUREAU

## **SUBREGIONAL HOUSING COMPARISONS**

### **Housing Units**

It is also important to see how Alstead’s housing supply compares to towns within its subregion. Table 19 presents the comparison of total housing supply for Alstead and its subregion from 1980 to 2004, the percentage change from each decade, and each town’s share of the subregional population. This information is also graphed following the table. Data for 2004 was gathered from NH OEP, derived by adding the number of new residential building permits from 2000-2004 to the 2000 census housing unit data.

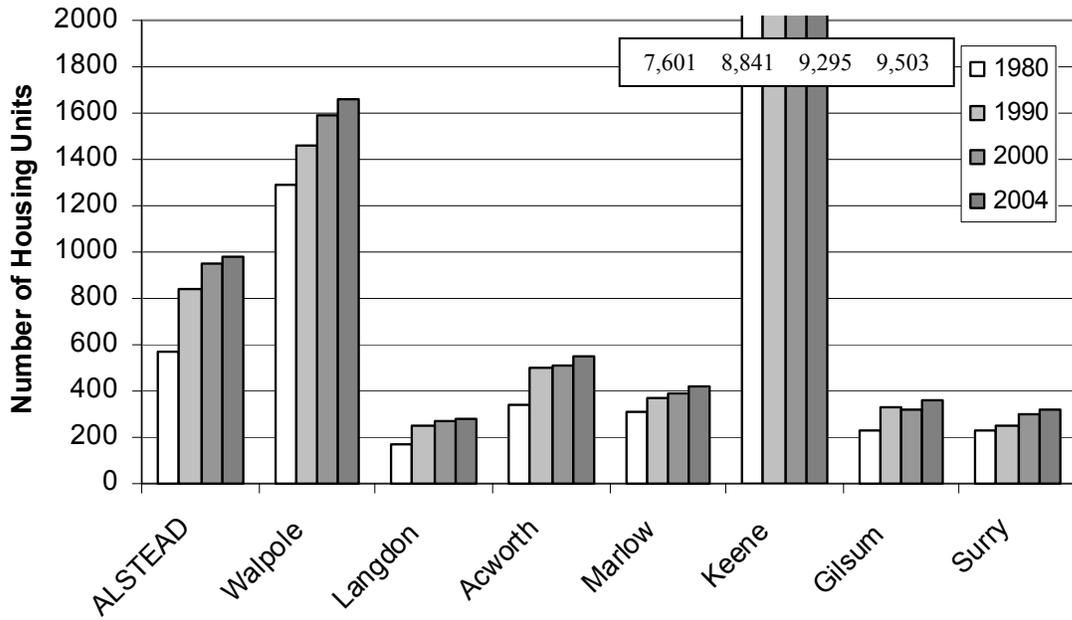
The information presented in Table 19 is fairly consistent with the population statistics presented earlier in this report; namely, most of the growth seen in this region - in terms of both population and housing, occurred in the 1980s. And, that growth was dramatically less in the 1990s. In terms of distribution of subregional housing units, Alstead ranks second among the seven towns – after Keene is excluded due to its larger size. Walpole has the most number of housing units, and Langdon has the least, which is consistent with the population distribution among the towns.

**TABLE 19: SUBREGIONAL HOUSING TRENDS, 1980 – 2004**

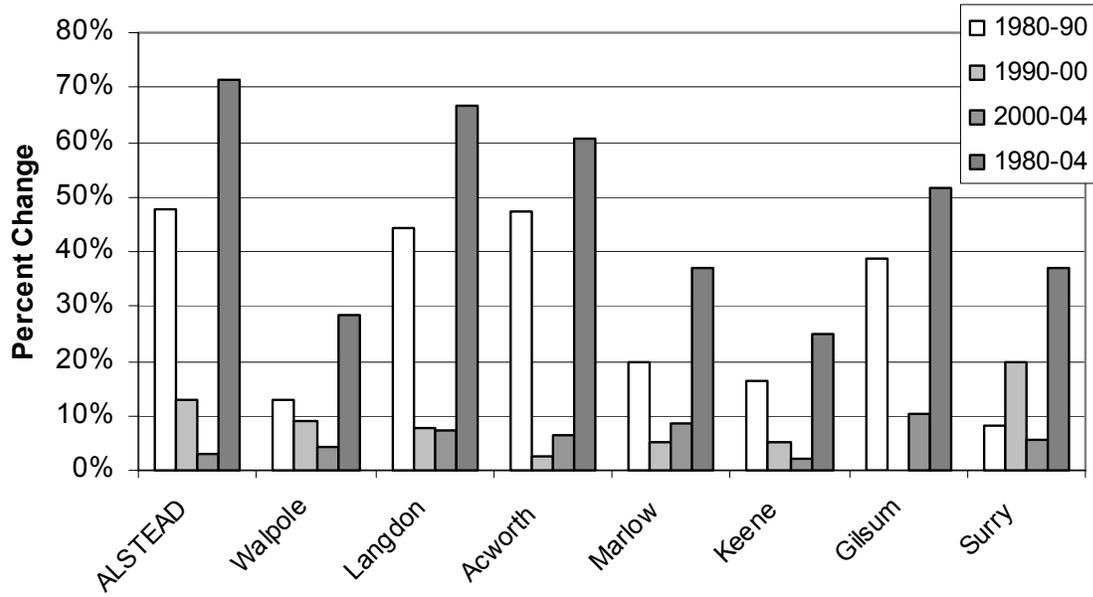
<b>NUMBER OF UNITS</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2004*</b>
<b>ALSTEAD</b>	570	843	950	978
Walpole	1,294	1,460	1,592	1,661
Langdon	171	247	266	285
Acworth	341	503	515	548
Marlow	307	368	387	421
Keene	7,601	8,841	9,295	9,503
Gilsum	235	326	323	356
Surry	233	252	302	319
<b>TOTAL HOUSING UNITS</b>	<b>10,752</b>	<b>12,840</b>	<b>13,630</b>	<b>14,071</b>
<b>PERCENTAGE CHANGE</b>	<b>1980-1990</b>	<b>1990-2000</b>	<b>2000-2004</b>	<b>1980-2004</b>
<b>ALSTEAD</b>	47.9%	12.7%	2.9%	71.6%
Walpole	12.8%	9.0%	4.3%	28.4%
Langdon	44.4%	7.7%	7.1%	66.7%
Acworth	47.5%	2.4%	6.4%	60.7%
Marlow	19.9%	5.2%	8.8%	37.1%
Keene	16.3%	5.1%	2.2%	25.0%
Gilsum	38.7%	-0.9%	10.2%	51.5%
Surry	8.2%	19.8%	5.6%	36.9%
<b>PERCENTAGE OF TOTAL UNITS</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2004</b>
<b>ALSTEAD</b>	5.6%	6.6%	7.0%	7.0%
Walpole	12.6%	11.4%	11.7%	11.8%
Langdon	1.7%	1.9%	2.0%	2.0%
Acworth	3.3%	3.9%	3.8%	3.9%
Marlow	3.0%	2.9%	2.8%	3.0%
Keene	74.2%	68.9%	68.2%	67.5%
Gilsum	2.3%	2.5%	2.4%	2.5%
Surry	2.3%	2.0%	2.2%	2.3%

SOURCE: US CENSUS BUREAU AND NH OEP\*

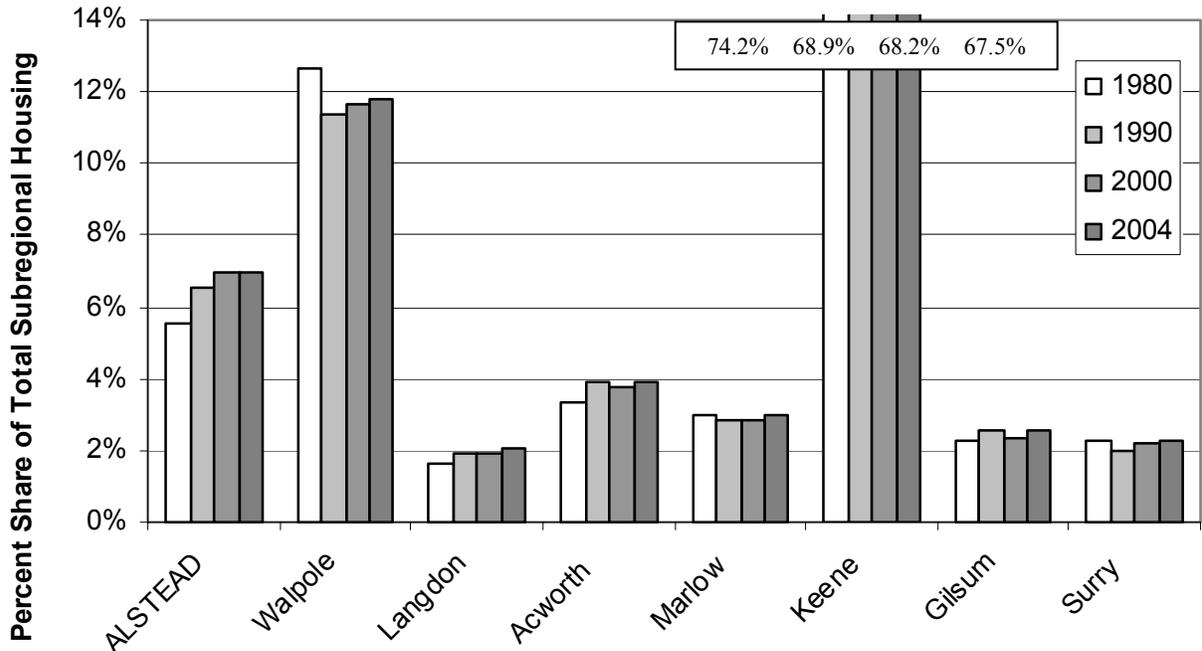
GRAPH 6: SUBREGION - TOTAL NUMBER HOUSING UNITS: 1980-2004



GRAPH 7: SUBREGION – PERCENT CHANGE IN HOUSING UNITS: 1980-2004



**GRAPH 8: PERCENT SHARE OF TOTAL SUBREGIONAL HOUSING: 1980-2004**



**Households**

An occupied housing unit is referred to as a household. By comparing the number of housing units to the number of households, it is possible to estimate the number of vacant housing units. From 1990 to 2004, the number of vacant housing units remained nearly static. In 1990, 22%, or 189 housing units were considered vacant. In 2000 and in 2004, 18% of housing units were vacant. Vacant housing units fall in three categories: 1) for sale, 2) seasonal/recreational, and 3) recreational vehicle, tents, cars.

**HOUSING NEEDS ASSESSMENT**

The enabling statute that addresses the development of Master Plans (RSA 674:2) requires that the housing section address current and future housing needs of all residents, at all income levels, of the town and the region in which it is located. In order to do that, opportunities for housing development in Alstead are examined, as well as population projections that give some indication as to what the Town can expect in terms of housing needs for new population.

**Housing Opportunity**

In this section, the zoning provisions for Alstead are reviewed, as they relate to opportunities for various housing types in the town; specifically which types are permitted and what the minimum lot requirements for those dwelling units are. (Table 20) Alstead has four zoning districts that accommodate residential development. Examination of the Alstead zoning ordinance reveals the following provisions that deal with the availability of housing:

**TABLE 20:  
HOUSING OPPORTUNITIES IN ALSTEAD**

<b>ZONING DISTRICT</b>	<b>PERMITTED HOUSING TYPES</b>	<b>LOT AND YARD STANDARDS</b>
Lake District	1. Single Family Dwellings – Permitted by right.	<ul style="list-style-type: none"> <li>◆ Minimum 5 acres with 200-foot of frontage</li> <li>◆ 75-foot setback from mean high water mark</li> <li>◆ 50-foot setback on public right of way</li> <li>◆ 30-foot setback from any other property line</li> </ul>
Village District (A,B, & C)	1. Single Family Dwellings – Permitted by right. 2. Condominium Conversion of Existing Apartments or Multi-Family Dwelling Units – Permitted by right. 3. Two-Family, Multi-Family Dwellings – Permitted by Special Exception. 4. Rest, Convalescent Homes – Permitted by Special Exception	<ul style="list-style-type: none"> <li>◆ Minimum 5 acres with 200-foot of frontage</li> <li>◆ 50-foot setback on public right of way</li> <li>◆ 30-foot setback from any other property line</li> </ul> <p><u>Village District A</u></p> <ul style="list-style-type: none"> <li>◆ Minimum 1 acre lot</li> <li>◆ 30-foot setback from public right of way</li> </ul>
Rural District	1. Single Family Dwellings – Permitted by right. 2. Manufactured Housing on Permanent Foundations – Permitted by right. 3. Condominium Conversion of Existing Apartments or Multi-Family Dwelling Units – Permitted by right. 4. Two-Family, Multi-Family Dwellings – Permitted by Special Exception. 5. Rest, Convalescent Homes – Permitted by Special Exception	<ul style="list-style-type: none"> <li>◆ Minimum 5 acres with 200-foot of frontage</li> <li>◆ 50-foot setback on public right of way</li> <li>◆ 30-foot setback from any other property line</li> </ul>

\* In addition to the above housing provisions, one Detached Dwelling, not exceeding 700 square feet of living space, is permitted in all zones on a lot of record of at least two acres under special exception by the Zoning Board of Adjustment.

†† Additionally, according to Alstead’s zoning regulations, the amount of required frontage may be reduced as lot size increases.

SOURCE: TOWN OF ALSTEAD ZONING ORDINANCE

**FUTURE HOUSING NEED**

In order to estimate what the potential need for housing will be in the future, the available data on housing characteristics and population growth must be reviewed along with estimates for growth in population, and therefore housing need. Between 1990 and 2000 the increases in both housing stock and population were very close – 12% and 13%, respectively, indicating that population growth did not outstrip housing need over this time period. Further, the Census data show that, in general, Alstead’s housing stock is in good condition and the incidence of overcrowding of dwelling units is very low.

The NH Office of Energy and Planning (OEP) population projections can be used to estimate future housing need based on a person per unit estimate. The projections for Alstead and surrounding towns are presented in Table 21 in five-year intervals up to the year 2025, beginning with the Census count from the year 2000.

**TABLE 21: SUBREGIONAL POPULATION PROJECTIONS**

	2000	2005	2010	2015	2020	2025	# Increase 2000-25	% Change 2000-25
ALSTEAD	1,944	2,040	2,140	2,270	2,380	2,490	546	28.1%
Walpole	3,594	3,750	3,920	4,150	4,340	4,530	936	26.0%
Langdon	586	630	720	760	800	830	244	41.6%
Acworth	836	880	1,010	1,090	1,150	1,200	364	43.5%
Marlow	747	790	830	880	920	970	223	29.9%
Keene	22,563	23,020	23,470	24,060	24,890	25,690	3127	13.9%
Gilsum	777	830	870	920	960	1,000	223	28.7%

SOURCE: NH OFFICE OF ENERGY AND PLANNING

The percent change in projected population (2000 – 2025) for the subregion is nearly double the amount experienced by these towns from 1980 to 2000 (9.5% for the past 20 years, with 18.4% projected for the next 25 years). The projected change for Alstead, however, is lower than the 33.1 % change in population the town experienced from 1980 - 2000. During the next 25 years, Alstead’s population is expected to change by 28.1%.

Alstead’s future housing need is estimated based on this projected population by dividing population by an average person per unit figure. A reasonable person per unit figure for the future must be assumed; in this case 2.67, the average of the recorded person per unit figure from the last three decades of Census information, will be used. The following calculations will use two possible scenarios: one using the OEP projected population increase over the next twenty-five years (rounded to 28%); the other using the known past population increase between 1980 and 2000 (rounded to 33%).

Scenario	Population Increase	2025 Projected Population	Ave. Persons/ Unit	= Total Housing Units
2000 - 2025				
OEP Projection	28%	2,490	2.67	933
1980 - 2000				
Actual Growth	33%	2,586	2.67	968

Under OEP population projections, the current supply of housing units in Alstead exceeds the needs of the 2025 projected population by 17 housing units. However, if Alstead's population continues to grow at a rate of 33%, as it did from 1980 – 2000, an additional 18 housing units will be needed by the year 2025. By looking at past trends, it can be expected that the availability of housing stock will keep pace with demand as it has during previous years.

Nevertheless, there are other housing issues to be considered that are not addressed by the current zoning provisions; in particular, the availability of housing for the elderly. Based on updated national Census information, the country can expect to see a dramatic increase in the number of elderly residents (those aged 65 and over); in fact, by the year 2010, this number could increase from 1 in 8 to 1 in 5 persons.

This fairly rapid increase in the elderly population is not only expected to increase the level of effort needed by society as a whole to support publicly-funded retirement programs, health care, and social welfare agencies, but strains will also be experienced due to changing family structures - more and more, the profile of the elderly includes increasing numbers of those who have never married, have married and divorced, have few children to call on for assistance, or never had children. Geographic isolation also contributes to the isolation from a family network as our development pattern depends so greatly on the automobile. All of these factors have the potential to interfere with the desire to "age in place", living out the remainder of one's life in the same town one calls home.<sup>10</sup>

According to the 2000 Census, the elderly population in Alstead amounted to less than 13% of the total population of the town; granted, this is not a significant proportion of townspeople, but as Table 2 illustrated, it does represent an increase since 1980. Based on the national trend data, the elderly population is expected to increase up through the year 2010. However, as important as the existing elderly population is, there is also a potential need for a large group of middle-age residents of Alstead to provide care for aging parents in the form of on-site housing accommodations.

Part of the problem faced by towns when attempting to respond to the housing needs of elderly residents, are limitations created by the town's own zoning ordinance. As the earlier review of Alstead's zoning ordinance illustrated, there are currently a limited variety of housing types available in Alstead - essentially single family, manufactured housing, and condominium conversion of existing multi-family dwellings are permitted by right. All other housing types, including a detached dwelling on the property, are up to the town to determine by special exception.

Specific to elderly accommodation, there are two ways to employ the detached dwelling use: (1) the elderly residents remain in the primary dwelling and rent out the detached dwelling, thereby supplementing their income which enables them to stay in their home; or (2) children of elderly parents can bring them to their home and set them up in a detached dwelling, which provides the elderly with needed care without requiring them to move into a nursing home or assisted living situation.

The provision of detached dwelling units adds to the range of available housing types for other segments of the population; for example, smaller living units for single persons or couples with no children.

Another problem created by the town's own zoning ordinance is the cost of larger tracts of land compared to the cost for smaller lots. For all zoning districts in Alstead, the minimum lot size is 5 acres. The high cost of larger lots is one hindrance to affordable housing. The cost to developers for 5 acres of land is passed on to the homebuyer in the sales price. Allowing for more affordable lots (i.e. smaller lots) would provide for more affordable homes.

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<sup>10</sup> "Planning and Zoning for an Aging Population", by Alan. C. Weinstein; ZONING AND PLANNING REPORT Vol. 19, No. 10 Nov. 1996

A typical lending package for homebuilders requires that no more than 25% of the lending cost can be used for preconstruction costs, including the cost of land, legal fees, engineering fees and any offsite improvements. As the cost of these preconstruction items increases, the sales prices of the homes must increase to remain within the allowed 25% ratio. The zoning ordinance can be altered to allow for more affordable housing in various parts of town, giving partial control of the cost of homes to the townspeople.

### **♦ Temporary Elderly Housing**

The idea behind temporary housing for the elderly is that, not unlike the accessory apartment concept, it allows a child (or other family member) to provide affordable housing and services for an elderly parent or relative who, in turn, retains privacy and independence. This housing is typically provided in the form of a manufactured home on the same lot as the caregiver, subject to certain conditions, for example, that following the death of the parent or relative, the unit would be removed within a certain specified period of time.

### **♦ Group/Shared Housing**

Also known as “congregate housing”, this method allows a number of unrelated elderly persons to live together as a housekeeping unit. And, depending on the age and degree of disability of the residents, this may or may not include on-site services by trained staff or health care professionals.

### **• Paper Mill Village Project**

Originally conceived by Mary Lou Huffling and David Young, Sr., the Alstead Senior Housing groundbreaking ceremony held in August 2006 and a completion for the early summer of 2007, Alstead Senior Housing will provide twenty units of age restricted housing that will allow elders a choice and opportunity to live according to their roots in the Fall Mountain community.

The multiple partners and funders involved in this effort include: The Alstead Board of Selectmen; The Alstead Planning Board; Southwestern Community Services Inc.; The US Department of Agriculture - Rural Development; The New Hampshire Housing Finance Authority; The New Hampshire Community Development Finance Authority; The Boston Capital Corporate Tax Credit Fund XXVII, LP; and most importantly the citizens of Alstead.

### **• Public/Private Developer Partnerships**

The idea behind public/private developer partnerships is that the town will give a developer the right to build more housing units per parcel size in exchange for the units being sold below market rate, making them more affordable to low-moderate income families.

## ECONOMIC DEVELOPMENT

### INTRODUCTION

*Alstead has transformed from a mill town to primarily a bedroom community since the turn of the century. Like many small towns in New Hampshire, Alstead has a limited amount of commercial and industrial development. Most goods and services including medical and professional services are provided elsewhere in towns such as Keene and Claremont. In 2000, these towns also served as major employment centers.*

Economic issues facing the town include the high residential tax burden required to support the Fall Mountain and Alstead schools which is exacerbated by the limited commercial and industrial tax base from which to draw upon. Because of economic restructuring in recent years, today the proportion of residential to industrial and commercial valuations is extremely disproportionate. Blanchflower Lumber and Fuller Machine Company, each having 10 employees, are the largest employers in Town and residential development dominates. It has been demonstrated across the nation that residential development alone does not generate the tax base necessary to fund the service demands which accompany such development.

Following are highlights of Alstead's economic environment:

- Alstead's population has increased significantly during the last three decades. From 1970 – 2000, the U.S. Census recorded a change of 759 people in Alstead (from 1,185 to 1,944), which is a increase of 64%, and an annual average increase of 2.13%. The estimated population of Alstead in 2005 (according to NH Office of Energy and Planning) was 1,995.
- From 1970-2000, the number of employed Alstead residents increased by 198%, an increase greater than the population increase of 64% during the same time period. The number of Alstead residents classified as managerial/professional sector employees increased by 696%. This increase was well above the increase of residents in the managerial/professional sector for Cheshire County (177%) and New Hampshire (264%).
- Alstead's top employers, as of 2006, are Blanchflower Lumber and Fuller Machine Company, each with 10 employees. Benson's Woodworking Company is the Town's other top employer with 6 employees.
- Alstead's 2000 per capita income of \$20,444 was slightly under the average incomes in Cheshire County (\$20,685) and New Hampshire (\$23,844).
- The unemployment rate in Alstead has varied from 2000-2005. 2002 shows the highest unemployment rate of 4.3% in Alstead, which then slowly decreased to 3.4% in 2005. The rate for Cheshire County was 3.2% in 2005, while the State rate was 3.6%.
- In 2005, 93.2% of Alstead's total valuation came from residential land and buildings. The remaining 6.8% came from commercial and industrial properties, utilities, and land in current use.

- Between 2002 and 2004, Alstead's total tax rate decreased by just \$1.92, from \$36.98 to \$35.06. Following a property revaluation in 2005, the tax rate decreased another \$16.43, from \$35.06 to \$18.63.
- Alstead is located in the Keene-Brattleboro Labor Market Area. In 2000, 79.5% of employed Alstead residents (830) commuted to another town for work. The most common destination was Keene with 347 trips, followed by Walpole with 110 trips and Charlestown with 38 trips. There were 470 people employed at jobs in Alstead, of which 214 were Alstead residents and 256 were nonresidents. The most common towns from which people commuted were Walpole with 41, followed by Keene with 31 and Langdon with 22.

## OVERVIEW OF ECONOMIC INDICATORS

### Demographics

Table 1 shows population statistics for Alstead and its surrounding towns. From 1970-2000 Alstead's population increased by 759 residents, representing a 64 increase. Alstead's population increased at an above average pace compared to surrounding towns, although not as fast as Langdon, Acworth, and Marlow. Alstead's greatest period of growth occurred between 1970 and 1980 (23%). Since 1980, Alstead's growth rate has been in decline, with growth rates of 18% and 13% respectively for the following two decades. According to statistics given in the Population and Housing chapter, the main source of Alstead's population growth has been from people moving to Alstead to live. In terms of population density, Alstead grew from a density of 30 persons per square mile in 1970, to 49 persons per square mile in 2000. NH OEP estimates population density in 2005 as 51.2 persons per square mile, a slight increase from 2000.

**TABLE 1:  
COMPARISON OF POPULATION GROWTH RATES, 1970 – 2005**

	1970	1980	1990	2000	Change 1970-2000	% Change 1970-2000	2005*	% Change 2000-2005
New Hampshire	737,681	920,610	1,109,252	1,235,786	498,105	67.5%	1,315,000	6.4%
<b>ALSTEAD</b>	<b>1,185</b>	<b>1,461</b>	<b>1,721</b>	<b>1,944</b>	<b>759</b>	<b>64.1%</b>	<b>1,995</b>	<b>2.6%</b>
Walpole	2,966	3,188	3,210	3,594	628	21.2%	3,703	3.0%
Langdon	337	437	580	586	249	73.9%	616	5.1%
Acworth	459	590	776	836	377	82.1%	882	5.5%
Marlow	390	542	650	747	357	91.5%	783	4.8%
Keene	20,467	21,449	22,430	22,563	2096	10.2%	23,023	2.0%
Gilsum	570	652	745	777	207	36.3%	810	4.2%
Surry	507	656	661	673	166	32.7%	739	9.8%

Source: US Census Bureau and NH OEP\*

### Employment

Between 1970 and 2000, the growth rate for total employed Alstead residents outpaced the growth in total population. In this period, population grew by 64%, while the number of employed residents over age 16 increased by 198%. Most of this increase could be attributed to a greater percentage of the population joining the workforce. In 1970, about 29% of Alstead's population was in the workforce; by 2000 workforce participation increased to over 57%. Alstead's labor statistics from 1970 to 2000 are given in Table 2.

**TABLE 2:  
LABOR TRENDS, 1970 – 2000**

Year	1970	1980	1990	2000	% Change 1970-1980	% Change 1980-1990	% Change 1990-2000	% Change 1970-2000
<b>Persons 16 yrs +</b>	669	1083	1,311	1,536	62%	21%	17%	130%
<b>In labor force:</b>	338	701	925	1,117	107%	32%	21%	230%
<b>In Armed Forces</b>	0	3	0	0	0%	-100%	0%	0%
<b>Civilian:</b>	338	698	925	1,117	107%	33%	21%	230%
<b>Employed</b>	358	667	880	1,068	86%	32%	21%	198%
<b>Unemployed</b>	30	37	45	49	23%	22%	9%	63%
<b>Not in labor force</b>	281	382	386	419	36%	1%	9%	49%

Source: US Census Bureau

Occupational Trends

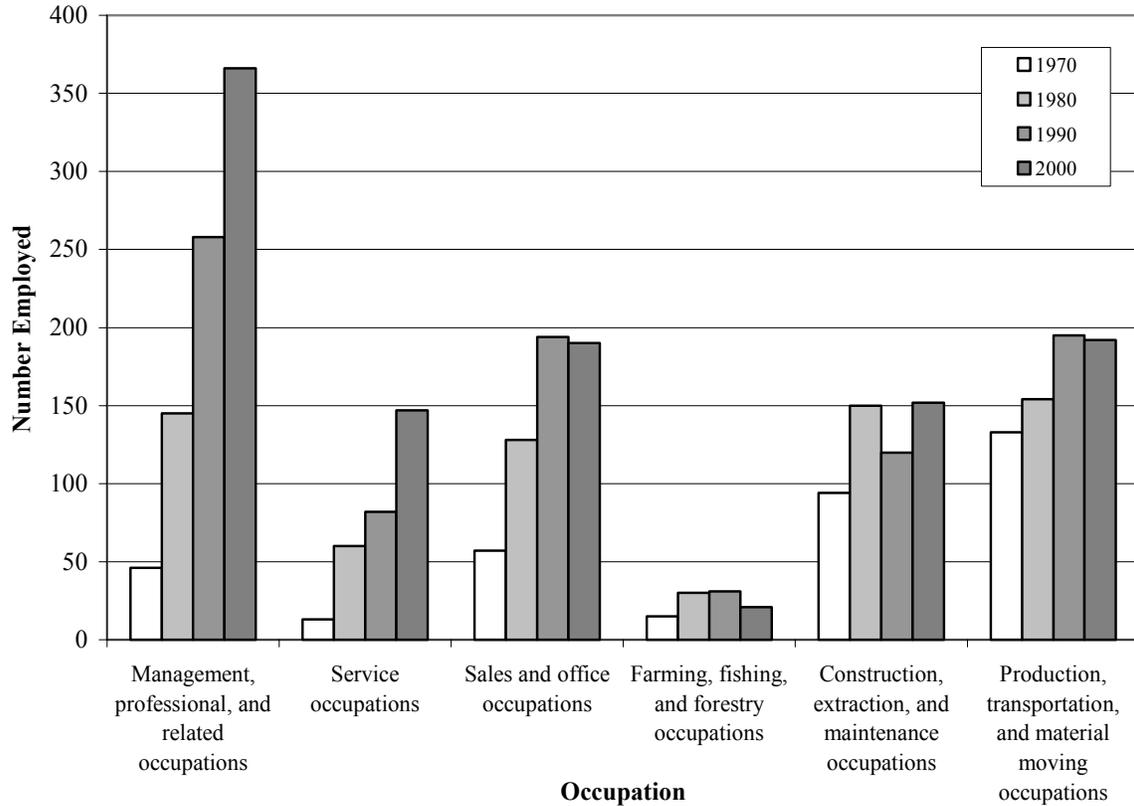
Looking at occupational trends of Alstead residents from 1970 to 2000 (Table 3), the largest occupational sector increases occurred in the service and managerial/professional fields. While number of service industry jobs increased dramatically (1,031%), those working in the service industry comprised a very small percentage of Alstead’s labor force in the years studied. In 1970, only 4% of Alstead residents held service jobs, and in 2000, only 13% of Alstead’s labor force held positions in the service industry. Graph 1, on the following page, presents the information found in Table 3.

**TABLE 3:  
OCCUPATION OF ALSTEAD LABOR FORCE AGE 16 AND OLDER, 1970-2000**

Occupation	1970	1980	1990	2000	% Change 1970-2000
Management, professional, and related occupations	46	145	258	366	696%
Service occupations	13	60	82	147	1031%
Sales and office occupations	57	128	194	190	233%
Farming, fishing, and forestry occupations	15	30	31	21	40%
Construction, extraction, and maintenance occupations	94	150	120	152	62%
Production, transportation, and material moving occupations	133	154	195	192	44%

Source: US Census Bureau

**GRAPH 1:  
OCCUPATION OF ALSTEAD LABOR FORCE AGE 16 AND OLDER, 1970-2000**



The percentage of Alstead residents in the labor force who held jobs in the managerial and professional occupations increased from 13% in 1970 to 33% in 2000. Although there was no net loss in actual jobs, the percentage of Alstead residents employed in the manufacturing sector decreased from 39% in 1970 to 17% in 2000. The growth in "white collar" employment and the decline in manufacturing employment witnessed in Alstead was typical throughout the region and across the country. Regional labor market projections forecast these trends to continue into the foreseeable future. Another regional growing occupational trend is home-based employment, which has been made easier with the spread of high-speed telecommunications. As described in the Utilities and Public Infrastructure chapter, Alstead currently only has access to high-speed telecommunications in certain parts of town.

Compared to labor trends for Cheshire County and New Hampshire (Table 4), Alstead had greater growth in all occupational sectors. While Alstead did not see negative overall trends in agriculture, production, and construction categories, the percentage of Alstead's labor force employed in these fields shrunk from 70% in 1970 to 33% in 2000.

**TABLE 4:  
PERCENT CHANGE - LOCAL, REGIONAL, AND STATE OCCUPATIONAL TRENDS:  
LABOR FORCE AGE 16 AND OLDER, 1970-2000**

<b>Occupation</b>	<b>Alstead</b>	<b>Cheshire County</b>	<b>New Hampshire</b>
Management, professional, and related occupations	696%	177%	264%
Service Occupations	1031%	95%	139%
Sales and office occupations	233%	104%	158%
Farming, fishing, and forestry occupations	40%	-11%	-20%
Construction, extraction, and maintenance occupations	62%	8%	24%
Production, transportation, and material moving occupations	44%	-3%	31%

Source: US Census Bureau

Major Employers

As of 2006, Alstead's top employers, listed in Table 5, are Blanchflower Lumber and Fuller Machine Company, followed by Benson's Woodworking Company.

**TABLE 5:  
TOP EMPLOYERS, 2006**

	<b>Product/ Service</b>	<b>Employees</b>
Blanchflower Lumber	Retail, wholesale lumber	10
Fuller Machine Company	Job machine shop	10
Benson's Woodworking Company	Timber frame houses	6

Source: Personal Communications, 2006

Per Capita Income

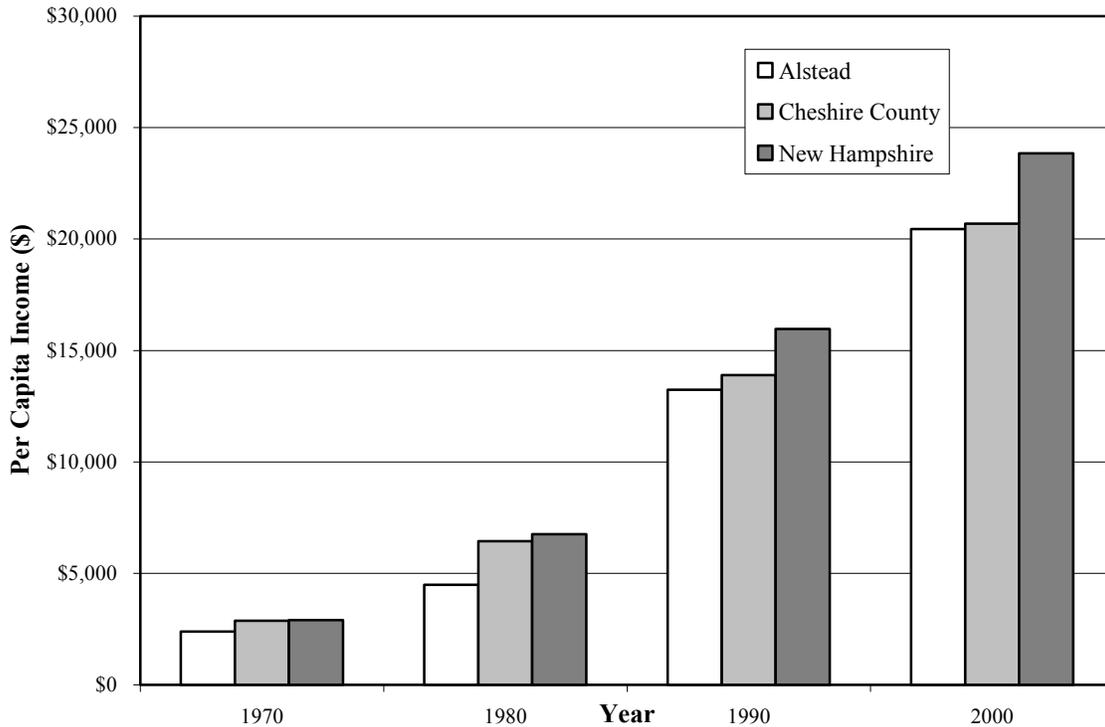
In unadjusted dollars, Alstead's per capita income has increased from \$2,386 in 1970 to \$20,444 in 2000. Between 1970 and 2000, incomes increased in the region and across the state. In 1970, Alstead's per capita income was just below the average incomes for Cheshire County and New Hampshire. By 1980, Alstead's per capita income was roughly \$2,000 less than County and State averages. However, since 1990, Alstead's per capita income nearly equaled Cheshire County's average income yet has remained roughly \$3,000 lower than averaged income recorded for New Hampshire. Table 7, below, gives Alstead's per capita income, as recorded by the U.S. Census, from 1970-2000. Graph 2, shows the same information visually.

**TABLE 7:  
PER CAPITA INCOME, 1970-2000**

	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>Change 1970-2000</b>	<b>% Change 1970-2000</b>
<b>Alstead</b>	\$2,386	\$4,481	\$13,236	\$20,444	\$18,058	757%
<b>Cheshire County</b>	\$2,865	\$6,442	\$13,887	\$20,685	17,820	622%
<b>New Hampshire</b>	\$2,892	\$6,747	\$15,959	\$23,844	20,952	725%

Source: US Census Bureau

**GRAPH 2:  
PER CAPITA INCOME, 1970-2000**



Source: US Census Bureau

Educational Attainment

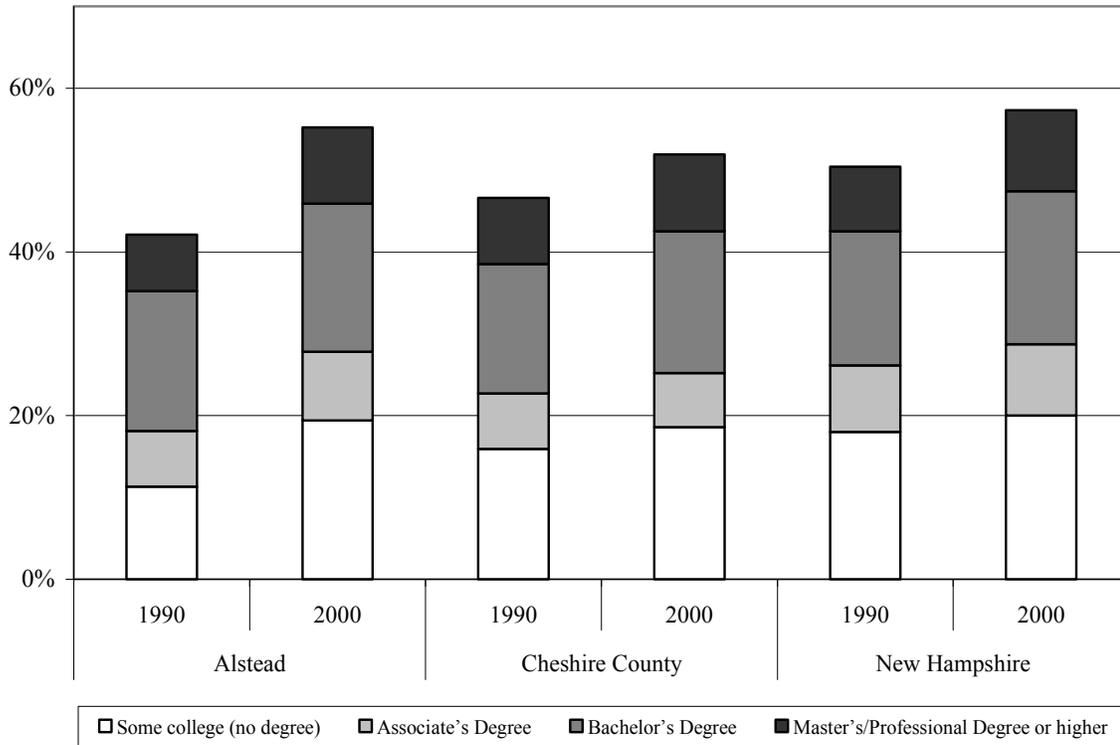
A well-educated workforce is an important resource for both existing and new businesses. Table 8 shows that the educational attainment of Alstead residents increased between 1990 and 2000. During the last two decades, the percentage of Alstead residents 25 years or older with some form of college experience has risen. The percentage of residents who did not complete high school or did not pursue a degree beyond their High School Diploma has decreased. In comparison with County and State education levels, Alstead often exceeds County levels for college attainment and is within a percentage point of State educational attainment levels. The comparison of post-secondary educational attainment levels are visually represented in Graph 3.

**TABLE 8  
EDUCATIONAL ATTAINMENT BY PERCENTAGE, RESIDENTS AGE 25 YEARS AND OLDER: 1990, 2000**

	Alstead		Cheshire County		New Hampshire	
	1990	2000	1990	2000	1990	2000
Did not complete high school	19.6%	13.3%	19.2%	13.8%	17.8%	12.6%
High school graduate (including equivalency)	38.3%	31.5%	34.2%	34.5%	31.7%	30.1%
Some college (no degree)	11.3%	19.4%	15.9%	18.6%	18.0%	20.0%
Associate's Degree	6.8%	8.4%	6.8%	6.6%	8.1%	8.7%
Bachelor's Degree	17.1%	18.1%	15.8%	17.3%	16.4%	18.7%
Master's/Professional Degree or higher	6.9%	9.3%	8.1%	9.4%	7.9%	9.9%

Source: US Census Bureau

**GRAPH 3:  
POST-SECONDARY EDUCATIONAL ATTAINMENT OF RESIDENTS AGES 25 AND OLDER, 1990, 2000**

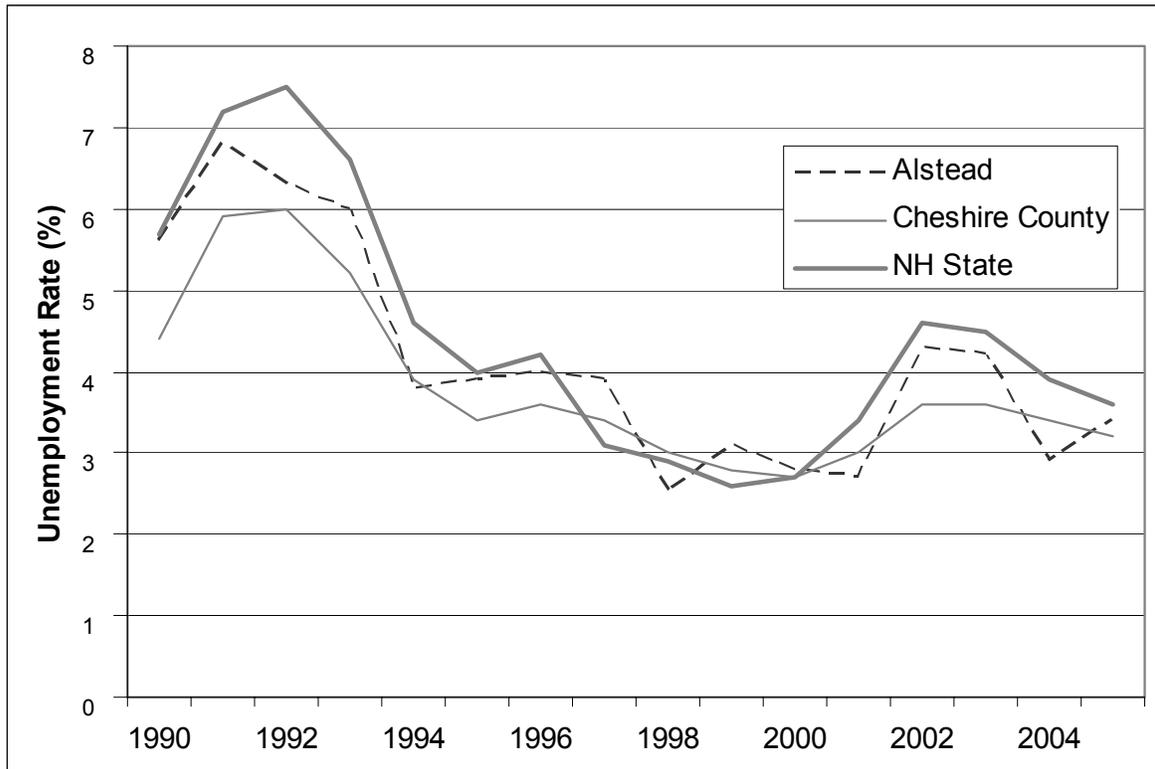


Source: US Census Bureau

Unemployment Rates

Between 1990 and 2005, Alstead's unemployment rate has largely remained above the average unemployment rates for Cheshire County and below the overall unemployment rates for New Hampshire. Over this period, Alstead's unemployment rate has followed the ups and downs of the regional and statewide trends peaking in 1991 (6.8%), followed by a fluctuating rate of decline through the 1990's (the lowest rate was 2.5% in 1998), and an increase again in 2002 (to 4.3%). (Graph 3A)

GRAPH 3A: UNEMPLOYMENT RATES, 1990-2005



Source: NH Employment Security

## Valuation and Taxation

### Valuation

Municipal property taxes are levied as a percentage of the assessed value of buildings and land in the community. Table 9 gives tax valuations for Alstead in 2000 and 2005 and shows the total change for each category of land use. Between 2000 and 2005, Alstead's total valuation increased by 117%. The tax burden for commercial and industrial land and buildings decreased by 1.36%, while the tax burden for residential land and buildings (including manufactured housing) increased by 3.16%. The doubling of total valuation resulted from a revaluation of property values in 2005. To offset this increase, tax rates were nearly cut in half, as described in the next section.

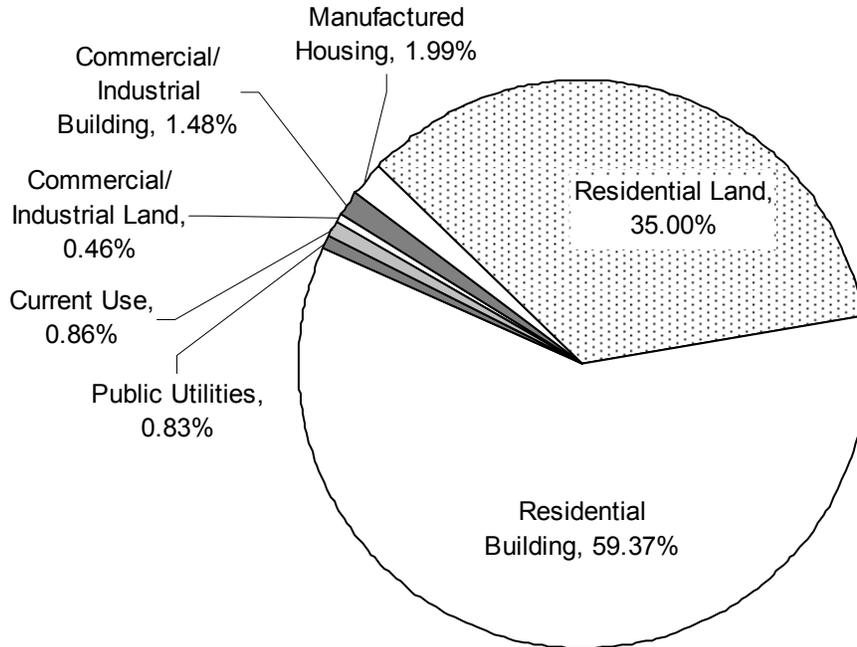
Looking at a breakdown of tax valuation in 2005 by land use, 96.36% of Alstead's valuation comes from manufactured housing, residential buildings and residential land, 1.94% from commercial and industrial uses, 0.83% from utilities, and 0.86% from properties in current use. (Graph 4) The residential burden of Alstead's tax base is greater than any of its neighboring towns. A regional comparison of property values is given in Table 10.

**TABLE 9:  
SUMMARY OF VALUATION BY LAND USE, 2000 AND 2005**

	Assessed Value (2000)	Percent of Total Assessed Value (2000)	Assessed Value (2005)	Percent of Total Assessed Value (2005)	Change in Assessed Value (2005-2000)	Percent Change in Assessed Value (2000-2005)
Commercial/ Industrial Land	\$700,500	0.92%	\$760,900	0.46%	\$60,400	8.6%
Commercial/ Industrial Building	\$1,778,100	2.30%	\$2,448,100	1.48%	\$670,000	37.7%
<b>Commercial/ Industrial TOTAL</b>	<b>\$2,478,600</b>	<b>3.30%</b>	<b>\$3,209,000</b>	<b>1.94%</b>	<b>\$730,400</b>	<b>29.5%</b>
Manufactured Housing	\$1,736,800	2.30%	\$3,293,400	1.99%	\$1,556,600	89.6%
Residential Land	\$22,126,479	29.10%	\$57,813,800	35.00%	\$35,687,321	161.3%
Residential Building	\$47,018,900	61.80%	\$98,086,600	59.37%	\$51,067,700	108.6%
<b>Residential TOTAL</b>	<b>\$70,882,179</b>	<b>93.20%</b>	<b>\$159,193,800</b>	<b>96.36%</b>	<b>\$88,311,621</b>	<b>124.6%</b>
Public Utilities	\$1,603,048	2.10%	\$1,373,612	0.83%	(\$229,436)	-14.3%
Current Use	\$1,097,808	1.40%	\$1,428,590	0.86%	\$330,782	30.1%
<b>TOTAL</b>	<b>\$76,061,635</b>	<b>100%</b>	<b>\$165,205,002</b>	<b>100%</b>	<b>\$89,143,367</b>	<b>117.2%</b>

Source: NH Department of Revenue Administration

**GRAPH 4:  
PERCENTAGE OF VALUATION BY LAND USE, 2005**



Source: NH Department of Revenue Administration

**TABLE 10:  
REGIONAL PROPERTY VALUATION STATISTICS: % OF TOTAL VALUATION BY LAND USE, 2005**

	<b>Alstead</b>	Walpole	Langdon	Acworth	Marlow	Keene	Gilsum	Surry
Residential Land and Buildings	<b>96.4%</b>	79.0%	88.0%	94.4%	93.7%	68.9%	91.4%	91.4%
Commercial/Industrial Land and Buildings	<b>1.9%</b>	15.6%	8.0%	2.5%	3.9%	30.0%	4.6%	2.4%
Other, Including Public Utilities and Current Use	<b>1.7%</b>	5.3%	3.9%	3.1%	2.4%	1.1%	3.9%	6.2%

Source: NH Department of Revenue Administration

Taxation

Between 2002 and 2004, Alstead's local tax rate decreased by \$1.92 per \$1,000 of assessed value. A re-evaluation in 2005 resulted in the tax rate being nearly cut in half to \$18.63 per \$1,000 of assessed value. A breakdown of Alstead's taxes by source for this time period is shown in Table 11 below. Alstead's total tax commitment for 2004 was \$2,787,013, and \$3,061,019 for 2005, an increase of 9.8%.

**TABLE 11:  
ALSTEAD TAX RATES PER \$1,000 OF ASSESSED VALUE, 2002-2005**

	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>
Municipal Tax Rate	\$7.62	\$6.76	\$7.92	\$5.41
Local Education Tax Rate	\$20.27	\$19.76	\$19.00	\$9.61
State Education Tax Rate	\$6.22	\$5.26	\$5.19	\$1.90
County Tax Rate	\$2.87	\$3.77	\$2.95	\$1.71
<b>Total Tax Rate</b>	<b>\$36.98</b>	<b>\$35.55</b>	<b>\$35.06</b>	<b>\$18.63</b>

Source: NH Department of Revenue Administration

In order to levy a fair and proportional state-wide education property tax, the imbalance created by varying municipal assessments must be resolved. This process, called "equalization", involves the adjustment of a town's local assessed value, either upward or downward, in order to approximate the full value of the town's property.<sup>11</sup> The equalized tax rates allow a comparison between towns.

In 2005, Alstead's equalized tax rate of \$17.95 was lower than its actual total tax rate of \$18.63. Comparing equalized tax rates statewide, Alstead was ranked 165<sup>th</sup> out of 228 in 2005 (228 representing the highest equalized tax rate in the State). Table 12 shows the equalized tax rates for Alstead and its surrounding towns.

<sup>11</sup> "Explanation of State Education Property Tax Rate Shown on Your Tax Bill", NH Department of Revenue Administration, 2001.

**TABLE 12:  
EQUALIZED TAX RATE COMPARISON PER \$1,000 OF ASSESSED VALUE, 2005**

	Alstead	Acworth	Gilsum	Langdon	Marlow	Keene	Surry	Walpole
<b>Actual Tax Rate</b>	<b>\$18.63</b>	\$29.76	\$20.16	\$33.45	\$18.88	\$26.19	\$24.99	\$17.43
<b>Equalized Tax Rate</b>	<b>\$17.95</b>	\$15.74	\$18.68	\$18.44	\$18.77	\$26.21	\$20.98	\$13.57
<b>State Rank</b>	<b>165</b>	120	181	174	183	215	202	71

Source: NH Department of Revenue Administration

### Commuting Patterns

Of the 1,044 residents of Alstead who were employed in 2000, 79.5% (830) commuted into another town for work. Slightly less than half (347) head to Keene for work everyday, 110 employees commute into Walpole for work, and 38 to Charlestown. The average commute time for Alstead's workers in 2000 was 28.6 minutes, which is slightly higher than the sub-regional average for surrounding towns (26 minutes). Commuting statistics for Alstead and its neighboring towns are given in Table 13 on the following page.

TABLE 13: REGIONAL COMMUTER ACTIVITY, 2000

	Alstead	Walpole	Langdon	Acworth	Marlow	Keene	Gilsum	Surry
<b>Commuting Out</b>								
Residents working	1,044	1,766	334	408	393	11,109	392	386
Residents commuting - out of Town / County	830	1,213	268	312	344	2,812	339	354
Commuting rate - out	79.5%	68.7%	80.2%	76.5%	87.5%	25.3%	86.5%	91.7%
Most common commute to:	Keene	Keene	Keene	Acworth	Keene	Swanzy	Keene	Keene
No. of Commuters	347	465	49	<i>Not Available</i>	212	372	218	257
2nd most common commute to:	Walpole	Rockingham, VT	Walpole	Claremont	Alstead	Brattleboro, VT	Brattleboro, VT	Brattleboro, VT
No. of Commuters	110	167	40	<i>Not Available</i>	15	315	19	17
3rd most common commute to:	Charlestown	Brattleboro, VT	Charlestown	Keene	Brattleboro, VT	Peterborough	Swanzy	Swanzy
No. of Commuters	38	101	24	<i>Not Available</i>	9	119	15	7
<b>Commuting In</b>								
Total Working in Town / County	470	1,442	196	110	86	18,575	142	55
Residents Working in home Town	214	553	66	96	49	8,297	53	32
Non-residents commuting - in	256	889	130	14	37	10,278	89	23
Commuting rate	54.5%	61.7%	66.3%	12.7%	43.0%	55.3%	62.7%	41.8%
Most common commute from:	Walpole	Alstead	Charlestown	Acworth	Alstead	Swanzy	Keene	Keene
No. of Commuters	41	110	37	<i>Not Available</i>	11	1991	27	9
2nd most common commute from:	Keene	Rockingham, VT	Alstead	Croydon	Stoddard	Winchester	Swanzy	Westminster, VT
No. of Commuters	31	107	24	<i>Not Available</i>	11	667	10	4
3rd most common commute from:	Langdon	Charlestown	Walpole	Rockingham, VT	Lempster	Marlborough	Rindge	Dublin
No. of Commuters	22	105	18	<i>Not Available</i>	8	604	10	3
Avg. Commute Time (min.)	28.6	24.3	27.8	33.1	31.6	16.4	26	19.8

Source: US Census

## **HISTORIC, CULTURAL AND RECREATIONAL RESOURCES**

### **INTRODUCTION**

The historical and recreational resources located within the Town of Alstead define the Town; contributing to its rural character and residential quality of life. The purpose of this chapter and the information contained herein will help the Town with both an inventory of existing resources and the identification of those resource features worthy of preserving, maintaining, developing or restoring in the future.

Alstead's Historical Society has and continues efforts to promote and preserve the Town's heritage that is outlined in this chapter. In addition to a summary of Alstead's historic and recreational landscape, this chapter will provide future recommendations and identification of resources to assist the Town in achieving its historic preservation goals along with recreational opportunities. Existing opportunities of the latter include hiking trails, scenic vistas, lakes and ponds, and picnic areas that enable people to enjoy the Town's natural areas.

### **HISTORY OF ALSTEAD<sup>12</sup>**

Alstead's recorded history dates back to 1735, when a fort was built in the area to protect southwestern New Hampshire from Indian attack; settlers arrived in the area Circa.1755. Primarily from Connecticut and Massachusetts the Town's first settlers included William Druce, Issac Cady, Major Gason Wait, Captain Timothy Delano, and John Burroughs. It is thought that the Town of Alstead was named for Johann Henrich Alstead, who compiled an early encyclopedia popular at Harvard.

Alstead's first Town Meeting was held on March 11, 1766. In June of the same year, the first meeting of Alstead's proprietors was held at Captain Delano's home. Three years later, Captain Delano built a grist mill on the outlet of Lake Warren and a saw mill was set up nearby. Other mills were eventually built close to the outlet of Lake Warren, including a spinning mill, fulling mill, rake/starch factory, blacksmith shop, and trip hammer shop. The development of industry in the area was made possible when a natural pond at the site was dammed in 1771, forming today's Lake Warren. Most of the mills operated seasonally as water levels were typically low in the summer and fall and most mill operators were also farmers who spent much of their time tending to their fields. Due to the abundance of mills at this site, the area earned the name of Mill Hollow.

By 1771, the population of the town had grown to twenty-five families and ten single men. In the spirit of independence, the First Company of the Militia formed in 1773 with Timothy Delano serving as the militia's Captain. In this same year, town members began discussion on where to construct a Town Hall but could not come to agreement. Two years later in 1775, Nathaniel S. Prentice was chosen to present the Town of Alstead to the Provincial Congress.

Still lacking a Town Hall, the residents of Alstead organized the First Congregational Church in 1778, headed by Reverend Jacob Mann. In 1781 both Town Hall and the First Congregational Church were erected in Alstead Center. The Second (est. 1788, East Alstead) and Third (est. 1842, Paper Mill Village) Congregational Churches were established later as members of the original church split off to form separate congregations.

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<sup>12</sup> Alstead 1979 Master Plan & 1969 Bicentennial Booklet

## **Alstead Master Plan Update, 2007**

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The 1790s brought the establishment of an Oil Mill (1792) and of New Hampshire's first paper mill in 1793. The paper mill, located on the Cold River, acted as a magnet for settlement. Within a few years of the mill's construction a small village, known as Paper Mill Village formed around it. The village soon became the economic center of Alstead and eventually all town offices were moved to this location. Today, Paper Mill Village is known as Alstead Village.

Community members formed the Calvinist Baptist Church in 1790 and the Town's first library was incorporated in 1798. The Sabbath Library was established by a local church shortly after.

The Village of East Alstead is primarily a residential/agricultural center that was developed around the Second Congregational Church (the church bell of the 2nd Congregational Church is stamped REVERE BOSTON) at its center. It is commonly understood that Alstead's oldest house, of Dr. Joseph Wood is located in East Alstead. A Methodist Church was established in 1839 and has since housed E.P. Fish's General Store, a garage, and now houses Fuller Machine Company. The town tannery was located close to East Alstead.

By the turn of the 19<sup>th</sup> century, Alstead was a flourishing mill town and one of the most populous in southwestern New Hampshire. The early 1800s brought the formation of various community organizations and churches and the establishment of many industries. Before Paper Mill Village became the economic and political heart of Alstead, Alstead Center served as the business center of the town.

In 1812 the Free Mason's Lodge and Female Cent Society were formed, followed by St. Paul's Lodge in 1818. The Alstead Academy was established in 1819 and a Calvinist Church was built in 1820. In 1825 the Jew's Society was formed. During this period of community growth, a cotton factory was constructed at the outlet of Lake Warren in 1817 and a woolen factory was built in 1824.

Industrial mining in Alstead started around 1810 after rich "pegmatite dikes" were discovered in the southeastern part of Alstead. The most notable mine was Big Mine (Colony Mine), which was mined to a depth of 200 feet until 1940. Initially, mica was the primary material mined in Alstead as mica was used in the production of many important products of the time including oven windows, cards for mariners' compasses, chemical laboratory lamp chimneys, and house windows in Russia. Up until 1920, any feldspar that was brought up with the mica was waste piled at mine sites. However, feldspar became an important material for ceramic and scouring powder industries in the 1920s. As a result, mining operations at Big Mine and other mines in town began to mine primarily for feldspar.

Records of 1839 show that Alstead experienced a serious town fire although the location and devastation are not noted. During the same year, a Methodist Church was also built.

During the 141 year span from 1835 to 1976, several industries began operations in Alstead including three sawmills, two carriage shops, a tool manufacturer, and a grist mill. The establishment of C.E. Cooks Foundry in 1863 is of particular note, credited with the manufacture of the Luftkin Plow, invented by Charles Luftkin. The Luftkin Plow is considered to be the "first successful two-way plow." Records indicate that the business did \$1,500,000 yearly in national and international markets.

Alstead experienced two serious town fires, the first in 1868 and the second in 1882. The 1868 fire took: the new paper mill (the original mill had been destroyed by fire in 1806); the covered bridge crossing the Cold River; H.A. Newell's store; Prentice's shed and barn; Timothy Tuft's store, house and barn; and the block containing the machine shop, C.H. Vilas's drug store, the post office, the coffin warehouse, and the Masonic Hall. The 1880 fire again destroyed the paper mill, and took the Vilas and Emerson Block containing the post office, shoe shop, store and Masonic Hall.

By 1880 Alstead had a population of 1,037 people and 1884 town records show that Alstead contained twelve school districts with fourteen public schools and 218 students. Also in 1884, William F. Vilas was appointed Postmaster General of the United States by President Cleveland. Postmaster Vilas was a direct descendent of Deacon Noah Vilas who helped settle Alstead in 1779.

Today, a trust fund exists to fund the continuous writing of Alstead's history.

## **HISTORIC RESOURCES**

### **Importance of Designation as Historic Resources**

Having a property listed with the National or State Register of Historic Places can contribute to the preservation of historic properties in a number of ways, which include:

- Public recognition that a property is significant to a community;
- Consideration of and advocacy for the site(s) in local and state funded projects;
- Qualification for state financial assistance for preservation projects, when funds are available; and,
- Special consideration or potential relief in the application of some access, building and safety code regulations.

### **National Register of Historic Places**

Through the National Historic Preservation Act of 1966, the U.S. Department of Interior's National Park Service (NPS) maintains the National Register, which lists the Nation's cultural resources worthy of preservation. The National Register is a catalog of properties deemed significant due to any one or a combination of the following factors: history, architecture, archeology, engineering, or culture. Properties may be nominated individually, or in grouping as a District. The nomination process requires careful documentation and community support. In addition to buildings and bridges, other categories – such as Main Streets, roads, villages, parks, and monuments can be listed.

There are a number of benefits for properties listed with the National Register, including the provision for special review, comment, and mitigation for public projects that utilize federal funding. Additionally, there are certain tax credits associated with historic preservation including charitable deductions for donations, easements, and grants for preservation.

No additional restrictions are placed upon those properties that are listed on the National Register; but instead, a listing in the National Register recognizes the property's significance, encourages the stewardship of the property or resource, and stimulates local pride, appreciation and commitment to preservation.

### **New Hampshire State Register of Historic Places**

The New Hampshire State Register of Historic Places is one part of the State's efforts to recognize and encourage the identification and protection of historical, architectural, archeological, and cultural resources. These resources may be buildings, districts, sites, landscapes, structures, or objects that are meaningful in the history, architecture, archeology, engineering, or traditions of New Hampshire residents and communities. The New Hampshire Department of Cultural Resources' Division of Historical Resources (NHDHR) administers the State Register and serves as the State's Historic Preservation Office (SHPO).

Owners of private property listed on the State Register are free to maintain, manage, or dispose of their property as they choose, without review and comment from NHDHR, if no state or federal monies or permits are involved.

### State and Local Historic Markers

The State's Historical Marker Program is one way that residents and visitors are reminded of the past. The marker program uses placards that provide information to help people think about New Hampshire's history while visiting historic locations. Throughout the state, over 158 historical markers identify sites and places significance to New Hampshire's rich history. Some are tangible reminders of the past like a covered bridge or an important mill. Others simply mark the spot where such a structure once stood, or they mark the location of a historical event that left no trace at all.

The historical marker program, initiated by the New Hampshire legislature in 1955, gives the Commissioner of Transportation the authority to erect up to ten markers per year in accordance with RSA 236:40. According to this statute, the only way a marker can be placed in a Town is in response to a proposal and petition of 20 signatures from concerned New Hampshire citizens. The Commissioner is authorized to erect markers within the right-of-way of any State highway, to be paid for by the State. The Division of Historical Resources is authorized to enter into contracts with cities, towns or historical societies for the placement of historical markers along locally maintained Class IV or V highways. The initial costs of these cooperative markers, and their maintenance, are local responsibilities. The New Hampshire Division of Historical Resources is responsible for approving the subject, location, wording, and accuracy of State Markers.

Guidelines applied by the NH Division of Historical Resources when responding to requests for markers are intended to help the marker program create a balanced picture of the State's past. The guidelines include a balanced distribution of markers throughout the State, representation of all the periods in New Hampshire's history and equal recognition of historic people, places, and events.

### Criteria for Historic Designation

For the National Register of Historic Places:

- The quality of significance in American history, architecture, archeology, engineering and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and;
- That are associated with events that have made a significant contribution to the broad patterns of our history; or
- That are associated with the lives of persons significant in our past; or
- That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- That has yielded, or may be likely to yield, information important in prehistory and history.

Criteria ordinarily include cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National

register. However, such properties will qualify if they are integral parts of the districts that do meet the criteria or if they fall within the following categories:

- A religious property deriving primary significance from architectural or artistic distinction or historical importance; or
- A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or
- A birthplace or grave of a historical figure of outstanding importance if there is not other appropriate site or building directly associated with his productive life; or
- A cemetery that derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or
- A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or
- A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own historical significance; or
- A property achieving significance with the past 50 years if it is of exceptional importance.

For the New Hampshire State Register of Historic Places

- New Hampshire's Division of Historic Resources' broad criteria are designed to guide individuals, local governments and others in evaluating potential entries in the State Register. Properties not specifically described in the text below may still be eligible. All properties listed on the State Register are documented and evaluated against the following criteria:
- Properties may be listed on the State Register for the story they tell;
- Properties may also be meaningful for their associations with people who made important contributions to a community, profession or local tradition;
- Properties may be listed on the State Register for their tangible merit, either as a well-preserved example of local architecture, design, construction, or engineering, or as a long-standing focal point in a neighborhood or community. These types of resources need not be extraordinary or the best example in town; they often can be a common, although irreplaceable, feature on the New Hampshire landscape;
- Identified, but unexcavated and unevaluated archaeological sites may also be listed.
- Generally, properties eligible for listing on the State Register should be at least 50 years old. Properties approaching the 50-year mark can be listed, if their historical values are already clear.

Local Criteria for Prioritizing Historic Preservation Activities

- The Alstead Historical Society currently has no set criteria for historic designation.

**Inventory of Historic Resources**

A total of 46 sites within Alstead currently serve as the basis for this report’s inventory of historic resources. The full and complete listing of these 46 sites is located at the end of his chapter. One of these sites, the Jewett Kemp Marlens House is listed with the National Register. The Alstead Historical Society and the Cheshire County Historical Society keep a detailed listing of these sites.

Within the Town there are three potential historic districts: Alstead Center, Mill Hollow, and Alstead Village (AKA Paper Mill Village).

Efforts to officiate historic recognition of a site or district is a community-based process that leads a decision for designation. The process can take months, or even years dependant upon various considerations. Once a community gains a consensus on such a designation, it can then be brought forth to the state and even federal level for recognition.

National Register

The Jewett-Kemp-Marlens-House is a private residence that was added to the National Register of Historic Places in 1997. This colonial structure’s historic significance is based on architecture/engineering utilized during the period from 1800 to 1824. The National Register’s reference number for this building is 97000506.

Site Name	Location	Register Number	Date Established	Historic Use	Current Use
Jewett- Kemp- Marlens- House	North Rd. (2 mi. N. of Jct. NH 123)	97000506	Period of 1800 – 1824	Domestic	Domestic (Privately Owned)

SOURCE: NATIONAL REGISTER OF HISTORIC PLACES

State Historic Register

Individual Listings and Area/District Forms are tools that can provide an overview of the town, its historical development and the architectural or archeological properties. This information is held by both the Alstead Historic Society and the New Hampshire Division of Historic Resources’ office in Concord.

State and Local Markers

The New Hampshire DHR and the Department of Transportation (DOT) are responsible for the state's historical highway marker program, (authorized by RSA 227 C:4, X, and RSA 236:40 44). Any municipality, agency, organization or individual may propose a marker to commemorate significant New Hampshire places, persons, or events. The DHR may also solicit suggestions for markers, texts, and proposed locations from other agencies, organizations, and the public.

Local Inventory

The Alstead Historical Society’s inventory includes the National Register site and locally recognized sites. Locally recognized sites that may be considered for National Register nomination are included in the recommendations section below.

**LOCAL PRESERVATION PROGRAMS**

Alstead Historical Society

The Alstead Historical Society established in 1937, collects, preserves, and exhibits artifacts for the purpose of interpreting local history. The society houses their collection at the Maybelle H. Still Memorial Building (1844 Universalist Church), located at the corner of Pleasant and High Streets (Route

12 A). Dates and Hours of Operation are the first and third Sundays (1-4 p.m.) and first and third Wednesdays (6-8 p.m.) of each month between Memorial Day and Columbus Day. Visits can be arranged by advanced appointment. Membership is due based at fifteen dollars per year. The Historical Society meets quarterly at the Shedd-Porter Memorial Library and monthly Board of Trustees Meetings are held at the Town office building.

### **Recommendations**

#### National and State Register of Historic Places

- Support individuals and organizations that are proposing structures/sites in Town to be placed on the National Register or the New Hampshire State Register of Historic Places by providing applicable information and resources.
- Develop and maintain a priority list to rank sites that are worthy of nomination for both the National and State Register of Historic Places.

#### State Historic Markers

- Identify and prioritize a list of structures/sites appropriate for state historical markers. These structures/sites should be significant to local and state history and culture and should be in accordance with Alstead's Master Plan and design for recognizing and promoting the town's heritage.
- In order of priority, apply each year to the appropriate state agency for a state historical marker. Approval of a state historical marker for a given structure/site may take many years to achieve and may require repeated applications.
- Seek funds annually from the town to pursue, erect and maintain state markers
- Separate article in the town warrant and/or Historical Society budget.

#### Local Historic Markers

- Develop a program and budget for local markers. This program could be coordinated with a guided or self-guided walking tour and would be in accordance with Alstead's Master Plan and design for recognizing and promoting the town's heritage.
- A simple plaque featuring date of construction, original or significant occupants, occupation or function would be appropriate for any structure contributing to Alstead's history. Similar in concept, some markers created for the nation's bicentennial in 1976 can be seen on Alstead houses today.
- Creating a hierarchy, larger plaques with text would mark sites or structures identified as outstanding focal points in the telling of Alstead's story.
- Walking tour signs, pamphlets or guides would be coordinated with to signage suggested above.

Seek funds annually to implement this program through:

- Separate article in the town warrant
- Historical Society budget
- Contributions form local populations/matching funds.

### Historic District Regulations

One step the Town could consider is the development and adoption of a Historic District Ordinance applicable to any one or combination of the already existing Lake, Village, and/or Rural Districts. While the establishment of the Town's three Village Districts (A, B, and C) presently calls for the "safeguard of historic patterns and types of development", historic district regulations would significantly expand upon this basis.

The concept of a historic district ordinance could permit an extent of local regulation on architectural detail, height, color, roof style, building and construction materials, fencing and screening, placement of trash receptacles, lighting, landscaping, and other site features to ensure that new development, construction and renovations are harmonious with existing features found within a specified historic district. While 45 percent of respondents that were surveyed for this plan cited that they live in Alstead due to its historic character, 31 percent of respondents answered "good" when asked "How well do you think the town is performing/providing the following services or opportunities?" applicable to historic preservation efforts. Twenty-nine percent answered "fair" and five percent answered "poor."

RSA 674:46 grants the authority for the local legislative body to establish, change, layout and define historic districts, by ordinance, within the respective municipality. The purpose of granting such authority, as outlined in RSA 674:45, is for the preservation of cultural resources, including in particular those structures and places of historic, architectural and community value. A historic district commission must be established in accordance with RSA 673:1, to perform the duties described in RSA 674:46-a, which include establishing a legal basis for the historic district.

The NH Office of Energy and Planning (NH OEP) maintains a list of those communities in New Hampshire with Historic District regulations. These examples, as well as input from the staff at NH OEP, the NH Division of Historical Resources and the Southwest Region Planning Commission, could assist the Town with establishing local regulations.

### Certified Local Government Program

New Hampshire's Certified Local Government (CLG) program is opportunity for municipalities to become more directly involved in identifying, evaluating, protecting, promoting, and enhancing the educational and economic value of local properties of historic, architectural and archeological significance. Created by the 1980 amendments to the National Historic Preservation Act, the CLG program charges the NH Division of Historical Resources (NHDHR) with the responsibility to designate at least 10 percent of its annual Historic Preservation Fund allocation from the U.S. Department of the Interior to local governments that have become Certified Local Governments.

A local government wishing to become a CLG must fulfill certain requirements indicating its commitment to preservation, including the establishment of a historic preservation review commission, which may be either a historic district commission or a heritage commission. In addition to its other responsibilities, the review commission serves as an advisory body to the municipal government and to local land use boards, becoming the coordinating body for municipal preservation activities.

CLG designation applies to the entire municipality. CLGs receive technical assistance and training from the NH DHR, and are eligible to apply for certain matching funds for preservation activities. Additional information on becoming a Certified Local Government is available from the NHDHR.

### Historic Information and Resources

- Create a database of all information available on the Town's history that is held by various organizations and departments, both within the Town and at other State locations, and make the database available to the public.
- Ensure that historical information located in town – books, papers, artifacts, etc. – are stored using the best preservation and conservation practices, are properly catalogued and accounted for and are accessible to the public, where feasible.
- Create a permanent source of funding for the Historical Society to preserve, protect, display, and educate residents about Alstead's history.
- Create specific roles for the Historical Society that relates to the education, maintenance, and preservation of historical resources within town.

### Alstead Historical Society

Potential ideas and concepts for the Historical Society to carry out include:

- Write and approve a mission statement;
- Hire a director/curator;
- Establish regular visiting hours;
- Develop and approve a long range plan which includes;
- Implementing procedures for accessioning and cataloging collections artifacts according to professional museum standards;
- Implementing procedures for the storage and exhibition of artifacts according to professional museum standards;
- Developing educational programs based on reliable research and supported by museum artifacts for local school children as well as the general public;
- Establishing offices, an archives, exhibition galleries and program areas which meet ADA requirements;
- Educating volunteer and paid staff so professional standards can be met;
- Develop and control budget that supports the mission statement and long range plan.

Achieving these goals will help the Historical Society meet standards and requirements that qualify the organization for state and federal funding.

- To provide a handicap access
- To offer compliance with safety codes
- To provide an area sufficient to display exhibits in a pleasing manner
- To provide space to properly store and protect acquisitions
- To focus more carefully on Alstead and its remarkable past
- To provide an excellent relationship with a potential Visitors Center

Other Recommendations

- Creation of municipal land trust to preserve locally designated buildings and sites of historic significance.

## **RECREATIONAL AND CULTURAL RESOURCES**

Within the Community Survey which forms the basis of this plan, respondents were asked, “How important is it for Alstead to protect and enhance its lakes, ponds and streams” and 86 percent stated that it is Very Important while 8 percent stated that it is Somewhat Important. When asked the same question in regard to Parks and Recreation, 60 percent of respondents cited Very Important while 31 percent cited Somewhat Important.

The Community Survey also contained a question regarding specific recreational opportunities that residents may enjoy. The residential ranking of activities in response to “In what ways do you enjoy Alstead’s recreational opportunities?” is paired with the proportion of responses as exhibited below:

In what ways do you enjoy Alstead’s recreational opportunities?

<b>Activity</b>	<b>Percentage of Responses</b>
Bird-Watching	58%
Hiking	55%
Swimming	46%
Canoe/Kayak	44%
Fishing	31%
Snowshoeing	31%
Boating	29%
Skiing	20%
Hunting	16%
No Answer	13%
Other	12%
Camping	11%
Horseback Riding	8%
Snowmobiling	7%
Mountain Biking	6%

Since 2002, Alstead has been a member of Tree City USA- a national Award Program which recognizes towns and cities across the United States with a documented commitment to an outstanding, comprehensive urban forestry program. The TREE CITY USA Award program is sponsored by the National Arbor Day Foundation, the U.S. Forest Service, and the National Association of State Foresters. Tree City USA Award designation provides recipient communities with direction, professional education, technical assistance, public recognition, and state and national recognition for the community's urban forestry programs. The only other municipality in the southwest region of NH which shares this distinction is Keene. 23 other cities and towns in NH are also Tree City USA communities.

## **INVENTORY OF RECREATIONAL AND CULTURAL RESOURCES**

The attached “Guide to the Natural and Cultural Resources of Alstead,” created in 2002 by the Conservation Commission, provides additional information of interest.

### **Recreational Facilities and Local Natural Features**

#### Shedd-Porter Memorial Library

Located within the center of Alstead Village.

#### Paper Mill Park

Site of New Hampshire’s first paper mill and was a Town park with a gravel foot path and benches along the banks of the Cold River before being destroyed by the October 2005 flood. The Town is currently seeking grants to rebuild the park.

#### Pratt’s Rock

Town owned land affording scenic views of the Connecticut River Valley and Vermont’s Green Mountains. Aside from picnicking and viewing, the site is exemplary of Alstead’s pegmatite bedrock.

#### Vilas Pool on the Cold River

The land surround the Vilas Pool was donated to the Town for use as a recreation area by noted resident Charles Vilas. The Pool and its surrounds are used for summer concerts, swimming, paddling, and picnicking.

#### Millot Green

Prior to the October 2005 floods, Millot Green was a municipal recreation area situated near the municipal offices and Paper Mill Park. Several acres in size, the Green once featured a baseball diamond, soccer field, a basketball court and an equestrian riding ring. In July 2006, Alstead received a \$20,020 federal grant, provided by the National Parks Service’s Land and Conservation Fund grant program, to assist in restoring Millot Green.

#### Tennis Courts

Tennis courts are located behind the Vilas School within Alstead Village.

#### Wellman Pond

Wellman Pond is a secluded 200+ acre wildlife refuge of land and water. The pond is accessible for non-motorized boating and a hiking trail leads to an overlook at the southern end of the pond.

#### Lake Warren

A vast highland lake encompassing approximately 200 acres, Lake Warren is host to a State maintained public boat launch.

#### Darby Brook Falls

This privately owned cascade was the site of an early 19<sup>th</sup> Century flax mill.

#### Camp Brook Road

Camp Brook Road is a two-mile gravel road that connects Mill Hollow and Alstead Center which is designated as a “Scenic Road” per RSA 231:157.

### Snow Mobile Trails

There are a variety of trails which snow mobilers use during winter months. Tri-Town Trail Blazers is a group located within Acworth, Alstead and Langdon whose members use trails located within Alstead.

### Alstead Historical Society

Established in 1937, the Alstead Historical Society utilizes the Maybelle H. Still Memorial Building (1844 Universalist Church). The Museum/Center operates from Memorial Day to Columbus Day with the following days and times:

The first and third Sunday of each month from 1 to 4 p.m. and the first and third Wednesday of each month from 6 to 8 p.m. Visits by appointment can be arranged.

### **Local Lodging**

#### Green Meadow Nature Escape B & B at Tamarack Farm

HC 63 Box 214A, Route 123A  
Alstead, NH 03602  
Phone: (603) 835-6580

### **Recommendations**

The following recommendations may assist the Town with more clearly identifying, planning and implementing this and other recreation facility goals:

- First, the Town may want to consider establishing a steering committee to gather additional information regarding the recreational opportunities residents would like to see the Town to invest time and money in to develop or improve. A steering committee could report to the Selectmen and provide recommendations that could assist with annual budgeting for the expansion and maintenance of recreational resources. Resources identified in the section below could further assist with the implementation of the Town's recreational goals.
- Second, educating residents about existing recreational opportunities available in the Town through the Town newsletter or by adding a "Recreation" page to the Town's website may assist residents with knowing where and how to access such opportunities.
- Third, making available to the public the existing public trails, picnic areas and swimming holes map could further assist residents in locating these recreational resources.

### Prioritization Criteria

The Town may want to establish criteria for prioritizing the use of public funds on the maintenance or development of recreation projects. Some criteria the Town could consider using, which could be ranked in order of importance to the Town, on how a proposed project would:

- Have multi-season use.
- Create linkages and/or improves connectivity between community and regional recreation or open space resources.
- Demonstrate solid connections with other community planning efforts.

- Help preserve and/or protect critical natural resources including surface water, wildlife habitat, productive soils, connections and buffers, scenic assets.
- Help preserve and/or protect critical cultural/historic resources.
- Not adversely affect water quality.
- Contribute to goals outlined in the economic development plan.
- Create educational opportunities for local residents (observing wildlife, general ecology such as forest succession or agriculture, etc.).
- Be in a scale relative to national standards for such projects.
- Be accessible to people with disabilities.
- Be consistent with the community vision or goals identified by local residents in the Master Plan Community Survey.
- Be accessible from local neighborhoods and schools.
- Be available for public use / have public access.
- Require minimal maintenance.
- Be consistent with the overall goals and recommendations of the Master Plan.

## **APPENDIX**

### Municipal Records

The Town Hall stores birth, death and marriage records, town reports, Town Meeting and Board of Selectmen minutes, and property transaction records.

### Alstead Historical Society

Established in 1937, the Alstead Historical Society utilizes the Maybelle H. Still Memorial Building (1844 Universalist Church). The Museum/Center operates from Memorial Day to Columbus Day with the following days and times: The first and third Sunday of each month from 1 to 4 p.m. and the first and third Wednesday of each month from 6 to 8 p.m. Visits by appointment can be arranged.

### Historical Society of Cheshire County

The Historical Society of Cheshire County is a non-profit educational institution dedicated to collecting, preserving and communicating the history of Cheshire County, New Hampshire. The Society hosts events, activities and educational programs that bring life to the history of Cheshire County. The Historical Society is located at:

246 Main Street, P.O. Box 803  
Keene, NH 03431  
Telephone: (603) 352-1895  
www.hsccnh.org

### NH Division of Historic Resources

The Division of Historical Resources was established in 1974 as the “State Historic Preservation Office.” The resources and materials available at the NHDHR include National Register of Historic Places criteria; New Hampshire Historical Marker Program; the offices of the State Architectural Historian, and State

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Curator, State Archaeologist; preservation tax incentive programs; historical survey programs; and grant programs. NH DHR is located at:

19 Pillsbury Street, 2nd floor  
Concord, NH 03301-2043  
Telephone: (603) 271-3483 or 271-3558  
[www.nh.gov/nhdhr/](http://www.nh.gov/nhdhr/)

### New Hampshire Historical Society

The New Hampshire Historical Society is an independent, non-profit organization and is accredited by the American Association of Museums. The services and resources that the New Hampshire Historic Society provides include the Museum of New Hampshire History, the Tuck Library, a museum store, a newsletter and quarterly calendar, and technical assistance to local libraries, historical organizations and citizens. The New Hampshire Historical Society is located at:

The Tuck Library  
30 Park Street  
Concord, NH 03301-6384  
Telephone: (603) 228-6688  
[www.nhhistory.org](http://www.nhhistory.org)

### New Hampshire State Library

The New Hampshire State Library houses approximately 2,400 titles of published family histories for New Hampshire and New England. This collection is enhanced by the unique name index to early town records on microfilm. The town records, ranging in years for each town, but falling roughly between the years 1640-1830/1840, can provide birth, death, and marriage dates, as well as a listing of such items as tax inventories. Other major resources available include town and county histories, annual town reports, federal census records for New Hampshire (1790-1920), local newspapers on microfilm, the genealogical column of the "Boston Transcript," legislative biographies (1890+), city and county directories, and military records. The New Hampshire State Library is located at:

20 Park Street  
Concord, NH 03301  
Telephone: (603) 271-2392  
[www.nh.gov/nhsl/](http://www.nh.gov/nhsl/)

### National Register of Historic Places

Under the terms of the National Historic Preservation Act of 1966, the U.S. Department of the Interior's National Park Service maintains the National Register, which lists the Nation's cultural resources worthy of preservation. The National Register is the Nation's roster of properties that are important in history, architecture, archaeology, engineering, or culture. The National Register can be contacted at:

National Register of Historic Places  
National Park Service  
1201 Eye Street, NW  
8th Floor (MS 2280)  
Washington, DC 20005  
Telephone: (202) 354-2213  
<http://www.cr.nps.gov/nr/>

### Resources

#### Funding and Technical Assistance

##### Grant-In-Aid Program of the NH Division of Parks and Recreation, Bureau of Trails

A grant program that provides assistance to organized, non-profit off highway recreational vehicle (OHRV) clubs and political subdivisions (such as towns and municipalities) to encourage development, maintenance, construction, grooming and safety of OHRV trails in the State of New Hampshire.

##### NH Division of Parks and Recreation, Bureau of Trails

PO Box 1865,  
Concord, NH 03301  
Telephone: (603) 271-3254  
[www.nhtrails.org](http://www.nhtrails.org)

##### NH Heritage Trail of the NH Division of Parks and Recreation, Bureau of Trails

The primary goal of the Heritage Trail is to provide and protect recreational and educational opportunities throughout the State by linking diverse communities and associated stories and histories. It is anticipated that the trail will create employment opportunities for youth, foster volunteer stewardship, and instill a sense of caring for valued natural and cultural resources.

##### NH Heritage Trail Advisory through the Division of Parks and Recreation, Bureau of Trails

PO Box 1865  
Concord, NH 03301  
Telephone: (603) 271-3254  
[www.nhtrails.org](http://www.nhtrails.org)

##### Land and Water Conservation Fund of the NH Division of Parks and Recreation, Office of Recreation Services

A grant program targeted at enhancing New Hampshire's recreational opportunities through the development of facilities or acquisition of land for public outdoor recreation areas. There is an annual grant application cycle for outdoor recreation facilities and protection of open space. Requires a 50% match. New Hampshire public agencies, cities and school districts are eligible to apply.

##### NH Division of Parks and Recreation, Office of Recreation Services

PO Box 1856, 172 Pembroke Road  
Concord, NH 03302  
Telephone: (603) 271-3556  
[www.nhstateparks.org](http://www.nhstateparks.org)

##### Recreational Trails Program of the NH Division of Parks and Recreation, Bureau of Trails

Federally funded grants are available to non-profit, municipal and private organizations to be used for maintenance and reconstruction of existing trails, purchase or lease of trail construction and maintenance equipment, construction of new trails, acquisition of easements or property for trails, and development and rehabilitation of trailhead and trailside facilities and trail linkages. Maximum 80% federal match.

##### NH Division of Parks and Recreation, Bureau of Trails

PO Box 1865  
Concord, NH 03301  
Telephone: (603) 271-3254  
[www.nhtrails.org](http://www.nhtrails.org)

### Rivers, Trails, and Conservation Assistance Program (RTCA) of the National Park Service

RTCA provides technical assistance to non-profit community and municipal groups working on trails, river conservation and land conservation for parks, wildlife and greenways.

Margaret Watkins  
18 Low Avenue  
Concord, NH 03301  
Telephone: (603) 226-3240  
[www.nps.gov/ncrc/programs/rtca](http://www.nps.gov/ncrc/programs/rtca)

### Transportation Enhancement funds through the NH Department of Transportation

Federally funded program supporting maintenance or expansion of alternative modes of transportation. Projects funded at 80% federal-20% local match. Applications submitted through the regional planning commissions to the NH Dept. of Transportation.

### NH Department of Transportation

1 Hazen Drive  
Concord, NH 03301  
Telephone: (603) 271-2701  
[www.nhdot.com/business\\_center/programs](http://www.nhdot.com/business_center/programs)

### Livable Walkable Communities, a Program of NH Celebrates Wellness

The LWC program works directly with communities to engage community members in a process to assess needs, establish priorities, and develop a workable action plan for increasing opportunities for people of all ages and abilities to safely enjoy walking, bicycling and other forms of recreation.

Livable, Walkable Communities Coordinator  
NH Celebrates Wellness  
25 Triangle Park Drive, P.O. Box 617  
Concord, NH 03302-0617  
Telephone: (603) 224-0184,  
[www.nhew.org](http://www.nhew.org)

### Rails-to-Trails Conservancy

A national organization focused on converting abandoned rail corridors to trails. A useful source of information for a variety of trail projects.

Rails-to-Trails Conservancy  
1100 Seventeenth Street, NW  
Washington, DC 20036  
[www.railtrails.org](http://www.railtrails.org)

### Trailwrights, Inc.

A nonprofit volunteer organization whose members help teach local trail groups/municipalities how to maintain their trails through hands-on sessions and may provide assistance with trail design and construction.

Trailwrights, Inc.  
P.O. Box 1945  
Hillsborough, NH 03244  
[www.trailwrights.org](http://www.trailwrights.org)

Private Foundations

There are a number of foundation directories, including one for NH charities available online at [www.state.nh.us/nhdoj/CHARITABLE](http://www.state.nh.us/nhdoj/CHARITABLE); see also <http://fdncenter.org>, which publishes The Foundation Directory. The NH Charitable Foundation in Concord and its various regional divisions manage a number of funds, some of which might be appropriate for trail projects.

NH Charitable Foundation  
37 Pleasant Street  
Concord, NH 03301  
Telephone: (603) 225-6641  
[www.nhcf.org](http://www.nhcf.org)

**Inventory of Historic Sites**

<b>Site-Location Name</b>	<b>Associated Year</b>		
First Saw Mill	1765	Gilsum Mine (Big)	1810-1960
Frist Grist Mill	1767-68	Colony Mine	1940
Fulling Mill	1806	Allen Mine	Unknown
Saw Mill	1858	Fitzgibbon and Lyman Mines	Unknown
Rake Factory	1858	Molesky Die Shop	1963
Trip Hammer Shop	1806	Winham Turning Mill	1963
Spinning Mill	Unknown	Blacksmith Shop	Unknown
Blacksmith Shop	1900	Blister Mine	Unknown
Saw Mill (Ferristall's Corner)	1900	French Mine	Unknown
Foundry	1858	Vilas High School	1934
Ox Yoke Shop	1858	Elementary School	1955
Carding Mill	Unknown	Feldspar Grinding Plant	1948
Edge Tools Works	1864	First Congregational Church	1883
Brick Grist and Saw Mill	1900	Baptist Meeting House (School #4) (Cold River Academy 1858)	1806
Mica Mill	1925	Second Congregational Church	1793
Paper Mill	1793-1880	Third Congregational Church	~1843
Foundry	1863-1920	Universalist Church	Unknown
Oil Mill (Stone Factory)	1790	Shedd-Porter Library	1910
Saw Mill	1858	Jewett Kemp Marlens House	Unknown
Flax Mill	1792	Vilas Homestead Site (Local Marker)	Unknown
Tannery	Unknown	Mapleside Cemetery	1813
Blacksmith Shop	1910	Alstead Center Cemetery	1768
Cidar Mill	1940	North Cemetery (East Alstead)	1795
Fuller Machine Shop	1963	Slade Cemetery	1826
La Frank Saw Mill	1963	Pine Grove Cemetery	1856
Craig Machine Shop	1963	Rust Cemetery	1776
Blacksmith Shop	Unknown	West Yard Cemetery	1840
Blacksmith Shop	Unknown		

**Alstead Inventory of Recreational Resources**

<b>Name</b>	<b>Use</b>
Paper Mill Park	Town Park within Alstead Village.
Pratt's Rock	Town Park affording scenic views of the Connecticut River Valley and Vermont's Green Mountains.
Vilas Pool on the Cold River	Town Park
Millot Green	Town Park, will be rehabilitated to its pre-October 2005 flood state: for baseball, soccer, basketball and equestrian riding.
Tennis Courts	Vilas School grounds.
Wellman Pond	Wildlife refuge for hiking and non-motorized boating.
Lake Warren	Contains a State maintained public boat launch.
Caldwell Pond	Contains public boat access.
Camp Brook Road	A two mile long gravel scenic road connecting Mill Hollow and Alstead Center.

# NATURAL RESOURCES AND CONSERVATION

## Introduction

The natural resources section of the Master Plan uses the environmental criteria of topography, soils, and water resources to evaluate the town's land area regarding conservation issues and the potential for development. Although natural features can often enhance a particular development site, they just as often pose significant barriers to development; this can be seen by examining locations where existing development has occurred. It is true that transportation routes are another factor in the location of development; however, to a great degree, the natural features of the land also determine the location of roads and the former railroads.

This section enables the Planning Board to address areas of the town that are most suitable for development and high intensity land uses, and evaluate the existing limitations of the land that would have to be accommodated. Environmental limitations may include steep slopes, seasonally wet soils, wetlands, floodplains, shallow bedrock, and aquifers.

This section also identifies the areas of town that deserve special protection due to the environmental function of the land, for example, certain soil types designated for agricultural purposes. In addition, this section notes specific areas the town may wish to conserve for future community use due to their aesthetic or historic qualities. Not all open spaces need to be steep slopes or wetlands. Some areas may be prime lands set aside for future school sites, parks, intensive farming operations, or other limited low intensity land uses that add value to the overall community.

Alstead has many natural features that make the town a very desirable place to live. The Town has maintained a typical New England character with the Town Common in the center, and the development spiraling out from this center. Outside of the village, Alstead is still quite rural, with fields, streams, and woods. As development pressures mount, however, there will be more pressure on the Planning Board to allow smaller lot sizes in other parts of Town. This section will aid the Planning Board and the residents to decide where they want growth to occur while at the same time preserving the natural environment that is critical to a high quality of life.

## Topography

Alstead has a land area of approximately 39 square miles or 25,394 acres of which 382 acres is lakes and ponds. The surface of the land is irregular and broken, with an absence of any mountainous peaks and an average elevation of 478 feet. The highest point in Alstead is Smith Hill, at 1795 feet. Two of the most distinguishing features in Alstead are Warren Brook and the Cold River. There are several other minor streams, some of which empty into branches of the Ashuelot River. The two largest waterbodies are Lake Warren, which lies in the eastern part of Town and Caldwell Pond, which lies in the southern portion.

Topography is an important consideration when assessing the development potential of land. Soil conditions are directly related to topography, with slope and drainage features having a determining influence. While slope is only one of many factors influencing the soil type of a particular site, it is the primary component of topography. The following discussion defines slope and addresses the influence slope has on the development potential of land.

## **Soils**

Soils information is an important consideration in land use planning since the various characteristics of soils – such as steepness, wetness, flood susceptibility, etc - have such an impact on land use opportunities. Soil information for Alstead was obtained from the following sources:

1. Soil descriptions and mapping: Soil Survey of Cheshire County, New Hampshire, published by the US Department of Agriculture Soil Conservation Service, 1982.
2. Soil development capability: Soil Potential Ratings for Development; Cheshire County, NH, prepared by the Cheshire County Conservation District in 1984.

The majority of soils in Alstead are of the Bernardston – Cardigan – Kearsarge – Dutchess complex. These are very deep, moderately deep, and shallow, gently sloping to very steep, well drained and somewhat excessively drained, loamy soils that formed in glacial till. These types of soils are mostly wooded. Some areas, particularly gently sloping and strongly sloping areas of Bernardston and Dutchess soils, are used for farming. Slope, stones on the surface, rock outcrops, depth to bedrock, and potential erosion are major limitations to use these soils for most types of farming and development. On Bernardston soils, slow permeability in the hardpan layer is a limitation to use as sites for septic tank absorption fields. Most areas where these soil types occur are suited to woodland use. Gently sloping, nonstony areas of Bernardston and Dutchess soils are suited to cultivated crops. Strongly sloping, nonstony areas of Bernardston and Dutchess soils are suited to hay and pasture. Gently sloping and strongly sloping areas of Dutchess soils are suited to development.

The other three soil types found in Alstead are: Windsor – Agawam – Hoosic; Marlow – Berkshire Tunbridge; and Berkshire – Tunbridge – Lyman. Windsor – Agawam – Hoosic are very deep, nearly level to very steep, excessively drained, well drained, and somewhat excessively drained, sandy and loamy soils that formed in glacial outwash deposits. Much of these soil types are used for crops in support of dairy farming. Nearly level or gently sloping areas of Agawam soils are suited to farming. Gently sloping areas of Hoosic soils are also suited to farming, but droughtiness is also a limitation. Agawam soils and nearly level to strongly sloping areas of Windsor and Hoosic soils are suited to development. If these areas are used as sites for septic tank absorption fields, ground water pollution is a hazard. Erosion is a hazard on all of these soil types. Terrace edges have many deep gullies. Erosion control measures are needed for most farm and non-farm uses.

Marlow – Berkshire – Tunbridge are very deep and moderately deep, gently sloping to very steep, well drained, loamy soils that formed in glacial till. These soil types are mostly wooded, and partly used for development and a few farms. Most areas are suited to woodland use. Slope, stones on the surface, depth to bedrock, erosion, and, in Marlow soils, slow permeability in the hardpan layer are major limitations to use these soil types for farming and development. Strongly sloping, non-stony areas are suited to hay and pasture. Gently sloping, non-stony areas of Marlow and Berkshire soils are suited to cultivated crops. Gently sloping to strongly sloping areas of Berkshire soils are suited to development. On Marlow soils, slow permeability in the hardpan layer is a limitation to use as sites for septic tank absorption fields.

Berkshire – Tunbridge – Lyman are very deep, moderately deep, and shallow, gently sloping to very steep, well drained and somewhat excessively drained, loamy soils that formed in glacial till. These soil types are mostly wooded, and partly used for development. Most areas of these soil types are suited for woodland use. Slope, depth to bedrock, areas of rock outcrop, stones on the surface, and erosion are the major limitations to use these soil types for farming and development. In gently sloping to strong sloping areas Berkshire soils are suited to farming and development.

The soils of Alstead are characteristic of the Monadnock Region with an almost equal division among developable and undevelopable soil types. Approximately 50% of the soils in Town are suitable for development while some 50% have restrictive features such as wetness, steepness of slope, hardpan or floodplain conditions. Soils on steep slopes are usually thin with exposed bedrock or a shallow depth to bedrock. Floodplain soils tend to be fine and sandy with wetland conditions. Floodplain areas often have well-developed topsoil making them desirable for certain agricultural uses.

### STEEP SLOPES

Generally speaking, the steeper the land the greater the possibility for erosion and sedimentation, and the more problems can be encountered in siting wells and septic systems.

Steepness is measured in terms of slope, which is defined as the change in elevation (vertical distance) over horizontal distance; the more abrupt the change in elevation, the steeper the slope. Slope is measured and expressed as a percentage that represents the relationship between elevation and horizontal distance.

Typical categories that might be seen on a slope map are 0-8%, 9-15%, 16-24%, and over 25%. Land in the 0-8% slope category is generally preferred for all types of development. Gradual slopes are most favorable for building roads and public water and sewer facilities and can be installed at the least cost to the community. Also, excavations for most structures can be done at a minimal cost and erosion associated with such work can be reduced easily on-site. The exceptions to this would be wetland areas and floodplains because they occur primarily in the 0-5% slope range. An examination should be made as to the environmental function of such wetland and floodplain areas, as well as the risks that might be inherent in development before such lands are utilized for building sites.

As slopes increase to 8-15%, the land is more suited to less intensive forms of development. Carefully placed residential dwellings and some agricultural uses (orchards and field crops) may be suitable for this terrain. As development approaches a 15% gradient, it requires more careful consideration for all types of development. Once a slope exceeds a 15% gradient, all forms of development are considered unsuitable, although it is really at the 25% slope and above that development becomes very problematic. Areas having 25 percent or greater slope have benefits as conservation areas for low intensity recreational uses and wildlife habitats. Also, their disturbance can create serious erosion problems, washing out topsoil and even roadways downhill. Forestry practices on such slopes must be confined to low-impact operations, with proper erosion controls in place. Other important controls for forestry uses include minimal basal area cutting, and skid roads designed for steep slope harvesting.

When developing steep terrain, the potential for environmental damage increases as the slope gradient increases. Overly steep slopes consisting of sands and gravels left after the excavation of an area will quickly gully and erode. Erosion control barriers should be in place at the time of excavation and prompt reseeding and regrading should take place afterwards. Surface water run-off rates and erosion factors increase as the slope increases. This will cause sedimentation of the surface waters down slope and will clog stream channels and rivers if no erosion controls are in place.

Alstead has 21 soil types associated with steep slopes as shown in Table 1 below and *Map 8-1: Steep Slopes*:

**Table 1- Steep Slope Soil Types**

<b>Symbol</b>	<b>Soil Name</b>	<b>Characteristics</b>	<b>Slope (%)</b>
36E	Adams	Loamy Sand	15-25
57D	Beckett	Fine Sandy Loam	15-25
72D	Berkshire	Fine Sandy Loam	15-25
771D	Berkshire and Mod	Complex	15-35
365E	Berkshire and Monadnock	Complex	25-50
365D	Berkshire and Monadnock	Complex	15-25
331E	Bernardston	Silt Loam	25-50
330D	Bernardston	Silt Loam	15-25
360D	Cardigan-Kearsarge	Complex	15-25
361D	Cardigan-Kearsarge	Rock Outcrop Complex	15-25
22E	Colton	Loamy Fine Sand	15-50
367E	Dutchess	Silt Loam	25-50
366D	Dutchess	Silt Loam	15-25
510E	Hoosic	Gravelly Fine Sandy Loam	15-50
362E	Kearsarge-Cardigan	Rock Outcrop Complex	25-50
161E	Lyman-Tunbridge	Rock Outcrop Complex	25-50
77E	Marlow	Fine Sandy Loam	25-50
76D	Marlow	Fine Sandy Loam	15-25
143D	Monadnock	Fine Sandy Loam	15-25
60D	Tunbridge-Berkshire	Complex	15-25
61D	Tunbridge-Lyman	Rock Outcrop Complex	15-25

SOURCE: SOIL SURVEY OF CHESHIRE COUNTY, NEW HAMPSHIRE, 1982

These soils are found on the sides of hills, along ridges and as rocky outcrops void of soils. Ranging in slope from 15% to 50%, these soils are classified by the SCS as having low and/or very low development potential because of steep slope, exposed or shallow bedrock and the lack of adequate corrective measures capable of increasing the development potential of such sites.

### WETLAND SOILS

Wetland soils in Alstead are those that the soil survey categorizes as being poorly drained or very poorly drained (including muck and peat). Alstead has a very scattered pattern of wetland soils, accounting for 2,015 acres of the total land area. *Map 8-2: Wetlands and Hydric Soils* shows many small patches and a few rather large sections of wetlands in the Town to the east and northeast of Lake Warren. The soil types and characteristics that make up the wetland soils are described in Table 2:

**TABLE 2- WETLAND SOIL TYPES**

Symbol	Soil Name	Characteristics	Suited For	Not Suited For
295	Greenwood	Mucky Peat	Habitat for wetland wildlife	Anything but Habitat
109	Limerick	Silt Loam	Open space, natural floodwater storage areas, habitat for wetland wildlife	Cultivating crops, grasses, legumes; urban development
347B	Lyme and Moosilauke	Complex	Habitat for wetland wildlife	Cultivating crops, hay and pasture; urban development
414	Moosilauke	Fine Sandy Loam	Habitat for wetland wildlife	Cultivating crops, hay and pasture; urban development
495	Ossipee	Mucky Peat	Habitat for wetland wildlife	Anything but Habitat
647B	Pillsbury	Fine Sandy Loam	Habitat for wetland wildlife	Cultivating crops, hay and pasture; urban development
533	Raynham	Silt Loam	Habitat for wetland wildlife	Cultivating crops, hay and pasture; urban development
5	Rippowam	Fine Sandy Loam	Habitat for wetland wildlife	Cultivating crops, hay, pasture, urban development
6	Saco	Mucky Silt Loam	Habitat for wetland wildlife	Anything but Habitat
340B	Stissing	Silt Loam	Habitat for wetland wildlife	Cultivating crops, hay and pasture; urban development

SOURCE: SOIL SURVEY OF CHESHIRE COUNTY, NEW HAMPSHIRE, 1982

### AGRICULTURAL SOILS

The Cheshire County Soil Survey also designates prime farmland soils. This designation is based in the soils' inherent fertility for agricultural production and physical characteristics which allow it to withstand various management practices without loss of productivity or need for additional or extraordinary care. Of the 22 soil types in Cheshire County that are considered to be prime farmland, 15 of them are found in Alstead. Furthermore, they may exist in formations that are too small or inaccessible for crop farms. The LESA (Agricultural Lands Evaluation and Site Assessment) manual should be consulted when a choice needs to be made regarding the use of one particular farmland over another, depending on whether the use is for farming or general development.

### CONSTRUCTION MATERIALS

The primary source for identifying construction material resources is the Soil Survey of Cheshire County, which was completed in 1984<sup>13</sup>. The document includes a table entitled "Construction Materials," that lists four types of material by soil category; these are: roadfill, sand, gravel, and topsoil. *Maps 8-3, 8-4 and 8-5* show where construction materials are most likely to be found in Alstead.

<sup>13</sup> Soil Survey of Cheshire County, New Hampshire, US Department of Agriculture, Soil Conservation Service, 1984. (The SCS is now the Natural Resource Conservation Service.)

## **FLOODPLAINS**

Floodplains are land areas that are susceptible to flooding. These areas actually have two parts: the floodway and floodway fringe. The floodway includes the channel and an additional area that often carries excess flow. The floodway fringe (more commonly known as the 100-year floodplain or the Special Flood Hazard Area) is a broader area over which floodwater may spread, but where the flow velocity is slower. This is an important distinction for land use planning, since some uses can safely occur in the Special Flood Hazard Area, but not in the floodway.

The Federal Emergency Management Agency (FEMA) has mapped the floodplains for all relevant municipalities; the boundaries of the floodplains were computed at cross sections interpolated between cross sections, based on hydraulic information and past experience of flooding. Flood Insurance Rate Maps define the 100-year floodplain (meaning there is a 1 out of 100 chance of flooding in any given year; over long periods of time, base floods will occur on the average once every 100 years), and an area of 500-year floodplain (a 1 out of 500 chance of flooding in any given year).

The Flood Insurance Rate Maps for Alstead became effective May 23, 2006, and the town then entered into the National Flood Insurance Program, which permits homeowners who live in the floodplain to purchase insurance for their property. However, in order for landowners to be able to purchase this insurance, the town needed to adopt a Floodplain Management Ordinance, which it has done. This Ordinance requires the town to keep track of all development in the Special Flood Hazard Areas (SFHA) and ensure that if any new construction or substantial improvements to a home are proposed for the SFHA, the lowest enclosed floor must be at or above the base flood elevation.

The purposes of this requirement are to minimize the potential for flood damage, to avoid damage-prone uses in the floodplains, and to reduce development pressure of flood hazard areas. Communities that do not maintain and/or enforce their floodplain regulations may be suspended from the insurance program, which could have serious consequences for any affected landowners if their mortgage holders wished to cancel the mortgage. For these reasons, it is very important for the town to keep the floodplain management ordinance up to date by amending it as necessary, and to monitor all development within these areas.

## **WATER RESOURCES**

Our water resources (perennial streams, ponds, lakes, wetlands, floodplains, and stratified drift aquifers), are some of our most sensitive natural resources - susceptible to loss due to small size, fragile conditions, poor prospects for regeneration once disturbed, vulnerability to pollution, and areas with a high potential for special communities or species. We are familiar with the legacy of degraded water quality and aquatic habitats, the loss of riparian habitat, the diversion of rain water and snow melt from natural courses of meandering through low lands or recharging ground water. Just as the ubiquity of trees along country roads throughout our Region may belie the degradation of natural forested communities by the road and traffic, home building and recurrent timber harvest, so the abundance of water may perpetuate a false sense of security about the well-being of the aquatic in our landscape mosaic.

Discussing water resources in terms of these discrete features – ponds and lakes, streams, aquifers – should not obscure the fact that these are not static, isolated resources, but parts of our hydrologic system – the ceaseless cycling of water through the atmosphere, soil and geologic formations, myriad organisms, and overland as surface water – and through our homes, businesses and industries.

Alstead has a land area of 39 sq miles or 25,012 acres. Approximately 1.5%, or 382 acres, of this total area consists of lakes and ponds. Alstead's largest waterbody is Lake Warren (approximately 200 acres). Alstead has a number of other small ponds scattered around the town. While there are numerous streams flowing through the town, the most notable flowing waterbodies are the Cold River and Warren Brook. Aquifers, or groundwater, are also included in this analysis, since they provide an important source of water for private and community wells. A description of the town's watersheds, waterbodies, watercourses, and aquifers is presented below.

### WATERSHEDS

A **watershed** is a land area from which all the surface run-off drains at a single point. Watersheds can be any size, from a parking lot to half a continent. Watersheds are meaningful units for conservation planning because of the pervasive nature of water – it continuously moves through the natural and manmade environments and our water quality is the net product of everything it encounters - air, soil, pavement, forests – and in the event that a water quality problem is identified, the cause is probably within the same watershed.

Watersheds for this project were delineated to identify all land area from which water flows into and through Alstead. Hence, the total land area of the watersheds considered here is greater than the total land area of the Alstead corporate limits (See *Map 8-6: Watersheds*).

The Town of Alstead falls both within the Cold River and Ashuelot River watersheds. The Town has been further subdivided into 22 sub-watersheds, some nested within others, to identify the land area from which water flowing in major streams and water bodies originates as rainfall, snow melt, or groundwater outbreak.

### WATERBODIES

Alstead has many waterbodies scattered throughout Town. Most of them are quite small, only measuring a few acres or less in size. The largest is Lake Warren (200 acres) in the eastern part of Alstead. Caldwell, Newell (Arch), and Cranberry are the other larger ponds in Town. Vilas Pool, located in the northwest part of town, is a recreational area, formed by a dam which slows the flowing Cold River. Most of Alstead's water bodies are too isolated to support much recreation use, with the exception of Lake Warren and Vilas Pool.

### RIVERS AND STREAMS

Alstead has approximately 11 perennial rivers and streams flowing through town, the most significant one being the Cold River, which runs through the northwest part of Town. The other significant watercourse in Alstead is Warren Brook, which runs from Lake Warren to the Cold River. These rivers and streams are delineated on *Map 8-6: Watersheds*.

### AQUIFERS

Aquifers are geologic formations (either fractured bedrock or sand and gravel) that by virtue of their physical structure and location on the landscape can provide water through drilled wells in sufficient quantities to support human uses. Characteristics of high-value aquifers include being situated down stream in a watershed, being in a watershed with a preponderance of natural forested land cover, and having a physical structure that is highly permeable – open spaces between particles of sand and gravel or

open fissures and interconnected networks of cracks in bedrock - to both store and transmit water. Aquifers are re-supplied primarily by water falling as precipitation. Rain and snow melt move downward through soil, sand and gravel and/or cracks in bedrock to a saturated zone where the spaces between particles and cracks in rock are filled with water. It is very important that the surface of the earth be able to transmit water so that a certain percentage can be stored underground. Excessive compaction or extensive covering of the land surface reduces the volume of groundwater which affects the supply of water to wells.

Aquifers of medium to high potential occur in southwestern New Hampshire as unconsolidated deposits of sand and gravel, or in bedrock fractures. The unconsolidated deposits in this region are principally stratified drift deposits (sand and gravel sorted and deposited by running water from the melting glaciers) that are usually in valley floors or on adjacent hill slopes. These materials have abundant pore space to store water, and pore space may amount to more than 30 percent of the total volume of the deposit. Consequently, stratified deposits at the bottom of watersheds are good aquifers.

Fractured bedrock can be highly-productive aquifers, especially when overlaid by a layer of sand gravel, which allows the recharge to occur directly from above. Most domestic water wells in Alstead are drilled into bedrock – and while many have low yields, bedrock fractures can be staggeringly water rich – and sometimes transmit great volumes of water over many miles.

In contrast, a till aquifer will typically have a lower-yielding well life due to its mixture of clay, silt, gravel and boulders that tend to compact. The transmission and storage of water is greatly decreased in this type of aquifer. The water table (the top of the saturated zone) can fluctuate, depending on the volume recharge to aquifer material.

Groundwater in saturated soils is generally vulnerable to pollution because surface contamination can infiltrate directly into it. It is possible, however, to trace the source of pollution by finding the watershed boundary. Once a pollutant enters an aquifer, it may remain in place for an indeterminate period of time. While pollutants can enter an aquifer easily because sand and gravel are porous and transmit water rapidly, once in the aquifer their movement is then governed by groundwater flow, which moves very slowly through the tiny pore spaces of the glacial till.

Sources of aquifer pollution are frequently located on the ground surface directly above or contiguous to the aquifer: septic tank effluent, landfill refuse, leakage from sewer lines or ruptured fuel tanks, agricultural fertilizers and pesticides are among the many possible sources of pollution for an aquifer. In addition to these potential contaminants are the materials such as fuels, lubricants or other toxic materials associated with earth excavation, an activity that is, of course, directly associated with sand and gravel aquifers.

The US Geological Survey provides aquifer delineation maps for the entire state. The map is essentially a surficial geology map, showing the distribution of unconsolidated (not bedrock) geologic material on the land surface. Bedrock aquifers do exist, but these were not part of this particular study. This study identifies areas of sand and gravel and measures the rate of transmissivity - that is, the speed with which water passes through the materials, in increments of 1,000 feet squared per day.

*Map 8-7: Stratified Drift Aquifers* shows the locations of soils that are commonly associated with concentrations of groundwater (aquifers), along with the location of private (since 1984) and public water supplies. The map also shows the existing wellhead protection areas surrounding the public water supplies. As may be seen from the examination of this map, the highest potential for the location of an aquifer is along Cold River and Derby Brook in northwest Alstead. This area includes the location of two public wells. A second area of interest is south of Lake Warren and east of Raymond Pond. There are

current three public wells located in this area. In the northeast corner of Alstead, there is a small area along Great Brook which has the potential for groundwater yield. There are no public water supplies at this location.

### NATURAL RESOURCES ANALYSIS

The following tables and figures quantify the distribution of Alstead's natural resources by watershed. In addition to the natural resources, the location of buildings, roads, fields, gravel pits, etc, are also accounted for in the watershed analysis. The natural resources data available for use in the Planning Commission's GIS data is described without regard for development, e.g. a USDA Soil Survey may indicate an area of land as prime farmland soil, while in reality, that land also has several homes and roads. The analysis attempts to quantify the displacement of natural resource by development – the numbers that correspond with the variable name qualified with “net” – meaning the area free of buildings, yards and pavement. The analysis is summarized for 1) the entire study area, 2) the watershed of the Ashuelot River, and 3) the Cold River Watershed. The Ashuelot River Watershed is further broken down into the sub watersheds of Dart Brook and Thompson Brook with the remaining sub watersheds listed just by numbers (1, 2, 4, 6 and 12). The Warren Brook sub watershed is similarly indicated as part of the greater Cold River Watershed with the remaining sub watersheds listed by number. *Map 8:6- Watersheds* shows each sub watershed with the corresponding number

The tables are separated into four categories: water resources, sensitive resource areas, soil resources and development parameters. Following the tables are graphs that reflect the total percentages of a number of land cover types.

**Alstead Master Plan Update, 2007**  
**Draft: October 2006**

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**Table 1.1- Summary**

	<b>Study Area Total</b>	<b>Ashuelot River Total</b>	<b>Cold River Total</b>
<b>Water Resources:</b>			
TOTAL AREA IN WATERSHED (acres)	<b>27,551</b>	10,285	17,266
<i>NET AREA (acres)</i>	<b>25,951</b>	9,907	16,044
TOTAL LAND AREA IN WATERSHED (acres)	<b>27,136</b>	10,144	16,992
<i>NET AREA (acres)</i>	<b>25,536</b>	9,766	15,769
WATERSHED AREA IN TOWN	<b>25,197</b>	10,239	14,958
WATERSHED LAND AREA IN TOWN	<b>24,781</b>	10,099	14,683
<i>NET AREA (acres)</i>	<b>24,253</b>	9,722	14,531
LAKES&PONDS (Count)	<b>58</b>	28	30
WATERBODIES AREA (acres)	<b>416</b>	141	275
WATERBODY SHORELINE (miles)	<b>27</b>	10	17
NET SHORELINE (miles)	<b>24</b>	9	15
STREAMS (miles)	<b>48</b>	16	31
STREAMS DENSITY (CU.FT)	<b>0</b>	0	0
USGS WETLAND (acres)	<b>276</b>	116	160
USGS WETLAND100ft BUFFER (acres)	<b>989</b>	336	653
NWI WETALND (acres)	<b>702</b>	346	355
USDA HYDRIC SOIL (acres)	<b>2,303</b>	891	1,412
STRATIED DRIFT AQUIFERS (acres)	<b>937</b>	54	883

Table 1.2- Ashuelot River  
Watershed Water Resources

	Study Area Total	Ashuelot River Totals	Ashuelot River Watershed											
			1	2	4	6	12	Dart Brook Subwatershed		Dart Brook Total	Thompson Brook Subwatershed			Thompson Brook Total
								3	13		11	14	15	
<b>Water Resources:</b>														
TOTAL AREA IN WATERSHED (Acres)	27,551	10,285	1,615	90	634	308	305	3,321	240	3,561	2,628	145	999	3,772
<i>NET AREA (acres)</i>	<i>25,951</i>	<i>9,907</i>	<i>1,565</i>	<i>90</i>	<i>630</i>	<i>299</i>	<i>305</i>	<i>3,222</i>	<i>240</i>	<i>3,462</i>	<i>2,535</i>	<i>126</i>	<i>896</i>	<i>3,558</i>
TOTAL LAND AREA IN WS (AC)	27,136	10,144	1,609	90	596	308	305	3,231	240	3,471	2,623	145	998	3,766
<i>NET AREA (acres)</i>	<i>25,536</i>	<i>9,766</i>	<i>1,558</i>	<i>90</i>	<i>592</i>	<i>299</i>	<i>305</i>	<i>3,132</i>	<i>240</i>	<i>3,372</i>	<i>2,530</i>	<i>126</i>	<i>895</i>	<i>3,552</i>
WATERSHED AREA IN TOWN	25,197	10,239	1,614	90	634	308	305	3,286	233	3,519	2,628	145	998	3,770
WATERSHED LAND AREA IN TOWN	24,781	10,099	1,608	90	596	308	305	3,196	233	3,429	2,623	145	997	3,764
<i>NET AREA (acres)</i>	<i>24,253</i>	<i>9,722</i>	<i>1,557</i>	<i>90</i>	<i>592</i>	<i>299</i>	<i>305</i>	<i>3,097</i>	<i>232</i>	<i>3,330</i>	<i>2,530</i>	<i>126</i>	<i>893</i>	<i>3,550</i>
LAKES&PONDS (Count)	58	28	4	0	3	0	0	13	0	13	4	0	4	8
WATERBODIES AREA (acres)	416	141	6	0	39	0	0	90	0	90	5	0	1	6
WATERBODY SHORELINE (miles)	27	10	1	0	2	0	0	6	0	6	1	0	0	1
NET SHORELINE (miles)	24	9	0	0	2	0	0	6	0	6	0	0	0	1
STREAMS (miles)	48	16	2	0	0	0	0	5	0	6	7	0	1	8
STREAMS DENSITY (CU.FT) stream in FT/ watershed area insq FT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USGS WETLAND (acres)	276	116	27	0	4	9	7	23	17	40	16	0	14	29
USGS WETLAND100ft BUFFER (acres)	989	336	62	0	13	38	24	73	44	118	42	0	40	82
NWI WETALND (acres)	702	346	55	0	32	16	6	145	18	163	52	0	22	74
USDA HYDRIC SOIL (acres)	2,303	891	182	7	52	87	16	297	26	323	146	10	68	224
STRATIED DRIFT AQUIFERS-acres	937	54	0	0	0	0	0	54	0	54	0	0	0	0

Table 1.3- Cold River Watershed  
Water Resources

	Study Area Total	Cold River Total	Cold River Watershed										Warren Brook		Warren Brook Total	
			7	8	9	16	17	18	19	20	21	22	5	10		
<b>Water Resources:</b>																
TOTAL AREA IN WATERSHED (acres)	27,551	17,266	3,138	983	425	3,310	677	66	41	363	163	35	3,348	4,718	<b>8,066</b>	
NET AREA (acres)	25,951	16,044	3,020	961	412	3,066	586	36	33	310	109	28	3,069	4,415	<b>7,484</b>	
TOTAL LAND AREA IN WATERSHED (acres)	27,136	16,992	3,124	983	424	3,300	668	63	41	363	158	28	3,141	4,699	<b>7,840</b>	
NET AREA (acres)	25,536	15,769	3,006	961	411	3,056	577	32	33	309	104	21	2,862	4,396	<b>7,258</b>	
WATERSHED AREA IN TOWN	25,197	14,958	1,397	983	116	3,240	677	66	41	206	162	34	3,348	4,688	<b>8,036</b>	
WATERSHED LAND AREA IN TOWN	24,781	14,683	1,384	983	116	3,229	668	63	41	206	157	27	3,141	4,669	<b>7,810</b>	
NET AREA (acres)	24,253	14,531	1,301	961	1,111	2,994	581	33	33	157	105	22	2,867	4,367	<b>7,233</b>	
LAKES&PONDS (Count)	58	30	2	1	1	8	2	1	0	1	1	3	5	5	<b>10</b>	
WATERBODIES AREA (acres)	416	275	14	1	0	10	8	4	0	0	5	7	207	19	<b>226</b>	
WATERBODY SHORELINE (miles)	27	17	1	0	0	1	3	1	0	0	2	1	5	1	<b>7</b>	
NET SHORELINE (miles)	24	15	1	0	0	1	2	1	0	0	1	1	5	2	<b>7</b>	
STREAMS (miles)	48	31	6	1	1	9	0	0	0	1	0	0	5	9	<b>14</b>	
STREAMS DENSITY (CU.FT) stream in FT/ watershed area insq FT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>	
USGS WETLAND (acres)	276	160	13	4	0	27	1	0	0	0	0	0	54	60	<b>115</b>	
USGS WETLAND100ft BUFFER (acres)	989	653	50	17	0	92	8	0	0	4	0	0	271	210	<b>481</b>	
NWI WETALND (acres)	702	355	48	1	1	64	2	0	0	2	0	5	131	102	<b>233</b>	
USDA HYDRIC SOIL (acres)	2,303	1,412	354	7	8	161	8	4	0	14	10	1	607	240	<b>847</b>	
STRATIED DRIFT AQUIFERS (acres)	937	883	105	0	37	188	314	49	9	96	45	8	15	19	<b>33</b>	

Summary Table 2

<b>Sensitive Resource Areas</b>	<b>Study Area Total</b>	<b>Ashuelot River Total</b>	<b>Cold River Total</b>
USGS WETLAND (acres)	<b>505</b>	116	160
USGS WETLAND100ft BUFFER (acres)	<b>1,842</b>	336	653
NWI WETALND (acres)	<b>1,294</b>	346	355
USDA HYDRIC SOIL (acres)	<b>4,261</b>	891	1,412
STRATIED DRIFT AQUIFERS (acres)	<b>1,874</b>	54	883
USDA EXCESSIVELY WELL DRAINED (acres)	<b>16,889</b>	1,953	6,693
USDA >25% (acres)	<b>9,011</b>	1,988	2,639
DEM > 25% (acres)	<b>84</b>	7	36
FLOOD PLAIN (acres)	<b>2,113</b>	317	781
USDA PRONE TO FLOODING (acres)	<b>266</b>	40	93
RIPARIAN AREA- 100FT BUFFER (acres)	<b>1,069</b>	161	908

**Table 2.2- Ashuelot River Watershed  
Sensitive Resource Areas**

	Study Area Total	Ashuelot River Totals	Ashuelot River Watershed											
								Dart Brook Subwatershed		<i>Dart Brook Total</i>	Thompson Brook Subwatershed			<i>Thompson Brook Total</i>
			<b>1</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>12</b>	<b>3</b>	<b>13</b>		<b>11</b>	<b>14</b>	<b>15</b>	
<b>Sensitive Resource Areas</b>														
USGS WETLAND (acres)	276	116	27	0	4	9	7	23	17	40	16	0	14	29
USGS WETLAND100ft BUFFER (acres)	989	336	62		13	38	24	73	44	118	42	0	40	82
NWI WETALND (acres)	702	346	55	0	32	16	6	145	18	163	52	0	22	74
USDA HYDRIC SOIL (acres)	2,303	891	182	7	52	87	16	297	26	323	146	10	68	224
STRATIED DRIFT AQUIFERS (acres)	937	54	0	0	0	0	0	54	0	54	0	0	0	0
USDA EXCESSIVELY WELL DRAINED (acres)	8,646	1,953	209	19	79	51	45	778	56	834	476	28	212	716
USDA >25% (acres)	4,628	1,988	118	0	55	5	66	597	73	670	953	47	74	1,074
DEM > 25% (acres)	42	7	0	0	0	0	1	1	0	1	4	1	0	5
FLOOD PLAIN (acres)	1,098	317	26	0	44	12	0	186	0	186	48	0	0	48
USDA PRONE TO FLOODING (acres)	133	40	0	0	0	0	0	0	0	0	40	0	0	40
RIPARIAN AREA- 100FT BUFFER (acres)	1,447	503	48	0	29	10	11	204	9	213	165	0	28	193

**Table 2.3 Cold River Watershed  
Sensitive Resource Areas**

	Study Area Total	Cold River Total	Cold River Watershed												Warren Brook		Warren Brook Total
			7	8	9	16	17	18	19	20	21	22	5	10			
<b>Sensitive Resource Areas</b>																	
USGS WETLAND (acres)	276	160	13	4	0	27	1	0	0	0	0	0	54	60		<b>115</b>	
USGS WETLAND100ft BUFFER (acres)	989	653	50	17	0	92	8	0	0	4	0	0	271	210		<b>481</b>	
NWI WETALND (acres)	702	355	48	1	1	64	2	0	0	2	0	5	131	102		<b>233</b>	
USDA HYDRIC SOIL (acres)	2,303	1,412	354	7	8	161	8	4	0	14	10	1	607	240		<b>847</b>	
STRATIED DRIFT AQUIFERS (acres)	937	883	105	0	37	188	314	49	9	96	45	8	15	19		<b>33</b>	
USDA EXCESSIVELY WELL DRAINED (acres)	8,646	6,693	888	467	53	1,726	171	16	28	73	67	7	793	2,404		<b>3,197</b>	
USDA >25% (acres)	4,628	2,639	122	164	19	702	189	10	3	32	6	0	166	1,226		<b>1,392</b>	
DEM > 25% (acres)	42	36	0	1	5	19	0	0	0	0	0	0	0	10		<b>10</b>	
FLOOD PLAIN (acres)	1,098	781	98	1	0	84	45	4	0	2	8	9	421	110		<b>531</b>	
USDA PRONE TO FLOODING (acres)	133	93	18	0	0	0	50	14	0	1	1	8	0	0		<b>0</b>	
RIPARIAN AREA 100 FT BUFFER (acres)	1,447	944	151	31	29	227	31	13	0	18	17	9	176	242		419	

Summary Table 3.1

	<b>Study Area Total</b>	<b>Ashuelot River Total</b>	<b>Cold River Total</b>
<b>Soil Resources</b>			
USDA PRIME FARM LAND (acres)	<b>2,494</b>	252	1,070
<i>USDA PRIME FARM LAND-NET (acres)</i>	<b>2,113</b>	206	915
FARMLAND- STATE IMPORTANCE (acres)	<b>3,219</b>	266	1,394
FARMLAND- STATE IMP-NET (acres)	<b>2,711</b>	221	1,180
FOREST SOIL GROUPS (acres)			
I A, IB, IC	<b>26,352</b>	3,932	9,781
<i>NET</i>	<b>24,074</b>	3,675	8,876
II A, II B	<b>21,626</b>	5,810	5,861
<i>NET</i>	<b>20,852</b>	5,678	5,588
NC NOT CLASSIFIED	<b>1,474</b>	438	376
<i>NC-NET</i>	<b>1,451</b>	435	368

**Table 3.2- Ashuelot River Watershed  
Soil Resources**

	Study Area Total	Ashuelot River Totals	Ashuelot River Watershed											
								Dart Brook Subwatershed		<i>Dart Brook Total</i>	Thompson Brook Subwatershed			<i>Thompson Brook Total</i>
			1	2	4	6	12	3	13		11	14	15	
<b>Soil Resources</b>														
USDA PRIME FARM LAND (acres)	1,323	252	80	11	0	61	0	25	0	25	43	1	31	75
<i>USDA PRIME FARM LAND-NET (acres)</i>	1,122	206	62	11	0	58	0	22	0	22	31	1	23	55
FARMLAND- STATE IMPORTANCE (ac)	1,659	266	75	2	0	15	8	33	0	33	35	15	83	133
<i>FARMLAND- STATE IMP-NET (acres)</i>	1,401	221	67	2	0	15	8	27	0	27	21	9	72	102
FOREST SOIL GROUPS (acres)														
I A, IB, IC	13,712	3,932	576	35	127	194	141	1,276	66	1,342	830	87	600	1,517
<i>NET</i>	12,552	3,675	540	35	126	188	141	1,221	66	1,287	774	72	512	1,358
II A, II B	11,670	5,810	983	55	434	95	148	1,800	154	1,953	1,712	57	372	2,141
<i>NET</i>	11,266	5,678	954	55	431	92	148	1,759	153	1,912	1,676	54	356	2,086
NC NOT CLASSIFIED	814	438	68	0	51	19	16	156	21	176	81	0	27	108
<i>NC-NET</i>	802	435	68	0	51	19	16	153	21	173	81	0	27	108

**Table 3.3- Cold River Watershed  
Soil Resources**

Cold River Watershed

	Study Area Total	Cold River Total	Cold River Watershed										Warren Brook		Warren Brook Total	
			7	8	9	16	17	18	19	20	21	22	5	10		
<b>Soil Resources</b>																
USDA PRIME FARM LAND (acres)	1,323	1,070	209	29	0	247	57	14	0	13	27	8	312	154	<b>466</b>	
<i>USDA PRIME FARM LAND-NET (acres)</i>	1,122	915	<i>194</i>	<i>25</i>	<i>0</i>	<i>221</i>	<i>51</i>	<i>9</i>	<i>0</i>	<i>13</i>	<i>22</i>	<i>6</i>	<i>249</i>	<i>125</i>	<b>374</b>	
<b>FARMLAND- STATE IMPORTANCE (acres)</b>																
FARMLAND- STATE IMP-NET (acres)	1,659	1,394	215	127	9	414	27	3	7	8	32	4	201	348	<b>549</b>	
<i>FARMLAND- STATE IMP-NET (acres)</i>	1,401	1,180	<i>197</i>	<i>118</i>	<i>8</i>	<i>354</i>	<i>22</i>	<i>2</i>	<i>5</i>	<i>7</i>	<i>20</i>	<i>1</i>	<i>155</i>	<i>292</i>	<b>447</b>	
<b>FOREST SOIL GROUPS (acres)</b>																
I A, IB, IC	13,712	9,781	1,639	632	66	2,186	353	40	30	139	124	22	1,857	2,693	<b>4,550</b>	
<i>NET</i>	12,552	8,876	<i>1,562</i>	<i>613</i>	<i>65</i>	<i>1,994</i>	<i>293</i>	<i>22</i>	<i>24</i>	<i>102</i>	<i>77</i>	<i>16</i>	<i>1,640</i>	<i>2,467</i>	<b>4,107</b>	
II A, II B	11,670	5,861	922	340	57	1,067	308	22	5	69	39	8	1,107	1,918	<b>3,025</b>	
<i>NET</i>	11,266	5,588	<i>891</i>	<i>337</i>	<i>54</i>	<i>1,023</i>	<i>279</i>	<i>10</i>	<i>5</i>	<i>57</i>	<i>32</i>	<i>7</i>	<i>1,051</i>	<i>1,842</i>	<b>2,892</b>	
NC NOT CLASSIFIED	814	376	28	3	0	47	15	4	0	3	0	0	188	90	<b>277</b>	
<i>NC-NET</i>	802	368	<i>28</i>	<i>2</i>	<i>0</i>	<i>45</i>	<i>12</i>	<i>2</i>	<i>0</i>	<i>2</i>	<i>0</i>	<i>0</i>	<i>186</i>	<i>89</i>	<b>275</b>	

Summary Table 4.1

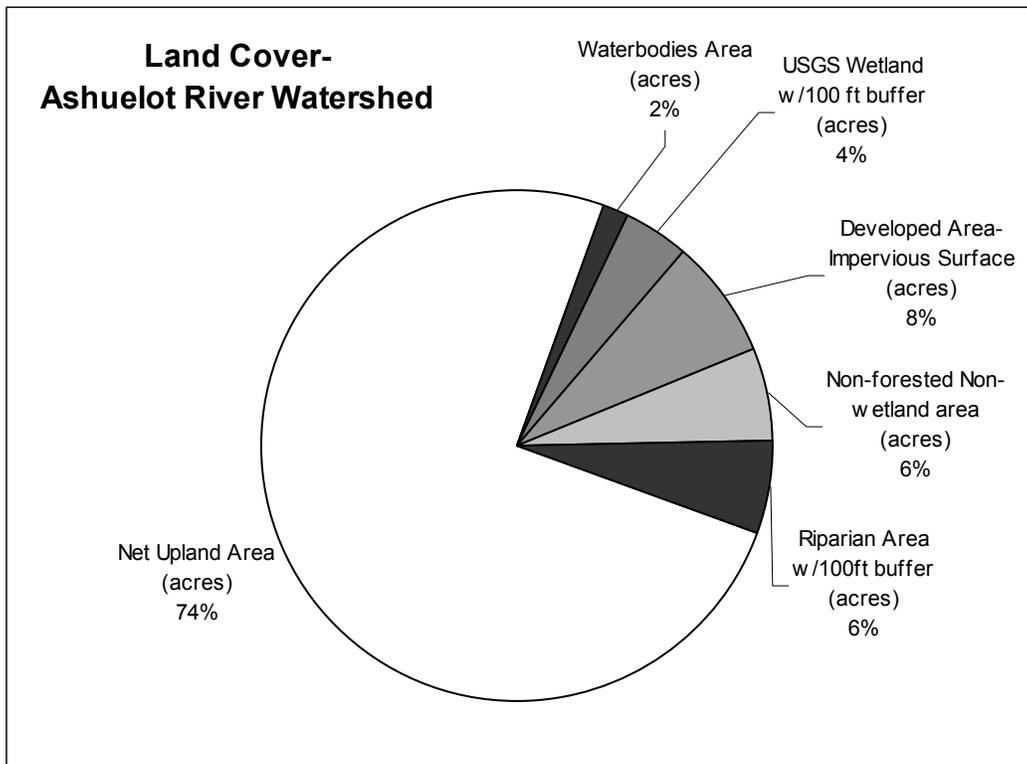
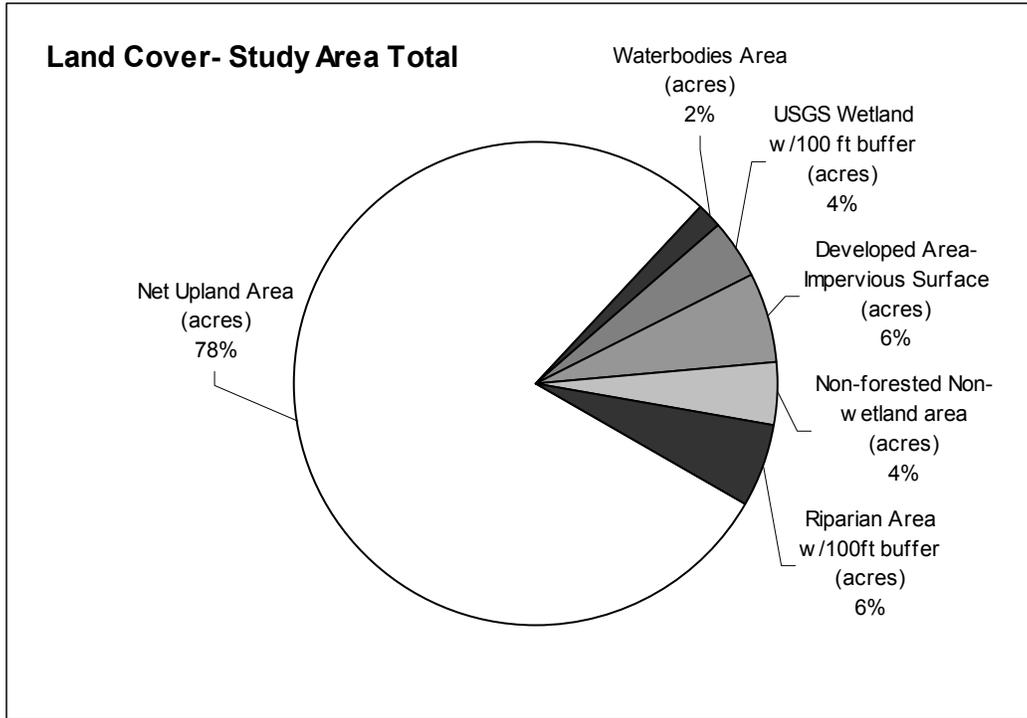
	<b>Study Area Total</b>	<b>Ashuelot River Total</b>	<b>Cold River Total</b>
<b>Development Parameters</b>			
STRUCTURES COUNT	<b>1,502</b>	142	621
AREA OF STRUCTURES (ACRES)	<b>1,947</b>	255	741
STRUCTURES DENSITY (BLDG AREA/ WS AREA)	<b>4</b>	0	2
BLDG NUMBER / WATERSHED AREA)	<b>3</b>	0	1
ROADS (acres)	<b>169</b>	24	62
DEVELOPED AREA -IMPERVIOUS SURFACE (acres)	<b>3,136</b>	378	1,222
% WATERSHED AREA IMPERVIOUS	<b>4</b>	0	2
NPS POLLUTION SOURCES (COUNT)	<b>51</b>	12	18
PUBLIC WELLS (COUNT)	<b>12</b>	3	3
WELLHEAD PROTECTION AREAS (acres)	<b>842</b>	123	298
NON-FORESTED, NONWETLAND AREA (Acres)	<b>1,447</b>	503	944

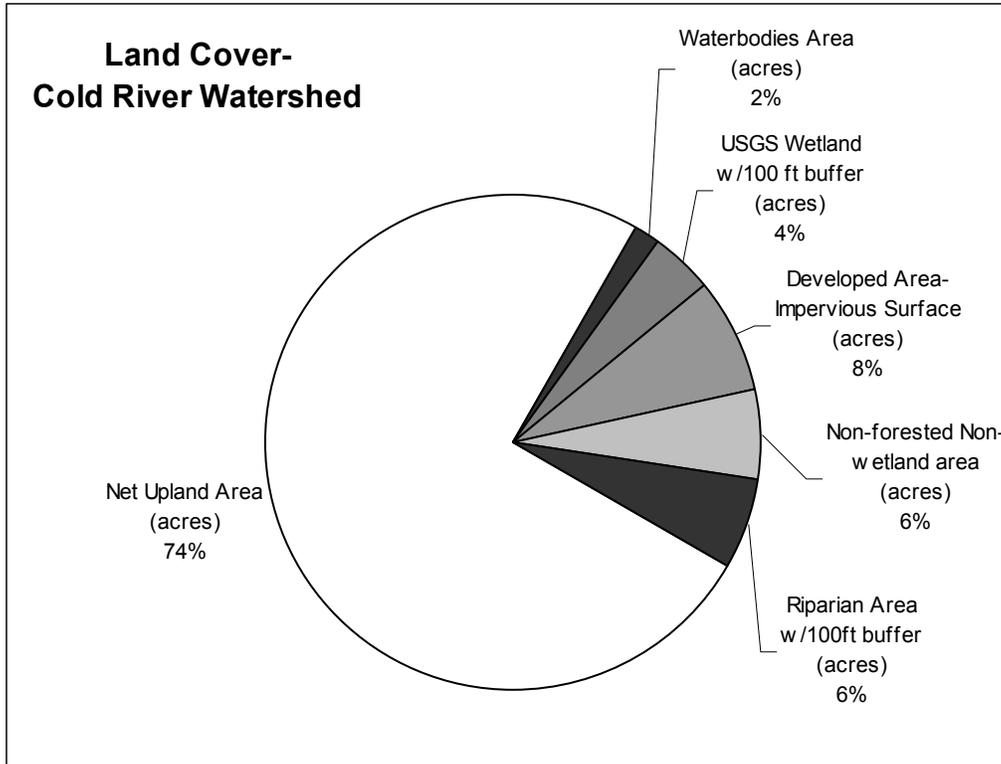
**Table 4.2- Ashuelot River Watershed  
Development Parameters**

Development Parameters	Study Area Total	Ashuelot River Totals	Ashuelot River Watershed											
								Dart Brook Subwatershed		<i>Dart Brook Total</i>	Thompson Brook Subwatershed			<i>Thompson Brook Total</i>
			1	2	4	6	12	3	13		11	14	15	
STRUCTURES COUNT	763	142	20	0	0	4	0	33	0	33	30	8	47	85
AREA OF STRUCTURES (ACRES)	997	255	39	0	0	7	0	51	0	51	56	14	88	158
STRUCTURES DENSITY (BLDG/WS AREA)	2	0	0	0	0	0	0	0	0	0	0	0	0	0
BLDG NUMBER / WATERSHED AREA)	1	0	0	0	0	0	0	0	0	0	0	0	0	0
ROADS (acres)	87	24	3	0	1	0	0	10	0	10	5	1	4	10
DEVELOPED AREA -IMPERVIOUS SURFACE (acres)	1,600	378	51	0	4	9	0	99	1	99	93	18	103	214
% WATERSHED AREA IMPERVIOUS	2	0	0	0	0	0	0	0	0	0	0	0	0	0
NPS POLLUTION SOURCES (COUNT)	30	12	4	1	4		0	2	0	2	1	0	0	1
PUBLIC WELLS (COUNT)	6	3	0	0	0	0	0	3	0	3	0	0	0	0
WELLHEAD PROTECTION AREAS (acres)	421	123	0	0	0	0	0	123	0	123	0	0	0	0
NONWETLAND NONFOREST AREA (AC)	1,069	161	41	4	11	22	0	0	0	0	28	5	48	82

**Table 4.3- Cold River Watershed  
Development Parameters**

	Study Area Total	Cold River Total	Cold River Watershed											Warren Brook		Warren Brook Total
			7	8	9	16	17	18	19	20	21	22	5	10		
<b>Development Parameters</b>																
STRUCTURES COUNT	763	621	42	7	2	107	80	24	4	33	42	4	143	133	<b>276</b>	
AREA OF STRUCTURES (ACRES)	997	741	62	12	4	186	84	30	7	47	53	7	23	227	<b>249</b>	
STRUCTURES DENSITY (BLDG/WS AREA)	2	2	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>	
BLDG NUMBER / WATERSHED AREA)	1	1	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>	
ROADS (acres)	87	62	11	2	1	13	3	1	0	2	1	0	13	15	<b>28</b>	
DEVELOPED AREA -IMPERVIOUS SURFACE (acres)	1,600	1,222	118	22	13	244	91	31	8	53	55	7	279	303	<b>581</b>	
% WATERSHED AREA IMPERVIOUS	2	2	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>	
NPS POLLUTION SOURCES (COUNT)	30	18	2	1	0	2	4	1	0	0	2	0	1	5	<b>6</b>	
PUBLIC WELLS (COUNT)	6	3	0	0	0	0	2	0	0	0	0	0	1	0	<b>1</b>	
WELLHEAD PROTECTION AREAS (acres)	421	298	0	0	0	0	107	0	0	0	28	0	151	11	<b>163</b>	
NONWETLAND NONFOREST AREA (AC)	1,069	908	24	29	3	222	45	5	13	24	27	10	192	215	<b>407</b>	





***OPEN SPACE***

Providing for the preservation of open space is an important aspect of town planning. Open space provides many benefits to a community:

- ◆ Maintenance of rural character and pleasant scenery.
- ◆ Provides buffers between developments.
- ◆ Wildlife habitat protection.
- ◆ Groundwater protection, water retention, and groundwater recharge.
- ◆ Flood control.
- ◆ Food production.
- ◆ Air purification and the production of oxygen.
- ◆ Recreational opportunities.

**FEDERAL, STATE AND LCHIP PROPERTIES**

The following table shows the amount of federal and state owned open space conservation lands, as well as all parcels protected under the Land and Community Heritage Investment Program (LCHIP) in Alstead and surrounding towns.

**TABLE 3- NEIGHBORING OPEN SPACE COMPARISONS**

<b>Town</b>	<b>Open Space (acres)</b>	<b>Total Acres</b>	<b>% of Town</b>	<b>% of Subregional Area</b>
<b>ALSTEAD</b>	1,434	25,012	5.7%	10.9%
Walpole	2,798	23,469	11.9%	21.3%
Langdon	784	10,496	7.5%	6.0%
Marlow	1,524	16,918	9.0%	11.6%
Gilsum	1,159	10,678	10.9%	8.8%
Surry	2,365	10,245	23.1%	18.0%
Acworth	3,077	24,960	12.3%	23.4%
<b>Total</b>	<b>13,141</b>	<b>121,778</b>		<b>100%</b>

Source: Southwest Region Planning Commission GIS

Alstead has a low percentage of Federal, State and LCHIP lands in terms of both the total area of the town and the subregional total (5.7% and 10.9% respectively). The Town of Surry has the highest percentage of its town as open space (23.1%) whereas Acworth has the highest percentage of the subregional area as open space (23.4%).

**CURRENT USE**

The Current Use Taxation program was enacted in 1973 to promote the preservation of open land in the state by allowing qualifying land to be taxed at a reduced rate based on its current use value as opposed to a more extensive use. The minimum land area currently needed to qualify is ten acres. The price of this favorable treatment is a 10 percent penalty tax (10% of the sale price) when the property is later changed to a non-qualifying use.

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In comparing conservation easements to current use taxation, easements are permanent, while current use may be reversed by change to a non-qualifying use and payment of the Use Change Tax. Thus, current use may satisfy the goals of a landowner who cannot afford to permanently abandon future development value, but desires current property tax relief. If it becomes financially necessary to subdivide, the use change tax becomes an element of the development costs.

The current use designation, authorized by RSA 70-A, provides the town other benefits as well: it encourages landowners to maintain traditional land-based occupations such as farming and forestry; promotes open space, preserving natural plant and animal communities, healthy surface and groundwater; and provides opportunities for skiers, hikers, sightseers, and hunters.

In 2005, 18,051 acres comprising 74% of Town were enrolled in Current Use. In Alstead, the monies collected from the Use Change Tax goes to the Conservation Commission for the acquisition of land and/or conservation easements, up to a \$2,000 annual cap.

### PROTECTED LAND

There are approximately 937 acres of land in some form of protection in the Town of Alstead. Below is an inventory showing the reported and calculated size of each tract, the protection type(s) and the protecting agency/entity.

<b>Reported Size of Tract (acres)*</b>	<b>Name</b>	<b>Protection Type</b>	<b>Secondary Protection Type</b>	<b>Protecting Agency/ Entity</b>
2.87 (66.8 in Marlow)	Feuer State Forest	Fee Ownership		NH Dept. of Resources & Economic Dev. (DRED)
219.1	Hall	Conservation Easement		Society for the Protection of NH Forests
77.3 on 3 lots	Burroughs	Conservation Easement	Executory Interest	Society for the Protection of NH Forests
38 as parts of contiguous lots	Hatch	Conservation Easement		Patten Environmental Trust, Inc.
70.0	Lorandean	Conservation Easement		Patten Environmental Trust, Inc.
88.9 on 2 contiguous lots	Covillion	Conservation Easement		Patten Environmental Trust, Inc.
273.7	Gardner - Wellman Pond	Fee Ownership with Conservation Easement	Town Owned	Society for the Protection of NH Forests LCIP (NH OEP)
93.70 (253 in Gilsum)	Tibbetts / Blanchflower Lumber	Right of way - Deed Restriction		Society for the Protection of NH Forests
25.8	Tibbetts / Gilman	Right of way -Deed Restriction		Society for the Protection of NH Forests
66.63 on 2 lots	Montgomery	Conservation Easement		Society for the Protection of NH Forests
100	Stevens	Conservation Easement	Executory Interest (Alstead)	Monadnock Conservancy

\*Size of tract as reported on the deed/tax map

## LAND USE ANALYSIS

### INTRODUCTION

A land use analysis is an important element of community planning. Once raw land is converted to a particular use, it is usually committed to that use for a very long time, if not indefinitely. It is extremely difficult to change a pattern of development once it takes hold. Therefore, decisions about future land use should be made carefully, with a studied eye to the potential ramifications of those uses. A well-conceived land use plan allows for new growth and development while it protects and preserves the integrity of neighborhoods, businesses, transportation routes, and the environment.

This chapter describes the pattern of existing land uses in Alstead and analyzes the changes that have taken place in the land use pattern since 1982, the date of the last Master Plan for Alstead. Maps are used to identify the areas of town that have been developed, the kind of development that has occurred, and the relationship of one land use to another. This information provides the baseline necessary to evaluate the appropriateness of future development and the availability of suitable land for such development.

The development of a land use plan forms the basis of land use regulations, which are effected through zoning ordinances, subdivision and site plan review regulations. The land use plan describes the goals and objectives envisioned by the town; the regulations are the means to put these goals and objectives into place. For instance, if in the process of describing present land use patterns in Alstead, recommendations are made to encourage more commercial activity in a particular area, the zoning ordinance should be amended to permit that kind of activity in that location - if it does not already do so. Or, by the same token, the land use plan might recommend that the zoning ordinance be made more restrictive in particular areas, for the purpose of protecting and preserving certain natural features in town.

### LAND USE CATEGORIES

The first step in the land use analysis is to classify the various land uses that exist in Alstead. A classification system describes these activities. The second step is an analysis of tax assessing data from Alstead using Geographic Information System (GIS) technology. Existing land uses and activities are recorded on a map to illustrate an interpretation of the land use pattern.

In general, land is classified according to its physical characteristics and/or the present activity that occurs on it. The two major divisions in a land use classification system are "Developed" and "Undeveloped" uses. Each of these divisions can be further subdivided into specific land uses. The following is a listing and description of the standard land uses categories used to prepare a Land Use Plan:

- ◆ **Residential:** All land and/or structures used to provide housing for one or more households. These include site-built single-family homes, manufactured homes (previously known as mobile homes), factory-built modular homes, duplexes, apartment buildings, condominiums, and seasonal residences.

- ◆ ***Government/Institutional:*** Establishments and facilities supported by and/or used exclusively by the public or non-profit organizations, such as fraternal, religious, charitable, educational and governmental facilities.
- ◆ ***Agricultural:*** Lands that are utilized for the cultivation of crops, the raising of livestock and poultry, and nurseries for horticultural purposes.
- ◆ ***Commercial:*** All lands and structures that supply goods and/or services to the general public. This includes such facilities as restaurants, motels, hotels, service stations, grocery stores, furniture and appliance sales, as well as establishments which are primarily oriented to providing a professional and/or personal service to the public, such as medical offices, banks and financial institutions, personal care establishments, etc.
- ◆ ***Industrial:*** Land and/or facilities used for mining, construction, manufacturing, treatment, packaging, incidental storage, distribution, transportation, communication, electric, gas and sanitary services, and wholesale trade.
- ◆ ***Home-Based Business:*** A residential property that houses a home occupation or home-based business. The residence continues to be the principle use of the land, and the occupation is by definition secondary and incidental.
- ◆ ***Road network:*** All public and private rights-of-way that are designated for carrying vehicular traffic. This includes Class VI roads that are no longer maintained by the town and do not carry public traffic.
- ◆ ***Protected Lands:*** Included in this category are all federally-owned lands, all State parks and forests, land protected under the State Land Conservation Investment Program (LCIP), land protected and/or owned by the town, sensitive land and wildlife habitats protected by the NH Audubon Society, land held by the Society for the Protection of NH Forests and the Monadnock Conservancy.
- ◆ ***Undeveloped:*** All lands that are not developed for any of the above uses, regardless of the reason - whether it be because the land is not usable due to environmental constraints, or there has been no demand to develop.

## **EXISTING LAND USE**

An analysis of the present land use pattern in a town is one of the first steps in the formulation of a Land Use Plan. Since the type and intensity of existing land uses have a strong influence on future development patterns, it is important to understand how land and other resources are used within a given area before recommendations can be developed relative to future land uses.

### **A Brief History**

The development of Alstead's land has gone through several changes as the Town's economic emphasis and travel patterns have shifted from one period to another since first being settled in 1763. Alstead's early settlement occurred on high ground in Alstead Center, away from the Cold River and Warren Brook. In time, however, the traffic, which sought an east-west access from the Connecticut River

crossing at Bellows Falls through Walpole and Alstead and on to the east, found a convenient route by following the valley of the Cold River and Warren Brook. A natural consequence of this traffic pattern was the development of a mixture of land use and increased development along the River and Brook. During this period much of the population shifted from outlying farms and homesteads, many of which were abandoned, to locations closer to the Town Center. Land that was previously cleared for pasture, hayfields, orchards and farms reverted to second-growth woodland. This general move away from an agricultural economy to a suburban-type of development, with most residents commuting to a place of employment, continues to the present day.

### **Alstead's Land Use**

#### **Methodology**

Two different methods were used to describe current land use. First described is the windshield survey method, followed by the resulting analysis and land use map. Second, the Tax Assessor's data method is described, followed by the resulting analysis. While the windshield survey was useful in that each structure could be assigned a specific land use and viewed at its physical location on a map, the Tax Assessor's data was used to quantify land use value and tax implications for each parcel.

#### ***Windshield Survey***

Volunteer residents conducted a windshield survey throughout the town to indicate the land use for each structure digitized using an aerial photography map. Building uses were put into one of the following categories:

- Commercial
- Industrial
- Multifamily residential
- Single-family Residential
- Single-family Residential-Seasonal
- Public
- Other

Using GIS technology, each structure within each category was assigned a specific acreage for land use according to the zoning district in which the structure is located (see *Map 9-1: Zoning Districts*) and as determined by the Planning Board. All structures within the Alstead Center, East Village, and Rural Residential zoning districts were assigned two-acres. Structures within the Alstead Village zoning district were assigned one-acre land use. Structures within the Lake Warren zoning district were assigned half-acre land uses. In addition, all structures surrounding Newell Pond and located in the Pine Needles Estates were assigned half-acre land uses. These estimations were made based on approximate housing density in each zoning district along with the presumption that most residential structures only impact a relatively limited portion of the land parcel on which they are located.

The following analysis results from the windshield survey and subsequent calculations using GIS.

The total area of the Town of Alstead is approximately 25,394 acres. Of this total amount, 25,012 acres constitute land area and 382 acres constitute surface water. Of the land area, roughly 6% is presently developed for one of the uses described earlier in this text.

A review of *Map 9-2: Existing Land Use* in terms of specific uses indicates the following:

**Agricultural** –Agricultural uses were not noted on the windshield survey and thus have not been considered of major significance in documenting the land use in this chapter of the Master Plan

**Residential** – Residential development in Town is mostly single-family detached homes and manufactured housing, with an infrequent occurrence of two family and multi-family housing. Seasonal residences are mainly located around Newell Pond with an additional few scattered within the Rural Residential district. Also of significance in terms of concentrated residential development are the areas around Lake Warren, the Cold River and Warren Brook where residential density is higher than in other parts of Town. In general, residential use occurs along the existing road network and is devoted to Single-family homes. Approximately 1,364 acres of Alstead’s land is in residential use.

**Commercial/Industrial** – The majority of commercial and industrial uses (40 acres) are scattered throughout the town within the Rural Residential zoning district. The remaining 16 acres of commercial and industrial development is located in Alstead Village and East Alstead Village.

**Public (Government/Institutional)** – Approximately 25 acres of developed land are attributed to public land uses. The highest concentration of public land uses is within the Alstead Village district (6 structures: 6 acres). Another 12 acres of Public land use is located within the Rural Residential district.

**Recreational** – The windshield survey did not include recreational uses as a separate land use category. Recreational land in Alstead includes the Vilas Pool, Millot Green, Ballfields between the schools, and Warren Lake.

**Roads and Highways** - Roads and highways, while not typically thought of as a "use" per se, do take up nearly 260 acres of land.

In addition to the preceding land use information, Graph 1 and Table 1 shows that while the rural residential zone has the most development (1,364 acres total), only 5% of the rural residential zone is developed. Alstead Village has the densest development: 63% of this zone’s land has been developed with a variety of land uses. Less than a quarter (22%) of the land in East Alstead Village has been developed, and just 15% and 17% of the Lake Warren zone and Alstead Center, respectively, has been developed.

**GRAPH 1- PERCENT OF ZONING DISTRICT DEVELOPED**

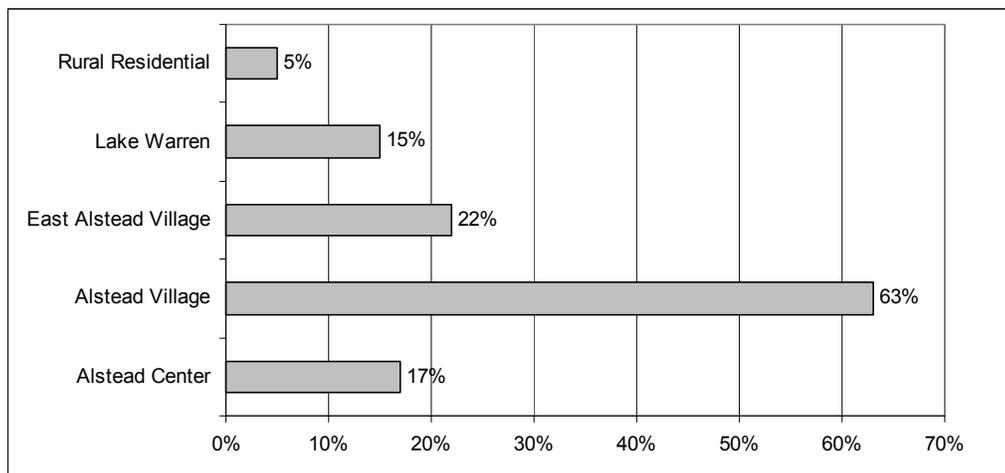


TABLE 1- LAND USE BY ZONING DISTRICT

Zoning Districts:	Alstead Center		Alstead Village		East Village		Lake Warren		Rural Residential		Newell Pond		Pine Needles Estates		TOTALS	
	count	acres (2 a./ use)	count	acres (1 a./ use)	count	acres (2 a./ use)	count	acres (0.5 a./ use)	count	acres (2 a./ use)	count	acres (0.5 a./ use)	count	acres (0.5 a./ use)	count	acres
<b>Land Uses</b>																
Commercial	0	0	9	9	0	0	0	0	17	34					26	43
Industrial	0	0	1	1	3	6	0	0	3	6					7	13
Single-Family Residential	34	68	122	122	36	72	82	41	507	1,014	2	1	20	10	803	1,328
Duplex Residential	0	0	0	0	0	0	0	0	3	6					3	6
Multi-Family Residential	0	0	10	10	0	0	3	2	2	4					15	16
Single-family (Seasonal)	0	0	0	0	0	0	0	0	5	2	24	12			29	14
Public	1	2	6	6	2	4	1	1	6	12					16	25
Other	4	8	9	9	4	8	4	2	53	106					74	133
Total Developed	39	78	157	157	45	90	90	45	596	1,184	26	13	20	10	973	1,577
Total Land Area		446		248		415		302		23,601						25,012
% Land Area Developed		17%		63%		22%		15%		5%						6%
Undeveloped Area		368		91		325		257		22,417						23,435
Fields	24	127	14	15	15	92	5	21	162	778					220	1,033
Lakes and Ponds	2	1	2	14	3	5	1	200	44	162					51	382
Forested		274		109		244		232		21,509						22,368
Conservation Land	0	0	0	0	0	0	1	12	13	1,422					14	1,434

Table 2 below and Graph 2 following summarize the information in Table 1 on the preceding page. The vast majority of Alstead remains undeveloped (23,435 acres). The amount of land in conservation and that which is of single-family residential use is comparable (1,434 and 1,328 acres, respectively). The next most common land use, fields (1,033 acres), can mainly be attributed to cleared yards and fields associated with adjacent dwellings. The remaining land uses cover far fewer acres in the Town.

**TABLE 2- TOTAL LAND USE BY TYPE**

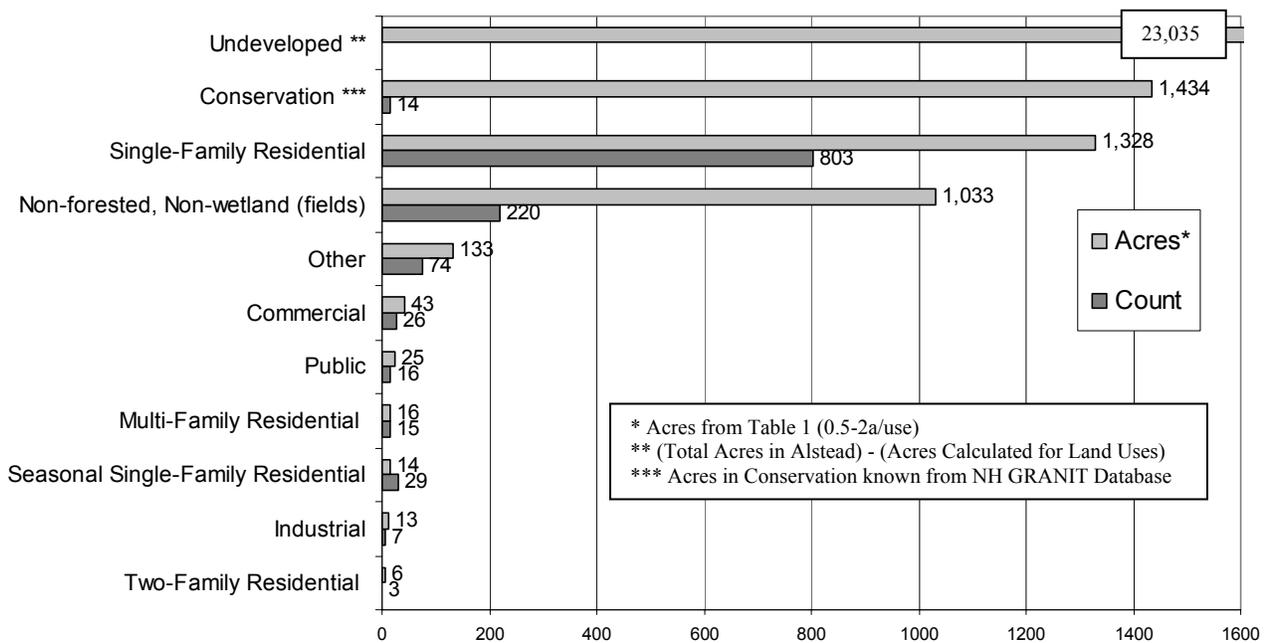
<b>Land Use</b>	<b>Count</b>	<b>Acres*</b>
Two-Family Residential	3	6
Industrial	7	13
Seasonal Single-Family Residential	29	14
Multi-Family Residential	15	16
Public	16	25
Commercial	26	43
Other	74	133
Non-forested, Non-wetland (fields)	220	1,033
Single-Family Residential	803	1,328
Conservation ***	14	1,434
Undeveloped **		23,435

*\* Acres from Table 1 (0.5-2a/use)*

*\*\* Calculated = Total Land Area-Total Developed Area*

*\*\*\* Conservation Acres from NH GRANIT*

GRAPH 2- TOTAL LAND USE BY TYPE



**Tax Assessor's Data- 2005**

Tax Assessor's Data indicated, by parcel, the specific land use, the average value of buildings, the number of total acres of the parcel and the number acres in Current Use<sup>14</sup>. Each parcel was put into one of the following five land use categories:

- Commercial
- Exempt
- Municipal
- Residential
- Mobile Home

Using the data provided by the Tax Assessor's office, parcels were separated into either developed or undeveloped categories based on the listed building value. If the building value was listed as zero, the parcel was determined to be undeveloped, while if the building value was listed greater than zero, the parcel was determined to be developed.

Table 3 below shows the breakdown of property values according to the Tax Assessor's Data. The 397 properties with a building value of zero are considered undeveloped properties. The remaining 953 properties are considered developed.

<sup>14</sup> The Current Use Taxation program was enacted in 1973 to promote the preservation of open land in the state by allowing qualifying land to be taxed at a reduced rate based on its Current Use value as opposed to a more extensive use. The minimum land area currently needed to qualify is ten acres. The price of this favorable treatment is a 10 percent penalty tax (10% of the sale price) when the property is later changed to a non-qualifying use.

**TABLE 3- NUMBER OF PROPERTIES BY BUILDING VALUE**

Building Value	Properties
0	397
\$1- 10,000	110
\$10,001 - 20,000	68
\$20,001 - 30,000	95
\$30,001- 40,000	81
\$40,001 - 50,000	96
\$50,001 - 100,000	353
\$100,001 & above	150

In order to determine the approximate “impacted” areas within each developed parcel, the Current Use acres were subtracted from the total acres per parcel to yield the total “impacted” acres within each parcel. Table 4 reflects this data, followed by an analysis.

**TABLE 4- TAX ASSESSOR’S DATA, 2005- LAND USE ANALYSIS**

ALL PARCELS

	Commercial	Exempt	Municipal	Residential	Mobile Home	Total
Number of Parcels	27	6	18	1,203	96	1,350
Total Acres	122	12	241	23,477	566	24,418
Current Use Acres	65	0	92	17,708	186	18,051
Acres not in Current Use	57	12	149	5,768	381	6,367

DEVELOPED PARCELS (building value > 0)

	Commercial	Exempt	Municipal	Residential	Mobile Home	Total
Number of Parcels	23	6	18	811	95	953
Total Acres	99	12	241	11,315	564	12,232
Current Use Acres	44	0	92	8,175	186	8,497
Developed Acres not in Current Use (“Impacted”)	55	12	149	3,139	379	3,735

UNDEVELOPED PARCELS (building value = 0)

	Commercial	Exempt	Municipal	Residential	Mobile Home	Total
Number of Parcels	4	0	0	392	1	397
Total Acres	23	0	0	12,162	2	12,187
Current Use Acres	21	0	0	9,533	0	9,554
Undeveloped Acres not in Current Use	2	0	0	2,629	2	2,633

The Tax Assessor’s data does not provide information as to where development is located within the town. The only information it provides is how many parcels have structures, in which category of land use these structures fall, and the corresponding land and building values. However, by analyzing the data, it is possible to make some land use observations.

As shown in the above table, of the total 1,350 parcels in Alstead, 953 of them, or 71% are developed—that is, they have a structure of some value located on the lot. 29% of the parcels have no structure and thus named undeveloped. 15.2% of the total area of town is “impacted.”<sup>15</sup> 14.4% is from residential land use (including both residential and mobile home categories), while the remaining 0.8% is from Commercial, Exempt and Municipal categories. According to the Tax Assessor’s data, almost 74% of all land in town is in Current Use.

**Comparison and Analysis**

The most obvious difference in the two methods of study is the varied acreage of the different land uses. In the windshield survey method, an approximate value varying from 0.5-2.0 acres was assigned to each structure by the Planning Board depending on the location of that structure within the town. In the Tax Assessor’s Data method, the total acres of developed parcels less the acres in Current Use yielded the approximate developed or impacted area. One limitation to the windshield study was the reliance on outdated aerial photography on which the study was based. Similarly, a limitation to the Tax Assessor’s data method was the reliance upon the acres in Current Use as the only acreage that is undeveloped. Surely, there is more land not in Current Use that is not impacted by surrounding developed.

A direct comparison between past and present land use is not possible due to differences in methodology described above in addition to those methods used to analyze land use in the past. However, an attempt to compare land use in 1982 to present land use is shown in Table 5.

**TABLE 5- SUMMARY TABLE- LAND USE IN ALSTEAD, 1982 AND 2006 (BOTH METHODS)**

	<b>1982*</b>	<b>Tax Assessors</b>	<b>Windshield Survey</b>
<b>Land Use</b>	(acres)	(acres)	(acres)
Residential	454	3,518	1,364
Commercial and Industrial	35	55	56
Exempt/Public/Institutional/Municipal/Government	40	161	25
Total Land Area	25,408	24,418	25,012
Total Developed Acres	1,784	3,734	1,577
% Land Developed	7.0%	15.3%	6%
% Land Undeveloped	93.0%	84.7%	94%

\* Data from 1982 Alstead Master Plan

Alstead is not unlike most rural New England towns in that most of the town is undeveloped, but land is assessed as residential. It should be noted that while much of the land in Alstead is in Current Use, very little, comparatively, is in permanent conservation. While land held in conservation or easement is permanent, land in Current Use is not.

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<sup>15</sup> “Impacted” area calculated by subtracting the acres in Current Use of the developed parcels from the total land area of the developed area. Percent of the town that is “Impacted” is calculated by dividing the “Impacted” area by the total land area of the town.

The Current Use Taxation program was enacted in 1973 to promote the preservation of open land in the state by allowing qualifying land to be taxed at a reduced rate based on its Current Use value as opposed to a more extensive use. The minimum land area currently needed to qualify is ten acres. The price of this favorable treatment is a 10 percent penalty tax (10% of the fair market value) when the property is later changed to a non-qualifying use.

The Current Use designation, authorized by RSA 70-A, provides the town other benefits as well: it encourages landowners to maintain traditional land-based occupations such as farming and forestry; promotes open space, preserving natural plant and animal communities, healthy surface and groundwater; and provides opportunities for skiers, hikers, sightseers, and hunters.

In comparing conservation easements to Current Use taxation, easements are permanent, while Current Use may be reversed by change to a non-qualifying use and payment of the Use Change Tax. Thus, Current Use may satisfy the goals of a landowner who cannot afford to permanently abandon future development value, but desires current property tax relief. If it becomes financially necessary to subdivide, the use change tax becomes an element of the development costs.

In Alstead, the monies collected from the Use Change Tax goes to the Conservation Commission for the acquisition of land and/or conservation easements, up to a \$2,000 annual cap. As described earlier, the Town of Alstead has a total land area of 24,418.45 acres, of which 18,051.20 (74%) are in Current Use, as of 2005 (according to the 2005 Tax Assessor's Data).

### **LIMITATIONS TO DEVELOPMENT**

The data concerning the existing land use pattern using the Windshield Survey method estimates that roughly 6 percent of Alstead's total land area is currently developed, leaving some 23,435 acres undeveloped. Not all of this land, however, is suitable for development. Limiting factors to development include steep slopes, certain soil types, wetlands, aquifers, floodplain areas, and other sensitive lands or features. In addition to these physical constraints, development is limited by the public's desire to protect the quality of life and property values of existing residents. This public will is ideally expressed in the Town's land use regulations, and is the central purpose of this planning document.

Table 6 below identifies seven limitations to development that are related to the ability of the soil to accommodate septic systems, and road or building construction. This presentation is general in nature due to the limitations of the available soil data. The soil data used is on a small-scale and gives a broad picture of the type and distribution of soils that occur in a given area. For this reason, areas smaller than approximately 5 acres cannot be accurately compared.

The data is meant to be a general indicator and the limitations are more accurately about conditions on a landscape scale. The limitations to development indicate both 1) physical conditions that require extraordinary expenses for engineering, construction and maintenance and 2) environmentally sensitive areas.

**TABLE 6- LIMITATIONS TO DEVELOPMENT**

Constraint	Total Acres	% of Land Area	Undeveloped Acres	% of Undeveloped Area
Total Land Area	25,012	n/a	22,001*	n/a
Slopes greater than 25%	4,859	19.43%	4,557	20.71%
Poorly/Very Poorly Drained Soils (Hydric Soils)	2,015	8.06%	1,760	8.00%
Wetlands (NWI, USGS)	768	3.07%	648	2.95%
Floodplain	1,146	4.58%	706	3.21%
Aquifer	849	3.39%	532	2.42%
Shallow to Bedrock (Less than 40in)	14,732	58.90%	11,668	53.03%
Shallow to Water Table (Less than 18in)	18,949	75.76%	14,846	67.48%

\* not including conservation lands

Four maps have been created using Geographic Information System technology showing the limitations to development in Alstead: *Map 8-1: Steep Slopes*, *Map 8-2: Wetlands & Hydric Soils*, *Map 8-4: Stratified Drift Aquifers* (located in the Natural Resources Chapter), and *Map 9-3: Development Constraints*. Reference to the maps illustrates that one or more of these development constraints exists virtually all over town. There are in fact, only a few areas on the map that appear to have no limitations at all.

Two additional maps, *Map 9-4: Undeveloped Land with Potential for Development* and *Map 9-5: Forested and Developed Land* (developable land) show further the current status and future opportunities for development in Alstead. The *Developed and Forested Land* map shows the developed areas with appropriate land use buffers (as described in the windshield survey) in addition to cleared fields. The remaining land is an approximation of the remaining forested land in the Town. The “*Developable*” map is an approximate representation of land not having any of the development constraints listed above (not including shallow to bedrock and shallow to water table, since these areas cover a great portion of Alstead).

In comparing limitations to development, to the *Existing Land Use* and “*Developable*” maps, one can see that, while the development does follow almost every road in town, the areas shown as having the least constraints are less accessible by the current road network. Many areas that have development constraints are located along current roads and are already developed.

Through thoughtful and intelligent planning and zoning, the Town can direct new growth into areas best suited to each class of land use. Through such advance knowledge of what the areas will support in the way of development, Alstead can consider, in advance, the need for roads, utilities, and community services and facilities.