

COMMUNITY FACILITIES AND UTILITIES

INTRODUCTION

One of the most important functions of town government is the provision of community facilities to its residents and taxpayers; these include public education, public safety and public buildings, as well as those utilities offered by the private sector, such as electricity and telephone service. The availability and quality of these facilities and services play a major role in determining the quality and general character of a community.

Gilsum, like most small towns in New Hampshire, provides the following community facilities and services: town government and property; highway maintenance; police and fire protection; emergency services; education; library; solid waste disposal; and cemeteries. In addition to these town-funded facilities, this section also examines other services that are provided by outside agencies (with some funding from the Town), but nevertheless contribute to the quality of life in Gilsum, such as postal service and health and human services.

TOWN GOVERNMENT

The seat of town government in Gilsum is located in a building on Route 10, on the northern edge of the Village, that houses the town offices, the police, and the town library. Gilsum town government is administered by a three-member board of selectmen, elected by the legislative body of registered voters who cast their ballots every year on the second Tuesday of March.

The building that houses the Town Offices was constructed in 1972. The Town Clerk and Tax Collector share office space with the Selectmen; all have regular office hours. Space is at a premium, and there is discussion regarding a possible expansion of the Town Office portion of the building, in order to create proper meeting space for town boards, and to bring the building into full ADA (Americans with Disabilities Act) compliance.



Library/Town Offices

TOWN HALL

The Gilsum Town Hall is a two-story wood frame structure situated on Main Street in the Village. The building was originally constructed as a Methodist Meeting House in 1848; it burned in 1908 and was rebuilt the following year. The building was sold to the Town in 1876, and was used initially to house the offices of the Selectmen and the Police Department. There is a large hall with a stage and balcony on the second floor, and a kitchen, a large meeting room, and two smaller rooms downstairs.



Town Hall

Over the years the building has deteriorated, and has been found to be generally inadequate, as needs of the town government have changed - there is no plumbing or rest rooms, and the second floor is not handicapped-accessible. Several studies conducted by committees in Town have concluded that the cost of bringing the building up to state code requirements would simply be prohibitive. The Town Hall is used, however, for the annual Town Meeting, and various social events. The Grange has historically met regularly in the downstairs room, but due to inadequate heating, the group now meets in the church basement.

More recently, there has been a resurgence in interest in saving the old Town Hall, and much work has been done on the building by a group of volunteers that organized themselves after discussion at Town Meeting 2000. To date, the entire interior has been cleaned, and most of the interior painted. The building was inspected by a construction consultant during the clean-up process; the consultant's report to the Town Hall Committee stated that while the building is in need of much cosmetic work, in his opinion the Town Hall is structurally sound. The report noted that demolition and disposal of the building remnants would be expensive. Bathroom facilities of course need to be added, and handicapped access needs to be addressed. The consultant's recommendation was that the Town Hall be repaired, updated and preserved. To supplement this report, the Selectmen have requested reports from both the State Fire Marshall and the town's insurance carrier.

HIGHWAY DEPARTMENT

The Gilsum Highway Department is housed in a new structure of 2,500 square feet that was completed in 1999. The facility is located on Route 10 north, and includes a 2,300-square foot salt barn. The new facility was funded principally through a long-term bond (10 years); in addition, a small amount was raised through taxes, and there was much value-added to the project through the efforts of a number of volunteers.



Highway Garage

The Highway Department is staffed by a full-time elected Road Agent, one full-time, and one part-time employee. The Department maintains approximately 14 miles of town road - 5 ½ miles paved, and nearly 9 miles gravel or dirt; in the winter, however, the town plows 16 miles of road, reimbursed by the state for the plowing. Recent projects undertaken by the Department consist of sealing Hammond Hollow Road, widening Nash Corner Road, and shimming and paving Belvedere Road.

Major pieces of equipment consist of:

<u>EQUIPMENT</u>	<u>YEAR PURCHASED</u>	<u>CONDITION</u>
1995 Dodge 1-Ton Truck	1995	Good
1990 International Truck	1990	Good
1987 GMC 1-Ton Truck	1987	Bad (used for cemeteries)
1971 Ford 3500 Tractor		Fair (used as road rake)
1971 Unimog Truck		Not good (used as spare)

The International and the GMC are the pieces of equipment that are most likely to be replaced, although the Road Agent believes that the International can be useful for another 10-15 years. The new highway garage and salt barn are a big improvement over the previous facility, but at some point another bay should be added for equipment storage and to provide security for the equipment.

In terms of personnel, the staff has the necessary skills and experience, and is sufficient in number for Gilsum's road maintenance.

The Road Agent would like to see the establishment of a Capital Reserve Fund for highway equipment, and this is a priority for the Selectmen, following the completion of the current effort to improve the condition of all roads in town.



Salt Shed

POLICE DEPARTMENT

Police protection in Gilsum is provided by three part-time officers: a Chief and two special officers. The Department is housed in the Library building. Equipment consists of a 1995 Chevrolet cruiser, purchased in 1998. Office equipment includes a used Packard Bell computer, purchased in 2000.

Patrols are on an as-needed basis, or when conditions merit, such as special events, holidays, or bad weather. Residents of Gilsum also have access to the State Police, with barracks in Keene. Special events covered by the Gilsum Police are as follows:

- w Gilsum Memorial Day
- w Gilsum Rock Swap (three days of coverage)

- w Peerless Bike Race
- w Clarence Demar Road Race
- w Gilsum Old Home Days

The number of calls being handled by the Department is increasing, in all areas. The types of activity handled by the Department include animal complaints, assistance to other agencies, court hours, motor vehicle summons, DWI arrests, criminal arrests, and crimes of residence. The level of service is generally good, for the size of the Town. The Chief would like to be able to increase the staffing capability, by either adding a officer, or increasing the hours of operation.

The Selectmen and the Chief are currently exploring the possibility of sharing a county prosecutor with a neighboring town. This approach has been gaining in use and popularity in the region, as the small towns are struggling to pay the costs of having their police officers tied up in court to handle the processing of arrests. Several towns are already engaged in such a shared arrangement, and are seeing positive results from this.

FIRE DEPARTMENT

Fire protection in Gilsum is provided by a 19-member volunteer force. The Fire Station is located in the Village on Church Street. An addition to the station was completed in the year 2000, and there are now four extended bays that can hold eight vehicles. Along with the addition, the building, windows and the overhead doors were insulated, and vinyl siding added. These improvements have extended the life and usefulness of the building.



Fire Station

The Department maintains the following pieces of equipment::

- ☐ 1997 International Pumper
- ☐ 1969 GMC Pumper
- ☐ 1952 Army Tanker
- ☐ 1952 Dodge 4-wheel drive brush truck
- ☐ 1925 Dodge Combination Pumper/Tanker (in original condition)

The next piece of equipment needed by the Department is expected to be a tanker with a large pumper on it. The Department could also use a hose reel truck, so that they can respond to fires at the end of driveways that are not accessible by the equipment. As soon as the International is paid off (in the year 2002), a Capital Reserve Fund is planned to be established, so that all of the money for the next purchase will not need to be raised at once.

Gilsum is a member of the Southwestern New Hampshire Fire Mutual Aid system, which is headquartered in Keene. Mutual Aid is primarily a dispatch center that receives all emergency calls for fire, police and emergency in the region. In addition, Mutual Aid is tied into the NH Fish & Game, and the Sheriff's communications bands, so that these services can

also be dispatched when needed. Gilsum is also now tied into the statewide Enhanced 911 system, and the 911 dispatch map has been provided to the town.

In the past year, the Department responded to about 15 calls, many of those including mutual aid calls to other towns. It should be noted that, with a 19-member department, Gilsum has a very high firefighter-to-population ratio. Many other larger towns in the region have departments that are not much larger, if at all. In addition, the town is very well served by a department that is highly regarded for its morale and professionalism.

RESCUE SERVICES

Rescue services are provided to Gilsum residents by both a local rescue squad, consisting of three members, and ambulance service from the town of Marlow. A 1980 Chevrolet 4-wheel drive rescue vehicle is maintained and housed at the Fire Station. The local rescue squad is trained for emergency, on-site assistance, but is not authorized to transport; that service is provided by the Marlow ambulance, if needed. The Town has also entered into a contractual agreement with an ambulance service from Keene to cover the southern part of town – basically, the south side of Bingham Hill.

SOLID WASTE DISPOSAL

Provisions for solid waste disposal in Gilsum are provided by a private waste disposal company on land owned by the Town. A transfer station and recycling center is maintained on the Dump Road, off of Surry Road in Gilsum. Recycling has been mandatory in Gilsum since 1986. Use of the transfer station is on a pay-per-bag system for trash; for recyclables there is no charge.

The one, part-time staff person is employed by Waste Management, Inc. under a contract executed between the company and the Town of Gilsum. Employees of Waste Management are required to be certified by the State of New Hampshire, as a Qualified Level III Solid Waste Facility Advanced Operator.

The station is open on Thursdays, from 12:30 - 4 P.M., and Saturdays from 8 A.M. to 4 P.M. Use of the station is by individual drop-off; the Town does not provide any trash pickup. Equipment consists of a dumpster and compacter for trash, recycling bins for the various materials that are recycled in Gilsum, a trailer for storage, and a small swap shop in a trailer.

The station has no toilet facilities, no telephone, nor are there any vehicles for loading. The Selectmen are investigating the option of providing the operator with a cellular telephone, as a less costly alternative to a fixed line.

WATER SUPPLY & SEWAGE DISPOSAL

All residents in Gilsum are served by individual on-site water wells and septic systems. While this is a common occurrence in small towns in New Hampshire, problems can arise when these systems are sited on very small lots in a densely-developed area, such as is the case in Gilsum Village. Not only are most of the homes in the Village located on lots ranging from

0.2 to 0.5 acres, but there is a brook running through the Village that discharges into the Ashuelot River. Any septic system failure could mean pollution for the River.

In addition to concerns about the River, there are difficulties simply trying to keep adequate separation from wells and septic systems on such small lots. When the minimum separation distance of 75 feet, required by the NH Department of Environment Services, cannot be met, there is danger of contamination of the drinking water.

A study was conducted in 1998¹ to determine the feasibility of construction a small municipal sewage disposal system for the Village area. The application for the funds needed to conduct the study was prepared in response to health, safety, economic, and environmental quality issues surrounding the need for adequate sewage treatment facilities in the Village. The survey conducted for the feasibility study application indicated that 89% of the lots in the Village do not have sufficient acreage to support a conventional tank and leach field (according to methodology developed by the Ad Hoc Committee for Soil-Based Lot Size), in addition to a well with adequate setbacks.

In addition to potential contamination problems faced by the current residents, there is an economic cost as well, based on difficulties in selling properties in the Village due to substandard septic systems. This kind of impact affects the entire town tax base, not just those residents of the Village. Preliminary information gathered for application pointed to public support of a municipal system: of the 30 residents in the target area, 25 were in favor of such a system, and all four businesses in the Village were in favor. The study proposed several alternatives for wastewater collection and disposal, the differences being based on treatment costs. The treatment alternatives described in the report are: typical leach field; sand filters; trickling filters; and fixed activated sludge treatment. In summary, the Feasibility Study made the following recommendations for the Town of Gilsum:

- ☐ Establish a Village Sewer District.
- ☐ Design a collection system in accordance with NH Department of Environmental Services regulations.
- ☐ Design a 20,000-gallon capacity community septic tank. Because of space and location limitations, there should be two 10,000 gallon-tanks, rather than one 20,000 gallon-tank.
- ☐ Design a pump station to be located on the town-owned lot behind Adams Court.
- ☐ Locate the disposal field at the northern perimeter of the elementary school lot (identified on the accompanying map), in order to maximize the down-gradient distance to the nearest drinking water supply.
- ☐ Hire a qualified and licensed part-time wastewater treatment plant operator to maintain the system.

At this time, the Selectmen are investigating alternatives to the proposals contained in the Feasibility Study, in an effort to reduce the potential costs to the town and to the users of a system in the Village.

¹ **"Town of Gilsum, Sewer System Feasibility Study, June 1998"; Prepared by Southwest Region Planning Commission. A copy is available for review at the Selectmen's Office and at the Planning Commission's Office.**

PUBLIC UTILITIES

The Town has telephone and electrical service. Infrastructure for the telephone is provided by Verizon, and for the electric service by Public Service of New Hampshire. There is a telephone switching station at the intersection of Routes 10 and Main Street. Wireless communication is also available, with a cellular telephone tower on the Old Gilsum Road contributing to the network. Cable television is available on a limited scale in Gilsum, with the infrastructure coming into town from Walpole. And, there are several internet service providers available to Gilsum residents.

LIBRARY

The Gilsum Public Library is located on Route 10 on the northerly edge of the Village, on land that was donated to the Library by Gilsum resident F. Sumner Hall. The 1,248-square foot building also houses the office of the Selectmen, Town Clerk and Tax Collector, and space for the Police Department. The downstairs basement is used for large meetings and a regular preschool program. The Library is also used for various public meetings, such as Planning Board, Board of Adjustment, Conservation Commission, and the Library Trustees.



Library

The Library contains just under 10,000 volumes, 125 videos, 35 audio books, and a wide selection of magazines. The Library also has access to the New Hampshire State Library's Bookmobile and the Keene Public Library. Staff consists of one Librarian, who keeps regular, part-time hours.

The facility is currently adequate for the Town's needs, although the trustees are looking to expand the building in the near future. Aside from space needs for the Library itself (for example, to add a computer for public access), the building needs to be brought into compliance with Life Safety codes, and with the ADA requirements. At the same time, there will be improvements to the parking area that will increase parking availability.

EDUCATION

Gilsum is a member of the Monadnock Regional School District, which includes the towns of Fitzwilliam, Richmond, Roxbury, Sullivan, Surry, Swanzey, and Troy. All towns, with the exception of Richmond and Roxbury, have an elementary school in town, but send their middle- and high-school students to the Monadnock Regional School located in Swanzey Center. All of the school facilities are owned and maintained by the District, and transportation to and from Swanzey is provided by the District. This system has been in place since 1961. Assessments to the towns are based on average daily membership

The Gilsum Elementary School is located just off of Route 10 on the northerly end of the Village. The facility is comprised of the school building, a playground with miscellaneous playground equipment, and ballfields. The building has four classrooms, a library, and a multi-purpose room. Needs for expansion prompted a town-wide discussion that ultimately resulted in the decision to add onto the building, with some dedication of the new space going toward a community center.

The school serves grades Kindergarten through 6, with a staff comprised of a principal (shared by three towns: Gilsum, Sullivan, Surry), a vice-principal, four teachers (including the vice-principal), four teacher's aides, one secretary, one cook, and one custodian.



Elementary School

Enrollment at the Gilsum Elementary School was approximately 54 pupils for 1999/2000 school year. Total average daily membership for all Gilsum pupils was approximately 110, with 25 at the middle school, and 31 at the high school. This number is slightly below the average daily membership of 10 years ago, when it was calculated at 112 pupils – 67 of them at the elementary school.

COMMUNITY CENTER

Efforts have been ongoing for several years to establish a Community Center in Gilsum. Funds were being set aside in a capital reserve account, with the intention of purchasing land and constructing a building. In 1998, discussions with the school district revealed that both the district and the town had the need for a community building. The Building Committee worked with the district to develop a plan that would meet the needs of both the town residents and the pupils, and in March of 2000 the voters approved a warrant article that would allow for construction of a community center at the Gilsum Elementary School.



Future Community Center

RECREATION

Recreation opportunities in Gilsum consist of the following:

- ☐ Field sports, tennis courts and playground at the Gilsum Elementary School.
- ☐ A ball field on the Dump Road.
- ☐ Bears Den State Forest, Natural Area
- ☐ Ice skating on the Frog Pond and on Woodbury's pond



Tennis Courts at the School

The Recreation Committee sponsors the annual Rock Swap, Gilsum Old Home Days, a children's Halloween Party, and the newly-established event of a Holiday Tree Lighting next to the Frog Pond.

The Frog Pond and the area immediately surrounding it in the Village is being improved and made available for public enjoyment. This has been made possible, in part, by the removal of the Highway Department's salt and sand pile - which is now relocated to the new facility on Route 10. The Recreation Committee has been responsible for various improvements at the site: a bench has been placed next to the pond; a "Welcome to Gilsum" sign erected next to the road; a water fountain placed in the pond; and flowers have been planted in the front of the pond - labor and materials donated by a local landscaper.



Frog Pond and "Welcome to Gilsum" Sign



Plantings at the Frog Pond

The Committee intends, following the success of the first Holiday Tree Lighting event in December of 2000, to plant a permanent tree at the Frog Pond that can be used for this purpose each year.

POST OFFICE

Postal service is provided to the residents of Gilsum by a Post Office and two rural deliveries routes. The Post Office is located in the Village in a privately-owned building. Staff consists of the Post Master and two part-time employees. Hours of operation are:

There are 420 post boxes, 400 of which are currently rented – many of these by Alstead residents. The Gilsum Post Office also offers rural delivery service to aabout 110 customers. With the adoption of the Enhanced 911 system for emergency response, any mail boxes that have a Keene address will be changed (moved, if necessary) to a Gilsum address, so that these will be consistent with the 911 information.



Post Office

	<u>Window</u>	<u>Lobby</u>
Monday – Friday P.M.	7:30 A.M. – 12:30 P.M., 2 – P.M.	7:30 A.M. – 5
Saturday	7:45 A.M. – 12 Noon	7:30 A.M. – 12 Noon

CEMETERIES

Gilsum has five cemeteries, all of which are maintained by the Town with one exception. A brief description of each cemetery follows:

1. **CENTENNIAL (BOND) CEMETERY** - Located on Centennial Road

The earliest believed burial at this site was of a Mrs. Fisher, in 1785. A Gilsum resident, Stephen Bond, gave about half an acre of land to the Town for the cemetery in 1804; the deed was executed in 1807. Later, a strip of land about one rod (16 ½ feet) wide at the south end was given by Solomon Woods. In 1876 a lot of land of about four aces (known as the Stephen Bond Burying Place) lying directly south of the original yard was bought from Willard Bill for \$150; at this time the cemetery became known by its current name.

This is Gilsum's largest cemetery, and the one most in use. There are monuments as well as flat headstones; in addition, there is a tomb that was built at the Bond site in 1830. There are 419 lots, with most lots having four sites. Of these estimated 1676 sites, there are only few that are vacant; thus, there are plans to expand the area by using land immediately to the north that has been acquired by the town.

2. VILLAGE CEMETERY - Located on the west side of Alstead Hill Road north of the Village.

This cemetery was established in 1856, when David Ware buried his son near the southeast corner of his farm; soon after, he sold some adjacent lots for burial purposes. This cemetery has gone by various names over the years, starting with Ware, as well as the Newman Cemetery. There are approximately 200 burial sites here, but only 120 grave stones. The cemetery has seen only limited use since the late 1800s, however, there are still several lots that are vacant but committed. There is a story of a ghost from this cemetery who visits neighboring homes: he is from the south, and fought in the Civil War, and wants to be moved out of this cemetery to his home.

3. EAST (NASH CORNER) CEMETERY - Located on Nash Corner Road

The first burial at this location was in 1833, and in 1835 Asa Nash gave land to the Town for a cemetery. There are 74 grave sites, and only one burial since 1979 - thought to be a relative of the Nash family. Most of the headstones contains the Nash name. The Town performs maintenance and clean-up at this cemetery as needed

4. VESSEL ROCK CEMETERY - Located on Vessel Rock Road.

This cemetery was established in 1804, with a deed going to the Town in 1810. The last burial at this location was in 1871. There are 175 grave sites, and a tomb adjacent to the road. The cemetery is small, originally consisting of about ½ acre, and enlarged in 1820 by the purchase of some land on the west side of the original lot. The Town performs routine maintenance as needed

5. SOUTH CEMETERY - Between Old Gilsum Road and the Gunn Road

This is Gilsum's oldest cemetery, with a documented burial in 1765. There are approximately 50 sites here, but only a few headstones are identifiable. The last known burial was in 1798. Some of the interred were moved to the Vessel Rock Cemetery. This cemetery is not maintained at all, and in fact, is not very accessible. As far back as the 1800s, the Town would not vote funds for caretaking.

Maintenance of the cemeteries is by cemeteries trustees and some highway department equipment. There is a need for a storage shed for the cemetery equipment. Use and maintenance of these cemeteries is complicated by the absence of any comprehensive mapping or record-keeping, other than a map of the Centennial Cemetery. When a burial is planned, the sexton must use a rod to determine if there is someone already buried in a space that is not marked. The most complete information that does exist on Gilsum's cemeteries is contained in the "History of Gilsum", which was published in 1879. In an attempt to address this deficiency, the Gilsum Historical Society is undertaking the mapping and plotting of the other cemeteries. And the Town Clerk and Cemetery Trustees are attempting to better document burials, and research past burials.

HEALTH & HUMAN SERVICES

Gilsum voters contribute to several human service agencies that provide a range of support services to people in the entire Monadnock Region; these are:

□ **The Community Kitchen**

Located in Keene, the Community Kitchen is a not-for-profit, direct service agency that provides hot meals, take-home boxes containing food and personal care items, information and advocacy to low- and moderate-income men, women and families with children in Cheshire County. Since its founding in 1983, the Kitchen has served and/or distributed over 4 million meals, all at no charge.

□ **Home Healthcare, Hospice, and Community Services**

This agency is headquartered in Keene and serves Cheshire and parts of Sullivan and Hillsborough Counties. It provides services ranging from nursing and physical therapy to medical social work and child health clinics. Much of the agency's costs are covered by Medicare, Medicaid, grant, and patient insurance and fees. The remainder is provided through contributions from participating towns, donations, and fund-raising.

□ **Meals on Wheels**

This is a service provided through the Home Health and Human Services, bringing food to shut-ins and other qualified individuals who are not able to shop for and/or prepare their own meals.

□ **Monadnock Family Services**

Located in Keene, this agency provides mental health services for both Cheshire and Hillsborough Counties. The service is funded through a variety of sources, and asks participating towns for a local contribution of \$1 per capita.

THE COST OF COMMUNITY FACILITIES/SERVICES

The cost of the selected community facilities described in this section have increased by just over 30% in the last 10 years. Within the individual categories, however, there is great variation: the cost of solid waste disposal actually decreased by 17%, while the cost of fire and rescue increased by 179%. Education, while the most costly single item in the budget, increased spending by only 18% over this same time period. Following are a table and several graphs that visually represent this information.

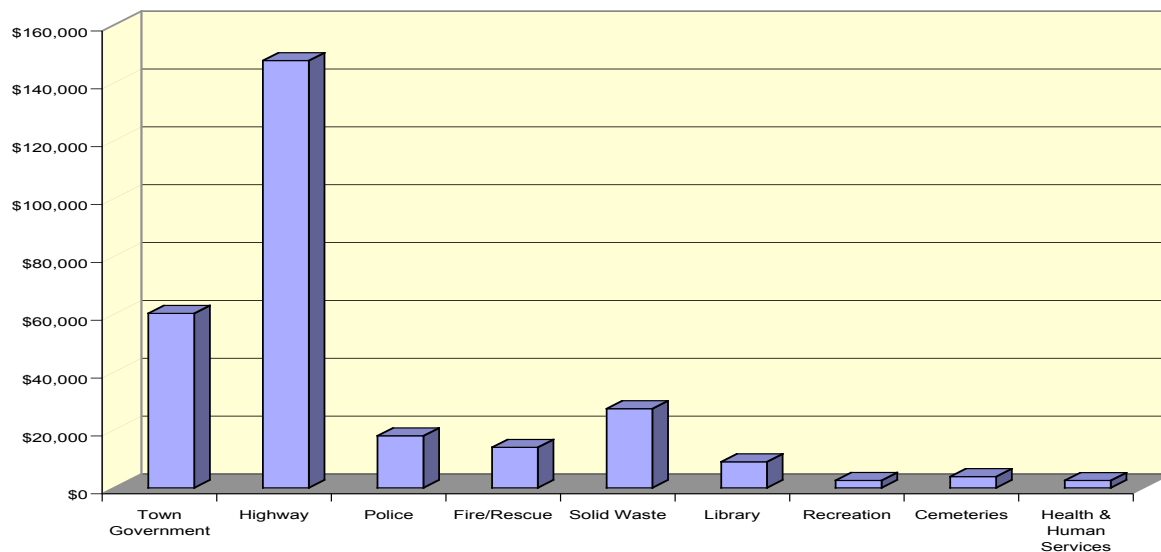
**TABLE #1:
COST OF SELECTED TOWN EXPENDITURES, 1999**

FACILITY/SERVICE	1999	
	\$ Amount	% of Total
Town Government	\$60,296	7.3%
Highway	\$147,679	17.9%
Police	\$17,994	2.2%
Fire/Rescue	\$14,000	1.7%
Solid Waste	\$27,381	3.3%
Library	\$9,028	1.1%
Education	\$540,411	65.4%
Recreation	\$2,565	0.3%
Cemeteries	\$3,888	0.5%
Health & Human Services	\$2,552	0.3%
TOTAL	\$825,794	

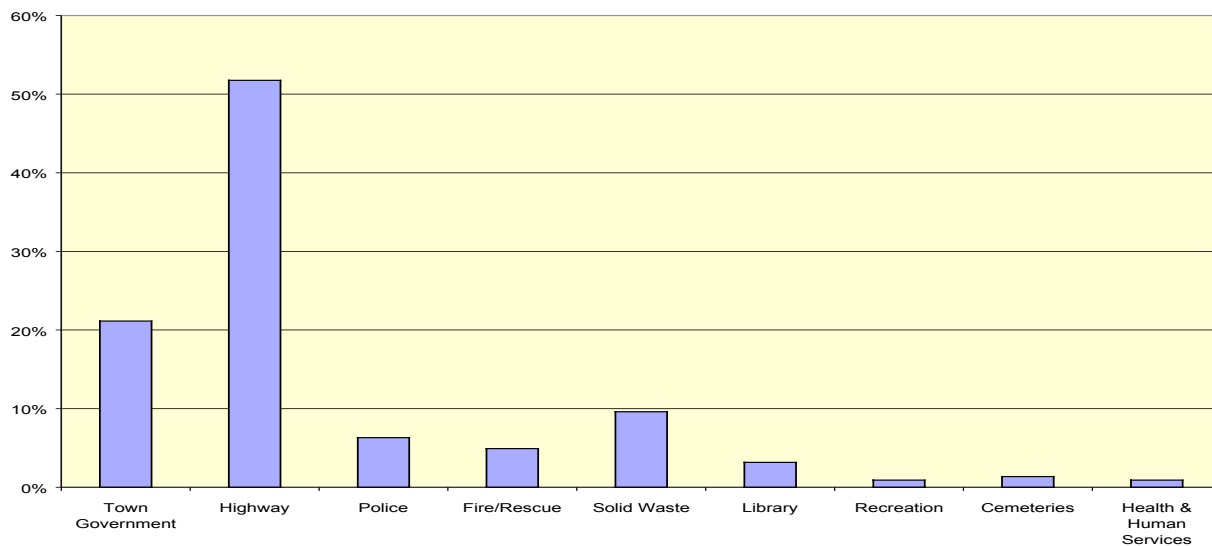
Education accounts for the largest share of the total expenditures on community facilities. Following education, the highway department accounts for the largest share of the town budget, but the difference between the two is dramatic: 65% for education compared to 18% for the highway department.

Graph #1 following illustrates the dollar amount spent on each category in 1999, and Graph #2 presents the cost of each facility/service as a percentage of total town expenditures on community facilities for 1999: for example, Town Government accounted for 7.3% of the total town expenditures. The graph correlates to the columns in the table above entitled “% of Total.” Note that the education category was not included in this graph, as the difference in spending and percentages is so great as to render the graph meaningless for the other categories.

**GRAPH #1:
COMMUNITY FACILITY SPENDING, 1999**



**GRAPH #2:
COMMUNITY FACILITY SPENDING AS A % OF COMMUNITY FACILITIES EXPENDITURES, 1999**



RECOMMENDATIONS

Based on the information collected for this section, the Planning Board makes the following recommendations regarding community facilities in the Town of Gilsum:

1. Pursue the establishment of a wastewater disposal system in the Village District with the following anticipated benefits to the town:
 - ☐ Enhance residential property values and increase their marketability.
 - ☐ Increase opportunities for commercial development.
 - ☐ Allow all permitted uses, under the Gilsum Zoning Ordinance, on existing lots.
2. Appropriate funds at Town Meeting for the development of a Capital Improvements Program, which is a schedule of planned town expenditures on capital items such as fire and highway equipment, over a six-year period. The purpose of which is to minimize the impact on the tax rate of the repair, replacement or improvement of town facilities and equipment.
3. Supports the establishment of Capital Reserve Funds for major equipment needs such as fire and highway equipment. By putting money aside each year, the impact on the tax rate and/or need to borrow is significantly reduced.
4. Construct a shed for protection and storage of cemetery maintenance equipment.
5. Provide toilet facilities and emergency telephone services at the town transfer station.
6. The Town should continue to seek alternative and traditional means of preserving the Town Hall.
7. Provide for security of equipment at the Highway Garage either by constructing a new bay or fencing the property.

CONSERVATION AND PRESERVATION ANALYSIS AND PLAN

INTRODUCTION

This section represents an on-going effort by the Gilsum Planning Board to update the 1981 Master Plan. In 1995 the Land Use Analysis was completed and adopted, and this section is being undertaken in conjunction with the Conservation Commission. The inclusion of this section in a Master Plan is authorized by state statute: *"A conservation and preservation section . . . may provide for the preservation, conservation, and use of natural and man-made resources."* (RSA 674: 2)

The essential purpose developing this section of the Master Plan is twofold: (1) to enable the Planning Board to make better-informed decisions as to the development potential (or lack thereof) of certain land areas; and (2) to supply the Board and the Town with information and knowledge about sensitive lands and important natural and/or man-made features that may need special protection. Decisions made on the basis of this information can then be implemented through a variety of techniques, which will be discussed in more detail later, but include such things as amendments to the zoning ordinance, or design/ development standards written into the Site Plan Review Regulations to address specific concerns.

A corollary benefit of collecting and analyzing these features is that the public becomes educated about just what is significant, sensitive, and valuable to the Town as a whole, and to individual residents. This level of knowledge enables people to think about the appropriateness (or inappropriateness) of using certain lands for certain uses. For example, in the not too-distant past, conventional wisdom held that wetlands were "junk" lands and should be filled in, since they couldn't be used for anything worthwhile. Today, we know that wetlands are widely recognized as providing a variety of benefits and functions to people and the natural environment.

This Plan is a result of analysis and evaluation of the natural and man-made resources in Gilsum, as identified by the Planning Board and the Conservation Commission, and town residents, who were polled by the local newsletter, *Gilsum Bridge*, to submit any information they felt noteworthy for this section. The Gilsum Historical Society was the source of much of the information on the historic buildings in town. The features identified and described herein are also illustrated on maps, some of which are included in this report, while others are on file at the Town Offices.

NATURAL FEATURES

NATURAL FEATURES

WETLANDS

The New Hampshire Wetlands Board defines wetland as “. . . an area that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal conditions does support a prevalence of vegetation typically adapted for life in saturated soil conditions.”

“Wetlands” is the collective term for land that serves as a transition zone between surface water and upland sites. Wetlands can be bogs and peatlands, fresh marshes, salt marshes, wooded swamps, and riparian areas. The Method for the Comparative Evaluation of Nontidal Wetlands in New Hampshire has been developed for the purpose of evaluating wetlands. This method lists fourteen functional values associated with wetlands; these include wildlife habitat, flood control, groundwater use, nutrient retention, educational potential, water-based recreation and historic value.

There are several methodologies a town can use to define wetlands; most town, however, use the US Department of Agriculture, Natural Resource Conservation Service (formerly Soil Conservation Service) definition, which categorizes soils as being either very poorly drained or poorly drained. The location of such wetlands in Gilsum are identified on a map titled “Town of Gilsum, Hydric Soils.” Hydric “A” soils are those that are very poorly drained, and Hydric “B” soils are poorly drained.

In Gilsum, wetlands constitute about 890 acres, out of the total land area of 10,688 acres. They are distributed fairly evenly around the town, consisting primarily of small pockets or areas adjacent to streams. There is only one significantly large wetland area, and that is located in the southeastern part of town, between Route 10 and the boundary with Sullivan. A portion of the frontage along Route 10 has been developed for residential use, and a few home occupation. The greatest part of this particular wetland area, however, is set far back from the road and remains undeveloped.

There is also some residential development adjacent to the wetland area in Hammond Hollow, but most of the scattered wetlands around town are far enough away from road frontage so that they have not become endangered. Within the Village area, where development is the most dense, the map identifies a wetland area at the intersection of Route 10, Main Street and Church Street.

WATERSHEDS

A watershed is the land area made up of a series of connecting higher ridges that drain surface water to the lowest point, which is where a stream or river flows out

of the watershed. The network formed by rivers, streams, lakes, and ponds is known as the drainage system of the watershed.

The surface water of the rivers, streams, lakes, brooks and ponds are subject to pollution caused either by hazardous materials located in close proximity to the water or pollutants discharged directly into the water. Surface run-off is therefore considered to be a non-point pollution source because the pollutant travels over the land to the water source, for example uncovered salt piles. A point pollution source discharges directly into the water, for example a malfunctioning sewage treatment plant.

Surface water resources can function as holding areas for flood waters and seasonal high waters. In addition, they serve as recharge areas and discharge points for groundwater sources, which are areas where surface and groundwater are hydrologically connected. Groundwater discharge replenishes surface water resources, as well as water wells during dry summer months.

The Town of Gilsum falls entirely within the Ashuelot River Watershed, which is a part of the Connecticut River Basin. The watershed consists of approximately 282,900 acres in the towns of Gilsum, Sullivan, Roxbury, Marlborough, Swanzey, Surry, and Winchester, and portions of the towns of Richmond, Troy, Dublin, Harrisville, Chesterfield, Keene, Alstead, Marlow, Stoddard, Jaffrey, Nelson, Lempster and Washington.

AQUIFERS

Aquifers are concentrations of groundwater, occurring in saturated soils and geological formations. They are found where saturated layers are permeable and the storage and transmission of water can take place. Aquifers are resupplied through precipitation, surface water, wetlands, lakes and streams. The water infiltrates the ground through an aerated zone where impurities are filtered out. The water then moves to a saturated zone (aquifer) where the pore spaces between soil particles are filled by the 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, as stated earlier, affects the supply of water to wells.

Aquifers of medium to high potential occur in Southwest New Hampshire as glacio- fluvial deposits of sand and gravel (known as unconsolidated deposits), or in bedrock fractures (known as consolidated deposits). The unconsolidated deposits, also called stratified drift deposits, contain sorted layers of gravel, sand, silt and clay - occurring chiefly in valley bottoms. 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, these stratified deposits of sand and gravel have become good sources of medium to high volume aquifers.

The consolidated deposits, or bedrock fractures, are a more productive water source when the bedrock is overlaid by a layer of sand gravel, which allows the recharge to occur directly from above. They are usually adequate for domestic wells. In contrast, a till aquifer will typically have a lower-yielding well life. This is due to a mixture of clay, silt, gravel and boulders which tends to compact due to the different soil particle sizes. The transmission and storage of water is greatly decreased in this type of aquifer. Stratified drift aquifers can be confined or unconfined. Confined aquifers have a layer of impermeable material, such as clay, over them. Unconfined aquifers have a layer of permeable material so that recharge occurs directly from above. 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. Pollution in bedrock aquifers is much more difficult to trace because the fractures that contain the groundwater are not always recognizable on the ground and may not, in fact, be directly related to surface flow direction. 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 has recently completed aquifer delineation maps for the entire state. The Gilsum Aquifer Map was prepared from the USGS study.¹ The map is essentially a surficial geology map, showing the distribution of unconsolidated (not bedrock) geologic material on the land surface. There do exist bedrock aquifers, but these were not part of this particular study. Unlike the previous aquifer study by USGS, which identified aquifers having high, medium or low potential yields, this study identifies areas of sand and gravel and measures the rate of transmissivity - that

¹ "Saturated Thickness, Transmissivity, and Materials of Stratified-Drift Aquifers in the _____ River Basin, South-Central New Hampshire."

is, the speed with which water passes through the materials, in increments of 1,000 feet squared per day.

The accompanying map, "Aquifers with Basins and Major Watersheds" shows the location of aquifer areas in Gilsum in relation to the overall aquifer distribution throughout the Southwest Region. As can be seen from the map, there are three aquifer areas, and they follow the path of the Ashuelot River through town, from the northern town line with Marlow, to the boundary of Surry to the west. There is development over the aquifer under Route 10 north, since the road follows the river, and the development occurred along the road. In the western side of town, however, the road separated from the river's edge about midway between the Lower Village and the Surry town line; in this location, there is very little development over the aquifer.

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.

FEMA maps for Gilsum are of two types - a Flood Insurance Rate Map (FIRM), and a Floodway Map. The FIRM defines 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 a small area of 500-year floodplain (a 5 out of 100 chance of flooding in any given year). Some base flood elevation numbers are given in the Village area along Route 10. The Floodway map shows the same boundaries, but also shows the cross sections from which the boundaries were interpolated. These maps are not reproduced for inclusion in this report, but are available at the Town Offices for review.

Gilsum was mapped in 1981 and the Town was able then to enter into the National Flood Insurance Program, permitting 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. This Ordinance requires the town to keep track of all development in the Special Flood Hazard Areas 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 chose 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 them.

In Gilsum the floodplain follows the Ashuelot River all the way through town (while this might seem logical, it is not always the case with floodplains) and includes land around Beaver Brook, Hammond Brook, Sheep Pasture Brook, Hayward Brook, and two areas along May Brook. Development in the floodplain is located primarily in the Village and along Route 10 north of Town, all of it existing prior to the entrance of the Town into the National Flood Insurance Program.

BEAR DENS STATE FOREST

Bear Dens State Forest is the location of a bedrock outcropping that contains numerous overhanging ledges forming holes and dens, including cavities on the undersides, that did in the past house wolves and bears. Most recently porcupines, foxes and other woodland creatures have found housing and security in caves and ledges.

The unique and dramatic rock formations are the result of a long and complex process of flowing and melting glaciers. The Bear Dens formation was created when the glacier flowed over Gilsum from the northwest. The existing outcrop was resilient to erosion from the glacier, however, it was not resistant to the action of melting and freezing ice: the weight of the glacier flowing over the bedrock caused that ice that was in direct contact with bedrock to melt; the immense weight of the glacier fractured the bedrock in place; the meltwater then ran into the fractures, re-froze and broke the rock away from the bedrock; finally, when the glacier melted, the fractured rock tumbled down the cliff.

Bear Dens is also the site of many potholes created by glacial action. As the glacier melted, the meltwater formed into rivers that ran through the ice, carrying with them huge amounts of rock and boulders. For decades, the eddy currents in the torrential river inside the ice swirled rocks and sand in patterns that created the potholes.

Gilsum is fortunate to be the site of one of the best examples of this kind of glacial activity - what is known as a "*roches moutonnees*" - a hill that is sloped on one side and outcrop and steep cliff on the other. Other local examples of this type of formation are Pitcher Mountain in Stoddard and Mt. Monadnock in Jaffrey.

VESSEL ROCK

Vessel Rock acquired its name because of the perceived resemblance of a ship under sail. The rock is approximately 45 feet in length, 32 feet wide, and 25 feet in height, and is estimated to weigh over 2,000 tons. The huge rock is split and there appears to be some difference of opinion as to how this event occurred. In an 1878 report entitled "The Geology of New Hampshire. . .", the State geologist reported that the rock had split due to the action of frost and ice. In contrast, Silvanus Hayward, in his 1881 history of Gilsum, attributed the split as resulting from an earthquake that struck the area on October 5, 1817.

Immediately adjacent to the rock is a house that was originally built in _____ as a schoolhouse. This area was once proposed to be the site of the Town Hall, since it is almost exactly in the geographic center of Gilsum.

IMPORTANT TIMBERLANDS

Gilsum's landscape is almost entirely wooded. There are hundreds of undeveloped acres in Town under single ownership; these areas are usually logged from time to time. Specific timberlands cannot be identified on the Resources Map since, as was stated, Gilsum is so heavily wooded, and because the sites of logging operations change annually. What is important for the purposes of this document is to recognize the potential environmental problems that can be created if care is not taken during the operation.

Timber harvesting exposes soils to erosion by the construction of skid roads, haul roads and landings. Without proper erosion mechanisms in place, soils will be eroded and will lead to problems such as: depositing sediment in wetlands and streams; adding nutrients to lakes and ponds; and smothering fish spawning areas.

There are techniques, known as "Best Management Practices" to control erosion from timber harvesting. The primary goal of these practices is to keep water off of the exposed soils. This can be accomplished by proper road ditching, construction of water bars and dips, and proper placement of culverts. To prevent erosion, the use of filter strips placed between exposed soils and water bodies is recommended, along with construction and maintenance of water crossings.

SIGNIFICANT WILDLIFE AREAS

The accompanying Resources Map identifies four areas in Town that are significant wildlife areas. While it could be stated that all of Gilsum is a habitat for wildlife, certain areas stand out for the abundance and diversity of wildlife present. A brief listing of wildlife to be found in Gilsum include:

- ☐ deer, moose, black bear,

- ☐ muskrat, woodchuck, porcupine, beaver, squirrel, chipmunk, mink,
- ☐ fisher, otter, skunk, weasel, raccoon, red fox, coyote,
- ☐ and a wide variety of snakes, frogs, birds, and fishes.

These areas that have been identified as being home to these creatures are found in all four quadrants of Town:

- in the northwest corner around Nash, Farnsworth, and Emerson Brooks;
- in the southwest section along Beaver Brook;
- in the southeast section around Hurd, Hammond, and Wright Brooks; and
- in the northwest section around May Brook - which also includes three beaver ponds.

Other beaver ponds are also identified on the map, although it is acknowledged that the location of beaver ponds change over time. Both Boards felt, however, that given the number of beaver ponds currently “active” in town, it was important to note their locations, as the ponds tend to attract other kinds of wildlife as well.

The more diverse the wildlife species, the greater the need for diverse habitats. Some species require only small areas - less than an acre, other need hundreds (or even thousands) of acres, and some require a mix of habitat types throughout the year. A diverse habitat is one that consists of a variety of landforms and vegetative cover, for example: open fields, woods, streams, marshes, ridges and valleys.

A major threat to wildlife is scattered development that results in fragmentation of the habitat. Wildlife might then be “stranded” in an area not large enough to support them. Other problems include a reduced breeding gene pool, loss of natural predators and increased susceptibility to disease.

Significant habitats will typically be connected by migratory routes or wildlife corridors; these are frequently found along stream and river paths, ridgelines, etc. The four significant habitats identified in Gilsum appear to be somewhat self-contained, that is, separated from one another and bounded by roadways. The actual documentation of corridors has not been determined for this report.

PROTECTED LANDS

By definition, protected lands are lands that cannot be developed because they are under the protection of some type of conservation easement, development restrictions, or transfer of development rights, etc. Protected lands may consist of both private and public (federal, state or local) lands. In New Hampshire virtually all federal and state-owned land can be considered protected.

In Gilsum, a small amount of land privately-owned land has been placed under a conservation easement.

CULTURAL AND HISTORICAL RESOURCES

LOIS WRIGHT MUSEUM/BLACKSMITH SHOP

This building was donated by Lois Wright to the Gilsum Historical Society in _____. The shop was built by here father, Phin Wright, in 1905. He operated a blacksmith shop here for many years, serving a tradition in the Gilsum community that had endured since the first settlers came to town. Blacksmiths were employed in manufacturing tools, nails, wheel tires, “potato diggers”, sled runners, and just about any and every iron or steel implement used on the farm and in the home.

The Museum today is open

STONE ARCH BRIDGE

The Stone Arch Bridge, located at the River Road intersection with Route 10, is listed in the National Register of Historic Places. It was built in 1862 entirely without the use of mortar. Spanning the “deep gorge” of the Ashuelot River, it has the highest vault of any dry laid bridge in New Hampshire. The height of the bridge above the mean water level exceeds 35 feet. Last year an historic marker was placed at the roadside by the NH Department of Transportation.

CONGREGATIONAL CHURCH

The Congregational Church was completed in 1834 at a cost of \$2,000, and was paid “through great struggles and self denial. Not only on the part of the larger subscribers, but of those who of their poverty cast in but little.” It was built to meet the needs of the growing factory village.

TOWN HALL

The original King’s Grant charter of Gilsum in 1763 stipulates that the annual town meeting “for ever hereafter. . . shall be on the Second Tuesday of March.” The present town hall which is still used for this occasion was built in 1905 after a disastrous fire that destroyed the original building and much of the town’s early records.

CEMETERIES

Gilsum has ____ cemeteries.

This was originally a private burial ground and was known as the Ware Cemetery, and also as the Newman Cemetery. The earliest gravesite dates to 1828. Some of Gilsum's notable residents buried here include Sally Loveland, Sarah Sumner, David Ware, Calvin May and Samuel Isham; all of whom contributed to the progress of the town throughout the 1800's.

GILSUM VILLAGE STORE

Established in 1881, the Village Store is a remnant of what was once a thriving commercial community in Gilsum. Over the past century and a half the town saw such enterprises as sawmills, a hotel, tannery, spinning mills, seven schools, line, flannel, woolen, and clothing mills, brickyards, taverns, gem shops, and a prosperous charcoal industry that supplied the numerous blacksmith operations.

POST OFFICE

By latest count, this is the fifth site for the post office since the first one was established in 1828. The post office was moved to its current location sometime around 1980. The building that now houses the Post Office

LIBRARY

While not housed in an historic structure, the Gilsum Library is nevertheless a valuable resource for not only current reading material, but also holds an extensive reference section for historical and genealogical research. Mine maps, Gilsum History reprints, town reports, and numerous other materials are available.

MINES

Threats

The land use pattern in the Village highlights problems that can result from the overlapping of dense mixed uses and wetlands, particularly for siting septic systems. The State of New Hampshire Department of Environmental Services (DES) requires that all septic systems be set back a minimum of 75 feet from all wetlands, and the State Wetlands Board prohibits any filling or dredging within a wetland. With the small lot sizes that currently exist in the Village area, it would be extremely difficult, if not impossible, to replace or construct a septic system and meet these setbacks. In addition to potential problems with septic systems, other activities that can threaten

the wetlands include runoff from parking areas and roads, household chemicals, underground storage tanks, and salt piles.

Recommendations

Under New Hampshire enabling statutes, towns are authorized to adopt wetlands ordinances that could require setbacks for other structures or uses besides just septic systems.

Under the enabling legislation of RSA 483-A:7, the Conservation Commission may designate prime wetlands according to specific criteria outlined in Appendix V, B. A prime wetland is an area of “substantial significance due to its size, unspoiled character, fragile condition or other relevant factors”. Once an area is designated as a prime wetland, the authority to regulate that area is in the hands of the NH Wetlands Board

REFERENCES:

Best Management Practices to Control Nonpoint Source Pollution: A Guide for Citizens and Town Officials (1994); NH Department of Environmental Services.

The Land Book: The Challenge of Making Wise Community Development Decisions. A Practical Guide for the Layman (1976); State of New Hampshire Office of Comprehensive Planning.

Natural Resources: An Inventory Guide for New Hampshire Communities (1991); The Upper Valley Land Trust and UNH Cooperative Extension.

New Hampshire Municipal Officials' Guide to Timber Harvesting Laws (1992); NH Timberland Owners Association, UNH Cooperative Extension.

Saving Place: A Guide and Report Card for Protecting Community Character (1991); Philip B. Herr, National Trust for Historic Preservation.

GILSUM MASTER PLAN

CONSTRUCTION MATERIALS SECTION

INTRODUCTION

In 1989 the New Hampshire Legislature amended the statute that addresses the purpose and description of a Master Plan: RSA 674:2, VIII-a calls for a *"construction materials section which summarizes known sources of construction materials which are available for future construction needs, including, at a minimum, the location and estimated extent of excavations which have been granted permits under RSA 155-E, as well as reports filed pursuant to RSA 155-E:2, I (d) with respect to non-permitted excavations."*

The statute does not define "construction materials", nor does it specify what the "construction needs" might be; however, since the statute addressing earth excavations is referenced (RSA 155-E), it is logical to assume that, at a minimum, sand and gravel are intended.

The primary source for identifying sand and gravel resources is the Soil Survey of Cheshire County, which was completed in 1984¹. The document includes a table entitled "Construction Materials," that lists four types of material by soil category; these are:

- ♦ Roadfill
- ♦ Sand
- ♦ Gravel
- ♦ Topsoil

The purpose of this section of the Master Plan is to identify such materials as are located in Gilsum. The soil types are listed in tables and the boundaries of the soil units are illustrated on maps. These maps were created by the Southwest Region Planning Commission using computer technology known as the Geographic Information System (GIS).

¹ Soil Survey of Cheshire County, New Hampshire, US Department of Agriculture, Soil Conservation Service, 1989. (The SCS is now the Natural Resource Conservation Service.)

A corollary purpose of this section is to determine whether reasonable opportunities exist in the Town of Gilsum for earth excavation as defined by RSA 155-E. Amendments made to this law in 1989 and 1991 made it incumbent on towns to ensure that their zoning ordinance provides some opportunity for excavation; otherwise *"excavation shall be deemed to be a use allowed by special exception . . . in any non-residential area of the municipality, . . ."*² and the zoning board of adjustment shall grant the special exception upon a finding by the board that the excavation would not diminish property values, unreasonably change the character of the neighborhood, create traffic hazards, or create any health or safety hazards.

THE SOIL SURVEY

The following descriptions of the construction materials are based on the above-referenced Soil Survey of Cheshire County. Soil categories are identified in the Survey by number and letter; the number represents the composition of the soil, and the letter designates the steepness - "A" being the flattest and "E" the steepest. (Note that the maps developed for this report show the soil unit boundaries but not the identifying number and letter, as the scale of the maps would render this information illegible.)

The classifications used to designate the construction materials are based on a number of factors, including observed performance of the soil, soil properties, and site features that affect the removal of the material and its use as a construction material.

DESCRIPTION OF MATERIALS

♦ Roadfill

Roadfill is defined by the Survey as soil material that is excavated in one place and used in road embankments in another place. Only soils suitable for low embankments (under six feet) were rated by the Survey. Roadfill is rated as being either "Good", "Fair" or "Poor". "Good" soils are those that are comprised of significant amounts of sand or gravel or both, and slopes of 15% or less. "Fair" soils have in excess of 35% silt and clay-sized particles, and slopes of 15-25%. "Poor" soils contain many stones, or slopes of more than 25%. The accompanying map identifies only the good and the fair soils.

² RSA 155-E:4,III.

♦ **Topsoil**

Topsoil is defined in the Survey as material used to cover an area in order to establish and maintain vegetation. For the purposes of the Survey, only the upper 40 inches of soil were evaluated for its use as topsoil. Topsoil is also rated as being either "Good", "Fair" or "Poor". Soils rated as "good" contain no stones or cobbles, have little or no gravel, and slopes of less than 8%. "Fair" soils are sandy, have considerable amounts of gravel or stone, or slopes of 8-15%. "Poor" soils are comprised of a lot of sand or clay, have a large amount of gravel or stone, and slopes of more than 15%. The accompanying map identifies only the good and the fair soils.

♦ **Sand and Gravel**

Sand and gravel are defined in the Survey as natural aggregates suitable for commercial use with a minimum of processing. The Survey evaluated only the probability of finding materials in quantities large enough as to be suitable for removal. The properties used to evaluate sand and gravel soils include the thickness of the material, the size of the grain, and the content of rock fragment. A soil rated as "probable" has either a layer of clean sand or gravel, or a layer of sand or gravel with up to 12% silty fines. In addition, the material must be at least three feet thick and have less than 50%, by weight, large stones. The accompanying maps identifies only the probable sources of sand and gravel.

CONSTRUCTION MATERIALS IN GILSUM

ROADFILL

Table #1 lists the soil units found in Gilsum that constitute roadfill; the Roadfill Map illustrates their locations. According to this information, Gilsum has 3,728 acres of fair roadfill. "Good" soils were found to constitute 495 acres. (Note that the acreage calculations for these materials do not denote the amount of the resource in the ground - only the surface area.)

Roadfill soils are distributed throughout most of Gilsum, with the fair soils having a much broader distribution than the good soils. Pockets of good soils are widely scattered, with one of the larger concentrations being found in the Village area, and another at Hammond Hollow.

**TABLE CM-1
ROADFILL SOILS IN GILSUM, NH**

GOOD SOILS		FAIR SOILS	
Soil Number/Name	Acres	Soil Number/Name	Acres
10B Merrimac	32	4 Pootatuck	15
36A,B,C Adams	88	14B Sheepscot	66
72B,C Berkshire	47	22A,B,C Colton	408
73B,C Berkshire	138	56B,C Becket	21
142C Monadnock	30	57C,D Becket	58
143B,C Monadnock	97	72d Berkshire	27
401 Occum	6	73D Berkshire	371
365C Berkshire	43	76B,C,D Marlow	260
771C Berkshire	14	77B,C,D Marlow	882
		78B Peru	22
		79B,C Peru	585
		143D Monadnock	164
		168B Sunapee	7
		169B,C Sunapee	110
		330C,D Bernardston	90
		334B,C Pittstown	53
		336B,C Pittstown	176
		365D Berkshire	189
		367D Dutchess	10
		531B Scio	3
		559B,C Skerry	89
		613B Croghan	34
		771D Berkshire	88
Total	495	Total	3,728

SOURCE: SOIL SURVEY OF CHESHIRE COUNTY, NEW HAMPSHIRE, SCS 1989

TOPSOIL

According to the soil survey, there is very little topsoil in Gilsum. The map indicates only one very small pocket of good topsoil source, located just south of Roundy's Corner near the Surry town line. No fair sources were identified. This one area amounts to about three acres.

TABLE CM-2
TOPSOIL IN GILSUM, NH

GOOD SOILS	
Soil Name/Symbol	Acres
531 Scio	3
Total	3

SOURCE: SOIL SURVEY OF CHESHIRE COUNTY, NEW HAMPSHIRE, SCS 1989

SAND

Probable sandy soils in Gilsum account for about 1,643 acres. These deposits are located predominantly between Hammond Hollow and Roundy's Corner, and from the Village along the Ashuelot River to the Marlow town line. A few smaller pockets are scattered around town.

TABLE CM-3
PROBABLE SANDY SOILS IN GILSUM, NH

Soil Name/Symbol	Acres
4 Pootatuck	15
5 Rippowam	41
10B Merrimac	32
14B Sheepscot	66
15 Searsport	11
22A,B,C,E Colton	550
36A,B,C,E Adams	336
56B,C Becket	21
57C,D Becket	58
107 Rippowam	10
142C Monadnock	30
143B,C,D Monadnock	260
214 Naumburg	15
395 Chocorua	22
401 Occum	6
414 Moosilauke	47
559B,C Skerry	89
613B Croghan	34
Total	1,643

SOURCE: SOIL SURVEY OF CHESHIRE COUNTY, NEW HAMPSHIRE, SCS 1989

GRAVEL

Gravel deposits in Gilsum are distributed in much the same pattern as sand, although to a somewhat lesser degree. Overall, the probable resource amounts to about 1,225 acres. The soil survey locations of both sand and gravel soils are consistent with known sites of sand and gravel excavations in Town.

**TABLE CM-4
PROBABLE GRAVEL SOILS IN GILSUM, NH**

Soil Name/Symbol	Acres
4 Pootatuck	15
5 Rippowam	41
10B Merrimac	32
14B Sheepscot	66
22A,B,C,E Colton	550
56B,C Becket	21
57C,D Becket	58
107 Rippowam	10
142C Monadnock	30
143B,C,D Monadnock	260
401 Occum	6
414 Moosilauke	47
559B,C Skerry	89
Total	1,225

SOURCE: SOIL SURVEY OF CHESHIRE COUNTY, NEW HAMPSHIRE, SCS 1989

The percentage of the total land area in Gilsum accounted for by each of the construction materials is presented below in Table #5. Note that the percentages do not equal 100, as the poor or improbable soil types are not included in the tabular calculations. This information indicates that topsoil accounts for the smallest - by far - share of construction materials in Gilsum. Sand and gravel are about equal in their presence in town, and fair roadfill constitutes the largest amount of material in Town.

TABLE CM-5
LAND ACREAGE BY CONSTRUCTION MATERIAL

Construction Material	Acres	% of Total Land Area
Roadfill, Fair	3,728	35.5%
Roadfill, Good	495	4.7
Topsoil, Good	3	0.03
Sand, Probable	1,643	15.6
Gravel, Probable	1,225	11.7

SOURCE: SOIL SURVEY OF CHESHIRE COUNTY, NEW HAMPSHIRE, SCS 1989

GROUNDWATER IDENTIFICATION

To further refine the attempt to identify sand and gravel deposits in the Town of Gilsum, aquifer delineation studies are examined and compared to the SCS soil survey. Inclusion of this information is useful, since the identification of potential groundwater is based in part on the inferred presence of sand and gravel soils - thus, the interpretation that where an aquifer exists, so too, do sand and gravel deposits. Groundwater identification should not, however, be solely relied upon to locate sand and gravel deposits, as these data present only part of the total picture.

The reason for this is that sand and gravel deposits were created by glaciers and rivers, and can be deposited on valley floors, hillsides and hilltops. The aquifer studies identify those soils that were deposited on valley floors - known as stratified drift. The other formations that must also be considered are eskers and deltas, both of which can be prodigious sources of sand and gravel deposits, which are not found in valley floors, but rather on hillsides and hilltops - therefore, they would not show up on an aquifer map. These formations all have something in common, namely that the materials have all been sorted by water; however, while good aquifers are also good sand and gravel sites, good sand and gravel sites are not always good aquifer sites.

The following map illustrates aquifers, river basins and watersheds for the entire southwest region. This map represents the results of a state-wide aquifer mapping project by the NH Department of Environmental Services in cooperation with the US Geological Survey, begun in 1985. The goal of the project was to update the reconnaissance level mapping that was

completed in the mid-1970s. The new maps identify significant stratified-drift aquifers in terms of their location and areal extent, as well as their hydraulic properties and internal characteristics. The methodology employed to develop these maps included drilling observation wells at selected sites around the state.

The project divided the state into 14 study areas whose boundaries largely coincide with natural drainage basins. The Lower Connecticut River Basin was the first to be studied and to employ the GIS technology for mapping. The 45 towns in the study area were divided into three groups. This map shows only the boundaries of the aquifer areas; there is more detailed information available on ground water flow, depth of deposits, volume of sediment, etc.

As this map shows, aquifer deposits in the region run mostly north-south within the Connecticut, Ashuelot and the Contoocook Watersheds. Gilsum lies in the Ashuelot Watershed, with the boundaries of aquifer deposits in town generally following the path of the Ashuelot River.

The Aquifer Map for Gilsum is generally consistent with the regional map - indicating the area along the Ashuelot River. The aquifer information and the soils information differ in that the pockets of construction materials identified in several scattered areas around town do not appear to have aquifer deposits. The Hammond Hollow area, however, is consistent for sand, gravel and aquifers.

EXCAVATION OPERATIONS IN GILSUM

As part of this chapter, information on all known existing and abandoned sand and/or gravel pits in Town was collected from Town records; the locations of these operations are identified on the accompanying map. According to the Town records, there are currently only three active excavation operations in Gilsum; in addition, there is one site that is used exclusively for the Timber Owners of New England, and five that are discontinued or inactive. Information that has been submitted to the Town is attached to this section; a brief description of the activity is as follows:

1. **Tax Map 408, Lot 68**, located between Route 10 and the Old Marlow Road. The lot comprised a total of 16 acres, however only 7.58 acres are permitted for excavating. As of April 1, 1998, all 7.58 acres were active, and no part of the excavation area had been reclaimed. The owners estimate that about 4,000 cubic yards of gravel have been excavated, 12,000 cubic yards of sand, and about 500 cubic yards of stone products. No estimation has been reported for remaining

materials, nor an estimated time frame for the excavation of the remaining materials.

2. **Tax Map 409, Lot 38**, located on Route 10, east. The lot is 44 acres in size, with an active excavation area of 1.5 acres. The remaining 42.5 acres have been reclaimed by natural vegetation. The owner estimates that about 204 cubic yards of material have been excavated, but there is no estimation given of remaining materials, or time frame for the operation.
3. **Tax Map 407, Lot 151**, located on Route 10 east, abutting Eaton Hill Road. The total lot area is 50 acres; only one acre has been permitted for excavation, and this area was still in active use as of April 1, 1998. No part of this area has yet been reclaimed. An estimated 1,000 cubic yards of sand has been removed, but no estimation is given as to the remaining materials, nor a time frame for their removal.
4. **Tax Map 401, Lot 3**, located on South Woods Road. This lot is owned by Timber Owners of New England, and is considered a non-commercial operation. No further information on this site is filed with the Town.

The remaining sites identified on the map are all listed as discontinued, or inactive (one site on Route 10 east). The discontinued sites have all been reclaimed by natural vegetation over a period of time.

OPPORTUNITIES IN GILSUM FOR EXCAVATING

RSA 155-E requires towns to allow some opportunity for earth excavation, as described in the Introduction. The law also allows towns that have adopted a Water Resource Management and Protection Plan consistent with RSA 674:2,VIII to include in their local excavation regulations provisions that are aimed at protecting water resources. The information depicted on the accompanying maps enables the Planning Board to do just that.

The Gilsum Zoning Ordinance provides for excavation in the Rural/Residential District. As the map illustrates, the three currently active sites, as well as two of the discontinued sites all are located in the Highway Business District, where excavation is not a permitted use.

In addition to the provisions of the zoning ordinance relative to excavation, the soil maps that identify the location of construction materials are also taken into consideration in determining where excavation should or should not be permitted. Given that much of the sand and gravel resources in Gilsum are, in fact, located along the Ashuelot River abutting Route 10 north, the Planning Board may want to revisit the zoning provisions for excavations.

CONCLUSION

Based on the County Soil Survey and other related information, it would appear that the Town has a fair amount of construction resources; a definitive number could not be reached without doing soil tests because, as noted earlier, the surface acreage identified by the soil survey does not provide the in-depth information on the soils.

The information in this report is intended to be used for land use planning. Once locations of the construction materials have been identified, the Planning Board can make informed decisions regarding the appropriate locations for excavation. For example, now that reasonable information is collected that indicates the presence of sand and gravel resources in an area of Town that does not permit excavations, the Planning Board will recommend that the zoning ordinance be amended to reflect this situation.

This section provides the Planning Board with the knowledge of where the likely locations are for construction materials, and zoning provisions can now be developed that address excavation in the most appropriate areas. Having the issue of excavations addressed in the zoning ordinance gives all parties involved the advantage of knowing what to expect: the landowner knows what restrictions there might be for a piece of property, and the Planning Board has its guidelines in place for the review process.

GOALS AND OBJECTIVES

GOALS:

1. To ensure that the Planning Board complies with the statutory requirements for Master Plans relative to excavation activity.
2. To ensure that reasonable opportunities for the excavation of earth materials exist in Gilsum.
3. To ensure that excavation activities do not impinge of the peace and tranquility of Gilsum residents, nor endanger sensitive natural resources.

OBJECTIVES:

1. To allow excavation activity as a permitted use in the Highway Business District.
2. To ensure that the Earth Excavation Regulations protect the public health and welfare, as well as the natural environment.

GILSUM LAND USE ANALYSIS

1995 Update

INTRODUCTION

An analysis of the present land use pattern is one of the first steps in the formulation of a land use plan. Since the type and intensity of existing land uses has 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 are developed relative to how land should be used within the foreseeable future.

Existing land uses and the present development pattern consist of both man-made and natural features that will have some impact on the type and degree of development in town. Economics, ownership patterns, and transportation routes all contribute to a development pattern as well, thus they are important considerations in the planning process.

Once raw land is converted to a developed use such as residences, commercial and industrial establishments, and streets and highways, the land is usually committed to that use for an extended or indefinite period of time. For this reason, it is essential to think in long-term concepts when recommending a certain land use pattern. Typically in the history of any town's growth and development, the public sector provided for schools, police and fire protection, the building of roads, and facilities for administering town government, while the private sector was involved with the provision of jobs, shopping opportunities, and the construction of residential dwellings.

Today these historical divisions of responsibilities are not always so clear-cut. Though not presently the case in Gilsum, there are many examples of overlapping responsibilities evident around the country: for example, public sector provision of affordable housing; and the private sector taking over such traditional public services as police and fire protection, collection of municipal solid waste, and even the administration of correctional facilities.

Thus, the total volume of development (and therefore of land uses) that occurs in any community is directly related to the joint efforts of the public and private sectors, as well as to the changing economic and social conditions of the area. Public investments can be as influential as private development in shaping land use patterns and determining the growth of a town. Such investments on the public infrastructure as state highway improvements, power generating stations, etc., respond to development, and at the same time have an effect on where future development will occur.

The idea of government regulation of private land and private development can be disturbing if the free market inadequacies are not considered. Land use planning and regulation are meant to protect the social and economic welfare, as well as health and safety of all citizens and the community in general. For example, the appeal of an attractive residential area could be greatly diminished by the addition of a heavy industrial or commercial development in the same

neighborhood. Examples of such land use conflicts and incompatibilities are endless. It is the long-term implication of such conflicts that makes land use planning so vital to a community's continued or future well-being. A well-conceived land use plan will allow for new growth and development while it protects and preserves important natural resources and the integrity of other defined districts.

This chapter will describe the pattern of existing land uses in Gilsum and analyze the changes that have occurred in that pattern over the last several decades. The existing land uses and their relationship to one another will be depicted on a map, enabling better decisions to be made about the appropriateness of future development and the availability of suitable land for such development.

LOCAL PLANNING EFFORTS

In planning for the future of a town, it is important to bear in mind that once raw land is converted to a developed use - whatever that use might be - the land 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 will allow for new growth and development while it protects and preserves the integrity of neighborhoods, businesses, transportation routes and the environment.

As mentioned above, 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 into place. For instance, if in the process of describing present land use patterns in Gilsum, recommendations are made relative to encouraging more commercial activity in a particular area, the zoning ordinance should be amended to permit that kind of activity in that location - assuming it does not already do that. Or, by the same token, the land use plan might recommend that the zoning ordinance be more restrictive in certain ways, for the purpose of protecting and preserving natural features.

LAND USE CATEGORIES

The first step in the land use analysis is to determine how to classify the various structures, uses and land areas that exist within the town. In short, a land use classification system must be developed so that each use can be described in concise and easily understandable terms. The second step is the field survey where present land uses and activities are recorded in map form so that a pattern can be discerned. The survey is simply a windshield survey conducted along all roads in town. Aerial photos are also examined to determine the actual size and extent of large undeveloped areas such as agricultural, wooded and vacant lands.

In general, land is classified according to its physical characteristics and the present use occurring 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 categories. Following is a listing and description of the present land uses found in Gilsum through the windshield survey :

- **RESIDENTIAL:** The Residential category identifies all structures in which dwelling units are found. These include standard (site-built) single family homes, duplexes, factory-built modular homes, mobile homes (now classified as "manufactured housing"), apartment buildings, and seasonal cottages.
- **RESIDENTIAL WITH A HOME OCCUPATION:** This category identifies dwellings that also serve as a site for the carrying out of an occupation as an accessory use on the property; this occupation may be of a commercial or industrial nature. Note that this does not include farming, which is typically considered to be a primary use.
- **COMMERCIAL:** This category denotes all lands and structures that supply goods and/or services to the general public as a principle use of the property. These range from grocery stores and retail sales of products to professional offices.
- **PUBLIC/SEMI-PUBLIC/INSTITUTIONAL:** This category relates to establishments and facilities supported by and/or used exclusively by the public or non-profit organizations; this includes fraternal, religious, charitable, educational, governmental and public utility facilities.
- **INDUSTRIAL:** Identifies land and structures used for manufacturing, processing, packaging, storage and/or warehousing.
- **STREETS AND HIGHWAYS:** Identifies public and private rights-of-way designated to carry vehicular traffic.
- **RECREATIONAL:** Denotes land and/or facilities that are devoted exclusively for public or private recreational pursuits, and may be owned either publicly or privately.

LAND USE DETERMINANTS

Several factors, known as land use determinants, act singularly or in combination to influence growth and development in a town. The major physical and topographic features, such as the existence of flat or gently- sloping land, steep slopes, rivers, wooded and open spaces, etc. are the primary factors that influence the initial as well as the subsequent development of land. Secondary factors usually consist of man-made features such as roads, railroads, utilities and major commercial, industrial or recreational facilities, which attract and/or stimulate new or expanded development. The following land use determinants have played an important role in the development of Gilsum:

- **Topography:**

Topography has, in the past more so than today, affected where roads would be sited and houses built. It is no coincidence that, in looking at existing land use and topographical maps, that the areas of steep slopes have either very little or no development. Gilsum's land area varies from wetlands,

flatlands, to steep slopes; in fact, approximately 66% of Gilsum's total area is composed of steep slopes, scattered all throughout the town in no particular pattern, and which make development at best difficult and expensive.

- **Transportation Systems:**

Gilsum has only one major transportation route, and that is Route 10, a state highway that originates south in Massachusetts and runs through Winchester, Swanzey and Keene before traversing Gilsum from south to north. The Surry Road serves as the principal east-west corridor in Gilsum, intersecting with Route 10 at the Asheulot River bridge.

- **Rivers:**

The Ashuelot River runs through Gilsum in an easterly direction, beginning at the Marlow border in the northeast section of town, and leaving Gilsum at the Surry town line. The river drops some 300 feet as it makes its way through Gilsum, creating an ideal situation for hydro power, which played a major role in Gilsum's development.

- **Soils:**

Soil conditions also play an important part in the development process. Good soils encourage development and can support a wide variety of land use activities. By contrast, poor or marginal soils have limited development potential because of construction constraints caused by such factors as shallow depth to bedrock, ledge, high water table, etc. In light of the state regulations that govern the siting and construction of septic systems, soils are probably more of a development constraint today than they were in the past, when the science was not as advanced.

THE SETTLEMENT PATTERN

The pattern of land use in any community reflects the mutual participation of both the public and private sectors in meeting the social and economic needs of the residents. Ownership patterns, economics, natural features and transportation routes all contribute to the settlement pattern, and are important complimentary considerations in the planning process.

Historically, agriculture was a large user of land in Gilsum, but that does not mean that it was the most significant use of land. Gilsum's rocky soils and steep slopes made field crops difficult to maintain, therefore the major products were hay, apples and maple sugar. However, mining was a very important activity in town during the 19th century, given the presence of mica, hornblende, lead and beryl.

The Ashuelot River, in conjunction with many brooks and streams, allowed for the development of water-powered grist mills, sawmills and textile mills. Tanneries and brickyards contributed to the manufacturing activities that supported the town in its early days.

Gilsum has a well-defined village area, bounded on its eastern periphery by the Asheulot River. The village today supports the municipal facilities provided by the town and a limited amount of commercial activity. Most of the lots are quite small - nonconforming by today's zoning requirements, but typical for a village settlement pattern (although there is not "village green", which often personifies this type of nucleated settlement pattern). The Town Hall is still existent in the center of the Village - a very important symbolic center of community life, although, unfortunately, Gilsum's Town Hall is only used for large public meetings due to building code constraints.

THE PRESENT DEVELOPMENT PATTERN

To more closely examine the development pattern, a land use inventory of the entire town was conducted. The inventory identified all of the buildings and uses identifiable from the windshield survey; these are presented on the Existing Land Use Map, and described as follows:

Residential Development:

Residential development in Gilsum consists overwhelmingly of single family homes. Four multi-family units were identified, all of them located in the Village. Occupancy is predominantly year-round; seasonal or recreational homes play only a small role in the total housing stock, most of which are situated in the Gilsum Woods development at Spoon Pond. The development pattern is fairly evenly dispersed around town. There are several residences located on roads that are not maintained by either the town or the state. The status of these roads, i.e., whether they are abandoned town roads or private roads, has not yet been determined.

Commercial/Industrial Development:

Commercial and industrial uses in Gilsum are very limited. There are, in fact, only six businesses that operate as principle uses and not as home occupations. They are located either directly in or in close proximity to the Village, and are as follows:

- *The Gilsum General Store*
- *Phil's Auto Repair*
- *R.J. Sports*
- *Gilsum Garage*
- *Blackstone-Houghton Woodworking*
- *A.K.R. Cutlery Manufacturing*

Other than the cutlery manufacturing and the woodworking operation, sand and gravel pits are the only industrial uses in town. There are presently nine sites, although five of these are either discontinued or inactive at this time.

In addition to the above-described uses are 17 businesses that operate from a homesite. These are dispersed around the town, although a very slight majority of them are located along Route 10. The types of development vary, although automotive repair and service businesses are fairly prevalent; these home-based business types are listed below:

- *engine service/repair*
- *snowplows/hydraulic jacks*
- *print shop*
- *graphics/silk screening*
- *racing engines*
- *wholesale book sales*
- *antique sales*
- *hairdresser*
- *automotive repair*
- *artisan's studio*
- *family farm*

Public/Semi-Public/Institutional:

Public and semi-public uses in Gilsum include all town-owned land; the Town Hall, Post Office, church, fire station, school, library/town offices, landfill, five cemeteries, and a girls home. Most of these uses are located in the Village; the landfill, however, is situated in the northwest corner of town, and the cemeteries are dispersed around the town.

Recreational:

Recreational uses in Gilsum consist largely of the Pot Holes and Bears Den State Forest on Bingham Hill, Route 10. Other than this nature area, there is a playground at the school, a parade ground and tennis court next to the school, and a ballfield off of the Dump Road.

Agricultural:

Agriculture plays a very small role in Gilsum's land use pattern today. There are only a few small family farming operations, none of which are full-time occupations for the landowners. These parcels are not identified on the Existing Land Use Map, however, the acreages involved have been estimated.

EXISTING LAND USE

This section describes the various land use activities existent in Gilsum today and compares them with the observed land use in 1978, as presented in the 1981 Gilsum Master Plan. The Town of Gilsum has a total land area of 16.7 square miles, or 10,688 acres. The tables and graphs following present the estimated acreage devoted to each of the above-described land uses in Gilsum; in addition, the table also presents the percentage each category represents of land that is actively used, and of total land area.

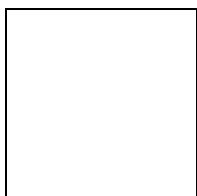
In order to estimate how much of Gilsum's land area is allocated to development, the following methodology was employed: every single family residence was given one acre, except for those within the Village area, which were given one-half acre; home occupations were counted with the residential use, since they are by definition an accessory to the primary residential use of the property. The acreages for gravel pits and agricultural uses were taken from the tax cards, so these are more exact; and roads were calculated based upon a 50-foot right-of-way, even though the actual roadway is much narrower. And, given that the commercial, public, multi-family and recreational uses are so limited in Gilsum, the actual size of all lots was simply added together for each of those categories.

**Table 1:
EXISTING LAND USES, GILSUM 1995**

Land Use	Acres	% of Developed Land	% of Total Land Area
Single Family	310.00	32.58	2.90
Multi-Family	2.50	0.26	0.02
Commercial	3.00	0.42	0.03
Industrial	5.00	0.53	0.05
Sand & Gravel Pits	289.00	30.38	2.70
Public/Semi-Public/Institutional	23.40	2.46	0.22
Recreational	98.00	10.30	0.92
Agricultural	20.50	2.15	0.19
Roads and Highways	200.00	21.02	1.87
TOTAL:	951.40	100.00	8.90
TOTAL LAND AREA	10,688		

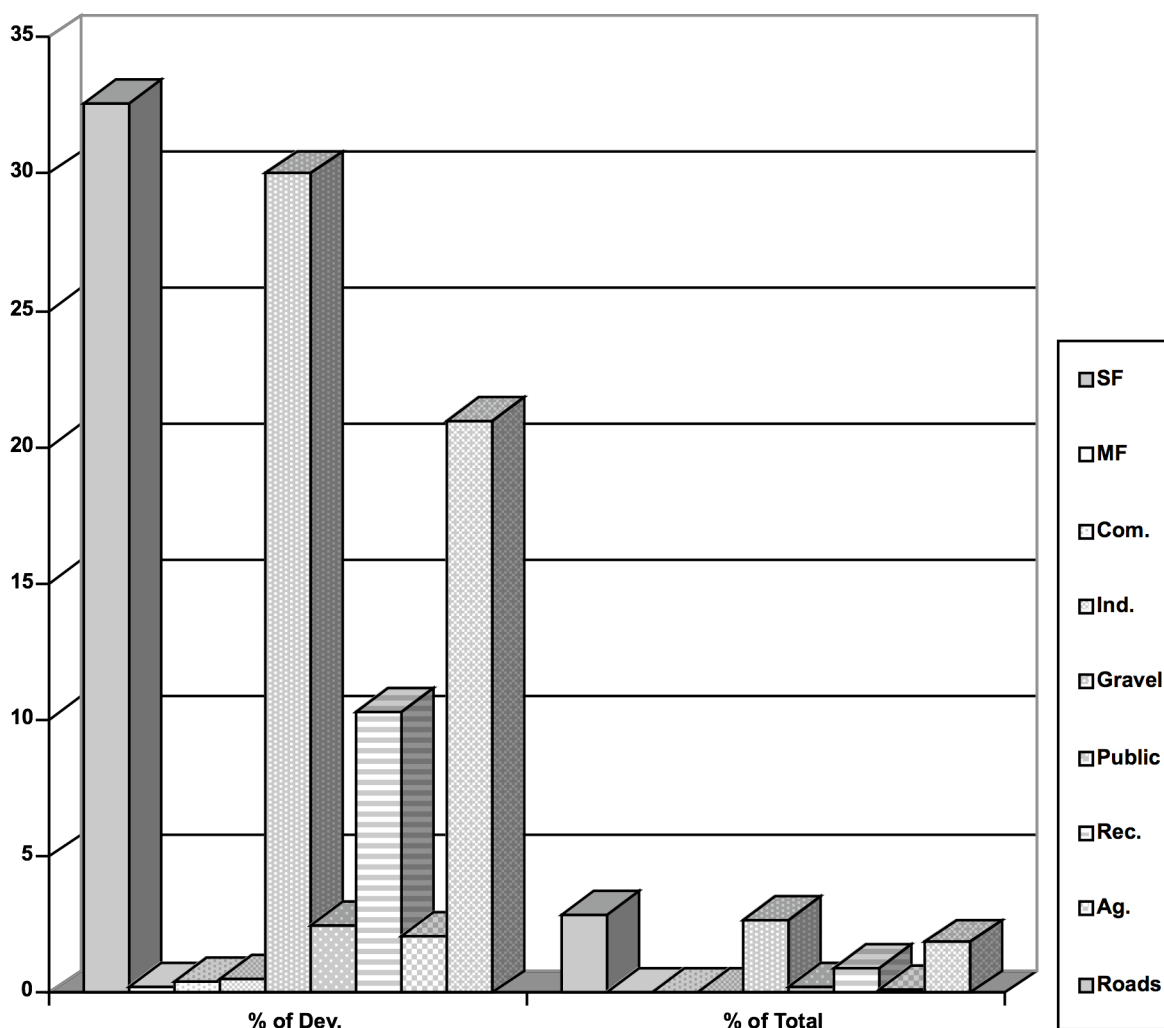
Source: SWRPC Field Survey, August 1995

**Graph 1:
Developed Land Uses by Acre, GILSUM 1995**



According to the methodology employed, only 951 acres are presently developed; this accounts for less than 9% of the total land area in Gilsum. The table further indicates that single family development accounts for the largest and most predominate land use in Gilsum. Industrial use is the second largest user of land, primarily due to the existence of the sand and gravel pits; note, however, that the acreage of the parcels on which excavation sites are located are used in these tables, not the actual (smaller) amount of land presently being excavated. Roads and highways account for the next largest use of and, creating 33 miles of traveled ways in the town. Graph 2 illustrates the sharp differences in the developed category or the Undeveloped category; for example, single family development accounts for over 33% of all developed land in town, but only 2.9% of the total land area. The percentage of total land area occupied by the other developed uses is so small as to be practically not visible on the graph.

Graph



Percentage of Acres in Use, GILSUM 1995

Table 2 following compares the amount of land occupied by each particular use for the years 1978 and 1995. The figures indicate a more than 40% increase in the use of land in Gilsum between 1978 and 1995. This needs to be read with caution, however, due to the unavoidable differences in counting acreages (for example the addition of sand & gravel pits into the calculation) and the difficulty in accurately measuring agricultural land.

**Table 2:
Comparison of LAND USES, GILSUM 1978 & 1995**

Land Use	Acres		% of Developed Land		% of Total Land Area	
	1978	1995	1978	1995	1978	1995
Single Family	231.00	310.00	26.43	32.58	2.16	2.90

Multi-Family	6.00	2.50	0.69	0.26	0.06	0.02
Commercial	7.00	3.00	0.80	0.32	0.07	0.03
Industrial	5.00	5.00	0.57	0.53	0.05	0.05
Sand & Gravel Pits	289.00	289.00	33.07	30.38	2.70	2.70
Public/Semi-Public /Institutional	17.50	23.40	2.00	2.46	0.16	0.22
Recreational	98.00	98.00	11.21	10.30	0.92	0.92
Agricultural	20.50	20.50	2.35	2.15	0.19	0.19
Roads and Highways	200.00	200.00	22.88	21.02	1.87	1.87
TOTAL:	874.00	951.40	100%	100%	8.18	8.90

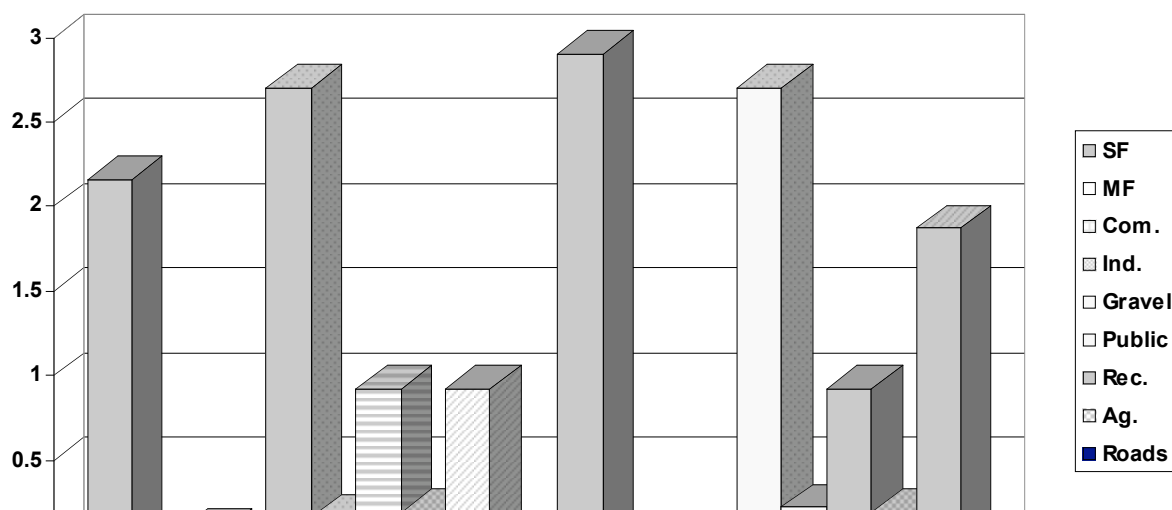
Sources: SWRPC Field Survey, 1995; Gilsum Master Plan, 1981

According to these figures, single family development remains the predominate land use over the 17-year period, accounting for 39 and 32 percent, respectively, of the developed land. Commercial and industrial uses have not changed appreciably, bearing in mind the difference noted above regarding the accounting for sand & gravel pits.

Comparison of the 1978 and 1995 land use surveys reveals little change in either the pattern of land use or the intensity of any of those uses. The most noticeable change would be in the rise of home occupations; also, the housing stock has increased, and agricultural use has declined, otherwise, no major changes in the pattern of development have taken place over the 17 years since the last land use survey was completed.

These figures would suggest that Gilsum has over 90% of its land area available for development. When certain natural constraints are factored in to this calculation, however, a different picture emerges. There are a number of reasons why all of this land cannot reasonably be expected to be developed, primarily the existence of ledge, wetlands, steep slopes, etc. These are presented in the following table as Constraints to Development, which was developed by interpreting the U.S. Geological Survey topographic maps.

**Graph 3:
Percent of Total Land Area Developed, by Year**



**Table 3:
Constraints to Development**

<u>Land Capability</u>	<u>Acres</u>	<u>% of Undeveloped Land</u>
Area of Surface Waters & Wetlands	88	0.90
Area of Land with Slopes over 15%	<u>6,474</u>	<u>66.30</u>
TOTAL UNDEVELOPABLE LAND	6,562	67.2
 TOTAL LAND AREA	 10,688	 NA
minus Developed Land	<u>931</u>	
TOTAL UNDEVELOPED LAND	9,757	100%
minus Undevelopable Land	<u>6,562</u>	
 LAND SUITABLE FOR DEVELOPMENT	 3,195	 29.9%

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Thus, based upon the designated natural constraints to development, it would appear that instead of having 90% of land available for development, Gilsum has in fact just under 30% of its total land area suitable for development. Furthermore, of these nearly 3200 acres considered suitable for development from a natural features perspective, some land will not be easily accessible to the existing road network, resulting in even less feasibility that the land will be developed in the near future.

It is important to note, when looking at development potential for land, the newly-enacted Shoreland Protection Act. This legislation was recently adopted by the NH Legislature, the purpose of which is to protect the shorelands of the state from inappropriate development; shorelands are defined as the land within 250 feet of certain rivers and waterbodies in New Hampshire. In Gilsum, the Ashuelot is the only surface water that is covered by the Act. The law sets standards for land uses, lot sizes, septic systems, use of common waterfront lots, and expansion of non-conforming uses within this area. This does not mean that the affected area along the river is not at all developable, as are some of the land types examined in the table above, only that development can only be conducted in concert with the protective measures adopted by the state.

Another factor to consider when looking at potentially developable land is the current use tax law (RSA 79-A). The statute, as originally adopted in 1973, was intended to promote the preservation of certain types of open land by allowing such land to be taxed at a value based on its "current use," rather than on the fair market value of the land. The statute defines the allowable categories under which land is allowed to be taxed according to its current use (e.g.: farm land, forest land, unproductive land). The difference in the amount of property tax paid by the owner when land is put into current use can be quite significant, and for this reason the program is used by many property owners with large tracts of land. In Gilsum, as of the 1994 tax assessments, 7,630 acres of land (or 71% of the total land area) are being taxed at a current use rate.

RESULTS OF MASTER PLAN QUESTIONNAIRE

In early summer of 1995, the Planning Board distributed a questionnaire to all residents in Gilsum, advising people of the Master Plan update and requesting opinions on various land use issues in town. A copy of the questionnaire and the results are appended to this document for closer review. The results of the survey demonstrated that, overall, people live in Gilsum because of the rural lifestyle and its location to the workplace. Furthermore, regarding the future of Gilsum, most people would like to see the town remain as it is.

When asked about a separate zoning district for commercial or industrial uses, the overwhelming response was "No", however, a slight majority is interested in seeing more commercial development in town; and, more people would like to see this type of development along Route 10 than anywhere else in town, with the Village District ranking as second most desirable location. Based upon the results of the above-mentioned analyses and a review of the Goals and Objectives from the 1981 Master Plan, selected Goals and Objectives for the Town of Gilsum are identified in this section.

For the purposes of this discussion, a goal is defined as a specific result the town intends to achieve; objectives are short-term goals or specific steps that must be taken into order to attain the stated goals.

FUTURE LAND USE PLAN

The Future Land Use Plan is one of the most critical elements of a town's Master Plan. It provides a description and analysis of past trends and establishes the basis for making future decisions about the extent and location of land use districts and the level and type of development activity that should occur in these districts.

At this point it is important to note that the information collected and the analysis conducted for this Plan have been of a limited nature, and for this reason, this Land Use Plan will deal with only a few specific issues - primarily those that were addresses in the Master Plan Questionnaire. The remaining areas of study applicable to a Master Plan, i.e., Transportation, Community Facilities, Population & Housing, Natural Features, and Construction Materials, will be dealt with in future updates.

The principal goal of the Land Use Plan is to develop a land use pattern that maintains the rural lifestyle considered by residents to be so important. Additionally, the plan should encourage compatible land use relationships; discourage indiscriminate location of commercial and industrial uses; protect property values; and minimize land use and environmental conflicts.

The proposed Land Use Plan recommends consistency between it and the Gilsum zoning ordinance. The purpose of both the Master Plan survey and the windshield survey of land uses is, in part, to determine if the wishes of the residents are being appropriately expressed through the zoning ordinance. The

Land Use Plan is the vehicle by which recommendations are made to correct any inconsistencies or conflicts that might come to light through this examination.

While the text of the Future Land Use Plan may present conceptual long-range planning considerations, the future land use map will reflect shorter-range land use proposals that are consistent with existing or proposed zoning districts. As part of this land use analysis, a review of the zoning ordinance was undertaken; this review (presented below) resulted in several recommendations for zoning amendments that may be presented to the voters at the 1996 Town Meeting.

ANALYSIS OF EXISTING REGULATIONS

The Gilsum Zoning Ordinance contains descriptions and provisions for three separate districts: the Village Residential, the Rural Residential, and the Industrial/Commercial Districts. The Village Residential District encompasses the Village itself and the area along Route 10 from the intersection of the Surry Road north to the intersection of the Sullivan Road. The Industrial/Commercial District consists only of three individual parcels of land: the lot on which the Blackstock-Houghton Company is located; the lot in the Village on Route 10 on which the Highway equipment is stored; and the lot on Mine Road on which the cutlery business is located. The Rural Residential District covers the rest of the town.

The Village Residential and Rural Residential Districts both contain provisions for Home Occupations, Tourist Homes, and Business and Professional Offices, but only by Special Exception of the Board of Adjustment; in addition, the Rural Residential District permits agriculture and certain light industrial uses, also by Special Exception of the Board of Adjustment. The Industrial/Commercial District has no provisions for uses, only lot and yard requirements.

The result of these regulations is that nowhere in town can a business or commercial use start up without approval from the Board of Adjustment. Furthermore, the few criteria that are spelled out in the ordinance for these uses are more appropriate for a home occupation than a primary business (e.g., no more than three employees, including resident family member, etc.). Based upon the survey responses and the applications received by the Board of Adjustment over the last several years, it would appear that there is a need for non-residential development in Gilsum that is not being met by the regulations.

GOALS AND OBJECTIVES

Residential

The comparison of residential development patterns over the last 17 years does not indicate any significant change in patterns nor unusual increase in amount of development. Gilsum's population in 1980 was 652 persons; by 1990 this had increased 1.4% annually to 745 persons. The Office of State Planning population estimates for 1994 indicate that Gilsum experienced a slight decline - 742 persons. Population projections - also developed by the Office of State Planning, predict a 1995 population of 755 and a year 2000 population of 779.

These projections point to an even smaller increase in population than Gilsum experienced during the 1980s, nevertheless, in light of the 1994 estimates,

it can probably be assumed that the 1995 projection is not on target; and whether the year 2000 projection will come to pass is difficult to determine at this time. At any rate, it would not appear that Gilsum can expect any dramatic increase in its population within the next 10 years.

The increase in housing units over this same period of time (2.8% annually from 1980 to 1993) are higher than the population increases, but still not significantly higher than what has been experienced in the region as a whole. The difference in the ratio of housing growth is likely attributable to the trend toward smaller (and more) households, i.e., single-person households, etc.

What increase can be expected in terms of population and housing development will likely occur outside of the Village, given that almost every lot in the village area is developed. Thus, the goals and objectives defined in this document will reflect a desire on the part of the residents to have Gilsum remain rural, and to retain the village character.

Goals:

- Goal #1: To maintain Gilsum as a rural community that offers decent, safe and sanitary housing to all residents at all income levels.
- Goal #2: To ensure that the Village retains its character as a densely-developed cluster of residential types, commercial activity and focus of local government and municipal services.

Objectives:

- Objective #1: Review zoning and subdivision regulations to ensure that they permit a variety of residential uses, densities and design concepts.
- Objective #2: To examine the feasibility of amending the provisions for the development of backlots, so that previously-unusable land may be developed, but at a scale consistent with the density provisions of the applicable zoning district.

Economic Environment

Non-residential development in Gilsum has not played a major role in the local economy over the last several decades. There are only a six principal business uses in town, and about a dozen home occupations. The opinion of the residents, as expressed in the above-mentioned Master Plan survey, indicated a desire to have more non-residential uses in town, but not a willingness to see a separate zoning district for these types of uses. Furthermore, given the existing land use pattern and the topography of Gilsum, creating a separate zoning district is not a feasible nor necessarily logical approach to supporting and encouraging business activity in town.

The goals of this Land Use Plan will be to develop strategies that will support commercial development, while at the same time retain the Village spatial form and the rural character of Gilsum.

Goal:

- Goal #1: Encourage new commercial and light industrial growth at a scale consistent with the rural nature of Gilsum and in harmony with the natural environment.
- Goal #2: Create an environment in which present business activity can flourish and expand.

Objectives:

- Objective #1: Amend the zoning ordinance to permit home occupations by right in all zoning districts and develop more comprehensive provisions regulating such uses.
- Objective #2: Amend the zoning ordinance to establish a Highway Business Overlay District along Route 10, and at the same time, develop specific types of uses and criteria for the establishment of such uses.
- Objective #3: Amend the zoning ordinance to permit certain business and professional uses by right in the Village Residential District, rather than only by Special Exception.

POPULATION AND HOUSING ANALYSIS

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) calls for a “*housing section which analyzes existing housing resources and addresses current and future housing needs of residents of all levels of income of the municipality and of the region in which it is located, as identified in the regional housing needs assessment performed by the regional planning commission pursuant to RSA 36:47,II.*”.

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 Gilsum’s past population trends and projecting the future population, it is possible to estimate the level of Town services necessary to serve the expected growth and to plan for that growth to occur in an orderly manner. This section 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 in order to address any inequities made apparent through the analysis. Following two important NH Supreme Court cases,¹ the concept of equal opportunity housing is now firmly established in the master plan process. In short, every town must, through its Master Plan, address the current and future housing need 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 State Planning (OSP). Information for both population and housing encompasses the years from 1970 to 1990, and up to 1995/96, using annual estimates developed by OSP. This time period gives a good indication of relevant trends. It must be noted that the way in

¹ *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.

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 1990 Census, Gilsum had a total population of 745 persons. This number represents a 14% increase from the 1980 population of 652, which is also exactly 14% greater than the population of 1970 (570).

**TABLE 1:
DECENNIAL POPULATION TRENDS**

Year	Population	% Change
1970	570	--
1980	652	14.4%
1990	745	14.3%

SOURCE: U.S. BUREAU OF THE CENSUS

Table 2 following presents the annual population estimates developed by OSP. These figures are based on the latest Census (1990) and therefore will obviously be less certain as the time span increases. Nevertheless, it is useful to examine them relative to local knowledge about the town.

**TABLE 2:
ANNUAL POPULATION ESTIMATES**

Year	Population	Percent Change
1991	745	--
1992	738	-0.9%
1993	741	0.4%
1994	742	0.1%
1995	742	0%
1996	744	0.3%

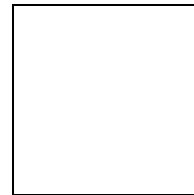
SOURCE: NH OFFICE OF STATE PLANNING

Both of the tables indicate that Gilsum has seen a very moderate shift in population numbers over the last 25 years; furthermore, based on the annual population estimates for the 1990s, it appears extremely unlikely that Gilsum will even come close to the 14% increase experienced in both preceding decades. To do that, Gilsum would need an additional 104 persons, reaching a population of 846 by the year 2000; at this point in time,

six years into the decade, Gilsum has virtually the same number of people as it had in 1990.

The Census breaks the population numbers out by age categories, which is also of interest for planning purposes. The graph below illustrates the population breakdown by age grouping and by males and females - which are almost equal, with 338 males in 1990 and 314 females. The graph illustrates that Gilsum's population is primarily composed of people in the work force age category: the most populous age group for both males and females in 1990 was the 30-39 years age group, followed by the 40-49 year olds. The second most populous large group is the school-age children, indicating that there will be a need for quite some time to plan for educational facilities.

GRAPH 1:



POPULATION BY AGE AND SEX, 1990

SOURCE: US BUREAU OF THE CENSUS

Comparing the 1990 age groups to the 1980 age groups indicates that there has been very little change. Most noticeable is the increase (although slight) in the 62 and older group and the corollary decrease in four of the other age groupings. This would also account for the increase in the median age between 1980 and 1990.

**TABLE 3:
COMPARISON OF AGE CATEGORIES, 1980 - 1990**

Age Groups	1980	% of Total	1990	% of Total	% Change
0-5	57	8.74	52	7.07	-19.07
6-17	138	21.17	133	18.1	-14.51
18-34	169	25.92	162	22.04	-14.97
35-54	145	22.24	221	30.07	35.2
55-61	65	9.97	49	6.67	-33.13
62-74	51	7.82	85	11.56	47.85
75	27	4.14	33	4.49	8.42
Total	652		735		14.3
Median Age	31.7		34.8		

SOURCE: US BUREAU OF THE CENSUS

Two factors affect population change: natural increase, or the excess of births over deaths; and migration, the movement of people into or out of the community. Table 4 below presents the birth and death statistics for Gilsum for the years 1980 through 1996.

**TABLE 4:
NATURAL INCREASE**

<u>Year</u>	<u>Births</u>	<u>Deaths</u>	<u>Increase</u>
1980	5	5	0
1981	7	8	-1
1982	5	8	-3
1983	6	2	4
1984	14	2	12
1985	5	5	0
1986	9	5	4
1987	11	4	7
1988	10	9	1
1989	6	8	-2
1990	10	2	8
1991	7	7	0
1992	12	5	7
1993	3	8	-5
1994	8	9	-1
1995	8	7	1
1996	4	5	-1
TOTAL:	130	99	31

SOURCE: GILSUM ANNUAL REPORTS

Over the past 17 years, Gilsum has had a relatively small natural increase - only 31 people. In fact, the table illustrates that of the entire 17-year time period, nine of those years saw either a negative increase (more deaths than births) over no change at all. If the natural increase figures are applied to the 1980 and 1990 Census information, a determination can be made as to the effect of in-migration on the population, for example:

POPULATION, 1980	652
NATURAL INCREASE, 1980-1990	30
POPULATION IN 1990, IF NO MIGRATION	682
ACTUAL 1990 POPULATION	745
THEREFORE, INCREASE DUE TO IN-MIGRATION	63

Thus, based on the above calculation, in-migration accounted for 67.7% of the 1980 to 1990 population increase. And, according to earlier statistics, this has been the case since at least the 1970s. Between 1980 and 1996, natural increase accounted for only 33% of the population growth experienced during those years.

Additional data gathered from the US Census reinforces the role that in-migration plays in population growth. Table 5 below 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 5:
PLACE OF RESIDENCE 5 YEARS PRIOR TO CENSUS**

Place of Residence	1980	% of Total	1990	% of Total
Same House	417	68.2	471	68.3
Different Town or County	139	22.7	168	24.3
Different State	53	8.7	51	7.4
Different Country	2	0.3	0	--

SOURCE: US BUREAU OF THE CENSUS

Most of Gilsum's population - nearly 70 percent - lived in the same house five years prior to each of the last two Census counts. The ratios changed very little from 1980 to 1990, there being a barely perceptible shift within the Different Town or County and Different State categories. Nevertheless, the largest percentage of the Gilsum population appear to be native to either the Town or the state of New Hampshire; a mere 7-8 percent lived in another state prior to 1975.

The two tables following present information collected by the Census on income and poverty levels. Table 6 contains median household and family incomes for Gilsum residents in 1980 and 1990, and compares those to the incomes for Cheshire County² ; and Table 7 presents the census information on poverty levels.

**TABLE 6:
INCOME INFORMATION - GILSUM AND CHESHIRE COUNTY, 1980 & 1990**

	1980	% of County	1990	% of County
Median Household	\$16,845	105%	\$34,821	110%
Median Family	\$19,375	104%	\$35,000	95.7%
Nonfamily Households	\$6,500	128%	\$21,250	116%
Per Capita	\$6,050	91.9%	\$13,774	99.2%

SOURCE: US BUREAU OF THE CENSUS

² 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 nonrelated persons who occupy a housing unit, and may consist of just one person.

In almost every case, Gilsum residents exceeded the median incomes of Cheshire County in both 1980 and 1990; and the per capita incomes were almost equal, illustrating the relative economic health of the population compared to the county. Information on poverty levels gives a slightly different picture. Between 1980 and 1990, there was a dramatic improvement in the numbers for both all persons below poverty and the elderly. The percentage of the population below the poverty level dropped by a half, and for the elderly there was a two-thirds decrease. Both years indicate, however, that the elderly tend to be closer to poverty than the general population, and this is more true for Gilsum than the whole of Cheshire County.

**TABLE 7:
POVERTY LEVELS - GILSUM AND CHESHIRE COUNTY, 1980 & 1990**

	1980		1990	
	Gilsum	Cheshire Cty.	Gilsum	Cheshire Cty.
Above Poverty Level	598	53,378	700	61,599
Below Poverty Level	64	5,912	33	4,672
% Below Poverty	9.7%	10%	4.5%	7%
Over Age 65:				
above poverty	49	6,396	88	7,918
below poverty	21	992	10	733
% Below Poverty	30%	13%	10.2%	8.5%

SOURCE: US BUREAU OF THE CENSUS

Gilsum's status relative to economic characteristics can also be compared to the surrounding towns. Table 8 below presents selected economic information the NH OSP compiles from the Census. The data are used to rank all towns by various indicators, e.g., income, poverty level, and per capita income. In the table, the towns are ranked by median income, from the town with the highest median family income to that with the lowest. Also included are the percentage of the population that are below the poverty level, ranked from lowest to highest. The number next to each town name represents the place held by all 34 towns in the Southwest Region. Note that the table does not include all towns of the Southwest Region - only the towns that are the closest, geographically, to Gilsum are examined here.

**TABLE 8:
ECONOMIC CHARACTERISTICS OF THE REGION**

TOWN	MEDIAN FAMILY INCOME	TOWN	PERCENT BELOW POVERTY
-------------	---------------------------------	-------------	----------------------------------

6. Surry	\$42,750	7. Gilsum	4.5
11. Keene	\$38,391	12. Alstead	5.6
16. Sullivan	\$37,000	13. Surry	5.9
19. Gilsum	\$35,000	16. Sullivan	
6.8			
21. Marlow	\$34,063	19. Keene	8.1
23. Alstead	\$32,857	24. Marlow	14.7
SOURCE: US BUREAU OF THE CENSUS			

Overall, the figures indicate that Gilsum's economic health is about average, compared to the region as a whole. In terms of regional median income, Gilsum's place is 19 out of 26; and, relative to the poverty level, its ranking is 7th. So, even though Gilsum does not have the highest median family income in the area, it clearly has a strong labor force, the occupations engaged in being able to keep people above the poverty level.

SUBREGIONAL POPULATION COMPARISONS

An analysis of population is not complete without a comparison of Gilsum's population with that of its immediate neighbors - Alstead, Marlow, Stoddard, Sullivan, Surry, and Keene. Statistics on percent of growth can be misleading if the towns involved in the comparison vary too greatly in population. For the purpose of this discussion, however, such a comparison can be useful, since the towns are all somewhat similar in size, with the exception of Keene, which is not included due to the great difference in population. Of the remaining five towns bordering Gilsum, Alstead has more than double the population of Gilsum, but it is still small enough to be included in the analysis. The tables and graphs following present information for the years 1970, 1980 and 1990; the information is presented as absolute numbers of people for each decade, by percentages these numbers account for within the subregion, and as percent changes in the population for each town over time.

**TABLE 9:
SUBREGIONAL POPULATION COMPARISONS - 1970, 1980 & 1990**

Town	ABSOLUTE POPULATION		
	1970	1980	1990
GILSUM	570	652	745
Alstead	1,185	1,461	1,721
Marlow	390	542	650
Stoddard	242	482	622
Sullivan	376	585	706
Surry	507	656	667
Total	5,240	6,358	7,101

PERCENTAGE CHANGE			
Town	1970-1980	1980-1990	1970-1990
GILSUM	14.4%	14.3%	30.7%
Alstead	23.3%	17.8%	45.2%
Marlow	39.0%	19.9%	66.7%
Stoddard	99.2%	29.0%	157.0%
Sullivan	55.6%	20.7%	87.8%
Surry	29.4%	1.7%	31.6%

PERCENTAGE OF SUBREGIONAL POPULATION			
Town	1970	1980	1990
GILSUM	10.9%	10.3%	10.5%
Alstead	22.6%	23.0%	24.2%
Marlow	7.4%	8.5%	9.2%
Stoddard	4.6%	7.6%	8.8%
Sullivan	7.2%	9.2%	9.9%
Surry	9.7%	10.3%	9.4%

SOURCE: US BUREAU OF THE CENSUS

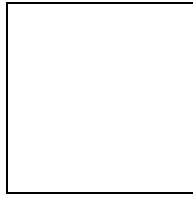
The figures in Table 9 illustrate widely variable rates of growth of the five towns bordering Gilsum. As already seen earlier, Gilsum experienced virtually the same rate of growth from 1970 to 1980 as it did from 1980 to 1990. The other towns, however, had very different rates of growth - Stoddard, for example, nearly doubled in size between 1970 and 1980. All of the towns saw more growth in the 1970s than in the 1980s, and the difference in rates between the two decades is quite marked for each town.

Over the twenty year period, Gilsum had the lowest population increase, at 30.7%, followed by Surry with 31.6%. Stoddard grew by 157%, but it remains the town with the lowest population of all six. Sullivan and Marlow also experienced quite large population increases, with 88% and 67%, respectively. Within this subregion, Gilsum ranks second in absolute population, below Alstead, although as mentioned above, Alstead's population is much larger than any of the other five towns. Gilsum has maintained this position in the subregion over these twenty years, with the exception of 1980, when Gilsum and Surry each comprised 10.3% of the subregional population (Gilsum had 652 persons, and Surry had 656.)

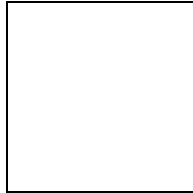
The graphs below and on the following page visually present the information contained in Table 9. Graph 2 shows the absolute population of the towns in each year examined; Graph 3 illustrates the percentage of population increase over the twenty years; and Graph 4 compares the share of each town's population relative to the total subregional population.

GRAPH 2:

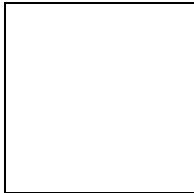
SUBREGIONAL POPULATION - 1970, 1980 & 1990



GRAPH 3: PERCENT CHANGE IN POPULATION - 1970 - 1990



GRAPH 4: TOWN POPULATION AS % OF SUBREGIONAL POPULATION -1970, 1980 & 1990



HOUSING ANALYSIS

HOUSING TRENDS

Information regarding housing trends, types, and number of units built is provided by the U.S. Census Bureau, the Office of State Planning, and town building permit records. Table 10 below presents the total number of housing units for the decades 1970, 1980, and 1990. These figures indicate that Gilsum has seen more of an increase in its housing stock than in its population over this same time period (the population increased by only 14% over both of these decades, by comparison).

**TABLE 10:
GILSUM HOUSING STOCK - 1970, 1980 & 1990**

<u>YEAR</u>	<u>TOTAL # OF UNITS</u>	<u>% CHANGE</u>
1970	204	--
1980	237	16.2%
1990	323	36.3%

SOURCE: US BUREAU OF THE CENSUS

In addition to the Census decennial counts, annual housing estimates are available from the NH Office of State Planning. Changes in the housing supply since 1990 are estimated, based on the inventory reports requested from OSP from all towns each year that represent applications for building permits and that account for any demolitions in the housing stock over the year. The validity of the information is subject to consistency and accuracy of reporting by all New Hampshire towns. Given the potential for miscalculations, it is wise to view these numbers merely as indicative of an overall trend and not as an absolute tally of the housing stock.

**TABLE 11:
BUILDING PERMIT ACTIVITY, 1990 - 1995**

<u>Year</u>	<u># of Permits Issued</u>	<u>Year</u>	<u>#</u>	<u>of</u>
<u>Permits Issued</u>				
1990	3	1993	0	
1991	0	1994	1	
1992	2	1995	2	

SOURCE: NH OFFICE OF STATE PLANNING

If the housing estimates are at all close to accuracy, they reflect the same kind of trend seen with the population figures - that is, growth in the 1980s, followed by very little change so far in the 1990s. Again, this is completely typical of population and housing trends experienced by other towns in the region. In Gilsum's case, the Census indicated an increase of 86 housing units over the decade of the 1980s; and according to the OSP estimates, midway through this decade, the town has issued only eight building permits.

HOUSING TYPES

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

- **Single Family:** 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.
- **Multi-Family:** Any structure containing 2 or more housing units; this includes the Census classification of “Single Family Attached.”
- **Manufactured Housing:** Both occupied and vacant mobile homes to which no permanent rooms have been added. The OSP report includes the Census classification of “Other” - units used as living quarters that do not fit any of the previous categories, for example, houseboats, campers, vans, etc.

To break these numbers out to the three types of housing generally examined - single family, multi-family, and manufactured housing, we refer to figures published by the Office of State Planning, “Current Estimates and Trends in New Hampshire’s Housing Supply.” This report, which is based on the decennial census counts, is updated annually by OSP to provide the figures presented in Table 12. In addition to the actual count of each housing type for the year, reference is also made to the percentage each type accounts for in the total supply of housing.

**TABLE 12:
HOUSING STOCK IN GILSUM, BY TYPE, 1970 - 1995**

Housing Type		1970	Total	1980	Total	1990	Total	1995	Total
SINGLE FAMILY	168	88.4	210	88.6	274	85.6	282	86.0	
MULTI-FAMILY	10	5.3	9	3.8	15	4.7	15	4.6	
MAN. HOUSING		12	6.3	18	7.6	31	9.7	31	9.4

SOURCES: CURRENT ESTIMATES AND TRENDS IN NEW HAMPSHIRE'S HOUSING SUPPLY,
UPDATE:1995, NH OFFICE OF STATE PLANNING, DECEMBER 1996;

US BUREAU OF THE CENSUS

Gilsum, like the other towns in the region and subregion, has more single-family homes than either multi-family or manufactured housing. The proportions of housing types were essentially the same in all four time periods examined, but the percentages have shifted slightly: the percentage of single family homes decreased very slightly, while the percentage of manufactured housing increased from 1970 to 1990, and then dropped less than a percentage point in 1995 - although the actual count of units for these two types did not change between 1990 and 1995.

OTHER HOUSING CHARACTERISTICS

A. Housing Tenure

Housing tenure refers to whether a dwelling is owner-occupied or renter-occupied. Gilsum is like most of the other towns in the region in that the housing stock is predominantly owner-occupied; in both 1980 and 1990, 88% of the occupied units were owner-occupied.

B. Vacancy Rates

The Census Bureau has been collecting data on vacancy status since 1940; in 1990 the "Seasonal/Recreational/Occasional Use" category combined two categories previously classified in the 1980 Census as "Seasonal or Migratory" and "Held for Occasional Use". This number specifically excludes houses that are vacant and for sale. In 1990 there were 25 units counted for this purpose, out of a total of 44 vacant units; therefore, 19 units were vacant and for sale or for rent. This represents a numerical increase from 1980, when there were only 11 units vacant for sale or for rent, but the percentage this represents of

the total housing supply dropped significantly from 13.5% to 4.6% in 1990. These numbers do illustrate that Gilsum does not play a significant role in the seasonal or recreation market.

From these actual numbers, the Census calculates a vacancy rate, further broken down by tenure, i.e., for homeowners and for renters³. In 1990 these rates were 0.8 and 8.3, respectively. That the rental vacancy rate is much higher than the homeowner rate is quite typical, not only for this region, but across the state as well, reflecting much more mobility among renters than homeowners.

C. Cost of Housing

The cost of housing in Gilsum, as in other towns, has risen significantly over the past several decades. The 1990 Census reported the median value of an owner-occupied home at \$88,700⁴, and the median rent at \$375 per month. Both of these figures represent huge increases since 1980; it must be noted here, however, that this situation is not unique to Gilsum. All towns in the state experienced spiraling housing costs during the 1980s. For the purposes of this analysis, the reported median housing values and rents in Gilsum is compared with those of Cheshire County and the state, as follows:

**TABLE 13:
MEDIAN HOUSING COSTS, 1990**

<u>Rent</u>	<u>Median Value of Home</u>	<u>Median</u>
Gilsum	\$88,700	\$375
Cheshire County	\$110,600	\$449
New Hampshire	\$129,400	\$479

SOURCE: US BUREAU OF THE CENSUS

³ The Homeowner Vacancy rate is the percentage relationship between the number of vacant units for sale and the total homeowner inventory. The Rental Vacancy rate is the percentage relationship of the number of vacant units for rent to the total rental inventory.

⁴ Note that the housing values are as reported by the homeowners; they are not based on independent research.

While this information is seven years old, it seems reasonable to assume that the ranking of the values has not changed - in other words, Gilsum would continue to have lower housing costs than either the whole of Cheshire County or the state.

D. Housing Affordability

The following two tables present an attempt to determine how available and affordable housing is for people in Gilsum. Table 14 illustrates the percentage of income spent on housing - whether this be 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. The table clearly indicates that the higher the income class, the lower percentage of income that is spent on housing; and likewise, the lower the income class, the higher the percentage of income that is spent on housing.

TABLE 14:
% OF INCOME SPENT ON HOUSING

	% of Income Spent on Housing by Number of Households		
Income Class	>20-24%	25-34%	35%+
<\$10,000	4	7	11
\$10 - \$19,999	9	10	16
\$20 - \$34,999	31	9	6
\$35 - \$49,999	22	11	2
>\$50,000	38	2	0

SOURCE: US BUREAU OF THE CENSUS

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 Gilsum are examined in the table below. The property tax calculation is based on the 1996 tax rate.

TABLE 15:
HOME OWNERSHIP AFFORDABILITY

1990 Median Household Income	\$38,821	80% of Median Household Income	\$31,057	50% of Median Household Income	\$19,410
------------------------------	----------	--------------------------------	----------	--------------------------------	----------

30% of monthly income	\$970	30% of monthly income	\$776	30% of monthly income	\$485
Property Tax (\$3,457/year)	\$288	Property Tax (\$2,766/year)	\$230	Property Tax (\$1,729/year)	\$144
Available for mortgage	\$682	Available for mortgage	\$545	Available for mortgage	\$341
Mortgage affordable at 7.5% for 30 years	\$96,919	Mortgage affordable at 7.5% for 30 years	\$77,535	Mortgage affordable at 7.5% for 30 years	\$48,459
Plus 5% downpayment	\$5,246	Plus 5% downpayment	\$4,081	Plus 5% downpayment	\$2,550
Projected Affordable Home	\$102,020	Projected Affordable Home	\$81,616	Projected Affordable Home	\$51,009

Under the three scenarios examined in the table, median income households could afford the median home valued at \$88,700. Those, however, earning 80% or 50% of the median household income could not afford such a home.

SUBREGIONAL HOUSING COMPARISONS

Housing data for the subregion can be compared to see how the towns compare relative to the provision of various types of housing. The two tables following present the comparison of total housing supply for Gilsum and its subregion and the percentage change from each decade for the years 1970, 1980 and 1990, and 1995. This information is also graphed, to the extent that the graphs are visually meaningful, with the amount of information being depicted.

TABLE 16:

TOTAL HOUSING UNITS, SUBREGION - 1970, 1980, 1990 & 1995

<u>Town</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>1995</u>
GILSUM	204	235	320	328
Alstead	494	595	843	881
Marlow	266	307	364	379
Stoddard	644	657	890	933
Sullivan	132	216	283	293
Surry	167	233	262	280

SOURCE: CURRENT ESTIMATES & TRENDS IN NEW HAMPSHIRE'S HOUSING SUPPLY, NH OFFICE OF STATE PLANNING, DECEMBER 1996.

TABLE 17:

AVERAGE ANNUAL PERCENT CHANGE IN HOUSING UNITS, 1970 - 1995

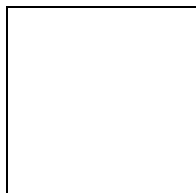
TOWN	1970-80	1980-90	1990-95
GILSUM	1.6%	3.6%	0.5%
Alstead	1.5%	4.2%	0.9%
Marlow	1.5%	1.8%	0.8%
Stoddard	0.2%	3.5%	1.0%
Sullivan	6.4%	3.1%	0.7%
Surry	3.9%	1.2%	1.4%

The information presented in Tables 16 & 17 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, with Sullivan being the exception for housing; most of its growth occurred in the 1970s. And, all of the towns have experienced very little housing growth so far in the 1990s.

The two graphs following illustrate the ranking of the individual towns relative to the number of housing units. Stoddard consistently has the greatest number of units, followed by Alstead. Note that Stoddard does not have the largest population in this subregion - that place is held by Alstead, but Stoddard has a significant number of seasonal homes that are being included in the table, thus accounting for the difference. Gilsum stays just about in the middle, having more units than Sullivan and Surry, but fewer than Stoddard, Alstead or Marlow. This is consistent with its place relative to the population as well.

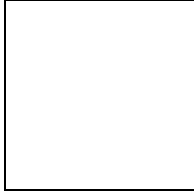
GRAPH 5:

SUBREGIONAL HOUSING COMPARISONS - 1970, 1980, 1990 & 1995



GRAPH 6:

PERCENTAGE CHANGE IN NUMBER OF UNITS, 1970 - 1995



Graph 6 shows that the overall increase in housing units for all six towns followed the same basic pattern: growth from 1970 to 1990, with a leveling off at that point. Although, Stoddard and Alstead clearly had the sharper increases, while Gilsum, Marlow, Sullivan and Surry increased housing stock at a more gradual rate.

HOUSING NEEDS ASSESSMENT

This chapter of the Master Plan has so far examined the existing housing stock in order to address current and future housing needs. To further determine whether a need exists for housing for low and moderate income residents, the relevant findings of a regional housing needs assessment and fair share analysis that were completed by the Southwest Region Planning Commission will be discussed. Towns are now required, by state statute, to incorporate a housing element and the results of the regional needs assessment into their Master Plans, and this implies new responsibilities for housing planning.

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 facilitate this provision, the legislature also amended RSA 36:47, making it a requirement for all regional planning commissions to prepare a regional housing needs assessment for persons and families of all levels of income.

The Southwest Region Planning Commission undertook such a housing needs assessment in 1989, along with the other regional planning commissions in the state. This assessment is currently in the process of being updated, as the law requires; therefore this analysis is based on the 1989

study, and will need to be reviewed when the update of the regional study is complete.

While the statutes address housing need for persons at all income levels, the general consensus at that time, at both state and regional levels, was for the regional assessment to specifically identify needs for low- and moderate-income households. A study conducted by a private planning consultant for the NH Office of State Planning determined that housing for low and moderate income residents had not been able to keep pace with the economic growth of the 1980s. The response to this identified need was the “fair share housing” concept, which is described in detail below.

A. Fair Share Analysis

The concept of fair share housing grew out of a landmark housing discrimination case in the state of New Jersey. Under such a concept, housing for low and moderate income residents is distributed equitably and fairly throughout the state or region based upon certain need criteria which most closely measure the region's share of statewide need. The underlying assumption is that all towns should participate equally in the provision of housing to people in need.

In order to accomplish this objective, a formula was developed and made available for all regional planning commissions to use in preparing their regional needs assessments. The methodology used in the analysis takes into consideration indigenous housing need, employment, vacant developable land, and equalized valuation per capita; credits are also given for a town's participation block grant programs, number of mobile home permits granted, and existence of rent-assisted housing.

FAIR SHARE CRITERIA:

◆ **Indigenous Housing Need:**

This information was taken from the Census. For the purposes of the regional needs assessment, it was defined as the number of household earning less than 61% of the median income for each region in 1980. For the Southwest Region, the median income was \$16,397; 61% of that amount is \$9,999. These households are further defined by meeting one or more of the following conditions:

- *living in an overcrowded unit (having more than 1.01 person per room);*

- *living in a substandard unit (one which lacks complete plumbing facilities);*
- *renters paying more than 30% of their income for housing;*
- *owner-occupied units built prior to 1940 and valued in 1980 at less than \$25,000.*

◆ **Employment:**

The assumption for including this information is that centers of employment will have a greater need for lower-cost housing; and, that communities with larger employment bases will have the fiscal and infrastructural capabilities to better absorb housing needs.

◆ **Developable Land Area:**

For the purposes of the regional study, defined as the total land area, minus that which has soil and slope restrictions, or otherwise environmentally fragile. The assumption is that the more land there is available for development, the greater the ability of the town to absorb the identified housing need. (This calculation did not include land under conservation easements.)

◆ **Equalized Valuation per Capita:**

These data were used to gauge the relative economic well-being of the towns. This kind of information is a standard element in a fair share allocation formula. Some formulas, however, used median income, but as those figures were quite dated, the regional model used equalized valuation. The intent was to measure the fiscal capacity of the town to afford lower-cost development.

The formula takes the total regional need and distributes it among the individual towns based upon the factors described above. The fair share factor is intended to balance out the inequity inherent in the definition of "indigenous need" for each town: a town which has, through its zoning ordinance, managed to exclude lower income households, will not be measured in the same way as towns which have households meeting the need criteria. The result of the analysis is a "number" for each town, representing its fair share obligation for the region in providing housing to the targeted population. The analysis represents a redistribution of households already residing in the region.

The Southwest Region Planning Commission and the Office of State Planning recognize that there are limitations of the formula, mainly associated with the age of the Census data from which the need factors are derived, and the assumptions implicit in the formula which deal with land development potential and a town's ability to absorb low and moderate income growth. Nevertheless, the results do establish a baseline for attempting to estimate housing need at a fixed point in time; furthermore, it is possible to identify which towns already have a reasonable, or "fair share" of low and moderate income residents, and which do not. This information can represent the town's goal over a five- or ten-year period, until such time as the 1989 study is updated.

The interpretation of this "fair share" number has been much discussed; a fear has been expressed that the towns will be held responsible for actually constructing and financing housing for low and moderate income persons. There is no indication that this is, or has ever been, the case. The primary objective of the needs assessment is to encourage towns to review and develop their land use regulations in light of the fair share apportionment, that is, to make a determination as to whether the local regulations in any way prohibit reasonable opportunities for the development of low and moderate income housing - for example, minimum lot sizes and whether various housing types are permitted by right in a particular zoning district or only by Special Exception of the Board of Adjustment are the kinds of issues to which the towns should be paying attention.

This intent has, in fact, been borne out by the recent NH Supreme Court ruling on the *Britton v. Town of Chester* case. The town of Chester had completely prohibited multi-family housing until 1986, and then only allowed it as part of a Planned Unit Development with a minimum of 20 acres (estimated to compose less than 2% of the town's total land area). In their decision, the justices ruled that the town of Chester had exceeded its zoning authority and created impediments to affordable housing opportunities by placing unreasonable and expensive obstacles in the way of multi-family development.

Though the Court recognized a concept of "community" that could extend beyond the municipal boundaries, and that "each municipality should bear its fair share of the burden of increased growth", it SPECIFICALLY REJECTED the appropriateness of a mathematical quota to determine the plaintiff's remedy. This does not mean that the regional needs assessment is useless; the figures will undoubtedly still be taken into

consideration when determining the "fairness" of a town's zoning ordinance.

In Gilsum's case, the analysis indicates an adjusted "fair share apportionment" of 24 units (see Table 18), out of a total of 1,376 units for the entire southwest region. This figure considers the need of both renters and owners in all age groups; and, when the housing need is broken out by age group and housing tenure, the results are as follows:

	<u>All Ages</u>	<u>Over 62</u>	<u>Under 6</u>
Owner and Renter	24	6	6
Owner Occupied	2	0	-1
Renter Occupied	8	-0	7

Thus, according to the study, the individual category needs are very small and are, in fact, statistically non-existent for both renters and owners over 62. The renters overall constitute the group with the greatest housing need; this result is typical for this study, considering the factors involved in the analysis. The assumption can also be made that people rent because they can't afford to own, therefore these people would more likely fall into the targeted group.

Table 18 shows some of the pertinent housing needs assessment data for Gilsum and towns in the subregion, such as the indigenous housing need as of 1980, the housing need based on an equalized distribution throughout the region, and the adjusted "fair share" need. As can be seen, Gilsum's indigenous need was 22 units, and after factoring in certain of the variables in the formula, this number increased to 27, which was then reduced to 24 after applying the fair share credits.

**TABLE 18:
SELECTED HOUSING NEED ASSESSMENT DATA**

Town	# of Year- Round Occupied Housing Units in 1980	Indigenou s Housing Need in 1980	Housing Need with Equal Distributi on, 1989	Adjusted Total Fair Share Need, 1989	Difference *
Gilsum	237	22	24	24	+2
Alstead	568	57	58	44	-13
Marlow	234	20	24	11	-9
Stoddard	260	24	26	39	+15
Sullivan	201	14	20	13	-1
Surry	218	10	22	10	0

* Difference is the numerical difference between the indigenous need and the adjusted fair share need.

SOURCE: SOUTHWEST REGION PLANNING COMMISSION; REGIONAL HOUSING STUDY AND FAIR SHARE ANALYSIS FOR THE SOUTHWEST REGION OF NEW HAMPSHIRE; MAY 1989

B. Housing Opportunity

In this section, the zoning provisions for Gilsum 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. Gilsum has three zoning districts that accommodate residential development. Examination of the Gilsum zoning ordinance reveals the following provisions that deal with the availability of housing.

**TABLE 19:
HOUSING OPPORTUNITIES IN GILSUM**

District Requirements	Permitted Uses	Lot & Yard
Village Residential frontage frontage frontage	Single Family	1 acre/175 feet of
	Two-Family	1 acre/175 feet of
	Conversion of single family to two-family	1 acre/175 feet of
Rural Residential frontage frontage frontage	Single Family	2 acres/175 feet of
	Two-Family	2 acres/175 feet of
	Manufactured Housing	2 acres/175 feet of
Highway Business frontage frontage frontage	Single Family	2 acres/200 feet of
	Two-Family	2 acres/200 feet of
	Conversion of single family to two-family	2 acres/200 feet of

SOURCE: TOWN OF GILSUM ZONING ORDINANCE

C. 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 the results of the regional fair share analysis.

Between 1980 and 1990, the housing stock in Gilsum increased by 36%, while the population grew by only 14%. The Census data indicate that, in general, Gilsum's housing stock is in good condition, in terms of availability of full kitchen and plumbing facilities; furthermore, the incidence of overcrowding of dwelling units is very low.

The NH Office of State Planning population projections can be used to estimate future housing need, based on a person per unit estimate. The projections for Gilsum and surrounding towns are presented below in five-year intervals up to the year 2015, beginning with the population estimates for 1995.

**TABLE 20:
SUBREGIONAL POPULATION PROJECTIONS**

	1995	2000	2005	2010	2015	% Chg. 1995-2015	
GILSUM	742	779	814	845	876	18.0%	
Alstead	1761	1914	2016	2102	2166	23.0%	
Marlow	660	743	789	821	847	28.3%	
Stoddard	641	750	813	862	888	38.5%	
Sullivan	715	803	852	894	921	28.8%	
Surry	697	698	729	757	784	12.5%	

SOURCE: NH OFFICE OF STATE PLANNING

These projections represent about half of the growth that these towns actually experienced during the twenty years from 1970 to 1990. This is not surprising, considering the slowing of growth that the region has seen since the 1980s. Gilsum and Surry are expected to grow at the slowest rates, and Stoddard still holds first place, although with only 38% increase projected, compared to the 157% increase experienced between 1970 and 1990.

The future housing need is then estimated based on this projected population by dividing population by housing units to reach a person per unit figure. It is known what the person per unit figures were in the past (in 1970 it was 2.79; in 1980 it was 2.77; and in 1990 it was 2.32); in order to calculate future housing need, a decision must be made as to what seems a reasonable person per unit figure for the future. This figure has been declining since 1970, but to assume that it will decline at the same rate over the next twenty years is probably not reasonable. Therefore, the figure of 2.3 persons per unit will be assumed for the time period extending to the year 2015. The following calculations will use two possible scenarios: one using the OSP projected population increase over the future twenty years

(18%); the other using the known past population increase between 1970 and 1990 (30.7%).

Population Increase	Housing Units	Projected Pop.	Persons/Unit	=
18%	876	2.3	381	
31%	972	2.3	423	

Thus, if Gilsum were to experience the same level of population growth between now and the year 2015 as it did between 1970 and 1990, the need for housing units would increase from the current 328 to 423, an additional 95 units; over twenty years this would mean approximately 5 units per year. Compared to the 116 units that were added between 1970 and 1990, even this high density projection would appear to be manageable, based on past performance. If, on the other hand, the OSP projections are correct, the Town would expect an increase of 61 housing units, or three per year for twenty years. Given either scenario, it seems reasonable to expect the Town to be able to accommodate these estimated housing increases.

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 - that is, more and more, the profile of the elderly is one of increasing numbers who have either never married, or have married and divorced, and have fewer children to call on for assistance; either they never had children, or the children have moved away for career/employment reasons. Contributing to the isolation from a family network, is also the geographic isolation caused by our development pattern that depends so greatly on the automobile. All of these factors have the potential to interfere with the desire to "age in place", that is, to be able to live out the remainder of one's life in the same town one calls home.⁵

⁵ "Planning and Zoning for an Aging Population", by Alan. C. Weinstein;
ZONING AND PLANNING REPORT Vol. 19, No. 10 November 1996

At this time, the elderly population in Gilsum amounts to less than 15% of the total population of the town; granted, this is not a significant proportion of townspeople, but as Table 3 illustrates, it does represent an increase since 1980 and, based on the national trend data, it is expected to increase up through the year 2010. However, as important as the existing elderly population, is the potential for the large group of middle-age residents of Gilsum needing to provide care for aging parents - in the form of on-site housing accommodations. Therefore, the Planning Board recognizes the need to examine these issues at this time and prepare for future situations.

Part of the problems faced by towns when attempting to respond to these kinds of housing needs are limitations created by the town's own zoning ordinance. As the earlier review of Gilsum's zoning ordinance illustrated, there are currently a limited variety of housing types available in Gilsum - essentially single family, two-family and manufactured housing in a separate structure on the property, or above a garage, for example; the options are up to the town to determine. Specific to elderly accommodation, there are two ways to employ this use: (1) the elderly residents remain in the primary dwelling and rent out the accessory apartment, thereby supplementing their income and enabling them to stay in the home; or (2) children of elderly parents can bring them to their home and set them up in an accessory apartment, which provides the elderly with needed care without requiring them to move into a nursing home or assisted living situation.

Aside from the elderly issue, the provision of accessory apartments adds to the range of available housing types for other segments of the population, for example, with the declining household size indicated by the Census data, there will presumably be more need for smaller living units for single persons or couples with no children.

2. 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) 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.

3. 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.

The Gilsum zoning ordinance currently limits a single household unit to either people who are related by blood, adoption or marriage, or to no more than four unrelated persons. This provision would deter congregate elderly housing, since a certain “critical mass” of people would be necessary in order for the arrangement to be economically feasible. Furthermore, courts have increasingly struck down such restrictions on household composition in favor of what are considered to be “functional families.”

Other zoning techniques that can be used to increase housing availability are to permit multi-family dwellings in the Village area, and to allow mixed uses in the Village area, for example, to permit residential and commercial uses by right in the same building or on the same lot. The question of multi-family development in the Village is presently limited by fairly severe septic constraints. However, the Town involved in a Feasibility Study at this time to determine the extent of the problem and the possibility of constructing a municipal septic system that would serve the Village area. Should this come to pass, the Planning Board and the Town can reexamine the question of multi-family use.

In conclusion, the availability and affordability of housing should be monitored carefully, and the estimated need adjusted as new information is obtained. As a result of the information and analysis presented in this section, the Planning Board offers the following as strategies to be considered by the Town in addressing the housing issue on an on-going basis:

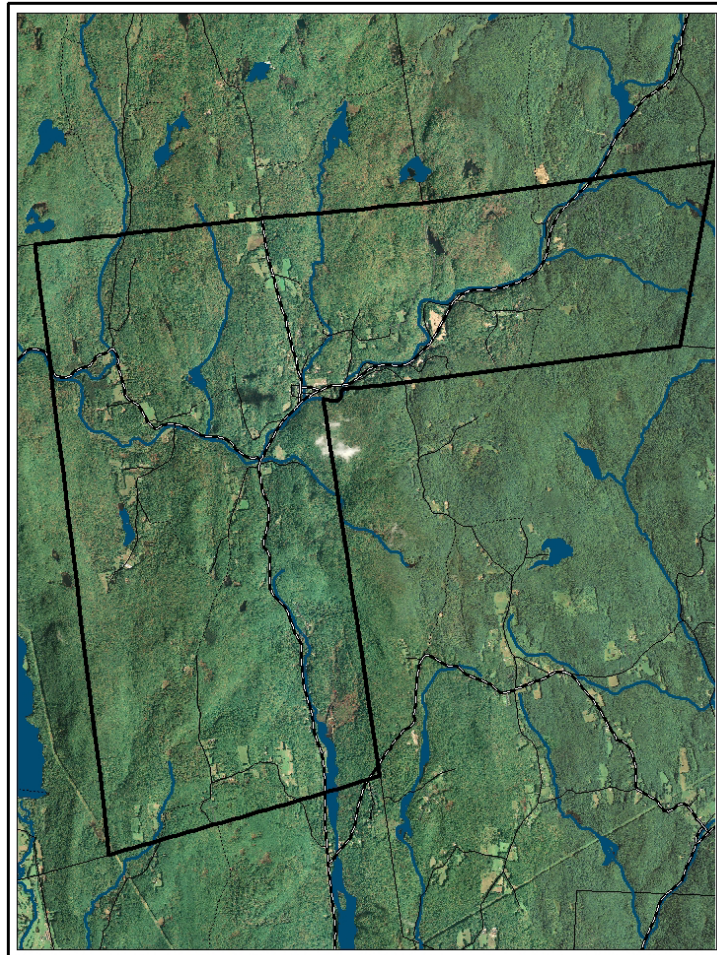
- 1. Investigate the possibilities of obtaining Community Development Block Grants for the rehabilitation and repair of existing substandard units in the housing stock.**
- 2. Consider the feasibility of amending the zoning ordinance to permit congregate housing for elderly.**

- 3. Consider the feasibility of amending the zoning ordinance to permit accessory apartments in all districts, subject to certain conditions.**
- 4. Consider the feasibility of amending the zoning ordinance to permit the Selectmen to grant temporary permits for the placement of manufactured homes on occupied lots for the purpose of caring for elderly parents or relatives, subject to the removal of those units after the death of the inhabitant.**

TOWN OF GILSUM, NEW HAMPSHIRE

Rural Character Preservation Plan 2009

Adopted November 3, 2009



TOWN OF GILSUM, NEW HAMPSHIRE

Rural Character Preservation Plan 2009

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BACKGROUND AND CONTEXT

Introduction

Gilsum, New Hampshire is a community of about 802 people that values its rural character. This rural character was identified in a 1995 Master Plan survey of Gilsum residents as the predominant reason people live in Gilsum along with the proximity to their workplace. There is some concern that Gilsum, with such desirable character in such close proximity to the City of Keene and the employment opportunities therein, could experience development pressure. This development, if performed with little attention to the Town's resources, could erode the very character that is valued.

The survey did not identify the aspects of Gilsum that foster the rural character prized by the respondents. The motivation behind this Rural Character Preservation Plan is to work with interested citizens to define the rural character. This plan's intent is to support the 1995 Master Plan's effort to "reflect a desire on the part of the residents to have Gilsum remain rural, and to retain the village character." This effort is also meant to expand upon the Conservation and Preservation Analysis chapter of the Master Plan in its capacity:

"to enable the Planning Board [and Conservation Commission] to make better-informed decisions as to the development potential (or lack thereof) of certain land areas; and to supply the Board and Town with information and knowledge about sensitive lands and important natural and/or man-made features that may need special protection."

The plan works to lay out methods through which limited resources can be applied to conservation projects in an effort to protect and retain the character. The role of this document is to serve the citizens of Gilsum as an aid to reaching the community's conservation goals (as a Rural Character Preservation Plan). The plan should be used as a guiding tool or policy that focuses conservation related decisions in the town.

Specifically this plan provides the following:

- A Summary of Natural and Cultural Resources (Natural Resource Inventory)
- The location of special places and scenic areas/vistas identified by community members (located in Map H of Appendix 3)
- A set of conservation priorities based on community values
- Methods to aid in protection of identified priority areas

This plan presents the results of an effort to identify and analyze the cultural and natural resources located in the Town of Gilsum as the basis for prioritizing land areas that

should receive encouragement and support for conservation by the community. The plan seeks to:

- Broaden the community base of understanding about land conservation: what it is, how it works, and how it can benefit the community
- Further the Gilsum conservation objectives by reaching out to land owners and providing incentives to encourage conservation of high priority lands
- Protect the character of the Town and village through strategically conserving land containing values identified as part of the community's rural character.

Overview of the Planning Process

Initial meetings were held in Gilsum with citizens of the community to assess the level of interest in and commitment to the process of creating a land conservation plan that would help the Town implement the conservation related goals, objectives, and recommendations set forth in the Master Plan.

This planning process was initiated by members of the Gilsum Conservation Commission, as well as other interested citizens, in collaboration with the Monadnock Conservancy's Community Conservation Partnership (See Appendix 1). The first step in the planning process was to identify the various stakeholder groups in Gilsum and invite their representation and participation in the future meetings of the process. A task force of committed individuals was formed from those expressing interest.

The second step in the planning process was to determine how to gather conservation values from the greater community. A booth was set up at the August 2008 Old Home Day event held in the Gilsum village in order to collect information concerning special places in Town and what aspects of those places made them special. Residents were able to circle special places on aerial photographs of the town and indicate the local name for the place and its values.

Task force members then met over the course of six meetings from November to April to assess the information gathered, the goals and objectives of the Master Plan, as well as their own values and opinions as citizens. These meetings worked to identify specific conservation goals, objectives, and priorities. This was accomplished by going through the Master Plan in its current form looking for conservation and development related information in order to maintain consistency with the document and community desires. The group also analyzed maps of all the natural resources presented through Geographic Information Systems (GIS) including soils, water resources, habitat types, and digital versions of the cultural/community data collected at 2008 Old Home Day.

The task force was able to assign weight to each conservation value based on its importance to the character of Gilsum, local scarcity, quality, and threat levels. The task force members used their knowledge of the community and its values to validate some of

the more subjective decisions. These weights were then added together in GIS analyses called co-occurrence analyses that look for where resources overlap on a map. Five co-occurrence analyses were performed to assess different types of conservation values including working lands, water resources, wildlife habitat, cultural resources, and an overall analysis that added all values together. It was assumed locations where multiple, important, natural and cultural resources overlapped should be a conservation priority because of the many values supported by that area.

After developing a draft plan with proposed priority areas, the committee then reached out to the community again at the 2009 Old Home Day held on August 28th and 29th. A survey was developed to allow citizens to vote on the proposed priority areas in order to gain input on which of the areas the community values more heavily. The committee was successful in gathering 56 responses to the survey. A copy of the survey and tables displaying the results can be found in Appendix III. The committee presented to interested citizens at the Old Home Day event in order to outline the last year's process for developing the draft plan and proposed priority areas to give more context to the map displayed on the survey.

FINDINGS

Focus of the Planning Process

Through reviewing the Gilsum Master Plan and collecting information from Gilsum citizens at Old Home Day, the clear focus of the planning effort is to protect the rural character of Gilsum. The residual question became, what is the rural character of Gilsum. What town characteristics add to the rural character and would be important to maintaining the rural character. The task force took this question and used their local knowledge and networks to develop a definition for "rural character" for Gilsum. Many of the characteristics were attributed to the abundance of natural resources including the Ashuelot River and its tributaries, the forests, and wildlife. A strong element of the Gilsum rural character was recognized as the village development pattern, the community, and opportunities for recreation.

Specifically, some of the aspects of Gilsum that were identified as important to the rural character included large stretches of land without manmade structures, scenic vistas, a small village with historic structures and places, and narrow roads lined with vegetation. These factors along with many others occur because of the original development pattern of the early settlers. In order to continue development in town without losing its character, care should be taken to mimic this early pattern for future developments. Some other aspects of Gilsum that citizens enjoy are the fields and open spaces around homes, the small size of buildings, and the smell of wood smoke. Small scale agriculture and silviculture practices with people growing their own food, having livestock and horses, cutting their own firewood, and milling lumber is also part of Gilsum history and rural character.

The task force found that there was a strong sense of community in Gilsum and that this was important to the rural character of the town. People in town believe that it is

important to know your neighbors and feel as though it is easy to do so in Gilsum. The village school keeps the children in town and adds to the vibrancy of the village and the activities that occur in town. The volunteer fire department is also an important part of the community and draws from the notion that neighbors help neighbors in a time of need and are happy to do so. Small businesses in Gilsum play important roles in the community through sponsoring events, providing places for information to spread, in addition to the benefits they provide in local services and the economy.

Recreational opportunities found within Gilsum are important to the character of the town. The town has many class VI roads (those roads not maintained) and trails that people use for jogging and hiking in the summer; snowmobiling, cross-country skiing, and snow-shoeing in the winter. The Ashuelot River and its tributaries provide opportunities for fishing, swimming, and some kayaking. The large forested blocks in town provide ample opportunities for finding and collecting native plants, as well as viewing and hunting local wildlife. Many of these recreational opportunities are supported by or connected to the natural resources of Gilsum. These natural resources also provide other benefits such as filtering runoff for clean water, absorbing gases to keep the air clean, and acting as a buffer from areas of heavy activity to keep the landscape quiet (and dark at night).

The information presented above describes components of Gilsum's rural character. As this rural character has been deemed the most significant reason for people wanting to live in the town, it is important to find ways of maintaining those different features that contribute to this character. Two methods that can be taken to accomplish this goal are to carefully plan future development to replicate the traditional development pattern in new developments and to protect the special places and natural resources in the community (See Appendix 2 for a description of land protection fundamentals). The next section of this plan will discuss the important natural and cultural resources found in Gilsum as an effort to impart the values associated with or provided by each aspect of the town's landscape.

Summary of Natural and Cultural Resources

The following is a list of the natural and cultural resources found in the Town of Gilsum. Each resource is described in a manner that discusses the importance of that resource in regards to supporting the rural character of the community. Resources are separated into groups including Water Resources, Wildlife Habitat, Cultural Resources, and Working Lands. This list should be seen as a discussion of landscape characteristics that would qualify as important for conservation efforts. Lands sustaining multiple characteristics could, depending on the quantity and quality of those characteristics, rank higher than lands supporting fewer attributes. Maps of these resources can be found in Appendix 3.

- I. Water Resources – Features related to water play a very important role in shaping the character of Gilsum with the main stem of the Ashuelot River flowing through the Town and the significant watershed that provides water to the Ashuelot. The water resources in Gilsum have been identified as important due to many values discussed below.

- A. *Rivers and Streams*: As previously mentioned, one of the greatest influences on the historic development of Gilsum is the main-stem of the Ashuelot River. There are many tributaries that flow through the town, including Hayward, May, and Beaver Brook to name a few. Many of these streams are relatively wild with little development along them and few road crossings. This natural state often leads to high water quality and biological and habitat diversity. There are also historical structures along the Ashuelot River including the village itself, old dams, and mill sites.
- B. *Lakes and Ponds*: There are very few lakes or ponds in Gilsum making it all the more important to protect the quality and condition of these water bodies in the town. Most of the ponds are the result of placing dams on some of the streams and flooding the area upstream. This does not mean that because they are unnatural (anthropogenic) ponds that they are not important. These water bodies provide habitat, scenic areas, and recreational opportunities.
- C. *Wetlands and Hydric Soils*: Wetlands and hydric soils are sensitive areas that support many functions including flood storage, sediment and pollutant filtering of storm water runoff, and habitat supporting the lifecycles of many plant and animal species. Wetlands can range in size from very small isolated vernal pools to complex wetlands systems like “Three-Mile Swamp.” Hydric soils are classified by the natural Resources Conservation Service as soils that are poorly drained or very poorly drained and underlay wetlands. The areas that have hydric soils can become wet during periods of prolonged precipitation like New England Springs. These soils often consist of fine particles such as silt, clay, and organic materials that are easily compacted. When these soils become compacted, they no longer filter water because it cannot penetrate the soil. The water then runs off the surface directly into water bodies such as rivers and streams and deposits sediment and pollutants reducing water quality.
- D. *Floodplains*: Low, flat areas adjacent to rivers, streams, ponds, and wetlands are important to maintain as they are valuable in storing excess water during flood events. Placing fill, houses, or other development in floodplains can be detrimental for multiple reasons. One being that the development can be at risk of being damaged or destroyed. Another reason is that any added material to the floodplain displaces more water resulting in a higher flood level and the potential for damage to occur outside of the floodplain area. Floodplains also support many of the wetland systems, habitat, scenic values, and prime agricultural soils.
- E. *Aquifers*: There are two types of aquifers in Gilsum. Bedrock aquifers occur through much of the town where water collects and flows through cracks in the bedrock (a process called aquifer recharge) and are made available through drilling wells. Water also accumulates in areas of sand or gravel substrate where the spaces between grains can accommodate the water. These areas are called stratified drift aquifers and also tend to be available for use as drinking water or

for use in industrial processes. It is important to discuss the future use of these resources in terms of how the town will use them as a way to provide a public water system or to attract businesses that require the resource. Either way it is an important resource to maintain and protect for the future. Both bedrock and stratified drift aquifers have the potential for being polluted if contaminants are introduced over the source areas of aquifer recharge. Development over aquifer recharge areas should be carefully planned and monitored to prevent contamination.

F. Steep Slopes: There are many areas in Gilsum that have steep slopes. Steep slopes are important areas to keep vegetated to prevent erosion and deposition of sediment and pollutants in the rivers and streams. Development on steep slopes can often strip the vegetation and disturb the soil resulting in greater risk of run off carrying soil to the surface waters. Certain species of plants and wildlife also utilize south facing steep slopes to survive in the winter as these south facing slopes tend to be warmer and experience the most sunshine. Undeveloped steep slopes provide scenic vistas as well.

II. Wildlife Habitat – There are many different types of wildlife in Gilsum. Many types of plants and animals have special habitat requirements. Many animal species use a number of different habitat types during different seasons or life stages. They also need networks of suitable, connected habitats to support stable, healthy populations with opportunities to share genetic diversity.

A. Large Unfragmented Blocks: Gilsum has many large areas that remain forested and are held by relatively few owners. The importance in maintaining these large blocks as such is to help support populations of animals that require large territories for their survival such as black bear, moose, and bobcat. By maintaining sufficient land to support the lifecycles of these large species, the habitats of many other species that require less space will also be protected, including smaller scale habitat types and variations such as vernal pools, wetlands, and different plant community types.

B. Important Natural Communities: Different types of plant communities are supported by different conditions that vary across the landscape such as soil conditions, elevation, and availability of water. Central New England is a transition zone between the southern and northern community types. Gilsum is located within this transition zone, and as such there is the potential for a high degree of variability of habitat types in Gilsum. The New Hampshire Wildlife Action Plan describes all natural communities in the state and provides a model that maps the distribution of these communities across the state. The most common community type in the Monadnock Region is Hemlock Hardwood Pine. There is a number of less common habitat types that are important to protect to support a greater biodiversity of the region. Those less common community types that should be considered for conservation in Gilsum include marshes, peatlands,

grasslands, floodplains, Appalachian Oak Pine, Northern Hardwood Conifer, and Lowland Spruce/Fir. For more information regarding the characteristics of each community type and the associated species consult the NH Wildlife Action Plan.

C. *South Facing Slopes*: South facing slopes provide greater warmth and sun exposure during both the summer and the winter which can be important to both plants and animals. These slopes provide a longer growing season and warmer temperatures which permits plants that generally grow in a more southern climate to survive slightly farther north. These areas are also important for animals as basking areas and winter havens. Deer yards are often found on slopes with southern exposure and dense conifer stands. Reptiles use rock exposures on southern slopes to bask and as hibernation areas. Bobcats also sun themselves on south facing slopes in the winter. Lands with southern exposure with lower gradients can be supportive of agricultural activities due to the increased sun exposure and warmer temperatures.

D. *Natural Heritage Bureau Sites*: The New Hampshire Natural Heritage Bureau records the locations of rare, endangered, and threatened plant and animal species as well as exemplary communities in all areas of the state. When one of the state or federally listed species is viewed and reported it is added to the database that includes the location and site description of the viewing. This data has been converted to a map that shows the approximate area of where the species or exemplary community was observed (to protect rare species the exact locations of observations are not available to the public). It is important to protect areas that have such sitings because they may still be home to these important wildlife species.

III. Cultural Resources – Cultural resources are places in the community that citizens have identified as holding value to the community and local quality of life. Areas that are important to people for recreation, historic, or scenic reasons have been included in this category and each are described further below.

A. *Recreational Opportunities*: Many areas in Gilsum support recreational opportunities including class VI roads, trails, and the surface waters that run through town. Recreation is important to the children and adults. The chance for citizens to enjoy their time at home in Gilsum increases their desire to live there and is part of the rural character. Opportunities for neighbors and the community to get together to recreate is also important for building a stronger sense of community. The places where people can recreate should be protected and the opportunities for people to get together should be increased in order to maintain the rural character.

B. *Historic Areas*: There are many different types of Historic areas in Gilsum, from old homesteads to abandoned mines to old mills and dams. All of these areas are part of Gilsum history and are important to the story of how the town became

what it is today. Areas such as these could be referred to as local identity sites as they provide an account of the history that describes the town and its people. To retain rural character, it is essential to remain rooted in the history and land that produced the current conditions.

- C. *Scenic Areas*: People can have differing views on what type of landscape is scenic, but many agree that certain areas in town are very special and give you a sense of being in Gilsum. The views of the Ashuelot River along Route 10 and Surry Road and the surrounding hills have been identified by many as an essential part of the town's character. Other scenic areas include the view of Beaver Brook and its wetlands, Pickering Hill, and Smith Hill. More information should be gathered in order to obtain more information about what people in town enjoy viewing and what specific places are crucial to people.

IV. Working Lands – With the change in the economy and a trend to supply food and other resources locally it has become critical to identify the places where these activities could be supported. Many people also like the view of farms and livestock. The timber industry has been a central aspect of the New England and Gilsum histories. There have been many changes in the techniques and philosophies that allow such practices to occur with less drastic impacts on the natural resources that permit the protection of natural resources and the agricultural/silvicultural process to continue sustainably.

- A. *Agricultural Soils*: Some soils are more fertile than others and provide fewer limitations to farming activities. A soil survey was performed in Cheshire County and is provided by the Natural Resources Conservation Service. This survey categorizes each soil by its productivity and impediments in a Farm Soil Classification. There are four classes including Prime Agricultural Soils, Agricultural Soils of Statewide Importance, Agricultural Soils of Local Importance, and Not Prime Agricultural Soils (in order of importance). These soils should be protected so that they can be available to people who wish to farm in the future or if higher levels of local food production becomes necessary.
- B. *Forest Soils*: The same soil survey for Cheshire County ranks each soil for its ability to produce timber and the ability to harvest that timber mechanically. There are Group I Soils (A through C), Group II Soils (A through C), and Soils Not Classified. The Group I soils are often good for growing timber and have fewer impediments for harvesting them. Group II soils are also usually good for producing timber product, but generally have limitations to the harvest of those materials such as shallow depth to the water table, too rocky, and/or too steep. The Soils Not Classified are generally too wet to rank (hydric soils) or have severe limitations to both timber production and/or harvest. As the timber industry has played such an important role in the past for this region, it is logical to believe that it may be so in the future if the resource is managed in a way that

continues its production. This resource can provide economic benefit to the landowner, local businesses, and the community.

- C. *Actively Managed Farms and Forests*: The NH Current Use Tax Program allows for landowners to receive a tax credit for keeping their lands undeveloped and in a natural or working state. For working lands to qualify under the program, the landowner must have and implement a management plan that sustains the resources over the duration of its use. It is assumed that lands under this program have a greater degree of protection through the management plan and best management practices. It is also assumed that landowners with management plans have a respect for their resources and desire to see them last. These practices should be encouraged and praised to keep protection and stewardship of the resources in the hands of the landowners. Building a respect for and connection with the resources of the town can help protect the rural character of the town if landowners are making thoughtful, long term decisions for their lands.

RECOMMENDATIONS

Summary of Conservation Priorities

The following is a description of the conservation priorities as determined by the Gilsum task force from its assessment of the Master Plan, natural resources, and cultural resources. The following discussion is meant to outline the features within Gilsum that have been identified as important to the rural character of the community. Priority areas were grouped into four classifications of Forested Blocks, Corridors, Watersheds, and Rivers. Lands that support these features should be conserved in an effort to perpetuate the character of Gilsum, with lands supporting multiple features having priority over lands with fewer values. In some instances the presence of one feature may be so overwhelmingly important to the community that it may rise to the top of the priority list, such as the location of an endangered species or a historically significant and visually appealing farm. Maps of these areas can be found in Appendix 4.

1. Forested Block Priority Areas – large areas of forested uplands maintained as unfragmented blocks to help retain the rural character of the community, provide recreation potential, protect scenic vistas, and serve as core habitat required for the survival of some wildlife species.
 - A. *Surry Mountain and Webster Hill*: This area of Gilsum is found along the south and west boundaries with Keene and Surry. It is associated with recreational uses, wildlife habitat, and important to the identity and character of the town. There are conservation lands in the vicinity of this area that would benefit in their use as recreational areas and wildlife habitat if they were connected through conserving portions of the Surry Mountain and Webster Hill region.
 - B. *Northwest Gilsum*: The Northwest corner of Gilsum is part of two forested blocks that extend into Alstead and Surry and are between 1000 and 5000 acres in size.

These two forested blocks are only separated by South Woods Road, which is a narrow dirt road and (probably) does not result in much fragmentation of these forested blocks. This area was also identified by the Nature Conservancy in the *Land Conservation Plan for the Ashuelot River Watershed* for the pristine quality of the surface waters and wetlands.

- C. *Emerson Brook Forest and Eaton Hill*: The area East of Route 10 between the bounds with Marlow, Stoddard, and Sullivan contains many conservation values. Much of this area has been conserved, but some large, abutting properties remain unprotected, including lands along surface waters and wetlands, class VI roads, and natural community types that are not common in town such as Lowland Spruce/Fir and Northern Hardwood/Conifer. The Emerson Brook Forest also supports outdoor recreation including hiking, wildlife viewing, and winter activities. Building on existing conservation areas is beneficial as it is more likely to protect core habitat and species that require large areas of unbroken habitat than many small conservation areas spread out over the landscape.
2. Corridor Priority Areas – Corridors linking existing blocks of conservation land have been identified as a priority in Gilsum for two main purposes. Linking multiple areas of conservation lands with new, protected corridors provides more extensive recreation opportunities in addition to supporting the needs of wildlife. Many people value the ability to experience new areas for recreation while others appreciate being able to go long distances. By creating corridors between conservation lands, both of these activities are supported. Wildlife also needs to be able to migrate from one type of habitat to another and thus it becomes important not only to protect the required habitats, but also the connecting lands.
- A. *Bear's Den to Surry Mountain*: Bear's Den Natural Area is a State of New Hampshire owned property maintained for recreational use and to preserve geologic features by the Department of Resources and Economic Development. Between conservation easements and preservations, Bear's Den connects to the Andorra Forest Property in Stoddard. Much of the Western slope of Surry Mountain is owned by the Army Corp of Engineers for the control and management of Surry Mountain Dam and Reservoir. It would be a great accomplishment to connect these large, important habitat areas. In addition to linking two very large conservation areas and providing an East-West travel corridor, properties conserved in this area would protect recreation on lands along class VI roads, and large wetland complexes.
- B. *Emerson Brook Forest to Gilsum Woods*: The Emerson Brook Forest, discussed above as a large forested block, also has corridor potential. Emerson Brook Forest abuts the Andorra Forest to the East and extends South into Sullivan, and North into Marlow. Gilsum Woods is open space set aside by Tree Growers, Inc. Gilsum Woods abuts land owned by the Town of Alstead to the North that has been designated as a town forest. The protection of a corridor linking these two

conservation areas would include high quality headwater streams, large wetland areas, class VI roads, and important wildlife habitat.

C. *Gilsum Woods to Tibbetts Deed Restrictions*: As discussed above, the Gilsum Woods conservation land is an important area of conservation land along the northern border. Another conservation area in town along the Northern border is the Tibbetts deed-restricted properties along Alstead Hill Road, near the heart of Town. The deed restrictions are monitored by the Society for the Protection of New Hampshire Forests. A corridor connecting the Gilsum Woods lands with the Tibbetts properties would provide a valuable recreational opportunity near the village, help protect the character of this portion of town, and protect lands along Hayward Brook which flows through the village.

3. Watershed Priority Areas – There are two sub-watersheds, or catchments, of the Ashuelot River that have been identified as high quality waters which impact the quality of the Ashuelot River. Watersheds include all the lands from the confluence of the stream with Ashuelot, to the highest hilltop where water flows toward the brook. It is important for the quality of these streams as well as the Ashuelot to protect these lands from development and disturbance. Important wetlands and wildlife habitat will also be protected by conserving lands within a watershed.
 - A. *Hammond Hollow*: The Hollow drains south to north where it enters the Ashuelot River west of the village along Surry Road. This watershed has been identified as a priority because it is pristine, has unique characteristics, supports wetlands, and open space. The watershed is almost entirely within the borders of Gilsum, which allows for great potential for in-town conservation efforts. This area has also been identified as an important wildlife area and backs up against the northern slope of Surry Mountain.
 - B. *May Brook*: Draining from north (in Alstead) to south where it joins the Ashuelot River, May Brook is an important water resource in Gilsum. The majority of the drainage lays between Alstead Hill Road and South Woods Road to the north and west of the village. This watershed includes important habitat resources including a heron rookery in one of the wetlands, high stream continuity, and is believed to have high water quality. There are also important historical and local identity features including scenic areas, class VI roads and old homesteads.
4. River Priority Areas – From the main stem of the Ashuelot River to small intermittent streams near the tops of the hills, running water has left its mark on the community. Rivers and streams are the dominant surface water feature in the Town of Gilsum and continue to impact the community from shaping development to providing recreational activities for the citizens. Protecting land along the banks of rivers helps protect the water quality by filtering pollutants from surface runoff. Trees and shrubs along stream banks help maintain cool water temperatures so that certain temperature dependant animals such as trout need to survive. Keeping the banks of rivers

vegetated protects the banks from erosion and flood damage as the roots hold the soils in place. Conserving lands along the banks also maintains these rivers as “wild” and scenic, providing important travel corridors and habitat for wildlife.

- A. *Ashuelot River Main Stem*: The main stem of the Ashuelot River as it flows from the northeast (out of Marlow), to the west (into Surry), is an important resource to the Town of Gilsum. The Ashuelot is significant as both a natural resource and as a cultural resource. The Ashuelot is a major part of the identity of Gilsum; it provides a scenic quality to much of the Town, especially along Surry Road and Route 10. It is the basis for the historic village and development pattern, and is an important recreation resource for the citizens that enjoy fishing, swimming, and boating in Gilsum. The river is stocked with trout by New Hampshire Fish and Game and is home to many native fish and wildlife.
- B. *Beaver Brook*: Following Route 10 to the East, Beaver Brook flows from north to south out of Bear’s Den Natural Area into Keene. The wide flat floodplain and wetland complex known as “Three-Mile Swamp” is both scenic and important wildlife habitat. To many, the view of Beaver Brook signifies that they have entered Gilsum; indicating that the area is important to the local identity. Some question the quality of the water due to earlier land uses, but much of the value resides in the view of undeveloped wetlands and hillsides, wildlife habitat, and water storage capacity that helps mitigate flooding downstream.

Implementation Strategy

In order to maximize the use and efficiency of this plan, the task force outlined steps that could be taken in the next year or two to start the process of protecting the rural character of Gilsum. These tasks range in topic including forming a core group of interested citizens to work on conservation related initiatives, working with the town boards, and working with citizens who may be interested in conserving their land. The main goal of this plan and initiative is to build awareness in the community about the natural and cultural resources of Gilsum and how to ensure that these resources continue to contribute to the desired town character. One way this will be accomplished will be to provide electronic or paper copies of the plan to interested citizens. Below is an outline of intended actions for implementation.

1. Form a Citizen Group: This group would consist of interested and passionate Gilsum residents with the mission to implement the Gilsum Rural Character Preservation Plan through working with other citizens, landowners, town boards, and other community groups.
2. Develop a Community Outreach Strategy: This would be an effort to determine how to inform the community about the Rural Character Preservation Plan, the efforts of the task force, and the future steps of the process. This will include:

- A. A list of people, boards, and groups that need to know about the project, how the different groups will be contacted and who will contact each group.
 - B. A list of different ways to present the information in the plan.
 - C. A list of events that might provide an opportunity to distribute the information and/or collect additional input and feedback.
- 3. Develop a Landowner Outreach Strategy: The landowner outreach strategy will be a method through which the citizen group would attempt to initiate contact with owners of land identified in the plan as a priority for conservation in Gilsum and would include:
 - A. A list of landowners with property in the priority areas.
 - B. Determining different ways to let landowners know of the conservation value that might exist on their property and the options available to them.
- 4. Work with the Planning Board to Identify Ordinance Changes: In an effort to build cooperative relationships with the Planning Board, as well as other town boards, the Citizen Group will try to aid in the identification of zoning ordinances that can help protect the natural resources and rural character of Gilsum. The Citizen Group could provide assistance by working with South West Region Planning Commission and the Monadnock Conservancy, to research or draft the new ordinances, and/or help educate the public and advertizing the public hearings. Examples of natural resource ordinances used in other New Hampshire towns include:
 - A. Wetlands and River Buffer Zones to protect water quality and important habitat.
 - B. Steep Slope Ordinance to protect scenic vistas and water quality.
 - C. Conservation Subdivision Ordinance to better maintain large forested blocks through allowing higher density “village-like” development in exchange for a conservation easement on the undeveloped portion of the property.
- 5. Identify Potential Areas for Development: The basis behind this implementation step would be to strike a balance between conservation efforts and development pressure through working with the Planning Board in finding areas in town that could support multi-use development, similar to the existing village in order to:
 - A. Focus development in less ecologically or historically sensitive areas.
 - B. Emulate the traditional village development pattern that has created and protected the rural character (natural resource abundance, community, recreation, etc.).

CONCLUSION

The rural character of the Town of Gilsum is one of the most important reasons for living in the town according to its citizens. The citizens involved in producing the Rural Character Preservation Plan worked to define rural character in a way that creates potential for its protection. There are many features in Gilsum that are part of the rural character, but they can be grouped into four main attributes including abundance of natural resources, traditional village development pattern, a strong, vibrant sense of community, and local recreational opportunities. This plan is an attempt to protect the rural character and the resources that produce that character through identifying the important characteristics, determining where they exist, creating conservation priorities, and laying out a framework for beginning conservation efforts in Gilsum. The main goal of this plan is to build awareness in the community of the important natural resources in Gilsum and the conservation options available. This plan shall also serve to support landowners in their attempt to qualify for tax incentives on conservation projects by outlining resources and values important to the Gilsum community.

ACKNOWLEDGMENTS

Thanks goes to all who helped in this process through providing their time, knowledge, and love for the Town of Gilsum. From the people who circled their favorite places and told us their fondest memories at Old Home Day, to those who tackled the hard questions during the planning process, we are grateful for all of your input and we hope that that input does not stop with the drafting of this plan.

Special thanks goes to the task force who have shown a great dedication to this community and a desire to see the features that make it special remain for future generations. Those individuals are:

Louise Cook

Bart Cushing

Pablo Fleischmann

George Gilman

Ralph Jernberg

Catherine Skove

The task force extends thanks to Pete Throop, Dee Robbins, and Rick Brackett for their help, expertise, and work in guiding the process of creating the Gilsum Rural Character Preservation Plan.

APPENDIX I: COMMUNITY CONSERVATION PARTNERSHIP

The Monadnock Community Conservation Partnership is a coalition of planning, conservation, and community education organizations, seeking to help towns throughout the Monadnock Region build their capacity to identify and protect important natural resources and special places that contribute to the character and quality of life of each town. Specific goals of this partnership include:

- Identifying land conservation priorities and develop implementation strategies to further land conservation goals and objectives;
- Training conservation leaders to be able to serve as a local resource to land owners interested in conserving their land and to town boards and commissions in the execution of their duties;
- Building community understanding and consensus about the importance of land conservation to protecting and enhancing community character and quality of life.

The Community Conservation Partnership includes the following organizations:

- The Monadnock Conservancy
- Southwest Region Planning Commission
- Antioch New England Institute
- Center for Land Conservation Assistance
- UNH Cooperative Extension
- Harris Center for Conservation Education

APPENDIX II: FUNDAMENTALS OF LAND PROTECTION

Understanding the purpose and benefits of conservation planning to a town also requires understanding several fundamental principles about the nature of a conservation transaction:

1. All land conservation is the result of a voluntary act by a willing land owner. Whether land is sold to a conservation minded buyer (a town or conservation organization such as a land trust) or a conservation easement is sold or donated to a land trust, the process begins with the original landowner making a decision to do something with their land. It is very rare that a town or the state exercises eminent domain with the primary intent of achieving conservation objectives, although it is possible that some land taken for other primary public purposes, such as for road building, or schools, or municipal water systems, or flood control dams, maybe considered as conservation land once the primary public purpose is fulfilled.
2. Land conservation is the result of a legal real estate transaction. It has a force in law in that various rights and interests in a parcel of land are transferred from one person or organization to another, expressly for the purpose of protecting identified conservation values that exist on the parcel. Land conservation is not a form of government imposed regulation. When land is protected by a land trust, there must be a clear, identifiable public benefit from the protection.
3. One of the most common approaches to accomplishing land conservation is through the donation or sale of a conservation easement. A conservation easement essentially is a legal agreement between a land owner and a conservation organization that transfers explicit rights from the land owner to the conservation organization. The land owner is able to retain certain rights (i.e. to farm, harvest timber, engage in non-commercial recreation, and sometimes to withdraw a land for future development under certain circumstances) and transfers other rights (i.e. the right to sub-divide, build residential, commercial, or industrial structures, and in general the right to ensure that the identified conservation values are not adversely compromised or diminished). In negotiating the terms of a conservation easement, a land owner and land trust have a fair amount of flexibility, as long as specific conservation values are identified and there is a clear public benefit associated with the protection.
4. When a land trust takes a conservation easement, it has the legal responsibility to steward and enforce all terms of that conservation easement in perpetuity. This means that the right to sub-divide or develop is essentially extinguished and can not be developed by the conservation organization or further transferred to a third party for the purpose of future development.

Given that land conservation is the voluntary act of a willing land owner, typically in partnership with a land trust, what role can and should a community play in land conservation? Many towns do hold conservation easements or purchase lands for

conservation uses. However, many towns do not have the structure or human and financial resources to fulfill their obligations to monitor and enforce easements. Furthermore, lands purchased by the town are taken off the tax roll and, unless protected by a conservation easement held by a land trust, a future town vote may result in the land being developed by the town or sold for private development, thereby eliminating the conservation benefits intended through the original purchase.

The most effective roles that a town can play to encourage land conservation are to create awareness and provide education to owners of special lands and to provide financial incentives to make land conservation attractive to the landowners. The process begins with understanding how residents in the town feel the landscape that makes up the town contributes to the town's character, desirability as a place to live, and overall quality of life. These qualities result from the combined land use decisions of all landowners in a town. Although connected, not all land is the same. Some parcels contribute more to the character and quality of life than others: some land areas are more important to wildlife, some are critical to water quality, some have prime agricultural soils and contribute to the rural economy, and some are more suitable for residential and commercial development.

When town residents understand what land characteristics contribute most to quality of life in their town and where the landscape supports the best examples of these characteristics, then they are in a position to talk with the owners of these lands about their aspirations for the future of their land. This provides an opportunity for an exchange of information about the resources that exist on the land, the importance of the land to the town, and the potential benefits of a conservation transaction to the landowner and the town.

APPENDIX III: OLD HOME DAY SURVEY AND RESULTS

**A. COPY OF OLD HOME DAY SURVEY AS ADMINISTERED AUGUST
28TH AND 29TH**

B. TABLES OF COMPILED OLD HOME DAY SURVEY RESPONSE DATA

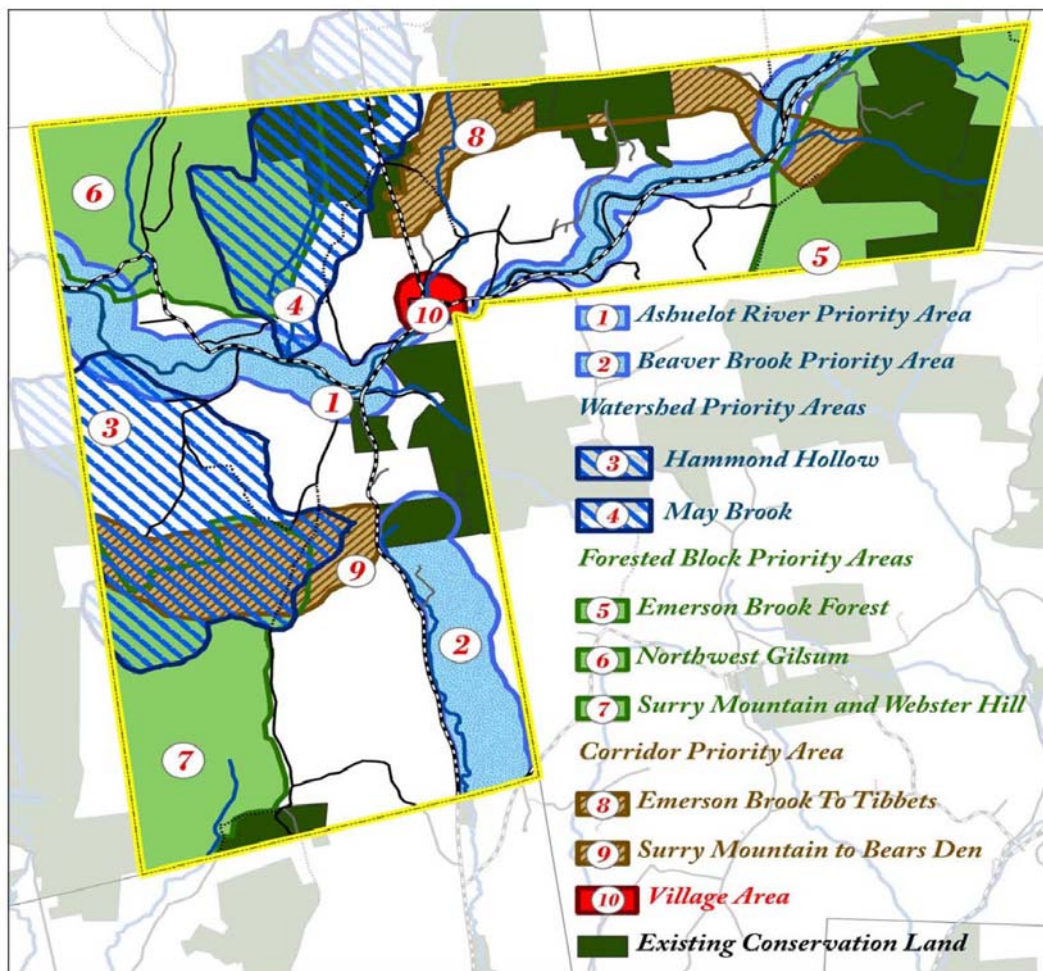
Appendix III A: COPY OF OLD HOME DAY SURVEY AS ADMINISTERED AUGUST 28TH AND 29TH

Gilsum Priority Area Survey

Part 1: Identify land areas on the map below that should be considered as a priority for Land Conservation, using the 5 numbered sticky dots you have been given.

- Place your dots in locations that you feel have resources values that are important enough for the area to be considered as a priority for land conservation.
- Place the dot with a number 5 in the area you think is the most important priority, the number 4 dot in the second most important area and so on.

See reverse side for additional information



If you would like additional information about land conservation, Please provide your name and email address:

Name: _____ Email: _____



- Things to consider...
 - Identifying priorities is important because no town can or should seek to protect all natural land areas in town.
 - There are limited resources available to support land conservation efforts and establishing priorities can help focus those efforts.
 - Establishing conservation priorities can help direct future growth to areas that are more appropriate for development.
 - The map is based on the town's Natural Resource Inventory (see Natural Resource Inventory poster).
 - The different colored or patterned areas shown on the map have been defined based on the most prominent natural resources associated with the area. (River Corridor, Forested Hills, Agricultural Lands, Ground water resources, Important watersheds)
 - Each of the defined areas most likely has a number of other resource values that also contribute to the health, quality of life, and unique character of Gilsum.
- When placing your dots...
 - Feel free to refer to the Natural Resource Inventory poster to understand where important resources are located.
 - Consider what you know about lands in Gilsum, what you value most about natural lands and how natural lands contribute to what you like about Gilsum.
- Values associated with Gilsum's Natural and Cultural Resources
 - Water Resources
 - Water quality
 - Ground water recharge
 - Storm/Flood water storage
 - Recreation
 - Drinking water supply
 - Wildlife habitat
 - Scenic values
 - Forested Hills
 - Wildlife Habitat
 - Large unfragmented Block
 - Recreation
 - Streams and wetlands
 - Scenic values
 - Local Economy
 - Agricultural Lands
 - Agricultural soils
 - Unique Habitat
 - Recreation
 - Working farms
 - Scenic values
 - Local Economy

C. Appendix III B: TABLES OF COMPILED OLD HOME DAY SURVEY RESPONSE DATA

Table 1: Old Home Day 2009 Data sorted by map location.
Gilsum Conservation Survey

Date 29-Aug-09
Location Gilsum Potluck and Old Home Day

Map - Based on dot placement ranking (5 = highest priority, 4= 2nd highest, etc.)

	<u>Score</u>	<u>Count</u>	<u>Average</u>
1 - Ashuelot River	143	41	3.49
2 - Beaver Brook	74	27	2.74
3 - Hammond Hollow	68	24	2.83
4 - May Brook	62	19	3.26
5 - Emerson Brook Forest	63	21	3.00
6 - Northwest Gilsum	57	19	3.00
7 - Surry Mountain/Webster Hill	72	29	2.48
8 - Emerson to Tibbets Corridor	59	20	2.95
9 - Surry Mountain to Bear's Den Corridor	128	41	3.12
10 - Gilsum Village	108	37	2.92
11 - Other Location Designated by Participant	X	2	X

Table 2: Old Home Day Table 2: Old Home Day 2009 Data sorted by raw score.
Gilsum Conservation Survey

Date 29-Aug-09
 Location Gilsum Potluck and Old Home Day

Map - Based on dot placement ranking (5 = highest priority, 4= 2nd highest, etc.)

	<u>Score</u>	<u>Count</u>	<u>Average</u>
1 - Ashuelot River	143	41	3.49
9 - Surry Mountain to Bear's Den Corridor	128	41	3.12
10 - Gilsum Village	108	37	2.92
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5 - Emerson Brook Forest	63	21	3.00
4 - May Brook	62	19	3.26
8 - Emerson to Tibbets Corridor	59	20	2.95
6 - Northwest Gilsum	57	19	3.00
11 - Other Location Designated by Participant	X	2	X

APPENDIX IV: NATURAL AND CULTURAL RESOURCE MAPS

D. WATER RESOURCES

1. SURFACE WATER RESOURCES

2. GROUNDWATER RESOURCES

E. STEEP SLOPES

F. WILDLIFE ACTION PLAN PLANT COMMUNITIES

G. UNFRAGMENTED FOREST BLOCKS

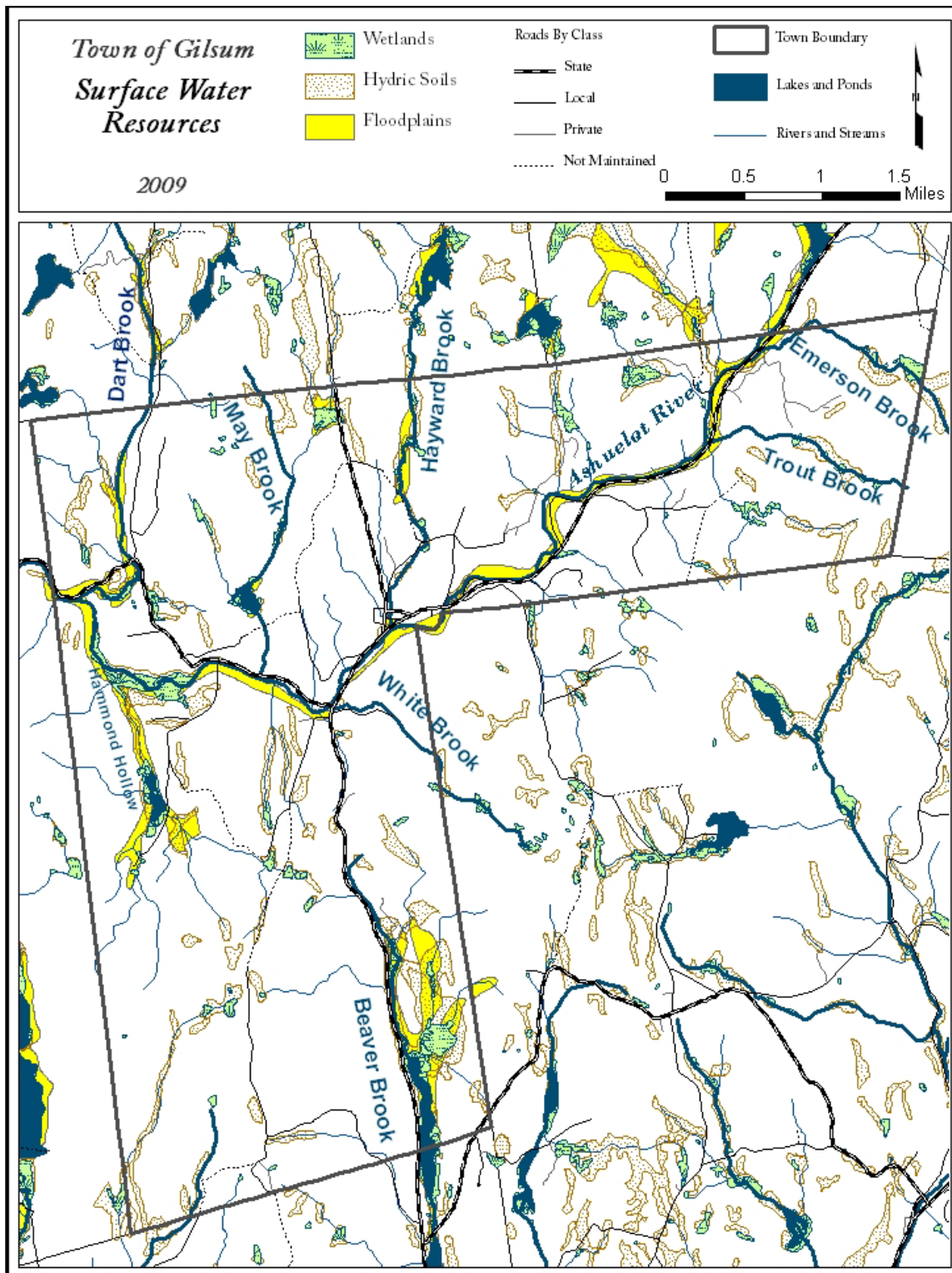
H. AGRICULTURAL SOILS

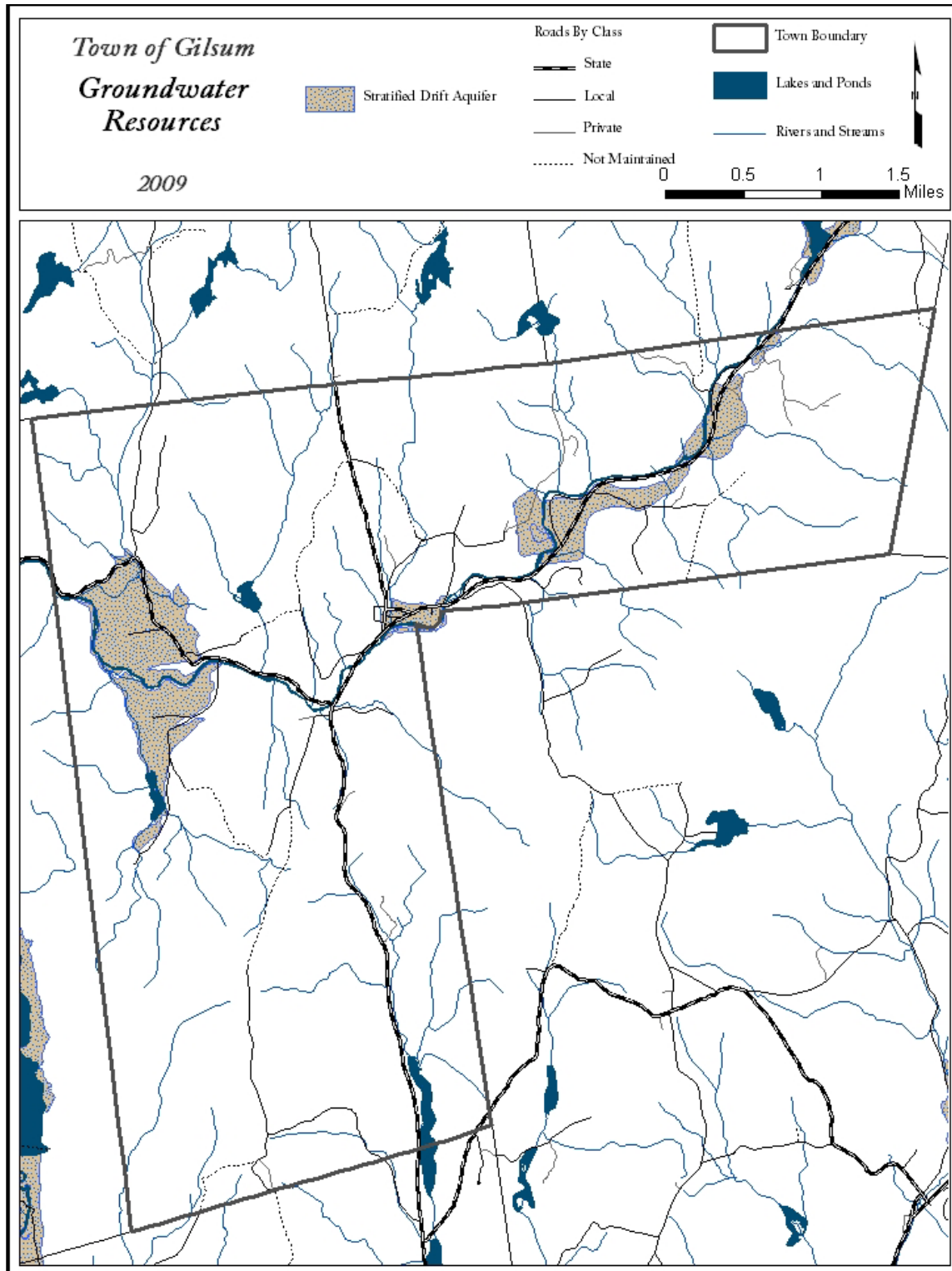
I. FOREST SOILS

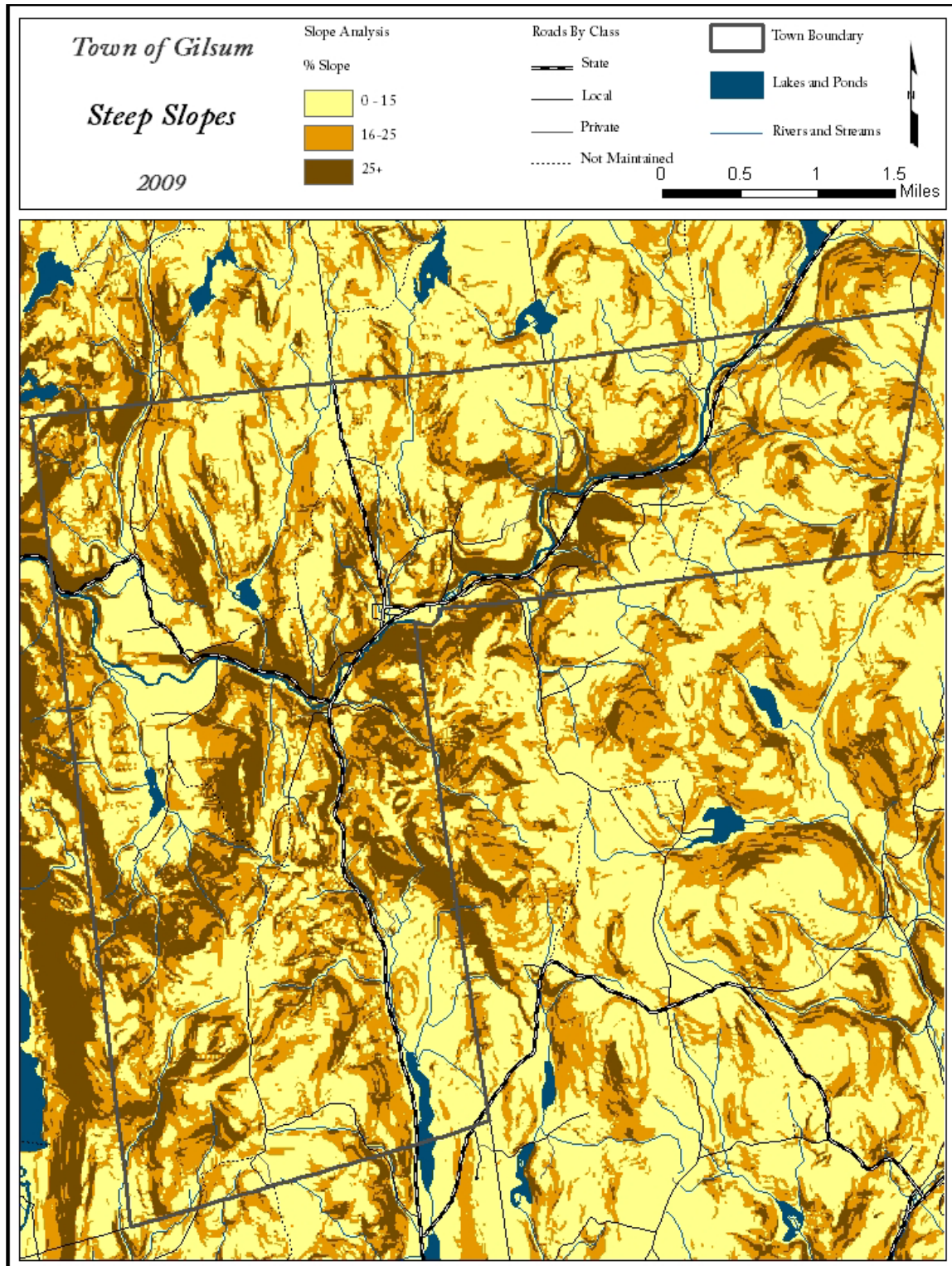
J. OPEN FIELDS AND ACTIVE FARMLAND

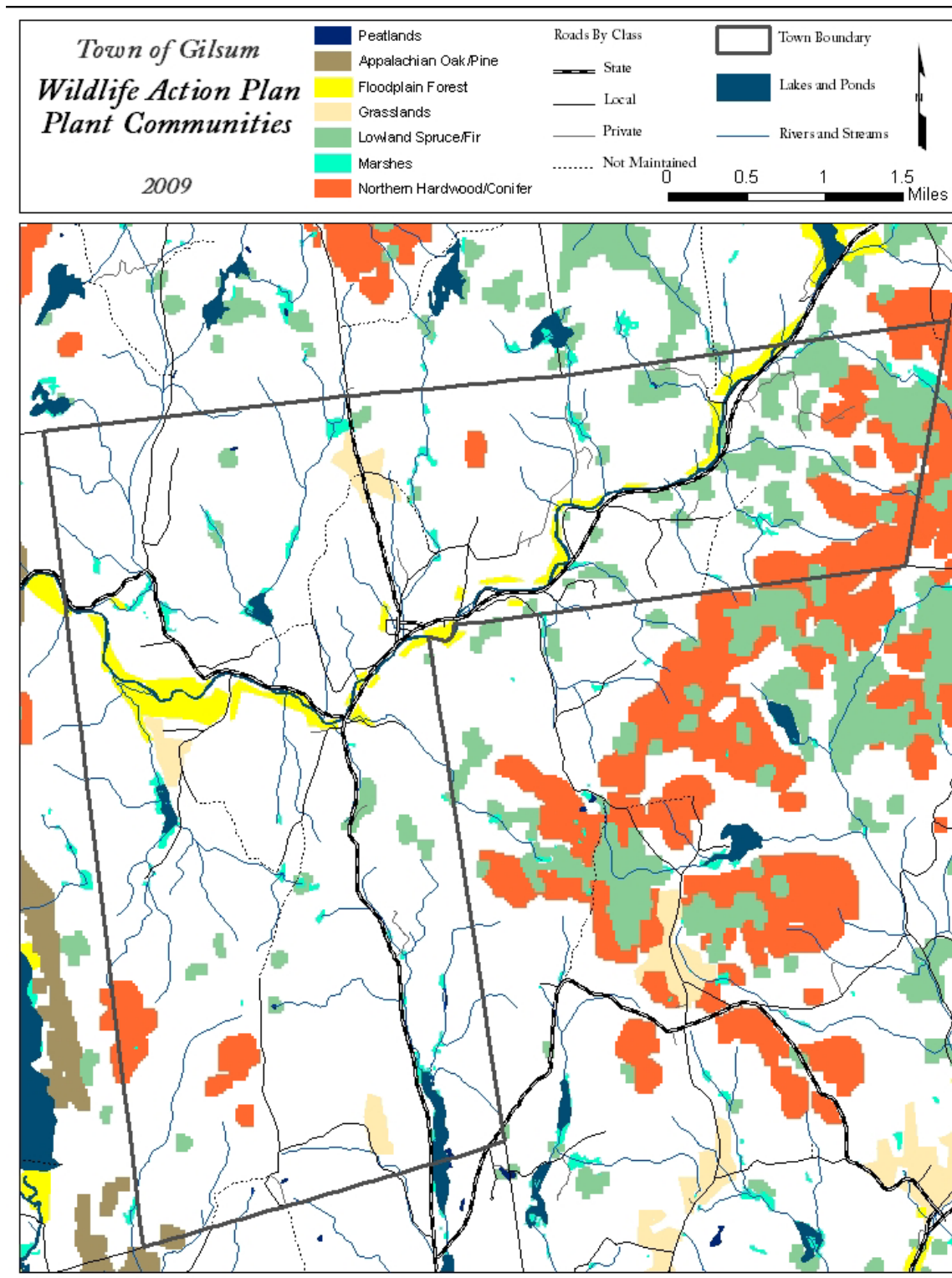
K. SCENIC AREAS AND IDENTIFIED SPECIAL PLACES

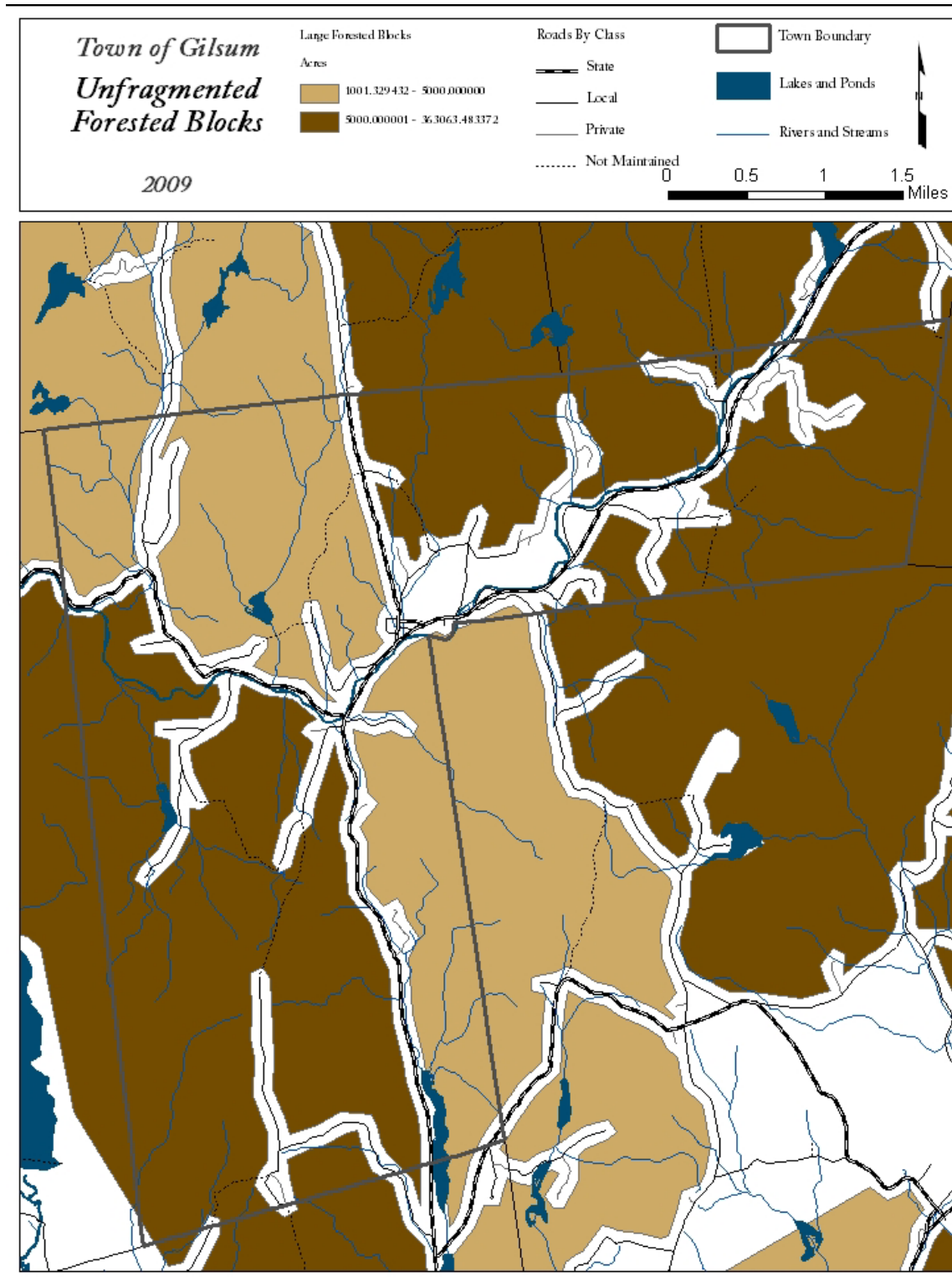
**L. EXISTING CONSERVATION AND PUBLICLY OWNED LANDS IN
GILSUM**

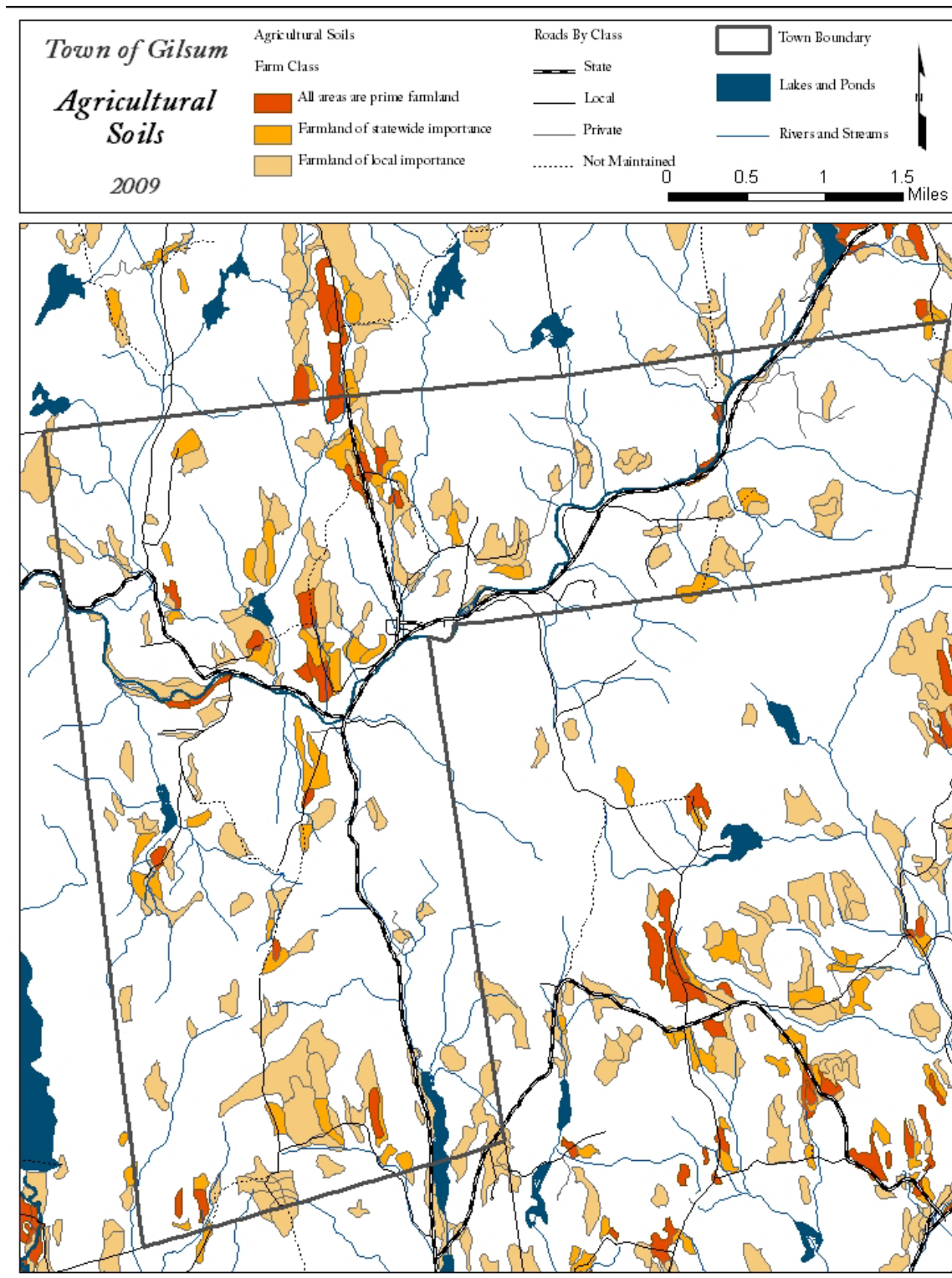


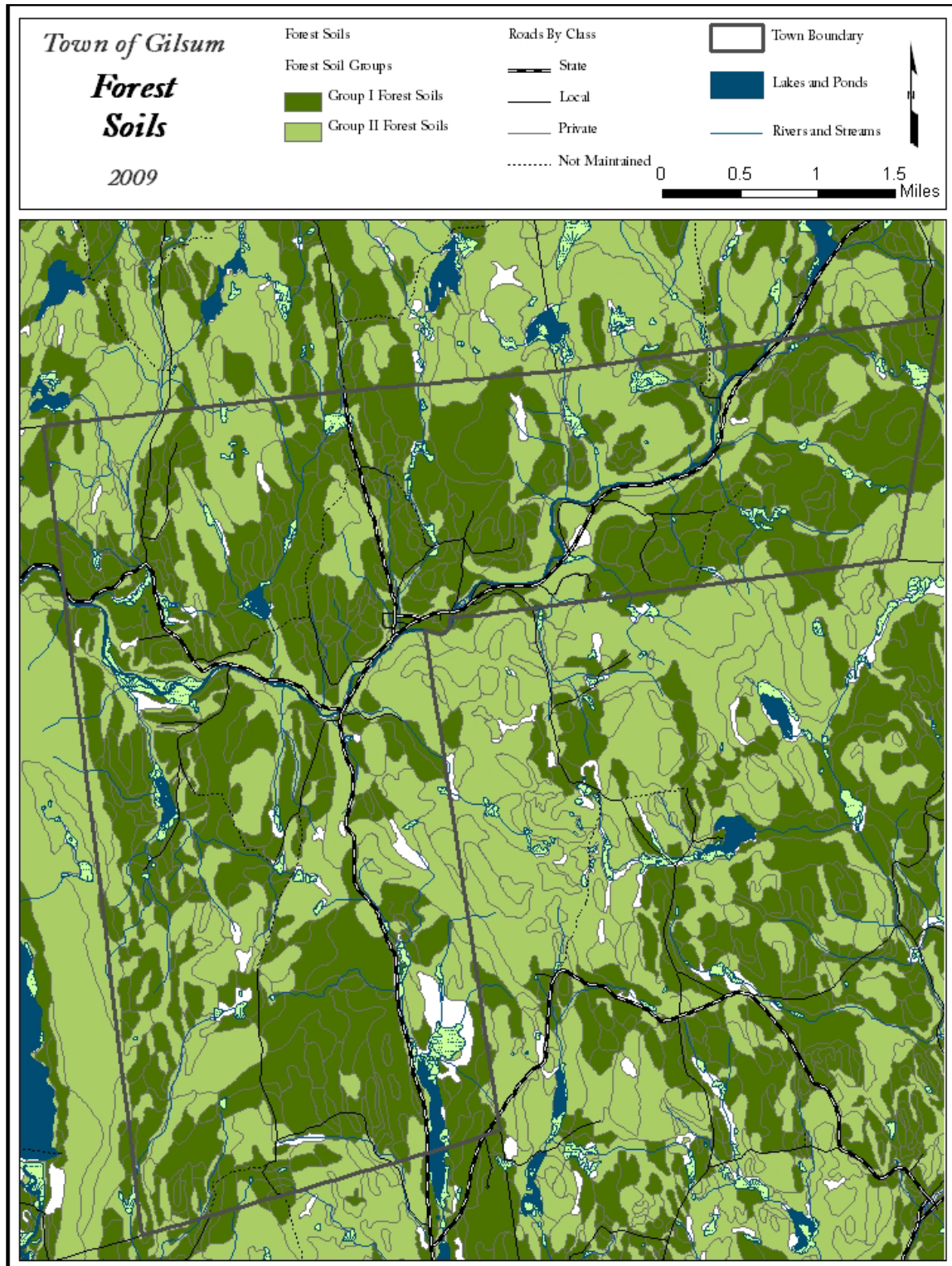


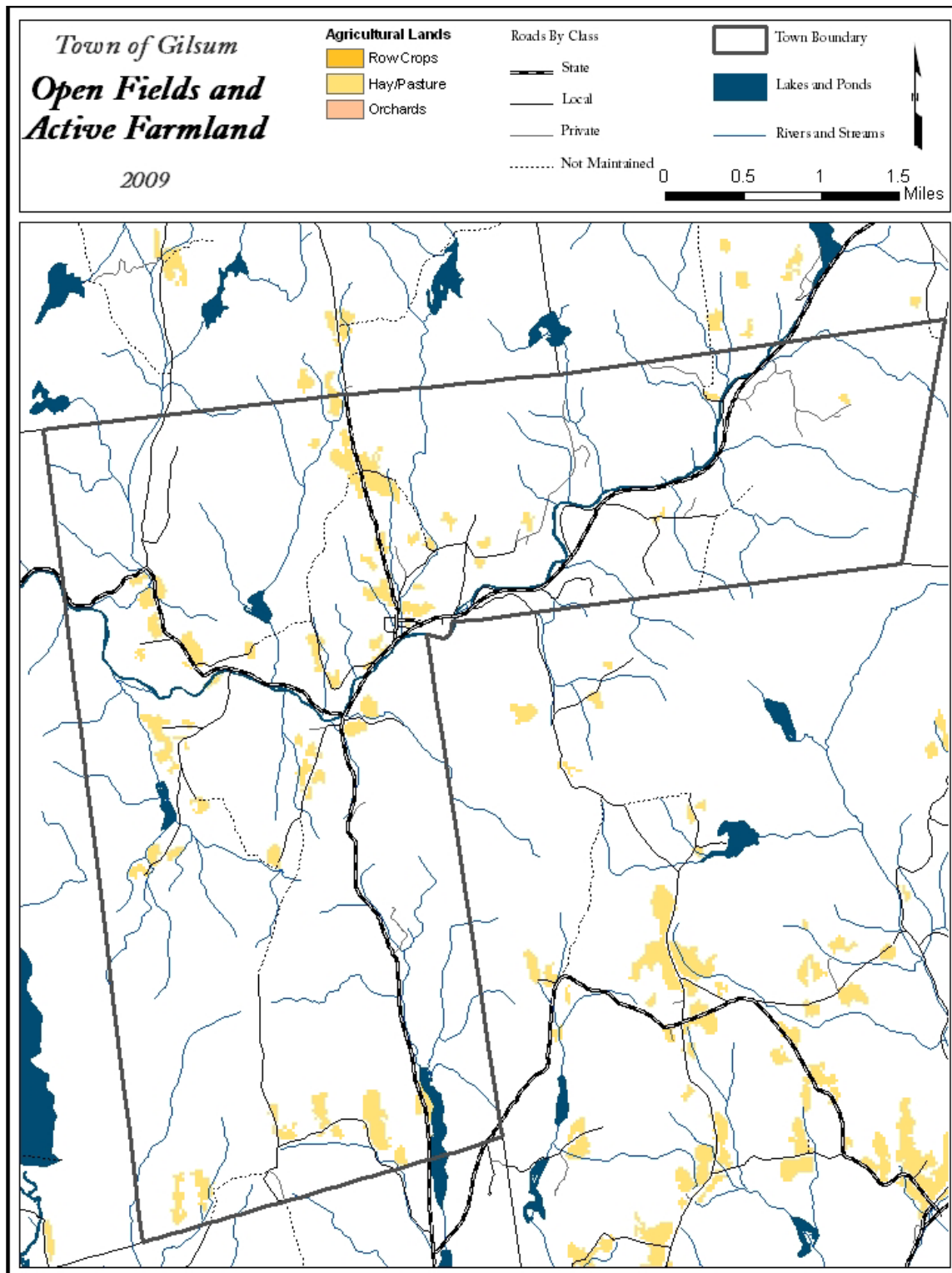


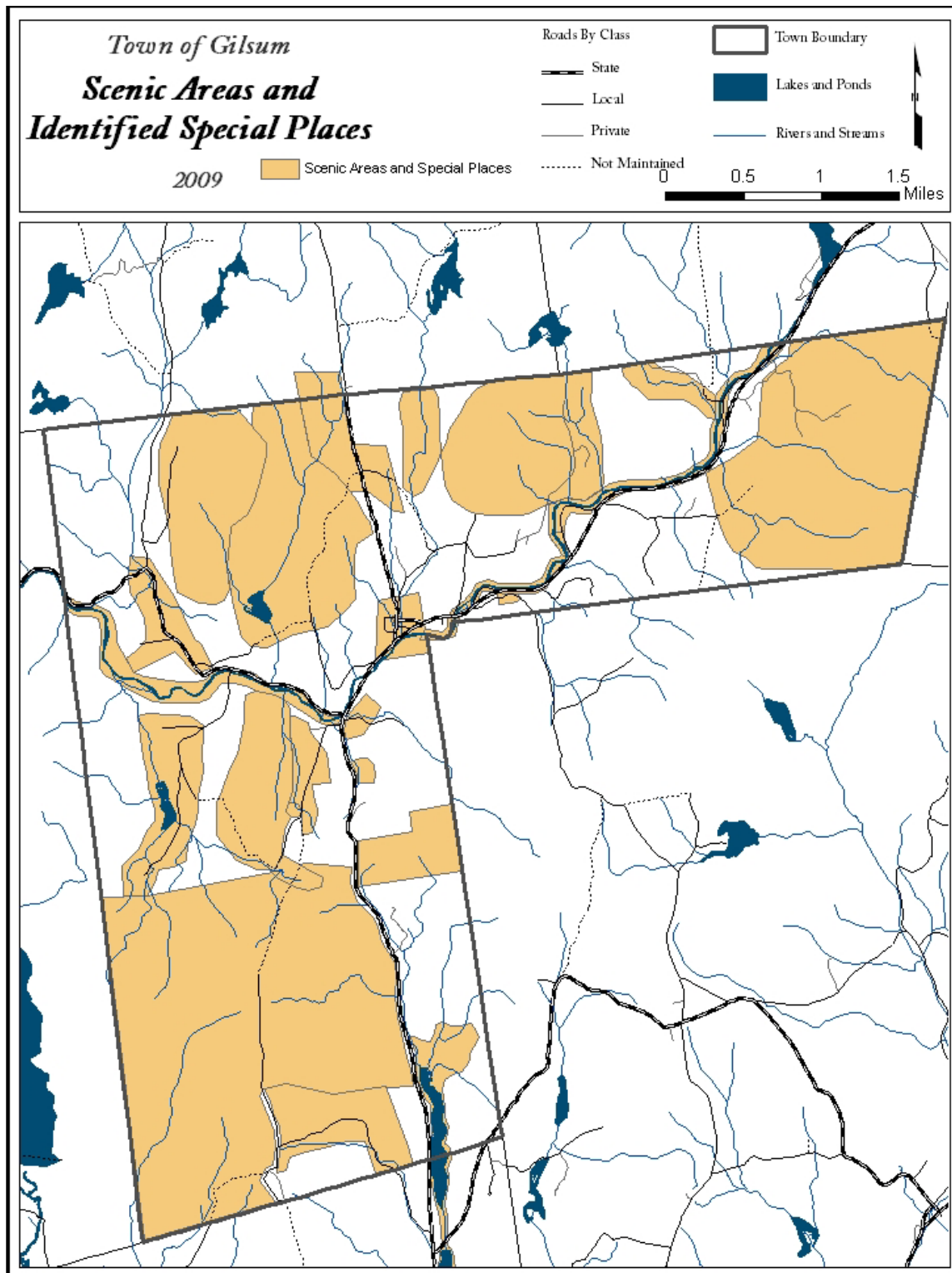


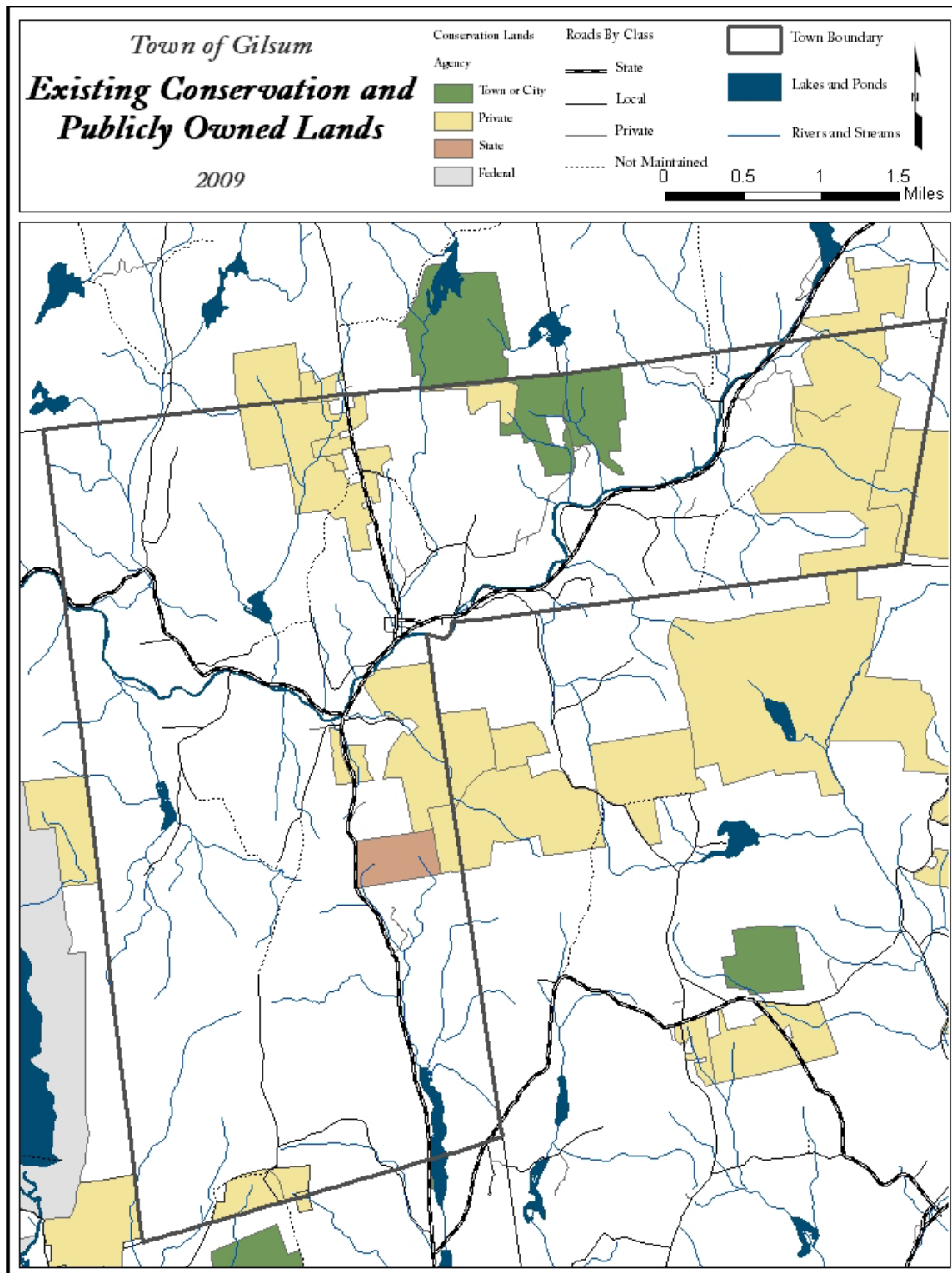






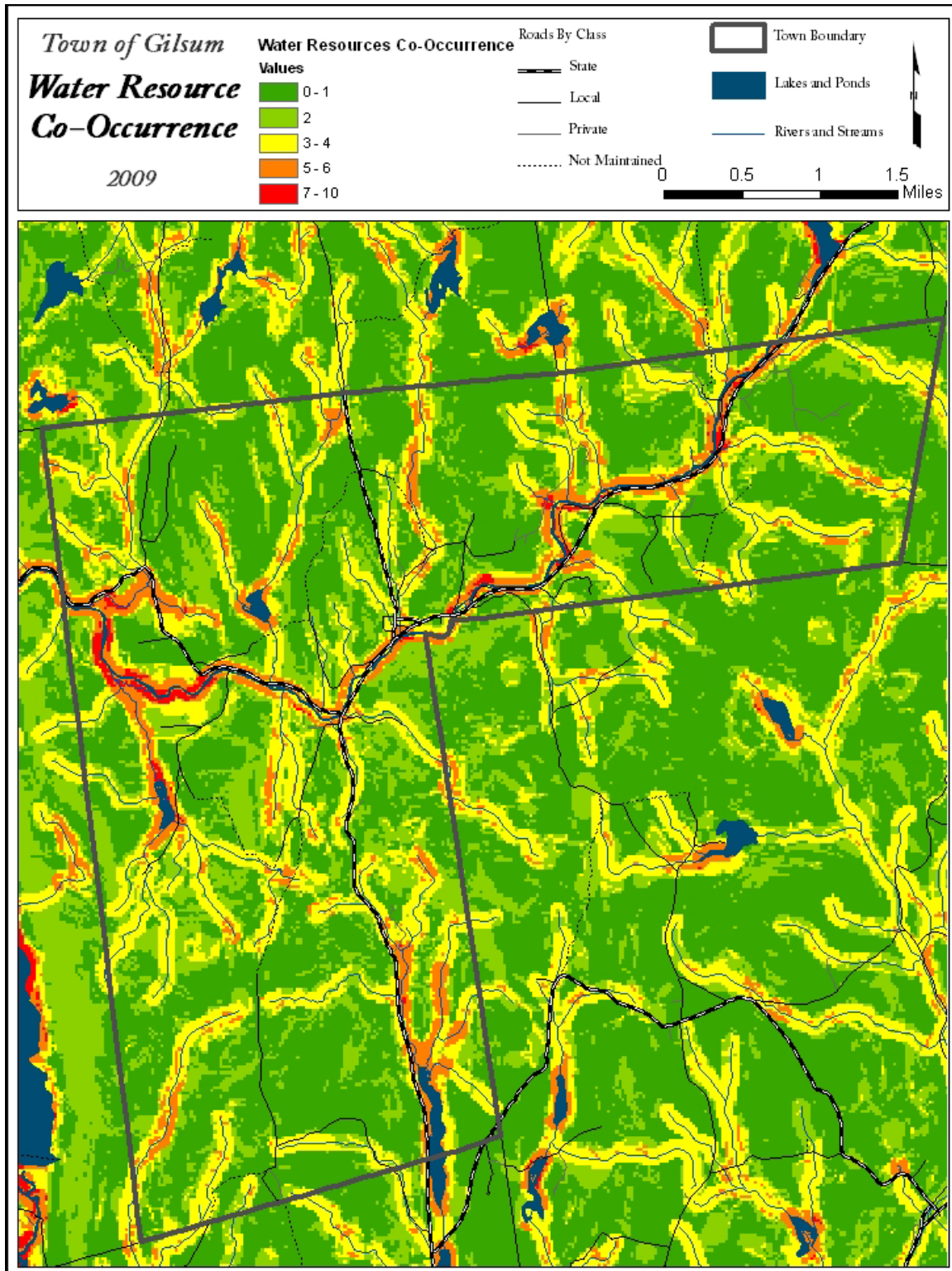


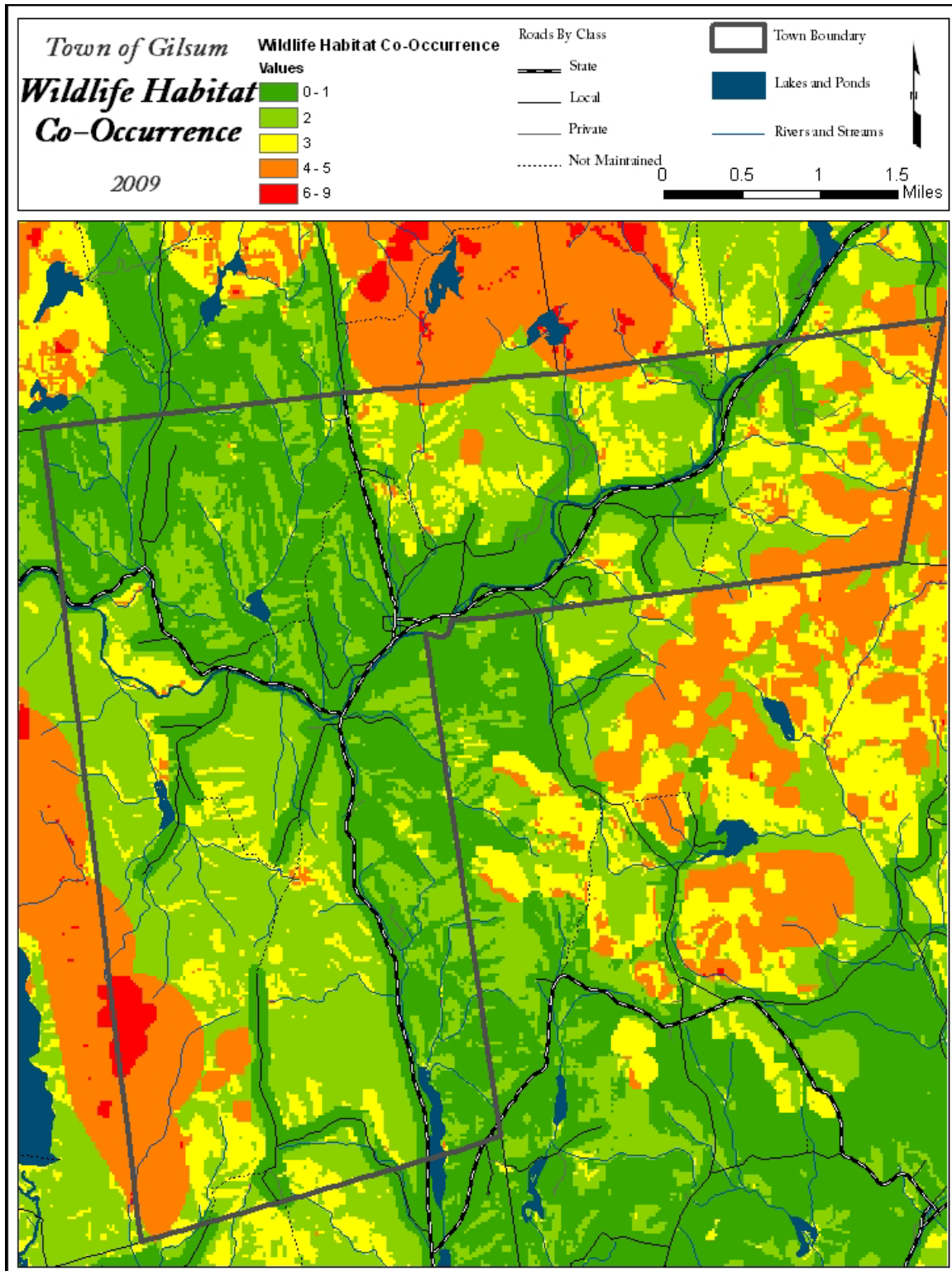


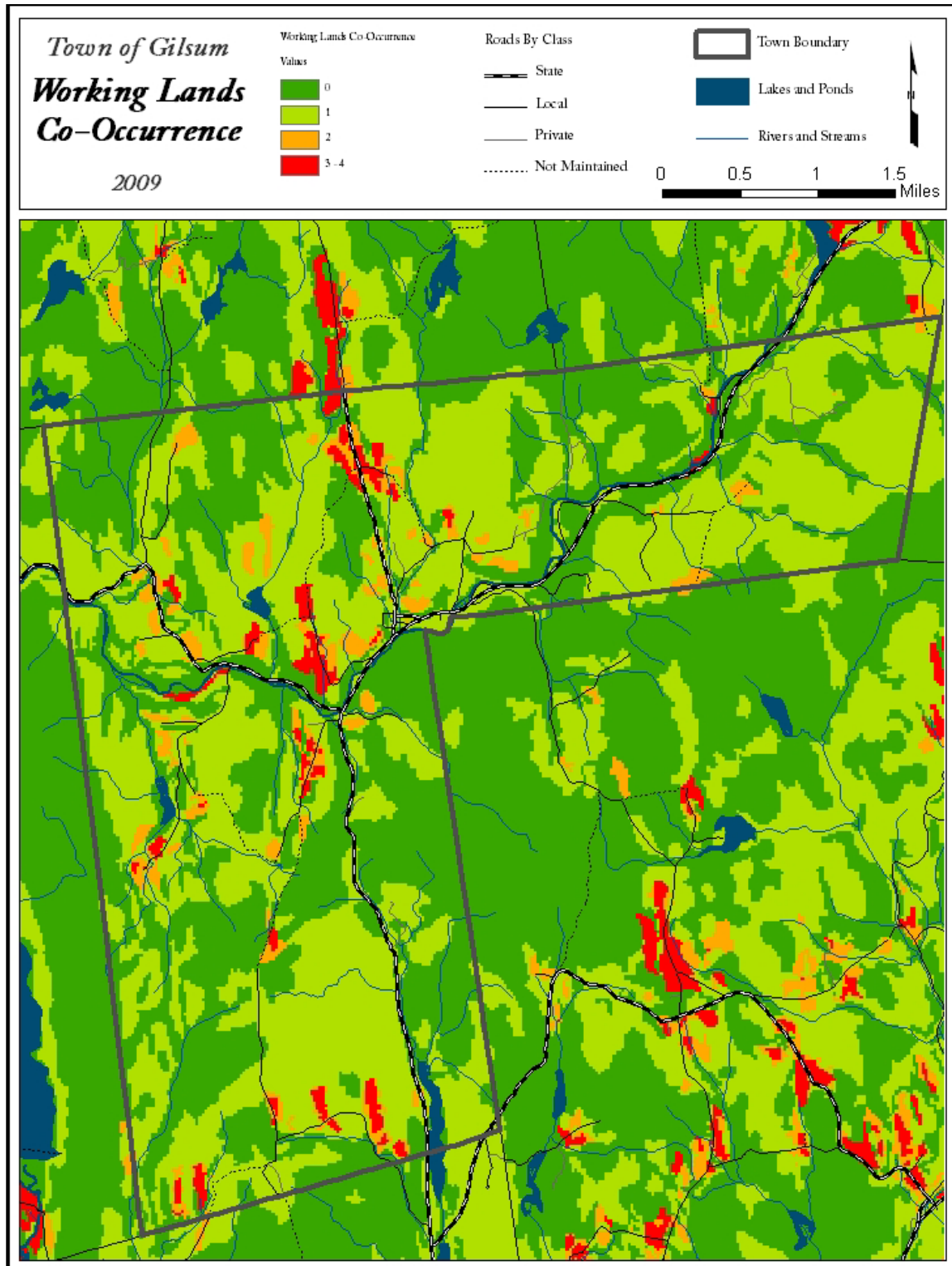


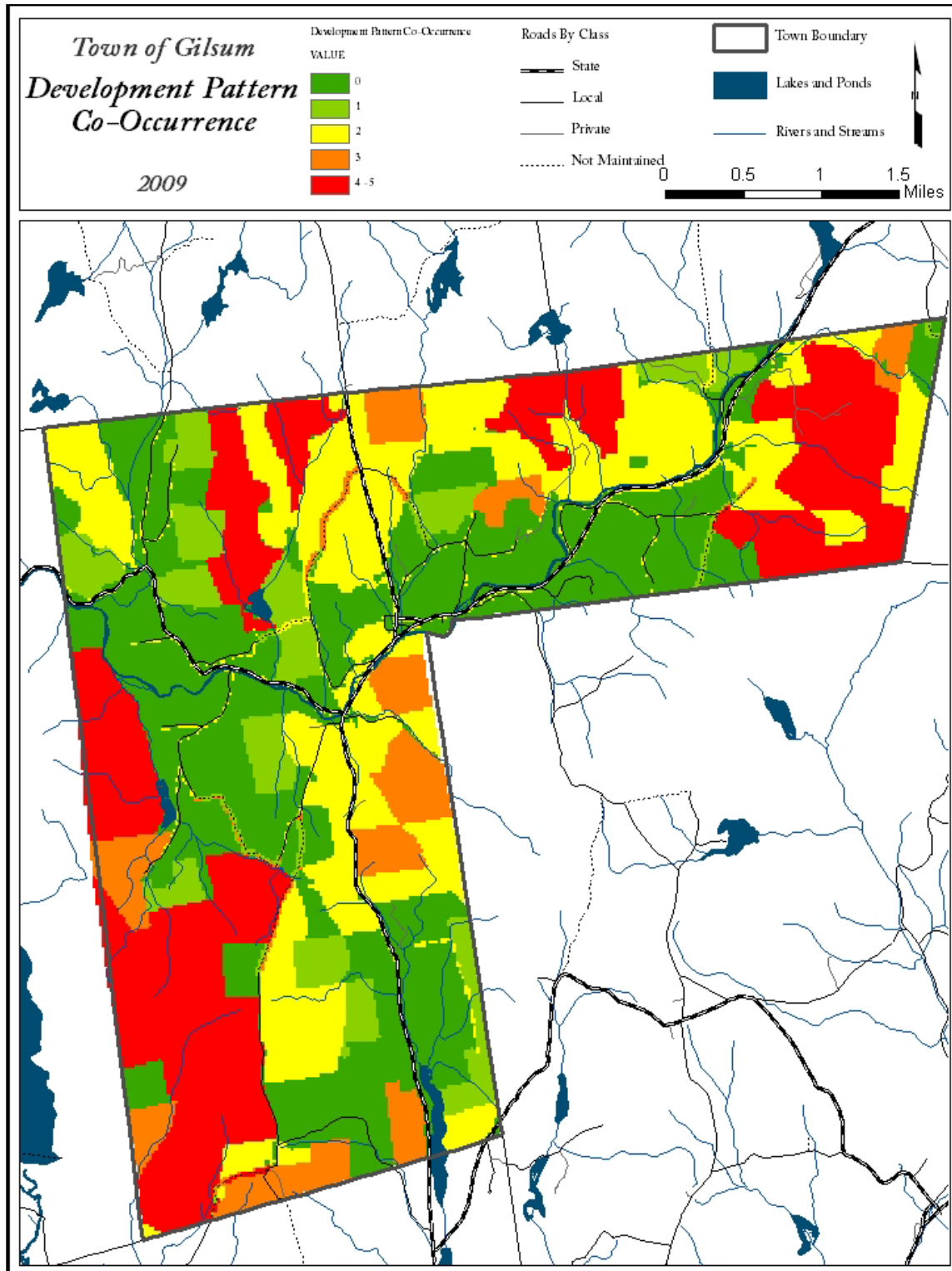
APPENDIX V: CONSERVATION PRIORITIES MAPS

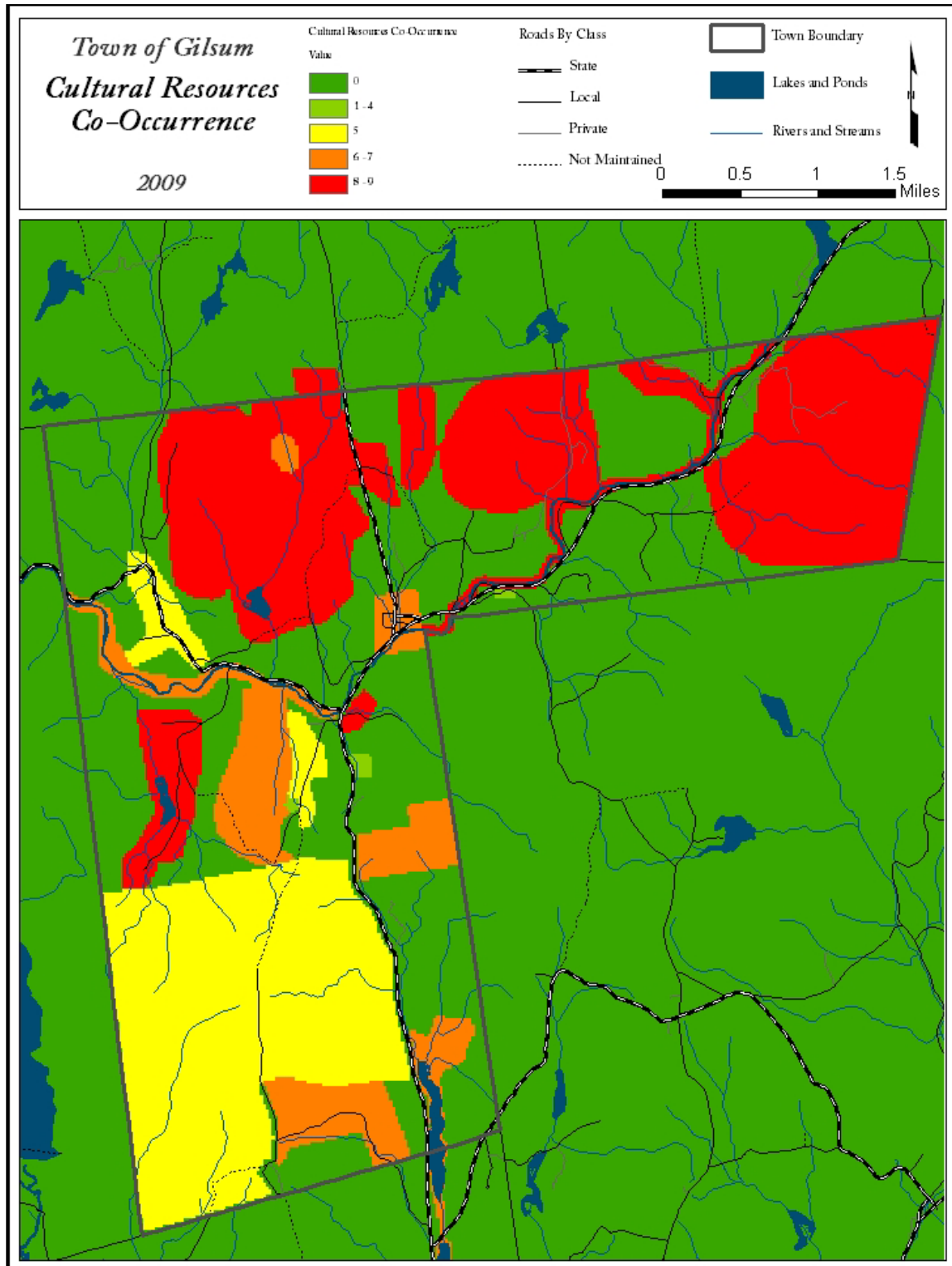
- A. WATER RESOURCE CO-OCCURRENCE MAP**
- B. WILDLIFE HABITAT CO-OCCURRENCE MAP**
- C. WORKING LANDS CO-OCCURRENCE MAP**
- D. DEVELOPMENT PATTERN CO-OCCURRENCE MAP**
- E. CULTURAL RESOURCES CO-OCCURRENCE MAP**
- F. ALL RESOURCES CO-OCCURRENCE MAP**
- G. GILSUM CONSERVATION PRIORITIES MAP**
- H. FOCUS AREAS IN GILSUM FOR CONSERVATION ORGANIZATIONS**
 - 1. QUABBIN TO CARDIGAN PRIORITIES**
 - 2. THE NATURE CONSERVANCY PRIORITIES**
 - 3. WILDLIFE ACTION PLAN PRIOTITIES**

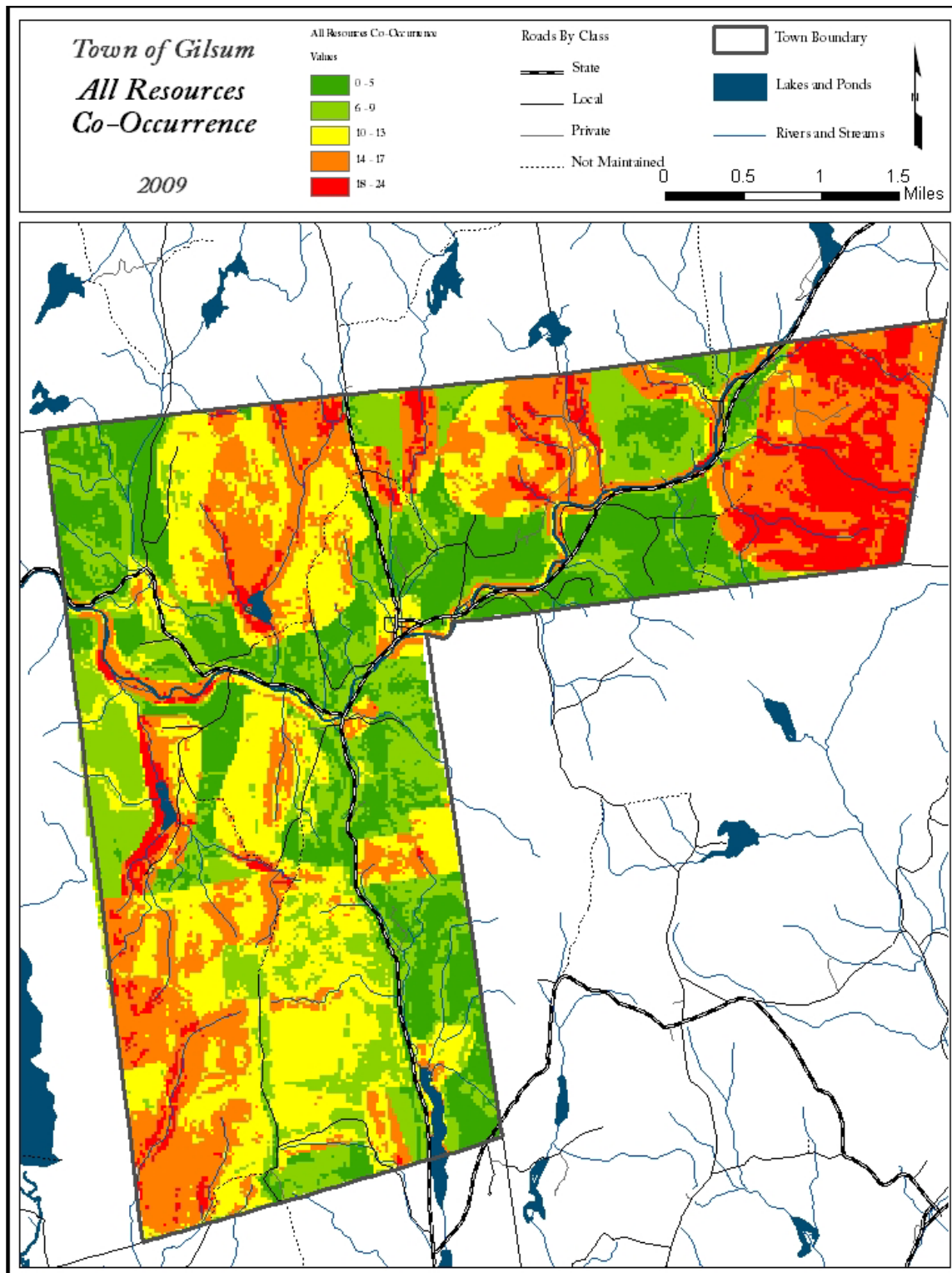


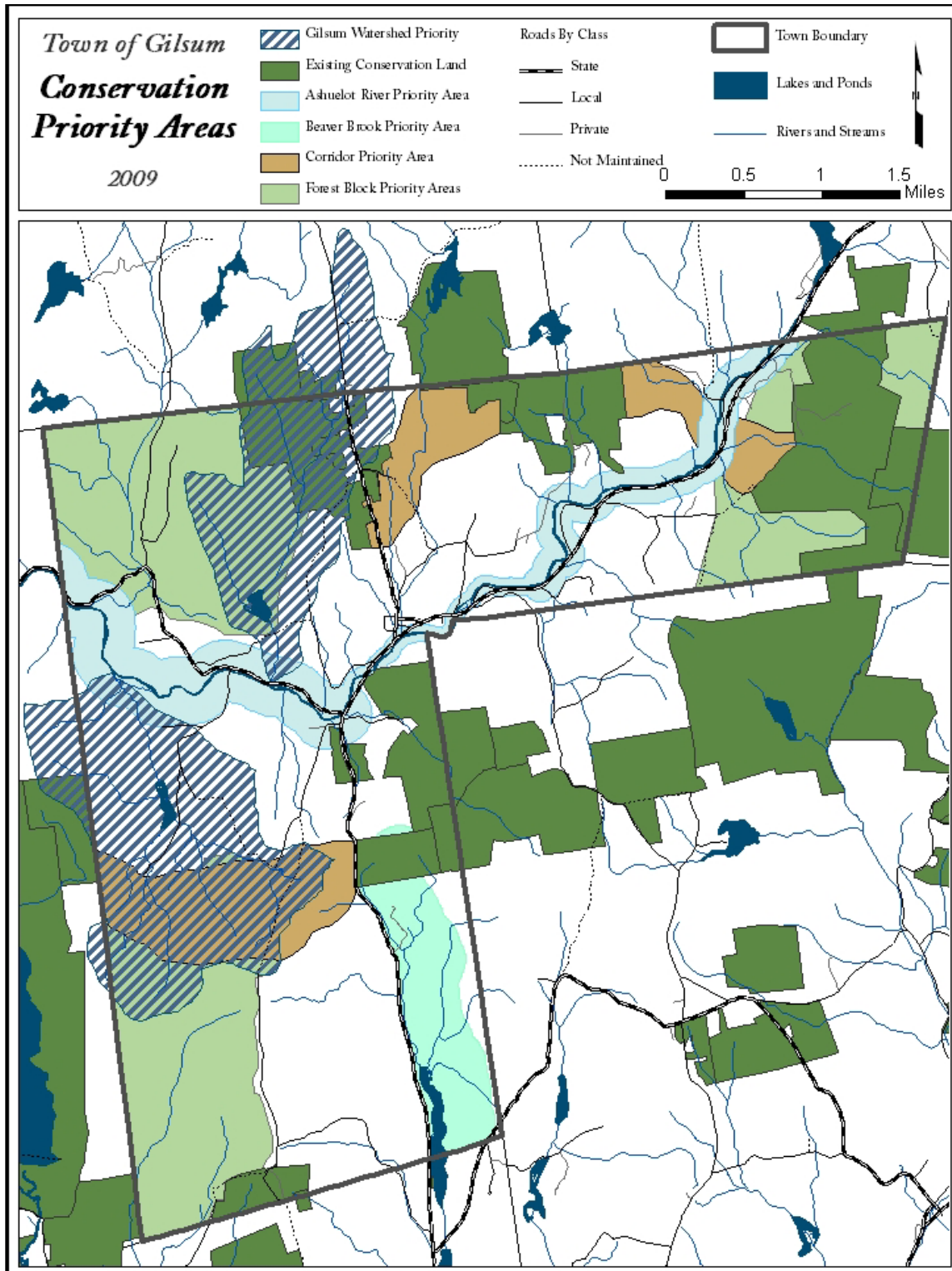


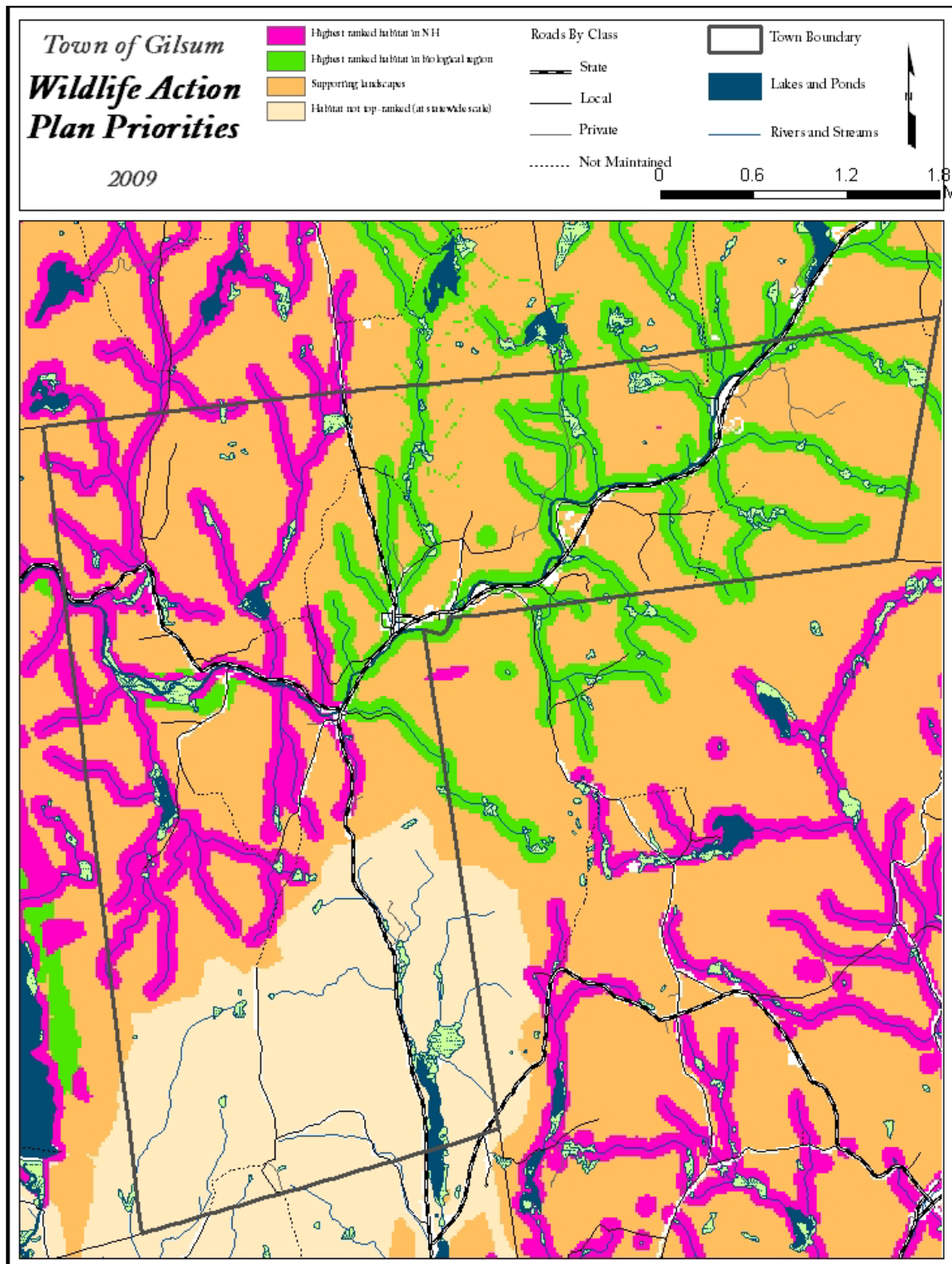


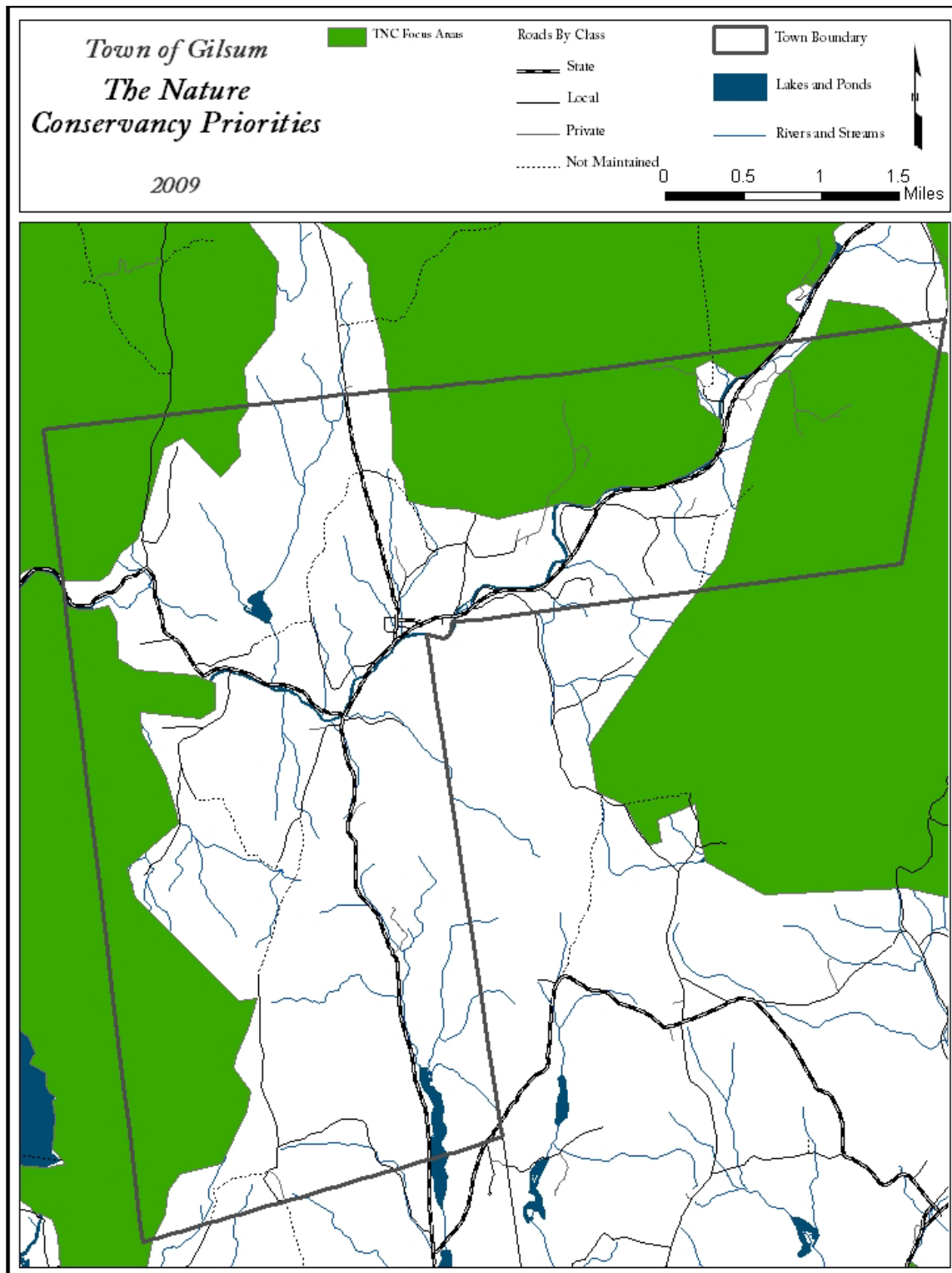


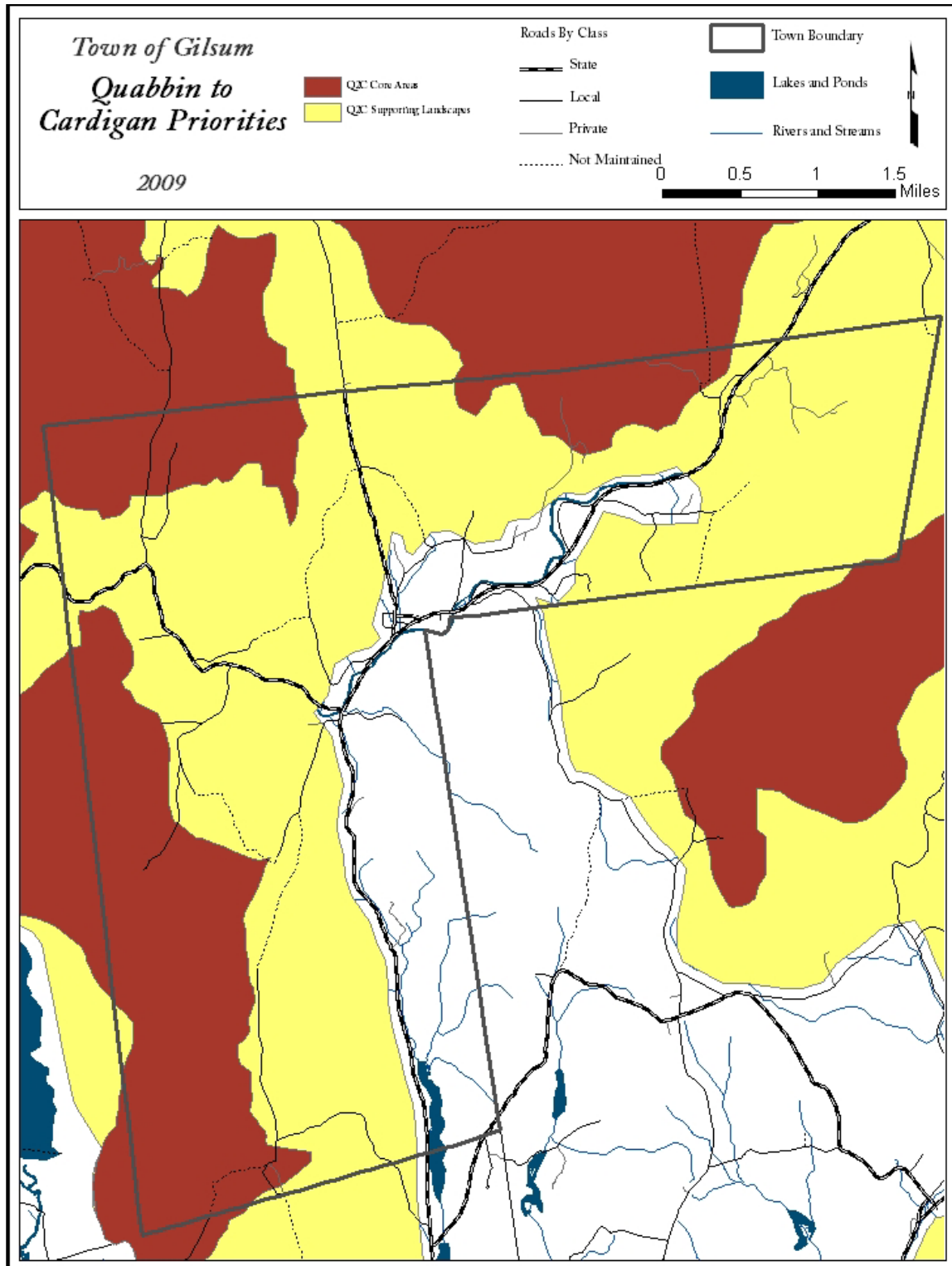












TRAFFIC AND TRANSPORTATION ANALYSIS

“Prepare ye the way of the people; cast up, cast up the highway; gather out the stones.” (Quoted by Silvanus Hayward, History of Gilsum, 1881.)

INTRODUCTION

RSA 674:2, VI, the statute that deals with Master Plans, 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 represent the most significant public investment in a town’s infrastructure. Outside of school taxes, the highway budget typically accounts for the largest percentage of the budget in most New Hampshire towns.

Because of the financial commitment required for the construction, improvement, and maintenance of a road network, the identification of current transportation issues and/or needs is crucial to orderly development and the safe and efficient movement of traffic. This section of the Master Plan intends to present relevant information on the transportation network, analyze this information, and set

forth goals and objectives, as approved by the Planning Board, relative to the identified issues.

A corollary purpose of this document is to assist the Town of Gilsum in fully participating in all levels of transportation planning - not only local, but regional, state and federal as well. Transportation infrastructure is heavily dependent on public funds. The New Hampshire Department of Transportation (DOT) sets the priorities for infrastructure spending through the development and implementation of a statewide Transportation Plan and Transportation Improvement Program. Both of these are required under 1991 federal legislation known as the Intermodal Surface Transportation Efficiency Act (ISTEA). ISTEA prescribes the federal disbursements to the states, and in order to qualify for New Hampshire’s full allocation of funds, the NH DOT must comply with the federal planning requirements.

To accomplish its task, the NH DOT requires each of the nine regional planning commissions in the state to develop a regional transportation plan that describes existing state road conditions, identifies problems and concerns, declares goals and objectives for the regional network, and makes specific recommendations for

improvements. Local concerns must be addressed through the Regional Transportation Plan in order to be included in the State Plan. This local transportation analysis will, therefore, take the regional issues into account in the process of promoting an overall cohesive transportation network.

HIGHWAY CLASSIFICATION SYSTEMS

Part of the process of evaluating a transportation network is to define the roads by the type of service they provide or by the funding that is available to build, maintain and repair them. There are three classification systems used to accomplish this: federal; state; and functional.

FEDERAL CLASSIFICATION

This classification determines whether or not a particular road is eligible for a share of federal funding for reconstruction, rehabilitation or resurfacing activities. At this time, Gilsum has no roads that fall within this classification.

STATE CLASSIFICATION SYSTEM

This system is used by the NH DOT for determining funding levels and

maintenance responsibilities. RSA 229:5 specifies the following seven classes of roads within the state system:

- **Class I: Trunk Line Highways** belong to the primary state highway system. The state assumes full control and pays costs of construction, reconstruction and maintenance.

- **Class II: State Aid Highways** belong to the secondary state highway system. All sections improved to the state standards are maintained and reconstructed by the state.

All other sections must be maintained by the Town until brought up to state standards. The same applies to bridges on Class II highways.

- **Class III: Recreational Roads** consist of all roads leading

to, and within, state reservations designated by the Legislature. The NH DOT assumes full control of reconstruction and maintenance.

- **Class IV: Town and City Streets** consist of all highways within the compact sections of towns and cities of 7,500 inhabitants and over.

- **Class V: Rural Highways** consist of all other traveled highways which the town has the duty to maintain.

- **Class VI: Unmaintained Highways** are all other existing public ways, including highways discontinued as open highways, highways closed subject to gate and bars, and highways not maintained by the town in suitable condition for travel for five consecutive years or more¹.

Of the six possible state classifications, Gilsum roads fall into four:

¹ The Class VI designation is frequently applied to roads that have been abandoned or discontinued, which often leads to confusion as to the ownership of the road. If a vote was taken at Town Meeting to formally discontinue a road (or “throw it up”), that road is no longer a public way - it then belongs to the abutting landowners.

- **Class I (Route 10);**

- **Class II (portions of Sullivan Road, Main Street, Memorial Street, Shaw’s Corner [or Surry] Road, and Mine Road);**

- **Class V (paved and gravel); and**

- **Class VI.**

Gilsum’s road network is illustrated on the accompanying map by these classifications; the map also identifies private roads and trails (which very often are discontinued roads). Table #1 below lists Gilsum’s road mileage by state classification.

**TABLE #1:
ROAD NETWORK BY
MILEAGE
AND STATE CLASSIFICATION**

	<u>Mileage</u>
<i>Class I</i>	<i>7.009</i>
<i>Class II</i>	<i>4.523</i>
<i>Class V</i>	<i>15.674</i>
<i>Class VI</i>	<i><u>6.171</u></i>

TOTAL MILEAGE 33.717

**Source: NH DOT Classified Road
Mileage, “RDIF04”, 1997**

Table #1 illustrates that Gilsum's road system is typical for most New Hampshire towns in that the greatest amount of mileage is accounted for by Class V roads. Route 10, while accounting for only seven miles in Gilsum, represents an important - if not the most traveled in the region - highway, in that it comprises one of the three north-south routes in the Southwest Region.

The greatest amount of mileage in Town consists of Class V, town-maintained roads. Of the approximately 15 miles of town-maintained roads, more than half have a gravel or graded surface: nine miles of gravel, compared to five miles of paved.

Class VI roads found all about Town, typically at the outskirts or the ends of Class V roads. Even though development on Class VI

THE COLLECTOR SYSTEM - MAJOR AND MINOR:

Major collectors are designed to move medium traffic volumes at low speeds between or within communities. It differs from the arterial system in that collector streets go through residential neighborhoods, distributing traffic from the arterials through the area to their ultimate destination. Minor collectors provide alternative routes to major collectors.

roads is generally prohibited, many of these roads do provide access to residences.

Also identified on the map are trails. Most of these corridors that are identified as trails today are in fact old roads that have been abandoned or discontinued. There is a state program that sets forth a procedure whereby towns can create municipal trails from Class VI roads (RSA 231-A); to date, there have been no such applications to landowners in Gilsum for this transfer of ownership.

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, based on standards developed by the US DOT. The purpose of utilizing such a system is to correlate the land planning and traffic planning functions of the Master Plan.

Recognition of the principal function that a highway, road or street is intended to serve can reduce potential conflicts between land use activities and traffic movements.

According to this system, there are two categories of functional classes - Rural and Urban; the Rural is the

**PRINCIPAL ARTERIAL/
CONTROLLED ACCESS:**

These consist of 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 traffic crossing lands and stopping on the road.

category that would apply to Gilsum, and contains the following types of roads:

The following map illustrates the Functional Classification System for the Southwest Region. The only road in Gilsum that is included in this system - other than the local streets - is Route 10, which is

classified as a Major Collector, funneling traffic to the “higher order” arterials of Routes 9, 10 and 12. Within the Southwest Region, Route 9 east-west is the highest order roadway.

On a local level, of course, there are several roads that play a greater role in the transportation network: Alstead Hill Road, which primarily carries area commuter

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. The minor system places more emphasis on providing land access than the major arterial system.

traffic through Gilsum; and the Surry Road, which connects Route 10 in Gilsum with Route 12A in

THE LOCAL STREET SYSTEM:

This system includes all streets not classified in one of the other higher systems. Its primary function is to provide direct access to abutting properties and access to higher order systems. It offers the lowest level of mobility and through traffic is usually deliberately discouraged.

Surry.

SCENIC ROADS

In addition to the state-aid 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 the written approval of the Planning Board. This law does not affect the rights of individual property owners; nor does it affect land uses as permitted by local zoning. In 1991 the statute was amended to allow towns to adopt provisions that are different, or in addition to, what is spelled out in the law. At this time, there are no roads in Gilsum designated as Scenic.

TRAFFIC VOLUMES

The gathering of information relative to traffic volumes helps the Planning Board identify not only how many vehicles a day are using the roads - and therefore impacting the infrastructure, but also where traffic is going. This

knowledge is necessary in order to plan for future road improvements and new road construction. The New Hampshire DOT collects average daily traffic counts (ADTs) around the state on a continual basis.

Some traffic counter devices are permanently installed and provide figures based on a full-year count, while others are set out on a rotating basis around the state for varying lengths of time, generally during the months of May to October, although counts are occasionally taken during other months. The permanent counters will be placed only on state roads; the temporary counters will be placed on state and local roads.

Traffic count data for Gilsum is available for nine locations in Town for various years; note that some of these locations have had only one or two counts taken, as the DOT does not collect the data from each location every year. The town lines at both Marlow and Keene have the most consistent data; this information is presented in Table #2 following and identified on the following map.

TABLE #2:

AVERAGE DAILY TRAFFIC BY YEAR

LOCATION	1970	1980	1990	1992	1993	1994	1995	1996
1. NH 10/Keene Town Line			2800		3100		3000	3200
2. Howard Road at Ashuelot River Bridge					10			
3. NH 10/Marlow Town Line	500	1000	1700		1900	2000	1800	
4. NH 10/Ashuelot River					3000			
5. Hammond Hollow Rd/ Ashuelot River					130			
6. NH 10/Hayward Brook					2200	2300		
7. Church Street/ Hayward Brook					80			
8. Memorial Street/ Hayward Brook				350	330			
9. Mine Road at Alstead Town Line								570

SOURCE: NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION

The most consistent traffic data collected by the DOT is for the Gilsum-Marlow Town Line, which shows a more than tripling in average daily traffic since 1970. While the counts at the Keene Town Line are much higher than at the Marlow line, they have not shown much change over the years for which the data have been collected. Note that the Keene Line counts will include traffic coming from Sullivan, as well as through Gilsum.

To some extent, the increase in traffic on Route 10 is related to the overall population increases in this region since 1970; given the small population of the Town, residents can account for only a small portion of the average daily traffic on Route 10. Another factor that has affected the Route 10 counts is surely the existence of PC Connections in Marlow, a mail-order computer company with a large number of employees commuting to Marlow from the north and the south. The company moved its operations out of Marlow in the early 1990s, and the

drop in the traffic counts is probably at least a partial reflection of this.

RESIDENTIAL TRAFFIC PATTERNS/ HOUSEHOLD CHARACTERISTICS

Gilsum itself has no major traffic generators. As noted above, the greatest amount of traffic in Town is the through-traffic on Route 10. Therefore, in order to gauge local traffic, information that illustrates the commuting patterns of the labor force is presented here. Also examined are the numbers of motor vehicle registrations in Gilsum, which suggests the number of vehicles per household, and therefore some indication of how much driving is done per household.

COMMUTER PATTERNS

In order to understand better where the traffic in Gilsum is going to and coming from, one factor to examine is the commuting patterns of the labor force.

TABLE #3:
COMMUTING PATTERNS, GILSUM LABOR FORCE,
1990

<u>% of Workers</u>	<u>Place of Work</u>
	Cheshire County:

56%	Keene
16%	Gilsum
17%	other towns
4%	other counties
6%	other states

SOURCE: US CENSUS

According to the US Census, Gilsum had 376 workers in 1990; as Table #3 indicates, over half of them work in Keene; however, 10% commute to other counties in New Hampshire or other states – principally Vermont or Massachusetts.

The usual mode of transportation for these workers is the private automobile; 73% of these workers drive alone to work; 18% carpool, 3% work at home, and the remaining walk or use some other form of transportation.

The travel time to work for most people is between 15 and 30 minutes. Only between one and two percent of the surveyed population travel an hour or more to their workplace, and about 4% drive for between 45 and 60 minutes.

GILSUM MOTOR VEHICLE REGISTRATIONS

Information on motor vehicle registrations helps to complete the picture of road impacts from local traffic. The NH Department of Safety collects this information from the municipalities each year. The table below presents the registrations for Gilsum from 1991 to 1997; however, these numbers represent all registrations – motorized and non-motorized alike. Nevertheless, it can be assumed that passenger vehicles make up the greatest proportion of the registrations.

TABLE #4: MOTOR VEHICLE REGISTRATIONS, GILSUM, 1991 – 1997	
YEAR	REGISTRATIONS
1991	739
1992	783
1993	795
1994	816
1995	794
1996	838
1997	844
SOURCE: NH DEPARTMENT OF SAFETY	

GILSUM'S ROAD NETWORK

This section describes the road conditions as they exist in Gilsum

today, with a brief discussion of the historical evolution of the road network seems appropriate and useful.

HISTORICAL OVERVIEW²

Early roads were mostly bridle paths that were marked by trees. The location of roads was principally driven by settlers' houses, running from house to house in the most direct direction. The Charter for Gilsum was granted in 1752, but settlers did not really begin to establish themselves until the early 1760s - due mostly to Indian trouble.

The first roads in Gilsum were laid out by the Proprietors in 1764-65, and -66, and after that by the Selectmen. The first principal road on record was laid out in April of 1764, and ran from Keene to Alstead, through what is now Surry. The first road laid out in what is now Gilsum followed in November of 1764.

The map on the following page is based on a map surveyed and drawn by S. Hayward in 1876-77

² The information for this discussion comes from the History of Gilsum, New Hampshire, published in 1881 by Silvanus Hayward.

and 1879, which was originally appended to his History of Gilsum.

hotel in the Village fought for the road and prevailed.

This map illustrates the evolution of the road system in Gilsum. The road development can actually be viewed in two “phases”:

v Phase I occurred from approximately 1789 to 1798 in the northern part of town; almost all of the roads laid out during this time period essentially followed the Ashuelot River from the Marlow line over to Surry.

v Phase II, in the 1800s, was noteworthy for the establishment of a north-south route: the County had laid out a road from Alstead to Keene in the late 1790s; in 1806 a Turnpike from Newport to Keene was established, and the section through Gilsum was laid out over the original County Road in 1811 (after much resistance by the Townspeople, who were eventually “. . . compelled to yield”. . .³). In 1839, a new County Road was established, again, against the wishes of many Townspeople, but the owners of a new store and

Most of the roads were laid out to be two or three rods wide (a rod is 16.5 feet wide). The first road (through Surry) was actually laid out to be six rods wide - a superhighway of the time, and the first road in Gilsum proper was four rods wide “. . . to be and Remain an oppen Publick Highway.”⁴

Throughout those early years roads were constantly being laid out, changed, discontinued, or reopened. Much of this activity was, of course, driven by the settlement pattern. Since people didn’t particularly need roads to get to a prime building site, they built where it suited them, then petitioned the Selectmen to lay out a road. Conversely, if people moved away, the town might vote to “trow up (sic)” the road.

This consistent change in road layouts and their status, combined with irregular record-keeping and a fire that destroyed some town records, contributes to ongoing questions over the status of certain roads, or sections thereof. Planning Boards and Selectmen are frequently called on to deal with issues of development on Class VI

³ History of Gilsum, page 57.

⁴ Ibid, page 53.

roads - or more specifically, is the road a Class V or a Class VI?

The primary routes that were established from 1790 to 1839 remain essentially unchanged: a north-south series of roads, from Keene to Alstead and Marlow; and an east-west road that went from the Lower Village of Gilsum (at the site of the Stone Arch Bridge) to Surry.

Comparison of today's map with the historical map shows that Route 10 parallels the 1839 County Road from Keene to the Marlow line, the only real difference is that the original route ran on the west side of the River from the Lower Village to the Village, whereas Route 10 now follows the east side of the River.

Bridges only became an issue for the Town as the population grew and heavy teams of horses were traveling through town. In fact, a quote from the Gilsum History reflects this situation:

"It has been said, that one of the surest tests of civilization is the condition of public roads. If so, Gilsum cannot boast a high grade. It is but justice to say, however, that the heavy teams passing from Marlow to Keene cost the town hundreds of dollars in annual road

repairs, without bringing a cent in return."

The first bridge of any substance was constructed in 1778-79 over the Ashuelot River near to where the current Stone Arch Bridge stands. This was a timber bridge, and was so frequently rotted by spray from a nearby dam, that the Town instructed the Selectmen to contract for a Stone Arch Bridge. Such a bridge was built in 1861, however, due to "faulty construction [and] the contractor not understanding his business . . ."⁵, the bridge collapsed after only a few months' use. The following year the Town voted to have a new Stone Arch Bridge built near the site of the first one; this was completed in 1863 (at a total cost of \$5,685), and continues in use to this day.

GILSUM ROAD CONDITIONS

⁵ History of Gilsum, p. 59.

Information on the status of Gilsum's Class V and Class VI roads, as well as private roads, is contained in a table appended to this document. General information relative to the adequacy and the problems of the road network is provided by the Road Agent and the Selectmen.

More than half of the Class V road mileage is unpaved – either dirt or gravel surfaced. In addition, many of the roads are deficient in terms of width necessary to accommodate daily traffic. This situation is neither unusual for many New Hampshire towns, nor is it necessarily indicative of an inadequate road system.

The problems encountered in trying to maintain these roads have more to do with the small population base that supports the budget and the difficult topography of Gilsum. The most problematic issue for road maintenance is the steepness of many of the roads and the lack of guardrails along these roads. Overall, however, the conditions of the town roads are generally adequate and able to accommodate the traffic served.

DOT ROAD STANDARDS

In order to adequately plan for future road improvements it is necessary to first identify existing deficiencies in the existing transportation system. Deficiencies include such problem areas as roads with substandard width, inadequate or deteriorated bridges, poorly designed intersections, deteriorating road surface and shoulders and poor drainage.

The New Hampshire Dept. of Transportation (NH DOT), in March, 1986 published "Minimum Geometric and Structural Guides for Local Roads and Streets". The specifications for minimum pavement widths based on their average daily traffic are shown on the accompanying illustration. Based on these criteria, the minimum standard for Class V roads is considered to be eighteen feet. While it is certain that many Class V roads experience well in excess of 50 trips/day, ADT figures have not been developed for all Town roads. The aforementioned NH DOT standards also include as criteria for road surfacing that a road with an ADT of 50 trips/day or greater should be paved with treated asphalt.

Reference to the information above indicates that many Town roads do not meet the DOT standards, in terms of width. Again, this is not at all unusual for

small New Hampshire towns; furthermore, it should be noted that it is not unusual for Town residents to feel that many of the narrow gravel roads, which may be considered deficient or substandard by NH DOT standards, are the type of road that gives character to the Town's rural countryside and typifies the traditional New England landscape and development pattern. Consequently, there may be a desire to preserve and/or maintain these roads pretty much as is, i.e., to minimize widening.

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 DOT, using a system based on federal standards for type of construction, widths, surface conditions, ability to handle traffic volumes, etc. There are 11 bridges in Gilsum, seven of them on state roads (Routes 10 and Old Route 10), and four on Town roads: Hammond

Hollow Road, Church Street, and Banks Street (which is actually a culvert, but appears on the DOT Mini-Bridge List). These are all identified on the accompanying map. The status of these bridges, based on the DOT standards, is presented below in Table #5.

The functional sufficiency ratings noted in the table are based on certain criteria that have to do with traffic capacity and safety of the bridge approach, and with the integrity of the structural components and the bridge surface. Using a maximum sufficiency rating of 100 points, the DOT has determined that a rating of less than 60 points is indicative of a disproportionate share of deficiencies, and a rating of less than 40 points indicates a bridge in very poor or severely deteriorated condition. In Gilsum's case, however, all the bridges have ratings well above 60, with two exceptions: (1) the oldest bridge in Town, on old Route 10, has a rating of 59.8; and (2) the bridge on Route 10 just south of Centennial Road.

HAZARDOUS CONDITIONS/ ACCIDENT LOCATIONS

Conditions that make for hazardous travel are typically related to design or physical features, such as steep grades, narrow roadways, sharp curves,

etc. Discussion with both the Gilsum Police Chief and the Road Agent generated the information illustrated on the Hazardous Conditions Map.

Problems the Road Agent would like to address, overall, is the vertical slope on the sides of many town roads and the lack of guardrails.

Alstead Hill Road, with the steep grade leading out of the Village, is very difficult to maintain in the winter; in fact, most of the Highway Department's budget for winter salt goes to maintain this hill. (This road is maintained by

the State in summer - which means road improvements, paving, etc.)

Sullivan Road also has a very steep bank; correction would require a great deal of fill, in addition to a guardrail. And, Bingham Hill - which is the State-maintained Route 10, is dangerous in that the road has been improved on the south side, and speeding has led to a number of accidents.

**TABLE #4:
STATUS OF STATE & LOCAL BRIDGES**

Location	FSR ⁶	Year Built/ Last Inspection	Type ⁷	AAR ⁸	LR ⁹	FC ¹⁰	ADT ¹¹	Year ADT
Old NH 10/Dart Brook #62136	76.7	1927/95	CS	4		8	3,000	1993
Hammond Hollow Rd/ Ashuelot River- #75121 1993		99.0	1981/94	IB-C	8	E2	9	130
Old NH 10/Hay Brook	62.3	1931/94	CS	6		8	3,000	1993

⁶ **Federal Sufficiency Rating**

⁷ **Structure Type:** CB=Concrete Box; IB-W=I-Beam w/Wood Deck; IB-C=I-Beam w/Concrete Deck; MP=Metal Pipe; CRF=Concrete Rigid Frame; CS=Concrete Slab.

⁸ **Approach Alignment Rating:** 9-8=Good 7-6=Fair 5-4-3=Poor 2-1-0=Very Poor

⁹ **Load Restrictions:** E2=Restrictions for Certified Vehicles;

¹⁰ Functional Class: 7=Major Collector 08=Minor Collector; 09=Local

¹¹ ADT=Average Daily Traffic

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#80121									
Old NH 10/Ashuelot River* #88117	59.8	1900/94	MP	4	E2	8	2,300	1994	
NH 10/Ashuelot River* #92121	58.3	1935/94	SRF	8		7	2,300	1994	
NH 10/Hayward Brook #97129	94.8	1935/95	CB	8		7	2,300	1994	
Church Street/ Hayward Brook #97130	74.1	1965/94	PSC	8	E2	8	80	1993	
Old NH 10/Hayward Brook 1993 #97131		88.2 1931/94	CB	8			8	330	
Banks Street/Hayward Brook #97139	---	1994/94	MP	8		9	0	00	
NH 10/Ashuelot River* #106131	67.2	1949/94	IB-C	6	C2	7	2,300	1994	
Howard Road/Ashuelot River* #138160	68.8	1945/94	IB-W	6		9	10	1994	

* These bridges are considered functionally obsolete, which means that they are carrying more traffic today than they were originally designed to do.

SOURCE: MINI-BRIDGE LIST, NH DOT, 1996

ALTERNATIVE MODES OF TRANSPORTATION

The focus of this analysis so far has been on vehicular, private transportation. Non-motorized transportation, such as pedestrian and bicycle traffic, is limited in this area, outside of the City of Keene. Most roads were designed and built with little or no consideration for anything but vehicles; pedestrians and bicyclists must often share the road with cars and trucks. We have seen in recent years an increase in both pedestrian and bicycle traffic, and with it a recognition of the potential dangers of mixing these uses with vehicular traffic. These

issues can be partly addressed at the local level by designing new roads with attention to alternative traffic. With existing roads the problems are more difficult, since the Road Agent is dealing with a circumscribed width in most cases; warning signs and speed limits are two methods that can help ameliorate the conflicts.

PUBLIC TRANSPORTATION

Public transportation plays a very small role in the overall service network. There is no bus service to Gilsum at this time; Vermont Transit operates routes through

Keene to points north, west and south, but none east. Train service is very limited, with one Amtrak trip per day leaving from Brattleboro, Vermont. Public transportation for special needs populations is available from a number of social service organizations on an as-needed basis; some of these services are also open to the general public. The City of Keene operates a public bus service within the City boundaries. The service is federally subsidized and targets the elderly population with a route that stops at the elderly housing complexes in the City, medical offices, and shopping facilities.

NON-MOTORIZED TRANSPORTATION

As mentioned above, opportunities for travel without an automobile are limited in this region. Bicycling, however, has experienced a resurgence over the last several years, both as a means of transportation and as a source of recreation. This shift is due, in part, to a statewide program called “Rails to Trails” that allows towns to develop recreational trails on abandoned railroad beds.

In the Southwest Region, there are three primary railroad routes that are being utilized now; the uses include snowmobiling and cross-country skiing in the winter, as

well as hiking and bicycling in the summer. These trails are also providing some people with an alternative to commuting by car. These routes are illustrated on the accompanying map and listed below:

- the Cheshire Line, from Keene to Walpole;
- the Ashuelot Line, from Keene to Hinsdale; and
- the Fort Hill Line, from Hinsdale to Brattleboro, Vermont.

The success of these trails is encouraging; in addition, state transportation planning takes into consideration the accommodation of bicycles on state roads and highways. As pressures mount to reduce the vehicular traffic on our roads, more opportunities for bicycling and walking are likely to present themselves.

HIGHWAY AND ROAD IMPROVEMENT PROGRAM

IDENTIFICATION OF ISSUES

- Elementary School/Addition of Community Center

• **Preservation of Class VI roads as potential emergency routes.**

• **Cost to the Town of road maintenance.**

• **Curb Cuts and Land Uses along Route 10**

• **Traffic through the Village**

• **Maintenance of Alstead Hill Road**

• **Posting of speed limits**

• **Bridge and highway limitations taken into account when Board reviews applications for development.**

STATE IMPROVEMENTS

Planned improvements to state-maintained roads in Gilsum are limited to the replacement of the bridge on Route 10 between the Stone Arch Bridge and the Village. The schedule, as published in the NH DOT Ten-Year Transportation Improvement Program for 1997-2006, is as follows:

v1997 - **Planning and engineering**

v1997 - **Ledge outcrop removed**

v1998 - **Complete cleanup of ledge removal**

v1998 - **Preliminary Engineering Design**

v1998 - **Right of Way Acquisition**

v2002- **Start Construction**

Participation in SWRPC Transportation Advisory Committee

LOCAL IMPROVEMENTS

The priority scheduling of road improvements is based on a number of variables, the condition of the road being only one of them. Of course, the Highway Department is dependent upon Town Meeting appropriations to purchase, maintain and repair equipment, as well as repair the roads. Obviously, hazardous conditions are given top priority.

The regular maintenance and repair of roads is further complicated by Gilsum's topography and weather

conditions in this part of the country. Alternating freezing and thawing wreak havoc with roads, and steep hills and curves make road construction expensive and difficult. These problems are compounded by the fact that most local roads were not constructed “new” - that is, built using technology and knowledge available to road agents today. Instead, they are roads that evolved from bridle or walking paths to a road that now carries vehicles. In these cases, a proper, solid roadbed was never constructed - the traveled way was widened and eventually paved or graveled, but the underlying base is not adequate in terms of addressing the basic problem of drainage, which is the single most significant factor to cause road deterioration. Unfortunately, the correction of drainage problems tends to be prohibitively expensive, so that road agents are frequently left to repair roads on an ongoing basis, rather than dig up the entire roadbed and start new.

Given the relatively small amount of town-maintained road mileage in Gilsum (15), and the relatively slow pace of development, the Road Agent does not develop a long-range plan for road improvements. Each year, problem areas are addressed as the budget allows.

THE LAND USE - TRANSPORTATION CONNECTION

An important part of transportation planning for the Master Plan is to understand that there is a close connection between land use and transportation. Roads provide access to land, which facilitates development of the land; the developed land, in turn, generates traffic of various types. An example of this was noted above, with the Highway Business District along Route 10: the challenge for the Town is to provide opportunities for commercial development without turning the highway into an unmanageable strip. At the same time, one of the reasons the decision was made to place commercial activity along Route 10 was because the town roads are generally unsuitable for intensive development; other than the small businesses and home occupations, the town is essentially residential, and any increase in commercial or industrial activity on local roads would necessitate road improvements and increased expenditures.

Despite some of the problem areas identified through this analysis, there are strategies available to the

Town to address transportation issues, both locally and regionally. Following are several approaches intended to support this policy. Several of these techniques are already in place within the Gilsum land use regulations.¹² Accompanying this discussion are also several graphics illustrating some of the concepts, like curb cuts and driveway alignments.

PLANNING STRATEGIES

q **FOCUS DEVELOPMENT IN THE VILLAGE**, and provide for mixed uses and higher densities than in the outlying parts of Town.

Discussion: This has already been addressed by the Town. The Zoning Ordinance was amended in 199__ to broaden the types of uses permitted in the Village District, and move other uses to the newly-created Highway Business District.

q **Set Development Boundaries along a Corridor.**

Discussion: The Highway Business District boundaries along Route 10 could be reexamined to: (1) ensure that significant natural

resources identified in the Conservation and Preservation Analysis would not be threatened by development in this corridor; and (2) look for areas along the highway that could possibly serve as “centers” for commercial development, with access off of an interior road, rather than the highway.

q **IDENTIFY APPROPRIATE LAND USES.**

Discussion: 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.

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

Discussion: On the town roads, this is not much of an issue - people can walk or bike without much trouble. Route 10 is a different matter. While the road does have wide enough shoulders in most places to accommodate bicycles and pedestrians, there are places along the road that are quite narrow with no shoulder. The Town can make sure that it is always at the table when the NH DOT is considering plans involving Route 10, and make every effort to see that all due consideration is

¹² Much of the following discussion is based on a report entitled “Access Management: A Guide for Roadway Corridors”, published in the Planning Commissioners Journal/Number 29/Winter 1998; Champlain Planning Press, Inc., Burlington, Vermont.

given to the accommodation of non-motorized traffic.

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

Discussion: The Planning Board, in conjunction with the 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.

q **CAPITAL IMPROVEMENTS PROGRAM.**

Discussion: 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.

REGULATORY STRATEGIES

q **ROAD STANDARDS**

Included in the Subdivision Regulations administered by the Planning Board are standards for road construction. These essentially mirror the DOT standards discussed above, which 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.

q **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 of off the road. Driveway standards can encourage safe and efficient transportation corridor management through provisions that:

ÿ reduce the number of curb cuts along a road;

ÿ separate curb cuts and intersections;

ÿ align driveways either opposite one another or offset them by at least 125 feet for safe sight distance;

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• relate driveway design such as width, length and curb radii, to travel speed and traffic volumes;

• require shared access and parking where appropriate; and

• prohibit parking that requires backing out onto the road.

q **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.

q **SCENIC ROADS**

Towns may designate any town-maintained road as a Scenic 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.

SUBDIVISION AND SITE PLAN CONSIDERATIONS

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:

n **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.

n **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.

n **PARKING LOT LOCATION AND DESIGN**

There are a number of issues with parking lots for commercial uses, such as:

• locating the building(s) close to the road and putting the parking on the side or in the rear of the parcel;

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- ü **requiring shared parking, when feasible;**
- ü **planning for future shared parking by designating reserved areas on the plan;**

- ü **prohibiting parking and loading that requires backing out onto the street; and**

- ü **the use of vegetative buffers between parking lots and roads.**

n DRIVEWAY LOCATION AND DESIGN

- ü **Do not allow more than one entrance and one exit drive on any lot.**

- ü **Make sure the driveway is long enough to allow vehicles to pull off the road and stack inside the lot before entering the road.**

- ü **Require two-way driveways to intersect the road at an angle of 70-90 degrees.**

- ü **Address 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.**

- ü **Avoid curb cuts on sharp hills.**

- ü **Limit driveway grades within 20 feet of the road to no more than 3% uphill and 6% downhill.**

GOALS AND OBJECTIVES

THESE ARE MY THOUGHTS - THEREFORE OF COURSE SUBJECT TO REVIEW AND APPROVAL - AND EXPANSION - BY THE PLANNING BOARD. WE WILL DISCUSS THESE IN MORE DETAIL AFTER YOU HAVE REVIEWED THIS FIRST DRAFT.

- ✓ **Corridor Management Plan for Route 10**

- ✓ **Identification of emergency access routes.**

- ✓ **Review land use regulations to see whether amendments are necessary in order to accomplish transportation goals.**

- ✓ **Consider adopting Road Policy.**

- ✓ **Consider adopting Driveway Regulations.**

- ✓ **Consider amending Backlot provisions in Zoning Ordinance.**

- ✓ **Work with the Transportation Advisory Committee of the Planning Commission to ensure that transportation concerns of**

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Gilsum are adequately addressed at the state level.