



# Town of Warner, New Hampshire 1999 Master Plan



# Town of Warner, New Hampshire 1999 Master Plan

Prepared for the Warner Planning Board  
By the  
Warner Master Plan Committee  
And the  
Central New Hampshire Regional Planning Commission

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# **I. INTRODUCTION**

# **Chapter I**

## **INTRODUCTION**

The Master Plan is an advisory document developed by the Planning Board to assist the community as it plans the town's future. This Plan is an inventory of existing conditions within Warner, an evaluation of current conditions and a plan for the future. This Plan will be helpful in developing future ordinances and regulation because effective planning and drafting of regulations cannot occur without sufficient knowledge of existing conditions and future trends.

The Master Plan, and the annual Capital Improvements Program, are helpful tools in guiding Warner's growth in a direction desired by Town residents. To reflect existing conditions and community values, the Master Plan should be reviewed by the Planning Board annually and updated as necessary.

### **1997 Master Plan Survey**

With Warner's population at an all-time high, and the Town experiencing increasing commercial and residential development pressure, the Planning Board decided to initiate this Master Plan update. The first step in updating the 1989 Warner Master Plan was to determine the extent to which citizen views have changed over the past ten years. The Master Plan Survey Committee developed a survey which was based on a Master Plan survey previously distributed in 1987.

In November 1997, the Master Plan Committee distributed approximately 1,250 surveys to landowners and residents of Warner. The Survey was comprised of nine sections: community services, business and economics, home businesses, housing, parking, environmental concerns, roads and bridges, historic and visual character, and demographics. The survey results can be found in Appendix A.

#### *Community Services:*

A comparison with the 1987 Master Plan Survey shows that citizen views of community services have remained fairly consistent over the past ten years. Services such as snow removal, fire protection, and road maintenance are still viewed favorably and receive high ratings of satisfaction; youth recreation facilities and adult education still rate poorly. Community services were rated, on average, three times higher than in 1987, with services such as the police, transfer station, youth recreation and the library rating significantly higher. Concerns about public lake and river access as well as public kindergarten have also increased slightly since the 1987 survey.

Of all of the community services listed, the Transfer Station received the highest rating of satisfaction with 88.2 percent, and police protection was rated as needing the most improvement, with schools ranking a close second.

The most favored community service listed in the survey was the general protection of the environment, with 82 percent of the respondents ranking it as important. Other favored services included public lake and river access, youth recreational facilities, and public kindergarten.

*Business and Economics:*

Respondents favored encouraging commercial and industrial growth, especially in concentrated areas, such as industrial parks. The location of new businesses, such as professional business offices, medical offices and pharmacies, were preferred over convention centers or auto service stations. Residents favored a wide variety of commercial activities with a mix of commercial and industrial growth. The preferred locations for future commercial development were in the Exit 7 (Davisville) and Exit 9 areas, with the expansion of the commercial districts beyond the existing zones considered unfavorable.

*Home Businesses:*

The majority of the respondents opted for leaving the definition of home occupation unchanged.

*Parking:*

Additional parking for the Fall Foliage Festival, established businesses, and for handicapped use was not seen as necessary, although residents felt that off-street parking should be better identified.

*Housing:*

The most important housing need identified was for the increased availability of elderly housing. Responses to the manufactured housing questions indicated no great preference for changing the current policy: half of the respondents wanted change and the other half were satisfied. Of the people wishing to change the policy, there was great support for limiting manufactured housing to specific areas of Town.

*Environmental Concerns:*

The highest priority identified in the 1997 Survey was the protection of the environment. Across the board, respondents favored continuing the 75 foot vegetative stream buffer requirement, using the zoning ordinance to protect and preserve the natural landscape, encouraging the Conservation Commission to work toward preserving habitat zones, increasing the Town conservation fund to purchase easements, limiting the negative impacts of recreation, and increasing the amount of land under conservation protection.

Respondents also favored actively encouraging good forest management practices, creating a forest/mountain district consisting of large lot zoning to encourage timber production,

continuing the current use assessment to encourage active farming operations, using easements to preserve open areas, and dedicating the revenues derived from the current use tax penalty to purchase conservation easements or development rights.

*Roads and Bridges:*

Roads such as Kearsarge Mountain Road, Pumpkin Hill Road and Burnt Hill Road were favored for New Hampshire scenic road designation. Respondents also favored creating a committee to review the need for new roads, bridges, intersections and connector roads on an ongoing basis.

*Historical and Visual Character:*

Protection for historic districts and structures was favored, especially for the Village Center. Respondents also favored the creation of regulations to maintain the natural landscape integrity of ridgelines and hilltops.

*Demographics:*

Approximately 233 of the respondents were homeowners in Warner and 8 were renters. The average length of time the respondents have lived in Warner is between 8 and 10 years, with the median length of time being 20 years.

*The 1999 Master Plan Update*

Using the above survey results and input from all of the Town Departments, Boards and Committees, as well as the general public, the Committee updated the 1989 Master Plan to reflect the current needs and future desires of the Town. The policy recommendations outlined in this Plan will be used by the Planning Board to revise specific regulations and ordinances. They also can serve as guidelines for other activities and projects, such as land and water resource protection, transportation improvements and historic preservation.

## **II. GOALS AND OBJECTIVES**

## **Chapter II**

### **GOALS AND OBJECTIVES**

#### **Introduction**

The purpose of the Goals and Objectives chapter is to make a general statement about the vision that the citizens of Warner have for the future of their community. This section is also the foundation for subsequent chapters of the Master Plan. As used in this Master Plan, goals are broad policy recommendations of a desired future, and objectives are more precise recommendations of how the goals will be accomplished. In the following chapters of the Master Plan, each set of objectives is further defined by a set of action statements, which indicate how the objectives should be implemented.

The following statements of goals and objectives reflect the general opinions and desires of the citizens of Warner as expressed in the 1997 Master Plan Survey. The results of this survey can be found in Appendix A. The survey results, as well as input received from the public and from various Town Boards and Departments, are used extensively throughout the Master Plan as the basis for the recommendations.

#### **Statement of Goals and Objectives**

##### **Goal 1 - Conserve and Protect the Natural Resources of the Town.**

###### **Objectives**

- 1) Increase the amount of sensitive/priority areas in the Town that are protected through easements, covenants, or Town ownership.
- 2) The Conservation Commission should continue to carry out watershed studies, such as the Willow Brook Watershed Study, to help the Town establish specific areas to be protected.
- 3) Use the proceeds from the Current Use Tax penalty to develop an open space plan.
- 4) Continue to promote the agricultural use of lands through the Current Use Tax.
- 5) Encourage the use of sound land management practices for forest and land to promote diverse wildlife habitat.
- 6) Investigate the use of stronger controls and protection of floodplain areas.
- 7) Protect scenic ridgelines and hilltops, and encourage the responsible use of Mt. Kearsarge.

- 8) Investigate alternative zoning practices to protect forestry and agricultural activities.
- 9) Protect important aquifers.

**Goal 2 - Provide For the Orderly Growth and Development of the Town.**

**Objectives**

- 1) Complete and maintain an updated Master Plan and other plans as needed.
- 2) Annually review and update, as necessary, all land use regulations.
- 3) Avoid the premature subdivision of lands.
- 4) Provide for a balance between the use and the development of land and the preservation of open space

**Goal 3 - Encourage growth and diversity in commercial development, while protecting the residential and rural character of the Town.**

**Objectives**

- 1) Review the current zoning ordinances after the Master Plan is adopted to ensure that proper and adequate areas for commercial and industrial expansion are available and that regulations to protect the environment are in place.
- 2) Provide for adequate separation and/or buffers between commercial/industrial uses and other sensitive uses.
- 3) Expand water and sewer services, as the need arises.
- 4) Encourage the location of more professional businesses in Town, such as business offices.
- 5) Promote the village center as the commercial core of the community.
- 6) Encourage sound land management practices for forestry and agriculture to promote a more diverse economy.

**Goal 4 - Conserve and protect the historical and cultural resources of the Town.**

**Objectives**

- 1) Identify and conserve the historical features in the Town, such as historic buildings, covered bridges, stone walls, foundations, scenic views and ridgelines. Conserve such land and preserve these landmarks.

- 2) Encourage the preservation, enhancement and rehabilitation of buildings of architectural and historical significance.
- 3) Establish a committee to explore historic, scenic and cultural roads and pursue state designation of such roads.
- 4) Publicize the history and culture of the Town.
- 5) Facilitate local interest in, and the preservation of, historic neighborhoods.
- 6) Encourage activities and events which facilitate community involvement, such as the Fall Foliage Festival, the 4th of July celebration and other Holiday activities.

**Goal 5 - Maintain and enhance Town services, such as schools, fire & police protection, roads and recreation, as the needs of the Town expand and change.**

**Objectives**

- 1) Investigate potential sites for a new police station.
- 2) Expand sewer and water service areas, where possible, to provide for improved public health.
- 3) Review the capital improvements program to plan for the future service needs of the Town. Plan for and assign responsibilities for the effect of long-range growth impact service costs on the Town.
- 4) Explore opportunities for the development of a multipurpose community facility.
- 5) Establish a committee to review the status of roads in the Town.

**Goal 6 - Provide long-range planning to meet current and future housing needs.**

**Objectives**

- 1) Review current housing location/density/economic/quality factors, as they relate to current and future housing needs.
- 2) Provide for high quality housing to meet the future demographic needs.
- 3) Maintain a balance of land zoned for a wide variety of housing types.

### **III. HISTORY OF WARNER**

## **Chapter III**

### **HISTORY OF WARNER**

#### **Introduction**

Warner's unique history sets it apart from all other towns. Historical interpretation of the natural setting and human spirit that are part of Warner's past provide important insights to our present condition and should be used as a guide for the future. The Master Plan is one method of helping to recognize and continue the best traditions of the town. However, a plan for the future is incomplete, without a look at the past.

The visual evidence of Warner's early settlement and later periods of development contribute greatly to the Town's present day character and appearance. The identification and conservation of the built environment can be an important community development instrument, especially in terms of evaluating future development proposals. There is a deepening recognition in Warner that the Town's historic resources and cultural heritage are significant ingredients in its overall quality of life. This chapter reflects these values and places historic resource protection as a cornerstone in the Master Plan's goals and objectives.

The historic narrative included in this chapter was provided by members of the Warner Historical Society and members of the Master Plan Committee.

#### **Goals, Objectives and Actions**

One of the major goals of the Master Plan is to conserve and protect the historical and cultural resources of the Town

The following objectives and recommended actions are presented as ways of achieving this goal:

**Objective 1:** Identify and conserve the historical features in Town, such as historic buildings, covered bridges, stone walls, foundations, scenic views and ridgelines. Conserve historic and culturally important land and preserve landmarks.

*Actions:*

1. Complete the Warner Historic Resource Inventory Survey
2. Develop walking or driving tours of historic sites
3. Create maps of historic resources
4. Conduct a stone structures inventory
5. Encourage increased communication between the Planning Board and the Historical Society

6. Replace covered bridge signs
7. Promote the Village as the center for community services and activities

Objective 2: Encourage the preservation, enhancement and rehabilitation of buildings of architectural and historical significance.

*Actions:*

1. Hold preservation/education workshops
2. Write historical articles for Warner's New Paper

Objective 3: Establish a committee to explore historic and scenic roads.

*Actions:*

1. Research the New Hampshire State Scenic Byway program and the steps necessary for designation
2. Develop historic and scenic driving tours of Warner
3. Explore the New Hampshire historic marker program

Objective 4: Publicize the history and culture of the Town.

*Actions:*

1. Review Village Center signage and explore a design theme
2. Apply to the NH Department of Transportation's Transportation Improvement Program to complete sidewalks throughout the Town
3. Update the current version of Town History
4. Encourage new research using the Warner Historical Society archives to publish articles that promote Warner's history
5. Publish books of local interest (cemeteries, location of one-room school houses, historic buildings, cellerholes, etc)

Objective 5: Facilitate local interest in historic neighborhoods.

*Actions:*

1. Publish walking and driving tours of the neighborhoods
2. Develop slides shows about the various neighborhoods for programs at the Warner Historical Society and public schools

Objective 6: Encourage activities and events that facilitate community involvement, such as the Fall Foliage Festival, the 4th of July celebration and other Holiday activities.

*Actions:*

1. Explore the implementation of a Community Cornerstones Project.

## **Historic Narrative of the Town of Warner**

In colonial America, charter governments ruled the royal land grants. A governor was appointed by the English King and empowered with the "authority to grant, in the name of the King, any unchartered lands in his province. Such was New Hampshire."<sup>1</sup>

On November 7, 1629, the Council of Plymouth, Massachusetts granted the territory of which Warner is now a part, to "Captain John Mason, his heirs and assigns forever".<sup>2</sup> He was a prosperous London merchant turned Sea Captain. Mason had been governor of Portsmouth in Hampshire, England and of Newfoundland in America. When a seat on the Plymouth Council was vacated, he was elected to join the Council. And when "Charles, King of England, Scotland, France and Ireland"<sup>3</sup> granted John Mason lands in the New World, he called them New Hampshire after his native County Hampshire, England.

An imprecise delineation of boundaries left several grants overlapping, and led to years of strife, and even violent dispute among New Hampshire, Massachusetts Bay Colony, the Province of Maine, and later with New York and Vermont.

"To gain ground in the contest"<sup>4</sup> and to make difficult a settlement should they lose the legal contest, Massachusetts Bay decided to settle its frontier. The inducements were unusually generous. Sixty people from Amesbury and Salisbury, Massachusetts were granted proprietorship calling their grant New Almsbury. The boundaries of this 1735 grant, also called Township Number One, are just as those we have today, with the exception of the Gore, which was annexed in June, 1818.

The grantees were instructed to "take care that there be sixty-three house lots laid out in a regular, compact and defensible a manner as the land will admit of; one of which lots shall be for the first settled minister, one for the second settled minister, and one for the school."<sup>5</sup>

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<sup>1</sup> Walter Harriman, The History of Warner New Hampshire, For One Hundred and Forty-Four Years, From 1735 to 1879., p. 12

<sup>2</sup> Ibid., 552

<sup>3</sup> Idem

<sup>4</sup> Ibid., 15

<sup>5</sup> Ibid., 20

Each grantee was to build a house at least eighteen feet square and to clear, fence and plow five acres of land within three years. They had also to build a meetinghouse and settle a minister within that time or forfeit their rights to another, hopefully more successful, petitioner.

After several failed attempts, Township Number One was surveyed and it was determined that the meetinghouse lot should be where the Parade Ground Cemetery is now located.

Each of the proprietors then contributed to the cost of building a sawmill at the Davisville Falls, which was completed in May, 1740. It was the first structure and a necessary tool of the settlement. It was here that the first proprietor's meeting was held on May 28, 1740. Those proprietors who attended the meeting returned to Massachusetts with glowing accounts of a region in which, according to one report, "The soile is rich and Deap, the Trees are very large and the Brookes are stocked with fish."<sup>6</sup>

The legal dispute over the boundaries raged on until King George III ruled in favor of New Hampshire's claim. Nevertheless, the Amesbury proprietors persevered, convinced that "no government would drive out bona fide settlers."<sup>7</sup> Even the subsequent sale on July 31, 1746 of the entire grant to twelve men from Portsmouth did not deter the Massachusetts proprietors. Thomas Colby, Moses Morrill, Jarvis Ring and Gideon Straw built four homes on twenty acres near what is now the Davisville Cemetery. But before settlers could be induced to occupy them "they were burned by the Indians at the same time they put fire to the saw-mill."<sup>8</sup>

Again the grant was transferred. This time the Masonian proprietors granted New Almsbury to seventy-six men hailing largely from Rye and Newcastle, New Hampshire, on March 14, 1749.

Yet the final blow to the settlement of Township Number One was "the renewal of the French and Indian War, which stopped the tide of emigration to the frontier."<sup>9</sup>

It would be another decade before "the axeman's blows again broke silence in this then howling wilderness."<sup>10</sup> Then, early in the summer of 1761, Daniel Annis and his son-in-law, Reuben Kimball, crossed the river and came up from Hopkinton. In his *Historical Sketches of The Town of Warner New Hampshire*, Dr. Moses Long states that Daniel Floyd, another of Annis's sons-in-law, was with them.

Whether there were two or three, they cleared the land by summer and sowed winter rye in the fall. Returning the following spring, Daniel Annis, at fifty, was the first to successfully settle in New Almsbury. By May 1, 1762 his house had been completed. It is for this first family that Annis

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<sup>6</sup> Ibid., 45

<sup>7</sup> Ibid., 54

<sup>8</sup> Ibid., 63

<sup>9</sup> Ibid., 64

<sup>10</sup> Dr. Moses Long, Historical Sketches of the Town of Warner New Hampshire, p. 9

Loop in the Bagley district is named, and it is there at the northern end of the old road that they settled. Daniel's daughter, Hannah Annis Kimball, and her husband Reuben, lived with him on his sixty acres until their own forty-acre settlement and house were completed, just one-third mile to the southwest.

On June 30, 1762 they repaired to their log home and primitive barn, their land with six acres "then in corn, potatoes and winter rye...Kimball was 24 years of age, and his wife 22."<sup>11</sup> A few months later in October, 1762, Hannah gave birth to Daniel Kimball, the first child of European extraction to be born in New Almsbury. There is a plaque marking the site of his birth on Red Chimney Road.

Daniel Annis' family, his wife and remaining children having since joined him, and the Kimballs, constituted the northernmost settlement in New England.

By 1763, forty-three men and their families had settled here. In 1872, Amanda B. Harris interviewed a Warner native, a woman then ninety-six years old, who said: "there were so few of them that they were drawn together in kindly feeling and used to go a long distance to see one another, two on one horse, or with an ox team."<sup>12</sup>

Within another three years a new sawmill had been built at Davisville Falls, as had a meetinghouse on the Parade Ground. Potash from wood burning had developed into an industry and a gristmill had been built. The Lower Village had a tavern, a lawyer and a doctor, a post office and stores.

Fire had soon devastated New Almsbury's meetinghouse and in 1769, a less primitive one was built on the same site at the Parade Ground. In 1772, Reverend William Kelley became New Almsbury's first permanent minister. He built his home in the Lower Village.

Then, one hundred and forty-five years after John Mason had named New Hampshire, Francis Davis rode to Portsmouth and returned "with the precious document"<sup>13</sup> of incorporation and the new name of "Warner", given by Governor Wentworth on September 3, 1774. Governor Wentworth's reasons for choosing Warner are unclear, but considerable evidence favors a decision on his part to honor Seth Warner. He was a man the Governor respected personally and had been a staunch New Hampshire ally in the lengthy political disputes with Massachusetts. He was soon to become a brilliant hero of the Battle of Bennington, at which five Warner men also served.

It was a heady time in Warner. There was a sense that rewards were forthcoming for the heavy price that had been paid. In 1832, Dr. Moses Long wrote his *Historical Sketches of the Town of Warner New Hampshire*. In it he recognized the cruel and tenuous nature of that generation's

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<sup>11</sup> Harriman, p. 72

<sup>12</sup> Amanda B. Harris, "A Sketch of Warner: Historic And Otherwise.," The Granite Monthly A New Hampshire Magazine, 19: 410-439, December, 1895.

<sup>13</sup> Idem

existence, but notes "The people enjoyed more social and friendly intercourse; felt more interest in each other's welfare, and more ready to contribute to each other's wants. Before the fire-brands of discord were thrown among the people, they were united like a band of brothers and sisters; to which time the survivors will now refer as the happiest of days...The first settlers considered every additional family that moved into town as a valuable acquisition to the place. All were ready to welcome the new comers into the fraternity."<sup>14</sup>

But the firebrand was among them. Barely seven months after Warner's incorporation, came the Battle of Lexington and Revolution. "Warner had only 262 inhabitants, the majority of whom must have been women and children; yet soon the number of men in the service was creditable to the town."<sup>15</sup> Warner men were at Bunker Hill and Bennington with General Stark. They served at Saratoga and West Point, as well as in Rhode Island, Canada at Monmouth and Morristown. Anthony Clark, who as General Washington's negro waiter also carried water and cartridges in many battles, actually witnessed the surrender of Cornwallis. After the war he settled in Warner, where he remained until his death at 102.

On November 19, 1776, Captain Francis Davis was sent to Exeter to represent Warner in the new State Assembly. It was his son, General Aquila Davis, who in 1812 "raised the first regiment of N.H. volunteers, enlisted for one year, and was chosen and commissioned its colonel."<sup>16</sup> He had enlisted at seventeen in the revolutionary army, serving for three years, and had witnessed the surrender of Burgoyne. Now he led his regiment to Burlington and commanded a detachment of two hundred men at the battle of Lake Champlain. "It is related of him, that, while stationed on an island in Lake Champlain, he mounted a battery of large guns, and kept the British at respectful distance from the island by this formidable contrivance, which, in reality, was nothing but an array of huge guns made from pine logs, and so painted as to deceive the eye at a little distance. That example was copied, over and over again....."<sup>17</sup>

He led many a muster at the Parade Ground. "No entertainment ever quite equalled a muster, in the estimation of a patriotic youth."<sup>18</sup> The infantry from many towns would assemble on the parade, the Warner Artillery bedecked in black broadcloth with red trimmings and black plumes; the Warner Light Infantry with their white pants, blue coats, large white plumes tipped with red; "the cavalry with spirited horses and shrill bugle".<sup>19</sup>

The years during and immediately following the War of 1812 were a period of continual growth in Warner. In 1813, the first post office was established in the Lower Village. By 1818 the Davisville

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<sup>14</sup> Long, p. 23

<sup>15</sup> Harris, p. 415

<sup>16</sup> Harriman, p. 280

<sup>17</sup> Ibid., 281

<sup>18</sup> Ibid., 495

<sup>19</sup> Ibid., 496

School had been built and the Kearsarge Gore annexed, only to be devastated by a tornado on September 9, 1821. The tornado utterly destroyed the Daniel and Robert Savory homesteads, buried the settlers in their rubble and killed two of them. It then passed over the Flanders and True homesteads, killing one of each family's children and an elderly woman. Everything in the valley between the mountains was destroyed.

Although Warner's population peaked in 1820, at 2,446 and the trend was toward westward migration, our economy continued to thrive.

The Warner River made this possible. From the beginning it had provided the path for settlement and prosperity. Dozens of homes, barns, businesses, several churches, and twenty-four schools had blossomed from the original mill in Davisville and others like it. By 1823, there were sixteen sawmills and eight gristmills. A trail of them ran from Davisville to the Village where, among others, Nicholas Fowler built both a gristmill and sawmill on opposite sides of the river in 1829.

Then, at the Waterloo Falls, which "were known to the proprietors as 'the Great Falls'. Once there were sawmill, gristmill, tannery and paper-mill. There were also a bakery and book-bindery."<sup>20</sup>

The Redington Hub Company was located at Roby's Corner. "An industry for the manufacture of wooden wagon hubs"<sup>21</sup> had been created about 1800, a new mill built by the Redingtons in 1884, and by 1894, it had become "the largest hub factory in New England and probably in the world."<sup>22</sup> Adapting to the times, it continued as a mill until 1940, despite having been twice destroyed by fire.

Farther on at Melvin's Mills, the Bartlett brothers milled one thousand tons of excelsior annually. From there to the Bradford border were mills that made "carriages, churns, chairs, and a variety of things down to clothespins."<sup>23</sup>

With the development of various lumbering industries along the river, came the inevitable support, service and retail businesses. By 1849, when the Concord and Claremont Railroad opened to Warner, settlement was centered within Warner Village. Grocery, dry good, hardware and clothing stores, several blacksmiths, and even a bakery and creamery lined Main and Depot Streets.

Warner farmers had sustained the early settlement and many continued to be productive and prosperous in the nineteenth century. In addition to raising the family food supply, they grew feed corn, oats and hay for market. "In 1870, Warner produced about 4,300 tons of hay"<sup>24</sup> and her 1,684 sheep produced 17,000 pounds of wool. Cattle, sheep and hogs were loaded at the railroad stations for export.

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<sup>20</sup> Harris, pp.431-2

<sup>21</sup> The Warner Historical Society, Warner, N.H. 1880 - 1974, Carl Malmberg, editor, p. 96

<sup>22</sup> Ibid., 96

<sup>23</sup> Harris, p. 433

<sup>24</sup> Warner Historical Society, p. 87

"Today, the number of dwelling and barn cellar holes that one finds even in the isolated wilderness areas of Warner, as well as the countless stone walls that criss-cross extensive tracts of former pasture land long since grown up to tall timber, are evidence that the town was once a thriving agricultural community."<sup>25</sup> No longer the frontier town of the eighteenth century, Warner also allowed its gentler side full expression.

Many religious denominations, besides the original Congregationalists, became active in Warner. They "included the Methodists; Baptists; Universalists; Freewill Baptists, ... Antipedobaptists,... and the Osgoodites... There were also a few Quakers and Adventists."<sup>26</sup> By 1880 only the Congregationalists and Baptists remained active, the Methodists having finally abandoned their meeting house, which still stands in the Lower Village. Its preservation is assured as the Lower Warner Meeting House has been deeded to the Warner Historical Society.

The Baptist Church was established here in 1833, at the intersection of Kearsarge and Church Streets, where services were held for over one hundred years. It is now the Masonic Temple.

The Congregationlists have occupied four different buildings since the first meeting house was built on The Parade Ground. The most recent Congregationalist Church was built in 1819, and in 1845, was moved to its "present location in the Center Village. This was accomplished without any interruption of services, for on Sunday the congregation met in the shored-up church where it stood in the roadway."<sup>27</sup> It is now the United Church.

The social life of the community revolved around the churches. There were socials, picnics, two services on Sundays and prayer meetings on Wednesday evenings.

The declining population, which would ultimately lead to the federation of these two congregations in 1940, had already affected the school districts. By 1887, there were fewer than two hundred students enrolled in the twenty-four districts. "The inhabitants of the widely-scattered districts placed great store on the autonomy of their particular area. Advice or interference by anyone from another district was not likely to be well received..."<sup>28</sup> But welcome or not, consolidation of the one-room school houses was inevitable.

Franklin Simonds became the catalyst. In 1869, shortly before his death, he bequeathed \$20,000 to the town of Warner: "My wish to leave some token of my regard for the town of Warner, which has so long been the place of my residence. An appropriation toward the support of a High School in said town, occurs to me as the best form of such a token ..." <sup>29</sup>. Shortly thereafter, Mrs. Abigail Simonds contributed an additional \$10,000 toward the fund for building a High School.

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<sup>25</sup> Ibid., 86

<sup>26</sup> Ibid., 49

<sup>27</sup> Ibid., 52

<sup>28</sup> Ibid., 37

<sup>29</sup> Harriman, P. 409

On January 4, 1870, a committee was formed at town meeting to "solicit subscriptions towards building a School House ....".<sup>30</sup> "Gilman C. Bean and Samuel H. Dow, each contributed liberally...and other citizens gave money or work. On the proposal of Mr. Dow it was named 'Simonds Free High School'...The building was erected in 1871, dedicated December 1st of the same year, and opened December 4th with 60 pupils..."<sup>31</sup>

In 1904, a full time superintendent was hired and the consolidation of school districts began in earnest. By 1906, the students were brought to school by oxcart or horse and wagon or, in outlying areas, by train.

When the Warner Village schoolhouse on School Street burned in 1909, a new elementary school was built on Main Street. This building, the Old Graded School, now houses a variety of community services, including day care, kindergarten and elderly services. In 1920, only five one-room school houses remained. And in 1936, the last of them closed in Davisville.

Warner was again a fortunate beneficiary when, in 1892, George A. Pillsbury donated a library building and over four thousand volumes. N.G. Ordway contributed the land upon which to build the library.

In 1873, Mr. Ordway and William E. Chandler had furnished a bond to complete the Kearsarge Mountain Road, which had begun in 1869. "In 1873 Nehemiah G. Ordway laid off from his intervale land, between the river and the railroad, ten or twelve acres for a fair ground. He erected the buildings and stalls, and made a track for horse-trotting."<sup>32</sup>

The railroad continued to bring prosperity to Warner. There were stations at Dimond, Bagley, Lower Warner, two in Waterloo, another at Melvin's Mills and at Roby's Corner. Several of these stations were also Post Offices and small stores.

Our link to the world beyond also brought visitors to Warner's many country inns and hotels. Summer tourism had long been a significant part of our economic life when, in 1931, the first "Snow Train" came up from Boston and launched a brief but flourishing ski trade.

By the 1940s, Warner's Breakneck Hill was "one of the state's best-known ski areas... Warner became the winter sports capital of central New Hampshire."<sup>33</sup> But in the 1950s, the state "built the multi-million-dollar Mount Sunapee State Park just a few miles away..."<sup>34</sup> and "once again the state struck a blow, putting Interstate 89 right through the center of the slope... Gone forever are

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<sup>30</sup> Ibid., 411

<sup>31</sup> Harris, p. 426

<sup>32</sup> Harriman, p. 415

<sup>33</sup> Warner Historical Society, p. 13

<sup>34</sup> Idem

the big crowds and all the glamour of the 1940s. All fourteen inns either closed or were burned down...."<sup>35</sup>

By the end of World War II, the railroads had waned and in 1955, the last passenger train made its stop in Warner.

The automobile soon dominated transportation and brought with it mixed blessings. The enlarged roads positively impacted many neighborhoods but the construction of Interstate 89, in 1968, devastated the North Village, taking approximately twenty homes as well as the ski area.

That development was symbolic of a series of events that led to Warner's unraveling in the nineteen sixties and seventies. It was a period of gradual estrangement.

With the regionalization of our schools in 1967, our children's participation within the community diminished considerably. The social and sporting events, with their camaraderie and pride, took place in other towns. As parents, we lost not only much of our involvement with each other but also our autonomy. Only our elementary school remained in town, where Simonds Free High School had been, and it was governed by a regional school district.

In the late 1960s, *The Kearsarge Independent*, which had published the news of the day since 1884, ceased publication and Warner lost its voice. Even the weekly meeting of townspeople at the Warner Dump, our lively exchange of opinion and ideas, became a thing of the past.

It was also a period of significant growth in population. And while that certainly had its advantages, it also meant that a large proportion of us had no common history or memory.

Perhaps Nancy Sibley Wilkins recognized these factors when she revived the Warner Historical Society in 1967, thus creating an invaluable source of information for all, and perhaps more importantly, the opportunity for our own rediscovery. If she, and those who worked beside her, believed that we would seize the opportunity, they were proven right.

In the late 1980's, there was rebirth of community feeling. The advent of the *Warner Clarion* and information of local interest on cable vision allowed us to communicate again on a community-wide basis. The Warner Historical Society purchased the Dow House on Main street and over the next few years established a year round series of programs, renovated the building and completed a very successful long range plan and a major fund raising effort.

The Merrimack County Telephone Company built a new office building on the former Cogswell property and the post office relocated from its former location in the Robertson to its present location across from the United Church in Warner. It was important to the lifeblood of Main Street that the post office remained on Main Street and was not relocated to Exit 9.

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<sup>35</sup> Idem

A major fund-raising and volunteer project took on the task of organizing the creation of a student-designed community built playground at Simonds Elementary School.

In the 1990's, many community projects were completed, such as the installation of brick sidewalks, updating the Town Hall facilities and making it handicapped accessible, and the Pillsbury Library celebrated its 100th year of service with a substantial addition to the facilities.

The Solid Waste Transfer and Recycling Station was built and is extremely successful. It has become a place of much community activity, such as canvassing for political opinion, recruiting volunteers for the Fall Foliage Festival and the posting of community events.

The Kearsarge Elderly Housing Project was constructed to address the needs of the elderly population in the community.

Warner's economic base has also expanded with the expansion of WPI, Inc., Mesa International and the location of businesses, such as Market Basket, at Exit 9 off I-89. Main Street has survived the development of Exit 9 with the establishment of two fine restaurants, a video store, Colby Realty, the expansion of Perkin's Hardware and several gift shops and boutiques, such as Country Cobwebs, Spirit Waves and MainStreet BookEnds.

Warner was without a newspaper for a few years after the *Warner Clarion* stopped being printed. In 1997, due to the organizational and fund raising efforts of many people, the *Warner New Paper* was established and it is published on a monthly basis. The local stories, combined with paid advertising has once again created a sense of community and provides an opportunity for ongoing dialogue about issues affecting the town and its people.

After the completion of town wells to provide water to the precinct, the Silver Lake Reservoir was turned over to the town. Despite the number of ponds in town and the Warner River, Warner had no public swimming facilities. It was decided that a town beach would be created with recreational and picnicking facilities at the western edge of Silver Lake. The creation of this public use area has again helped to create a sense of community and a place for families to meet other people in town. Red Cross swimming lessons are held in the summer and Parks and Recreation holds educational programs.

Due to the increase in students enrolled in baseball, softball and soccer, the athletic fields at Riverside Park were expanded and upgraded and Bagley Field, in Lower Warner, was converted and used as a soccer field.

The Warner Fire Department needed to expand its facilities to accommodate larger equipment and its increase in providing emergency services. Fortunately, they were able to add onto their existing building on Main Street. The fire department and many volunteer hours organized this volunteer effort and donations were expended to successfully complete this renovation.

Magdalen College moved from Bedford to a brand new facility on Kearsarge Mountain road. Townspeople may attend church services and the college students volunteer for town activities, such as the Fall Foliage Festival and the Holiday Festival Trees.

The Mount Kearsarge Indian Museum and Educational Center opened on Kearsarge Mountain Road. It draws thousands of people to visit and attend special promotional days that are held from May through December.

The Festival of Trees is a town-wide holiday celebration during the month of December with organizations decorating trees in the town hall. The library and historical society host open houses with music, readings, Santa and refreshments. The event culminates with a parade down Main Street, the lighting of the town tree and caroling with the Magdalen college students.

The American Legion decorates Main Street with American Flags on Memorial Day, Flag Day, Fourth of July and Labor Day. They also host a Pancake Breakfast on the Fourth of July.

The Kearsarge Trail Snails maintain miles of trails for snowmobilers in the winter. The trails are also used for cross-country skiing in the winter and for hiking and biking during the warmer months.

For over fifty years, the Warner Fall Foliage Festival has exemplified the best aspects of our community character with hundreds of volunteers helping to make the event a great success. Each year the proceeds are granted to various community projects, further enriching the community.

Whatever his military achievements, and they were considerable, one cannot help but suspect that Governor Walter Harriman's most profound gift to posterity was his *History of Warner*. In it he proposes "To rescue the early history of Warner from oblivion and to perpetuate a knowledge of it in generations to come..."<sup>36</sup> noting that "Records become dim with age, and are destroyed; the traditions of events which occurred in the preceding century are rapidly fading from memory..."<sup>37</sup>

We will be wise and fortunate indeed if we are able to preserve something of ourselves and our aspirations for our children.

"Warner is my native town, and there cluster all my earliest and fondest remembrances. Every brook and rock and tree that I knew in my childhood is still dear to me, and, if my wishes are regarded, Warner will be the place of my final rest."

Walter Harriman

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<sup>36</sup> Harriman, p.3

<sup>37</sup> Idem

## Outline of Important Dates

- November 7, 1629: Council of Plymouth, Massachusetts grants the territory of New Hampshire to John Mason.
- 1735: Sixty people from Amesbury and Salisbury Massachusetts are granted proprietorship of New Almsbury (present boundaries of Warner, with the exception of the Gore, which was annexed in June 1818).
- May, 1740: Sawmill at Davisville Falls constructed. Site of first proprietors's meeting on May 28, 1740.
- July 31, 1746: New Almsbury grant sold to twelve men from Portsmouth.
- March 14, 1749: New Almsbury grant transferred to seventy-six men from Rye and Newcastle, N.H.
- 1761: Daniel Annis and son-in-law Reuben Kimball arrive from Hopkinton.
- May 1, 1762: Daniel Annis builds first house in New Almsbury.
- June 30, 1762: Hannah Annis Kimball and Reuben Kimball house built
- October, 1762: Daniel Kimball, first child of European extraction, born in New Almsbury. (Plaque marking the site of his birth is located on Red Chimney Road.)
- Reverend William Kelley named first permanent minister at New Almsbury.
- September 3, 1774: Town of Warner incorporated.
- November 19, 1776: Captain Francis Davis represents Warner in the new State Assembly
- Redington Hub Company founded at Roby's Corner
- General Aquila Davis raises the first regiment of NH volunteers
- First Post Office is established
- Congregationalist Church established.



September 9, 1821: Tornado strikes Warner and devastates homesteads.

Dr. Moses Long writes “Historical Sketches of the Town of Warner, New Hampshire”

Baptist Church established

Concord and Claremont Railroad opens to Warner.

Simonds Free High School erected.

“The Kearsarge Independent” newspaper established.

George A. Pillsbury donates the Pillsbury Free Library to the Town with 4,000 volumes.

1931: First “snow train” arrives from Boston, bringing tourists to the ski area

Last one room school house closes at Divisive.

1940's: Ski trade flourishes on Breakneck Hill.

1955: Last passenger train stops in Warner.

1967: Schools become regionalized.

1967: Warner Historical Society revitalized.

1980's: Warner begins to be revitalized. Warner *Clarion* published.

1990's: Expansion of Warner commercial base begins.

## List of Important Historical Resources

Please refer to the map of Historic Buildings and Sites in Warner, which is located at the end of this chapter.

### Structures:

Pillsbury Free Library

The Glendon in Davisville

Lower Warner Meeting House

Country Corner Store in Davisville- National Historic Register

Daniel Kimball Birthplace - Red Chimney Rd

Warner Town Hall

Odd Fellows Hall

Masonic Hall/Old Baptist Church

Simonds Elementary

Warner Community Action Building

United Church of Warner

Brick Law Office Lower Warner

Tavern at Davisville

Fran Brown's/ Rev. William Kelley House

Existing Railroad stations - Warner Village, Waterloo and Melvin's

Existing one room school houses - New and Old Davisville, Schoodac, Waterloo

Warner Historical Society Main Street House

Iron Railroad bridges - Old Ela Bridge and Iron Railroad Bridge at Bagley



### **Important Historic Locations:**

Warner River	Schoodac	Bible Hill
Chandler Reservation	Lime Ledge Quarry	Pumpkin Hill
Newmarket	Bagley	Denny Hill
Collins	Soapstone Quarry	Burnt Hill
Burnap	Hoyt	Couchtown
Howe	Joppa	Kearsarge Gore
Sisco	Parade Grounds	Tory Hill
Liberty Union	Boundtree	Davisville
Judytown	North Road	Melvins Mills
North Village	Village Center	Birthplace of Daniel Kimball
Lower Warner	Waterloo PO	Mill Sites along Warner River
Cellar Holes in Mink Hills	Kearsarge Mountain	Pine Rock
Tory Rock	Bible Rock	Mink Hills

### **Cemeteries:**

Lower Warner	Ferrin	Gore
Parade Ground	Davisville	Hoyt
Waterloo Bridge	Poverty Plains	Sisco
French Brook	Coal Hearth	Sanborn
Pumpkin Hill	Poor Farm	Wheeler
Village Center	Welchans	BeanSchoodac
Tory Hill	Peaceful Retreat	Colby
Seavey	Pine Grove	Page
Old Warner Village	New Warner Cemetery	Kittredge
Morse	Melvin	Johnson

### **Covered Bridges:**

Dalton Covered Bridge, Waterloo Bridge

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## **IV. POPULATION AND ECONOMICS**

## **Chapter IV**

### **POPULATION AND ECONOMICS**

#### **Introduction**

This chapter contains a collection of statistical information pertaining to the general population, housing, and employment characteristics of the Town. The purpose of the Population and Economics Chapter is to present population and economic data in order to establish trends in comparison with surrounding Towns, County and State. This data is useful in determining the future development needs of the Town.

The information in this chapter comes from the United States Census Bureau Census Data, the New Hampshire Office of State Planning, as well as from official Town records.

#### **Chapter Summary**

Warner experienced a steady decline in population from 1830 to 1960. The primary reason for the decline was the decrease in railroad activity, with the last passenger train ceasing in 1955. However, from 1960 to 1980, the Town experienced a dramatic increase in population. This significant increase was due to the construction of Interstate 89 in the late 1960's. As Warner became easily accessible by automobile, it has developed into a bedroom community for the City of Concord. By 1990, the population had grown to an all time high of 2,250 people. With the current population estimated at 2,460, the future population is projected to steadily increase at a moderate rate.

Along with the population increase comes an increase in the age of the population. A comparison of the median age numbers shows that the Town's median age in 1980, was 31.3 years, and in 1990, it was 34.8 years. This trend is likely to continue. The population is also becoming more educated with the number of college educated people increasing dramatically since 1980.

#### **Population Data**

The population of a town is an important component of the Master Plan. A look at population figures over past decades will describe the history of growth and decline within the community and can assist in making projections for the future. Planning for community facilities, schools, housing, transportation and other land use depends heavily on a town's projected population.

## Population Growth

Between 1980 and 1990, Warner's population increased by 14.6 percent from a count of 1,963 to 2,250. During this same ten-year period, the State grew 20.5 percent and Merrimack County grew by 22.1 percent. Table 4-1 presents the population figures for the Town since its incorporation in 1773.

Warner has surpassed its historic population high point of 2,246 people for the year 1820. The most recent population estimate for the Town is 2,460, a figure prepared by the Office of State Planning, for the year 1997.

**Table 4-1**  
**Population in Warner, 1773-1997**

<u>Year</u>	<u>Population</u>	<u>Year</u>	<u>Population</u>
1773	213	1900	1,358
1790	863	1910	1,226
1800	1,569	1920	1,051
1810	1,838	1930	1,062
1820	2,246	1940	1,113
1830	2,222	1950	1,080
1840	2,139	1960	1,004
1850	2,038	1970	1,441
1860	1,970	1980	1,963
1870	1,667	1990	2,250
1880	1,537	1997*	2,460*
1890	1,383		

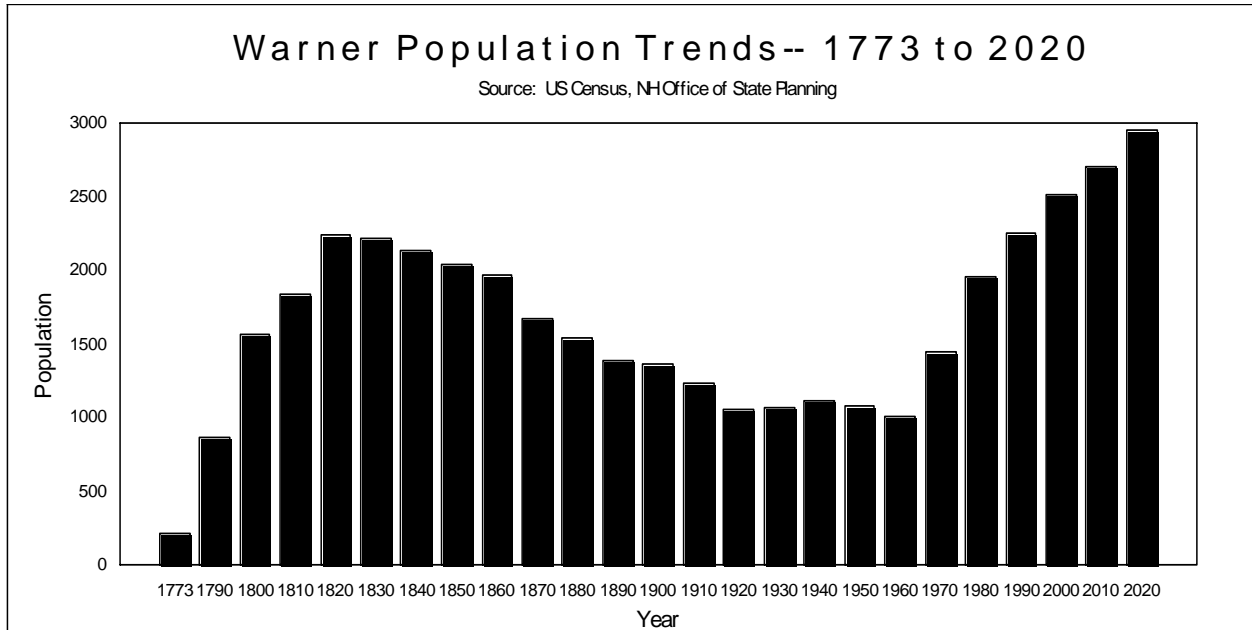
Source: US Census Bureau

\* The information presented for the year 1997 is based on an OSP population estimate and not census data \*

Table 4-2 shows the projected growth of Warner and surrounding Towns, as well as the County and State, through the year 2020. The figures are Office of State Planning projections, which estimate that the Town's population will increase 31.6 percent by 2020.

Figure 4-1 shows Warner's historic population trends.

**Figure 4-1**



**Table 4-2  
Population Projections**

	1990	2000	2005	2010	2015	2020
Warner	2,250	2,522	2,641	2,710	2,830	2,962
Bradford	1,405	1,462	1,545	1,593	1,678	1,772
Hopkington	4,806	5,105	5,385	5,545	5,829	6,144
Henniker	4,151	4,235	4,484	4,628	4,885	5,170
Merrimack Cnty County C	120,005	130,476	137,322	141,326	148,328	156,115
New Hampshire	1,109,117	1,228,794	1,306,638	1,358,750	1,441,668	1,527,973
Sutton	1,457	1,525	1,615	1,667	1,762	1,867

Source: NH Office of State Planning

Table 4-3 presents a breakdown of the population by age and gender for both 1980 and 1990. During this ten-year period, the Town's population grew slightly older, from a median age of 31.3 in 1980 to 34.8 in 1990. This compares with the State's change from 30.1 to 32.8 years and the County from 30.8 to 33.5 years.

Persons 65 and over represented 10.9 percent of the Town's population in 1980 and a similar 10.4 percent in 1990. The largest increases occurred in the ages between 35 and 44. The school age groups, under 18 years of age, experienced a slight drop in percentage trends, from 29.0 percent of population in 1980 to 26 percent in 1990, although this age group grew slightly in total numbers, from 569 to 584.

Figure 4-2 shows the breakdown of the 1990 population by age and gender as a percent of population. The graph shows that the population between the ages of 30-34 made up the largest segment of the total population, while those between the ages of 70-74 made up the smallest. By the year 2010, when this age group will be the 50-54, they will be a large percentage of the expected elderly population.

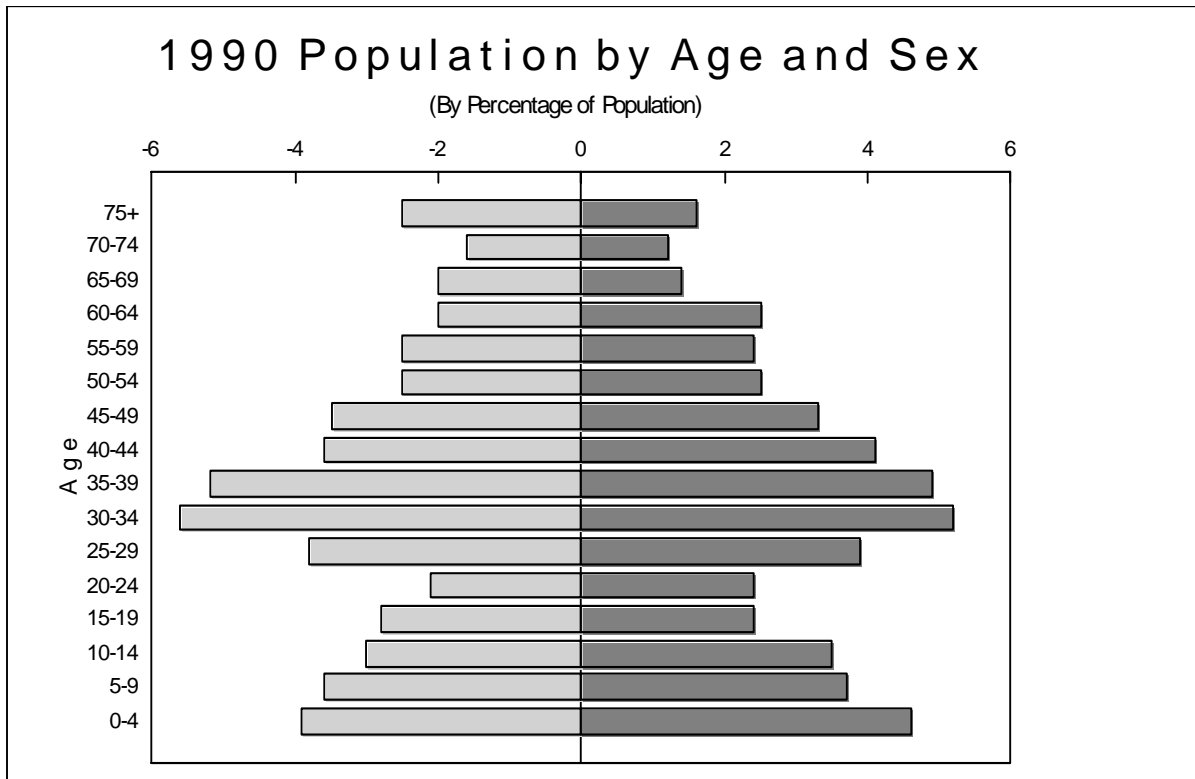
With the aging of the “Baby Boom” generation, the elderly population in Warner will become a much greater percentage of the population by 2020. The Town should plan appropriate public services and facilities to accommodate such growth.

**Table 4-3**  
**Warner - Count of Persons by Age and Gender**

<u>AGE</u>	<u>TOTAL</u>			<u>MALE</u>			<u>FEMALE</u>		
	1980	1990	Change	1980	1990	Change	1980	1990	Change
<5	145	191	46	76	104	28	69	87	18
5	23	33	10	15	20	5	8	13	5
6	18	39	21	10	26	16	8	13	5
7-9	87	104	17	42	48	6	45	56	11
10-13	149	122	-27	86	64	-22	63	58	-5
14	33	24	-9	20	14	-6	13	10	-3
15	45	25	-20	23	9	-14	22	16	-6
16	37	19	-18	22	13	-9	15	6	-9
17	32	27	-5	21	13	-8	11	14	3
18	24	28	4	16	9	-7	8	19	11
19	26	18	-8	12	9	-3	14	9	-5
20	26	24	-2	15	14	-1	11	10	-1
21	17	19	2	7	12	5	10	7	-3
22-24	96	60	-36	41	29	-12	55	31	-24
25-34	362	414	52	183	204	21	179	210	31
35-44	256	400	154	122	203	91	134	197	63
45-54	212	267	55	116	132	16	96	135	39
55-59	87	112	25	40	55	15	47	57	10
60-61	32	39	7	12	22	10	20	17	-3
62-64	42	62	20	22	35	13	20	27	7
65-74	132	140	8	63	59	-4	69	81	12
>74	82	93	11	28	36	8	54	57	3

Source: U.S. Census Bureau

**Figure 4-2**



Source: U.S. Census Bureau

Table 4-4 illustrates changes during the 1980-1990 period in household types according to the number of persons in the household, one person or two or more persons. The occupants of a dwelling unit are defined collectively as a household, while a family is composed of those persons living in a unit who are related by blood. A householder is the person identified on the census questionnaire as the head of the household or family. In 1980, 73 percent of all households were made up of families, in 1990 the percentage was 74. Family households grew by 20.3 percent during the decade, which exceeded the growth in population as a whole (12.8 percent). Non-family households decreased by 13.5 percent.

When the total number of households is considered, the growth between 1980 and 1990 was 17.7 percent, a rate that was significantly less than the previous decades 53 percent growth rate, but still greater than the overall population increase for the decade. The trend toward smaller family units and households, a trend that is repeated in other parts of the state and the nation can explain this difference. Since each occupied housing unit contains fewer people on average, more housing units and consequently more residential land are required to provide shelter. In 1980, the average household size in Warner was 2.81 persons per unit and in 1990 it was 2.65 persons. The decline in Merrimack County was from 2.82 persons per unit to 2.63 and in the state, the change was from 2.75 to 2.62.

**Table 4-4  
Warner Family and Household Composition**

	1980	1990	Change
Count of Families	519	627	108
Count of Households	699	845	146
Persons in Household and Household Type - Count of Households			
One Person:			
Male Householder	55	70	15
Female Householder	73	103	30
TOTAL	128	173	45
Two or More Persons:			
Married Couple Family	453	545	92
Male Householder, no Wife	19	24	5
Female Householder, no Husband	47	58	11
Non-family Household	52	45	-7
TOTAL	571	672	101

Source: 1990 Census

Table 4-5 presents counts of persons according to the type of household in which they live. In 1980, 86.4 percent of all persons in town lived in family households, and in 1990 the percentage was 85.6.

### **Population Mobility**

The mobility of the population in Warner changed only slightly from 1980 to 1990. According to the comparative figures in Table 4-6, 49.4 percent of persons 5 years and over lived in the same house as they did in 1975. In 1990 49.9 percent of persons lived in the same house as 5 years earlier. When a comparison is made for persons living in the same county as 5 years prior to the census, 75 percent of those persons lived in the same county in 1980, as compared with 74.7 percent in 1990.

**Table 4-5  
Warner-Persons by Household Type**

	1980	1990	Change
Household Type and Relationship Count of Persons			
In Family Household:			
Householder (Head)	519	627	108
Spouse	453	545	92
Other Relative	725	753	28
<b>TOTAL</b>	<b>1,697</b>	<b>1,925</b>	<b>228</b>
In Non-Family Household:			
Male Householder	88	99	11
Female Householder	92	119	27
Non-Relatives	60	51	-9
<b>TOTAL</b>	<b>240</b>	<b>269</b>	<b>29</b>

Source: US Census

**Table 4-6  
Residence 5 Years Ago (County)  
Count of Persons 5 Years and Over**

	1980	1990	Change
Same House	886	1,027	141
Different House:			
Same County	466	511	45
Different County / Same State	62	203	141
Different State:			
Northeast	252	214	-38
North Central	44	29	-15
South	58	37	-21
West	15	28	13
Different Country	9	10	1
<b>Total</b>	<b>1,792</b>	<b>2,059</b>	<b>267</b>

Source: 1990 Census

## Economic Data

This section is a snapshot of the economic health of Warner. It is important to review the characteristics of the workforce, business and industry, and the community in order to gain an understanding of what assets Warner currently has to work with, and what the Town should be aware of in planning for future economic development.

### Labor Force

#### *Education*

The educational level of the workforce is a good starting point to show the quality of Warner's working population. With more information-based technologies demanding more highly-skilled employees, it is important to know the education trends in the community and whether the community can meet the future demand.

Table 4-7 presents years of school completed for persons 25 years old and over. In ten years, a tremendous change is evident in post-secondary education. The number of persons with some college education rose from 555 to 854, an increase of 53.9 percent, and those with a degree grew by 54 percent.

**Table 4-7**  
**Years of School Completed - Count of Persons 25 Years Old and Over**

	1980	1990	Change
Elementary (0-8 years)	153	77	-76
High School:			
1-3 years	142	152	10
4 or more years	355	442	87
College:			
1-3 years	281	432	51
4 or more years	274	422	148

Source: US Census

The State of New Hampshire Department of Resources and Economic Development estimates that in 1990, 85 percent of the labor force in Warner had high school degrees or higher and 27.8 percent of the labor force had a bachelor's degree or higher. The trend of higher education appears to be continuing with more people enrolled in school for more advanced degrees.

Table 4-8 shows a comparison of 1980 and 1990 persons enrolled in school. The Table shows that overall school enrollment has remained consistent over the decade. However, the number enrolled in primary school decreased significantly while the number enrolled in college and nursery school increased.

**Table 4-8**  
**School Enrollment - Persons 3 yrs. Old and Over Enrolled in School**

	1980	1990	Change
Nursery School	24	49	25
Kindergarten, Elementary & High School	405	363	-42
College	51	71	20
Total	480	483	3

Source: US Census

### ***Occupations***

Two major components in understanding the work force are what occupations people have and the type of industry in which they are employed. Table 4-9 shows the employment of Warner's labor force by occupation.

**Table 4-9**  
**Employment By Occupational Group**

<b>Executive/Administrative/Managerial:</b>	<b>171</b>
Professional Specialty:	208
Technician/Related Support:	38
Sales Workers:	133
Administrative Support/Clerical:	164
Private Household:	0
Protective Service:	11
Services, Other:	101
Farming/Forestry/Fishing:	33
Precision Production/Craft/Repair:	167
Machine Operators/Assemblers:	63
Transportation/Material Moving:	58
Handlers/Helpers/Laborers:	49

Source: 1990 Census

A majority of Warner's workers are engaged in professional business services rather than agricultural or mechanical operations.

Table 4-10 shows the breakdown of persons employed by industry. The number of employed persons in Warner increased 30.7 percent from 1980 to 1990.

**Table 4-10**  
**Industry - Employed Persons 16 Years Old and Over**

	1980	1990	Change
Agricultural, Forestry, Fisheries, Mining	25	35	10
Construction	94	124	30
Manufacturing:			
<i>Non-durable Goods</i>	44	34	-10
<i>Durable Goods</i>	162	168	6
Transportation	12	33	21
Communications & Other Public Utilities	24	39	15
Wholesale Trade	59	77	18
Retail Trade	111	154	43
Finance, Insurance, Real estate	59	87	28
Business & Repair Services	26	40	14
Personal, Entertainment, Recreational Services	34	17	-17
Professional Services:			
<i>Health</i>	62	116	54
<i>Education</i>	67	102	35
<i>Other Professional</i>	59	79	20
Public Administration	77	91	14
Total	915	1,196	281

Source: US Census

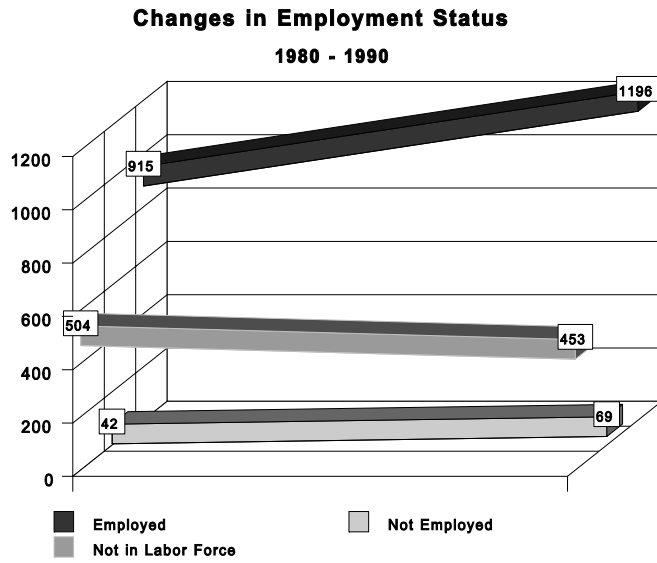
***Labor Participation Rate***

Another characteristic that is key in understanding the make-up of the work force is the labor participation rate. Table 4-11 shows the number of people in the work force who are employed, looking for work, or not in the labor force. It also shows the changes in labor force between the census years. In 1980, 43.9 percent of women 16 years old and over were employed or looking for work, and in 1990 this figure was 44.9 percent. For the total working age population, labor force as a percent of the total, increased from 66 percent to 73.6 percent. The New Hampshire Department of Resources and Economic Development estimate that Warner's overall labor force participation rate by gender is 83.2 percent male and 64.5 percent female.

**Table 4-11**  
**Gender by Labor Force Status - Count of Persons 16 Years Old and Over**

	1980	1990	Change
Male Civilian Labor Force:			
Employed	511	656	145
Not Employed	26	41	15
Not in Labor Force	178	141	-37
Female Civilian Labor Force:			
Employed	404	540	136
Not Employed	16	28	12
Not in Labor Force	326	312	-14
Total:			
Employed	915	1,196	281
Not Employed	42	69	27
Not in Labor Force	504	453	-51

Source: US Census



### ***Place of Work***

It is important to note that Warner's labor force consists of all residents who are of working age, and not of all people working within the Town of Warner. Table 4-12 presents the changes from 1980 to 1990 in the place of work of Warner residents who are 16 years and over. The most significant change is in the number of residents commuting to Concord. The Town should prepare for this trend to continue, with its convenient distance from Concord, and relatively lower housing costs.

**Table 4-12**  
**Places of Work - 1990**

	1980	1990	Change
Warner	232	309	77
Bradford	21	16	-5
Concord	234	360	124
Henniker	24	18	-6
Hopkinton	118	71	-47
New London	17	21	4
Sutton	26	22	-4
Webster	8	2	-6

Source: US Census

### ***Income***

Personal income is another piece in the snapshot to determine Warner's economic health. It is important to know the per capita income of other towns in the region to show how Warner compares. This comparison can be seen in Table 4-13.

In 1990, Warner had the second highest per capita income, compared with its neighbors and the third highest median household income, but only the fifth-highest weekly wage. This could be due to paying jobs within the industrial base of Warner offsetting the higher-paying jobs commuting to lower- Concord.

**Table 4-13  
Personal Income**

<b>Town</b>	<b>Per Capita Income</b>	<b>Median Household Income</b>	<b>Average Weekly Wage</b>
Warner	\$18,088	\$37,917	\$357
Bradford	\$17,234	\$36,667	\$310
Henniker	\$14,005	\$36,951	\$320
Hopkinton	\$23,872	\$46,810	\$495
Salisbury	\$13,993	\$36,771	\$408
Sutton	\$17,887	\$35,536	\$414
Webster	\$14,790	\$40,043	\$521
Wilmot	\$15,766	\$37,000	\$309

Source: 1990 Census

## **Business and Industry**

Warner has a thriving business community. The Warner Business Association is active in promoting Warner businesses and industries. The current Warner Business Directory lists 49 different businesses that provide a variety of services, from auto repair and artisans to restaurants and wholesale pottery.

The major businesses and industries in Warner are listed in Table 4-14.

Although the businesses listed in Table 4-14 are major employers, the other businesses in Town, which make up the majority of total businesses, consist of smaller businesses and home-based occupations.

Currently, home occupations are permitted in Warner as an accessory use to the principal use of the dwelling as a residence. As technology advances and it becomes easier to be connected to the world through computers, more people are likely to work out of the home. Although the 1997 Master Plan Survey showed that people favored keeping the definitions of home business the same, the Town should prepare to accommodate more “telecommuting” business and home occupations. Using performance standards, such as noise, neighborhood impact, lighting, environment, traffic and hours of operation, are one way to deal with the increase of home occupations.

The Town should also plan for the expansion of home businesses, determine appropriate areas and zoning regulations for such businesses, such as in the Village Center or at the I-89 Exits, and encourage businesses to relocate, but remain in Town.

**Table 4-14  
Major Business/Industry**

<b>Business</b>	<b>Product/Service</b>	<b>Number of Employees</b>	<b>Established</b>
WPI	Transformers & power supplies	195	1948
Techni-Cut Inc.	Precision cutting center	8	
R.C. Brayshaw & Co., Inc.	Commercial printing center	8	1979
MESA International	Glassware & accessories	40	1993
Pine Rock Manor	Assisted Living Facility	40	1986
McDonald's	Restaurant	40	1990
Evans	Fuel mart/Convenience store	12	1982
Mobile	Fuel mart/Convenience store	12	1983
Market Basket	Groceries	100	1995

Source: NH Department of Resources and Economic Development

## Community Characteristics

### *Property Taxes*

The Town's major source of revenue is the property tax. The Town of Warner's tax rate has fluctuated by ten dollars per thousand over the past five years, from a high of \$42.86 in 1993 to \$32.42 in 1997. Table 4-15 shows the property tax rates for the Town of Warner from 1993-1997.

**Table 4-15  
Warner Property Tax Rates 1993-1997**

<b>Year</b>	<b>Municipal Rate Per Thousand</b>	<b>County Rate Per Thousand</b>	<b>School Rate Per Thousand</b>	<b>Total Rate Per Thousand</b>
1997	\$8.83	\$2.15	\$21.44	\$32.42
1996	\$8.86	\$1.97	\$20.54	\$31.37
1995	\$9.40	\$2.25	\$19.75	\$31.40
1994	\$9.01	\$1.72	\$22.40	\$33.13
1993	\$11.32	\$3.00	\$28.16	\$42.86

Source: Town of Warner Annual Reports

A capital improvements program will help to stabilize the fluctuations in the tax rate. By planning ahead for large capital expenditures for the Town, the cost can be spread over several years instead of using taxes to pay for such expenditures in a single year. The Planning Board should maintain this program and Town Departments should make every effort to assist in planning ahead.



## **V. HOUSING**

# **Chapter V**

## **Housing**

### **Introduction**

The Housing Chapter is an important element in the Master Plan. Knowing the type and condition of the available housing stock can help a community plan and set policies for the future. The purpose of this Chapter is to assess the existing housing stock, compare it to surrounding communities, evaluate future housing needs based on the Town's residential zoning requirements, and consider the affordable housing assessments for the Central New Hampshire Region.

### **Housing Supply**

The 1990 U.S. Census showed that Warner had 1,039 total housing units, 845 (81.3%) of which were occupied, year-round units, and 194 (18.7%) were vacant or seasonal units. Among the occupied units, 79.9% were owner occupied, while 20.1% were renter occupied. Approximately 34% of the total housing units were built after 1970; 9% were built during the 1960's; 6% were built during the 1950's; 4% were built during the 1940's; the remaining 47% were built before 1940. Table 5-1 and Table 5-2 outlines the housing supply.

In 1990, 73% of Warner's housing supply was single family housing. See Table 5-3. Multi-family housing was 12.8%, and manufactured housing comprised 14.2% of the town's housing supply.

Taking into account the number of residential building permits issued from 1990 through 1997, single family housing still dominates the housing supply at 71%. Over the same period, permits issued for multi-family housing greatly out-numbered those issued for manufactured housing, mainly due to the construction of new elderly housing units in 1993.

The distribution of housing types in Warner differs from surrounding towns, as shown in Table 5-4. Warner has a far larger proportion of multi-family and manufactured housing. This difference may be explained by three factors. First is that Warner, although primarily rural, is far more urbanized than Bradford, Sutton, or Webster. Urbanized areas have generally more dense, and typically less expensive forms of housing.

**Table 5-1  
Year-Round vs. Seasonal Housing Units**

Housing Units	1980	1990	Change	Percent
Total Housing Units	899	1,039	140	15.6
Seasonal	128	127	-1	-.7
Year Round	771	912	141	18.3
Occupied	699	845	146	20.9
Owner	559	675	116	20.6
Renter	140	170	30	21.4
Vacant	72	194	122	169
For Sale	10	20	10	100
For Rent	20	21	1	.05
Other	42	26	-16	-38

Source: 1990 US Census.

**Table 5-2  
Age of Housing Units**

Built	Number	Percent
1989-1990	11	1.1
1985-1988	139	13.4
1980-1984	62	6.1
1970-1979	141	13.6
1960-1969	94	9.1
1950-1959	62	6.1
1940-1949	37	3.6
before 1940	493	47

Source: 1990 US Census

Second, Warner has a more commercial/industrial employment base than the above mentioned towns. Historically, dense villages developed around employment centers, such as Warner Village. Manufactured housing, although a relatively recent innovation, is most popular in and around communities with a large working class population.

Third, unlike the other towns, Warner has both public water and sewer facilities in the village precinct. Such systems facilitate the development of dense housing, although water and sewer service are often developed after the fact to rectify or prevent a public health problem. Manufactured housing parks typically have their own systems, although connecting to municipal water and sewer systems is generally less expensive than constructing a separate system to serve a park.

**Table 5-3  
Housing Supply and Recent Building Trends**

	Single Family	Multi-Family	Manufactured	Total
1990 Census	758	133	148	1,039
1990	9	0	1	10
1991	6	0	0	6
1992	5	0	0	5
1993	4	32	2	38
1994	2	0	3	5
1995	3	0	6	9
1996	10	0	0	10
1997	13	0	1	14
Totals	810	165	161	1,136

Source: Office of State Planning , Current Estimates and Trends in Housing Supply, December 1997

It should also be noted that Warner has a number of group housing units that are not reflected in Table 5-3. Such housing includes the dormitory/student housing at Magdalen College and group housing, such as the 70 bed elderly housing facility, Pine Rock. Elderly housing is further discussed under the “Special Needs” category at the end of this chapter.

### **Housing Need Projections**

Population and housing unit projections are, by nature, speculative. Projections are based on current trends and assume that existing relationships will either continue through the projection period or that relationships will change at a regular, observed rate.

Based on the latest projections by the NH Office of State Planning (OSP), which are listed in Table 5-5, Warner will continue to grow through the year 2020 at an annual rate of approximately 4%. Meanwhile, the State of New Hampshire is projected to grow at an annual rate of 6.6%.

**Table 5-4  
Housing Supply Comparisons: Warner and Surrounding Towns**

Town	Year	SF	%	MF	%	MH	%	Total
Warner	1990	758	73	133	13	148	14	1,039
	1997	810	71	165	15	161	14	1,136
Bradford	1990	634	84	70	9	53	7	757
	1997	653	83	70	9	60	8	783
Sutton	1990	722	93	28	4	26	3	776
	1997	761	94	28	3	26	3	815
Webster	1990	529	92	11	2	37	6	577
	1997	576	91	11	2	47	7	634
County	1990	30,516	60	15,704	31	4,650	9	50,870
	1997	33,323	61	16,990	30	5,082	9	54,504
NH	1990	297,448	60	162,998	32	41,801	8	502,427
	1997	326,803	61	167,675	31	45,602	8	540,080

Source: OSP, Current Estimates and Trends in Housing Supply Update: 1997

In calculating the housing unit projections, the decreasing size of families was used. This trend toward smaller family size and more single and no children households is documented by the Census Bureau for New Hampshire and the Nation. Table 5-6 projects the growth in housing units from 1990-2020 to be 33%, or about 4.9% per year.

Based on these projections, an average of 10-11 housing units per year must be constructed to meet the need for housing through the year 2020. Using the 1997 housing proportions for Warner (see Table 5-4), the OSP projections have been allocated to single family, multi-family, and manufactured housing. The projection of manufactured housing units in Warner is likely to be on the high side since the Town adopted a revision to its zoning ordinance in 1999, which allows such units to be placed only in manufactured housing parks or subdivisions.

**Table 5-5  
Population and Housing Projections**

Year	Population	Housing Units	Persons/Unit
1990	2,250	1,039	2.17
1997	2,460	1,136	2.17
2000	2,522	1,162	2.17
2005	2,641	1,223	2.16
2010	2,710	1,290	2.16
2015	2,830	1,310	2.16
2020	2,962	1,378	2.15

Source: 1997 OSP Population Projections

**Table 5-6  
Projected Housing Units By Type**

Year	Single Family	Multi-Family	Manufactured
1990	758	133	148
1997	810	165	161
2000	825	174	163
2005	868	183	172
2010	916	193	181
2015	930	197	183
2020	978	207	193

Source: OSP, Current Estimates and Trends in Housing Supply Update: 1997

## **Housing Affordability**

The median household income in Warner in 1990, was \$37,917, which is 2% below the median for the Central Region. The median rent, as a percentage of household income in 1989, was 26.3%. Table 5-7 shows that rents and home values in Warner are in the middle as compared with surrounding towns.

**Table 5-7  
Regional Median House Value and Rent**

Town	Median House Value	Median Rent
Warner	\$116,800	\$475
Bradford	\$109,000	\$433
Hopkinton	\$144,900	\$501
Sutton	\$123,400	\$425
Webster	\$93,760	\$650

Source: SOICC of NH, Community Profiles

### **Regional Fair Share of Affordable Housing Needs**

New Hampshire State Law requires that the housing chapter of a town's master plan address the current and future affordable housing needs, as identified by the Regional Planning Commission. A municipality has an obligation to provide low and moderate income families with a realistic opportunity to obtain affordable housing.

The "Affordable Housing Assessment of The Central New Hampshire Region" [February 9, 1995] is a general assessment of the level of need for affordable housing in the Central Region. The Assessment states that in order for people to be considered as being housed "affordably", the household that earns at or below 80% of the regional median income must pay less than 30% of their income for housing. The 30% includes all shelter costs such as utilities, heat, rent and taxes. This means that in the Central Region, a household earning less than \$30,984 must pay no more than \$775 per month for housing. In the Central Region, there are 12,997 households that have an income at or below the 80% of the regional median income level.

The goals in undertaking the Affordable Housing Assessment were:

1. To identify...the scope of regional need for affordable housing for low and very low income households.
2. To use the available data to allocate a theoretical share of affordable housing to each municipality in the region.
3. To accurately estimate the existing affordable housing in the region and in each community.
4. To provide guidance for further study of affordable housing at the municipal level.

A theoretical share of affordable housing assigned to each community was determined by using 1990 Census demographic factors that reflect the need for affordable housing, such as population and employment, and the ability of a community to support affordable housing, such as equalized value and income.

The theoretical “fair share” of affordable housing assigned to Warner was 279 units. This number is the amount of affordable housing that Warner should have, regardless of the current population of low-income households. Based on the number of multi-family and manufactured housing units existing in Warner, 281 in 1990, the Assessment determined that the community was adequately serving 125 low-income households. According to the Assessment, Warner has a theoretical future planning goal of 50 additional affordable housing units. This number is not a precise number which a community is advised to achieve. The numbers indicate, based on statistical data, how many affordable housing units would be present in a community if affordable housing were distributed uniformly throughout the region. Table 5-8 compares surrounding Towns’ fair share assessment with Warner’s.

**Table 5-8  
Regional Fair Share Assessments**

<b>Town</b>	<b># of Households at less than 80% of median income</b>	<b>Theoretical Fair Share Goal</b>	<b>Future Units Needed</b>
Warner	267	279	50
Bradford	179	192	80
Hopkinton	459	721	466
Sutton	209	201	131
Webster	126	159	107

Source: CNHRPC "Affordable Housing Assessment of The Central New Hampshire Region";1995

The Assessment concludes that:

1. The issue of affordable housing affects a large portion of the population in the region.
2. Although many communities have provided for affordable housing, each community has households that are paying more than the affordable level of income for housing.
3. Statistically identified affordable housing units are not always occupied by the households that need them most.

The Assessment recommends that communities review their zoning ordinances to determine whether the ordinances hinder or forbid the construction of affordable housing, such as town-wide large lot zoning, excessive public improvement requirements, restrictive multi-family regulations or restrictive manufactured housing regulations.



## Existing Residential Zoning Provisions

Warner's current Zoning Ordinance includes different zones in which residences are the principal permitted use. Single and multi-family units are permitted in each residential zone (multi-family by special exception in R1 and R3 zones).

Although the 1997 Master Plan Survey did not indicate any great preference for changing the location or availability of manufactured housing, the Town approved a zoning amendment at the Town Meeting in March, 1999, that permits manufactured housing to be located only in manufactured parks or manufactured housing subdivisions. This amendment restricts the location of manufactured housing in Town, thus limiting the availability of this type of affordable housing. The Town may need to look at providing additional affordable housing in the future for those who have been opted out of manufactured housing, due to the lack of space in parks or the prohibitive cost of subdividing property for manufactured housing. As stated in the Existing Land Use Chapter (Chapter IX), most of the land in Warner is undeveloped. Table 5-9 identifies open land in each residential zone.

**Table 5-9  
Undeveloped Land in Residential Zones**

Zone	Total Acres*	Undeveloped Acres*
OC1	7,910	5,842
OR1	11,690	10,552
R1	407	149
R2	3,577	2,377
R3	9,675	5,193

\*These are approximate figures based on the 1998 Existing Land Use Survey Database

These figures are approximately all the acres within Zoning Districts that are undeveloped, including conservation land that is protected by ownership or easement, so not all of this land is currently available for development. It is, however, land that may feel the pressure of development in the future.

## **Special Housing Needs**

Some populations, such as the elderly, the handicapped, families in crisis or transition, and persons needing emergency shelters have special housing needs. Few reliable numbers are available for any of these groups, with the exception of the elderly. The main responsibility and obligation of the Town is to ensure that adequate provisions exist within the zoning ordinance for the siting of special needs housing.

Elderly are the fastest growing segment of the population. Consideration of special provisions to ensure that adequate housing is available to elderly persons is therefore justified. Based on the projections in Table 5-5, Warner's 65 and older population will grow significantly in the next decade.

In the past, the need for elderly housing has been met by the independent elderly themselves. For the most part, they lived in homes which they had paid off the mortgage prior to retirement. As property taxes increase, however, persons on fixed incomes may need alternative housing or property tax relief.

It is difficult to predict how many special elderly housing units will be needed by the year 2020, since the elderly are healthier, living longer, and remaining independent longer. The land use regulations must be responsive to the need for special elderly housing, especially since the elderly are growing in population so rapidly.

This growing problem has been addressed in Warner by two developments. The first development is Pine Rock, which is an assisted living facility for the elderly, that has expanded to accommodate approximately 70 beds. This is a private facility, which means that the housing is paid for by the residents or their families.

In 1993, Kearsarge Elderly Housing, Inc., in conjunction with the Community Action Program (CAP) Belknap-Merrimack Counties, Inc., developed an additional 35 elderly housing units off of North Road. CAP received approval for a \$1.7 million loan under HUD, 202 Section 8 Program. Three of the units are designed for the handicapped. The units are open to Warner residents first, then to residents of other towns. The rent prices of the units are based on the financial status of the elderly residents.

## **Recommendations**

To continue to address its regional share of affordable housing needs, Warner needs to focus on finding alternatives to reduce the cost of housing to both home owners and home renters. Examples of alternatives include cluster developments, allowing the conversion of existing homes to affordable housing units, the use of locally-owned land for affordable housing, and setting aside a portion of residentially zoned land to be developed only as affordable housing.

Further, it is recommended that the Town become more pro-active in providing opportunities for low-income affordable housing, by either facilitating the construction of low-income housing or by encouraging developers to pursue such housing in Warner.

To maintain the rural character of Warner, new housing developments should be encouraged in residential areas, as identified in the Future Land Use Map. These new developments should be directed to areas which will minimize the cost of expanding Town services while making more efficient use of existing services, especially the existing water and sewer systems.

## **Conclusions**

Based on the analysis contained under Housing Availability, a more than adequate amount of land has been set aside to accommodate the anticipated housing needs of Warner through the year 2020. For individuals and families who can afford market price housing and who do not have special needs in housing, Warner has allocated sufficient area for residences.

Special housing needs do exist and will increase during the planning period. These special needs include affordable housing and elderly housing.

To meet statutory obligations, a town can not effectively prohibit any class of persons from living within its jurisdiction. A town is not required to provide housing for special groups, but must allow housing to meet every group's special needs. As detailed in this report, the Town has taken actions to cope with the challenges of affordable housing and housing for the elderly.

Current regulations governing multi-family housing and manufactured housing should meet current statutory guidelines. Since multi-family and manufactured housing are an important option for low and moderate income families and individuals, land use regulations governing such housing are subject to intense scrutiny by the courts. Warner should periodically review its regulations to ensure that no class of persons is effectively prohibited from living within the community.

## **VI. COMMUNITY FACILITIES**

# **Chapter VI**

## **COMMUNITY FACILITIES**

### **Introduction**

The purpose of the Community Facilities section of the Master Plan is to inventory and analyze the public infrastructure of the community. All available facilities and services, such as fire, police, schools, parks, and water, are assessed for their adequacy to accommodate existing and future populations and development.

There are several uses for such an inventory and analysis within town government. The Planning Board needs reliable information when reviewing development proposals. The information is spatial - Is a given part of town served adequately under existing conditions? ; numerical - How many police officers do we have per capita? ; and temporal - When will we need an additional fire truck?

The objective of the Community Facilities Chapter is to list existing conditions of current facilities and make recommendations for the future needs of the Town in one comprehensive, coordinated summary. Information contained within was provided by the Board of Selectmen, department heads and elected officials, and volunteers. At the end of this Chapter is a list of people who contributed to specific sections of the Community Facilities Chapter.

Another use for the Community Facilities Chapter is for the Capital Improvements Program (CIP). Generally, a CIP is a list of municipal department needs for major equipment and facilities over a six year time period. Some items that might be included in a CIP are vehicles, new facilities (highway garage, police and fire stations), land and roads, or special studies. In 1988, the Planning Board was authorized by Town Meeting to initiate a (CIP) for the Town. The Planning Board has defined capital needs as items with a cost over \$10,000 with a useful life of more than three years.

The Planning Board adopted the current CIP for the Town in November, 1998. This document covers the years 1999-2004 and should be updated annually prior to the Town budget process to reflect changes in department needs and Town growth. One of the impacts of using a CIP in the annual budget process is to even out municipal expenditures so that property taxes do not greatly fluctuate from year to year. With annual updates to the CIP, the Selectmen and Budget Committee can use the information in making sound budget decisions.

## **Town Hall and Community Offices**

The Town Hall, which was constructed in the early 1900's, is in good condition and is a cornerstone of the community. Renovations in 1988 and 1989, made the building handicapped accessible and added restroom's and offices for Town Administration. Other improvements within the past decade include new windows, trim, wiring, new hardwood floors, foundation drains, fire alarm system, public address system, entrance, outdoor lighting, walkways and landscaping. The condition of the Town Hall roof, however, is currently substandard and is in need of major repair. The slate roof is almost 100 years old and very brittle. Each winter, due to snow and ice, slate breaks off causing leaks. This situation needs immediate attention in order to avoid major damage to one of the Towns most important buildings.

If the new police station is constructed as planned, the future space needs for Town Administration will easily be accommodated within the existing Town Hall building.

The Old Grade School building was built in 1910. It is home to a number of community-based programs, including Kearsarge Children's Center, Kearsarge Valley Community Action, the Senior Center, Senior Community Service Employment Center, Head Start, kindergarten, Commodity Supplemental Food Program, Congregate Meals, Emergency Food Pantry, and the Women, Infants, and Children Program. This heavily used facility is in adequate condition, however it is in need of roof repair, new fire alarm and suppression system, and a new furnace system, which requires asbestos removal.

## **Solid Waste**

The most significant event that occurred since the 1989 Master Plan was the construction of the Warner Transfer and Recycling Station on Route 103. Prior to 1989, Warner had been using the Hopkinton/Webster landfill on an annual agreement basis. When the landfill was ordered to be closed, Warner had to seek an alternate trash disposal option. After exploring all the alternatives, Warner voted to adopt mandatory recycling. In a nearly unanimous vote at the 1989 Town Meeting, Warner chose to adopt a long-term solution to emphasize recycling and to dispose of non-recyclable trash at the Concord Regional Solid Waste/Resource Recovery Cooperative. The Cooperative has a 500 ton per day waste to energy plant in the Penacook section of Concord. As part of this decision, the Town had to construct a new transfer station that could handle the Town's recycling capacity.

The Transfer/Recycling Station has been a tremendous success. Countless hours of volunteer and staff effort went into educating the Town about recycling. The station is the center for waste disposal, recycling, and even supports a "swap" area for items that can be reused by others in Town. In 1998, a \$20,000 expansion was approved to accommodate additional storage which allows loads of recyclables to be consolidated. The latest Master Plan Survey results showed this facility to be the highest-rated (88.2%) among the community services in Town.

Table 6-1 shows the tons of materials that have been recycled through the Transfer Station and the total cost savings to the Town.

**Table 6-1:  
Materials Recycled in Tons and Total Savings**

<b>Material</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>Total Tons</b>
Metal & Steel Cans	62.9	81.1	82.57	98	123	111.392	87.9	132.01	778.872
Aluminum Cans	4.2	5.17	4.21	4	4.23	2.38	0.99	2.021	27.201
Newspaper & Magazines	28.7	29.24	56	48	52	79.83	38.9	70.508	403.178
Cardboard	62.2	77.02	124	120	128	120.983	115.7	108.707	856.61
Plastic	7.5	16.73	16.76	12.5	12	n/r	9.14	9.802	84.432
Textiles	n/r	n/r	n/r	1.5	5	8.37	7.6	5.68	28.15
Glass (approx)	37	37	48	53	50	54	47	68	394
Total Tons Recycled	202.5	246.26	331.54	337	374.23	376.955	307.23	396.728	2,572.443
Total Savings Recycling	\$17,277	\$1,141	\$29,306	\$33,270	\$46,785	\$29,969	\$29,233	\$37,529	\$224,510

n/r = not reported

Source: Town of Warner Annual Reports

The Transfer Station currently houses the following equipment:

<b><u>Equipment</u></b>	<b><u>Purchase Date</u></b>	<b><u>Exp Yrs</u></b>	<b><u>Replace Date</u></b>	<b><u>Replace Cost</u></b>
1. Accurate 450-HD Trash Compactor	1989	15	2004	\$25,000
2. Philadelphia Tram Rail Bailer 3400	1990	15	2005	\$15,000
3. Bob Cat Skid Steer	1996	10	2006	\$15,000

In 1998, the Town negotiated an agreement with the Towns of Hopkinton and Webster regarding Warner's share of the cost to close the Hopkinton Landfill. This agreement provides that Warner will pay approximately \$18,000 per year on a 20 year bond issue, and \$5,000 per year for ongoing monitoring costs.

## Recreation

Respondents to the 1997 Master Plan survey gave recreation facilities a rating of "good," with youth recreation and the Town beach rating high among town services. Over half of the respondents ranked improvements for youth recreation and public lake and river access as important public projects for the Town to undertake.

Warner's recreational facilities include:

1. Bagley Field, located on Route 103 between Exits 7 and 8 off of I-89, which has soccer fields used by summer and fall soccer camps.
2. Silver Lake Recreation Area, which hosts swimming programs and has popular picnicking facilities.
3. Riverside Park, located on a 16 acre parcel off North Village Road, which includes a little league baseball field that is fenced and in good condition, as well as a softball/T-ball field, that is also in good condition. The field has a new sprinkler system using water from the Warner River. The facility also is used by the football program for the towns of Warner, Bradford, Henniker, Hillsborough, Hopkinton and Sutton. A new skateboard park was recently constructed at the Park as well, funded through the Nancy Sibley Wilkins Trust and private donations.
4. Snow mobile trail system, maintained by the Kearsarge Trail Snails, connecting to surrounding communities. In 1998, a suspension bridge over the Warner River was completed, linking additional trails to the system.
5. Chandler Reservation, which has numerous hiking trails.
6. Warner River, which is used for canoeing.
7. The Sunapee, Kearsarge, Ragged Mountain Greenway trail system connects Warner to surrounding communities for hiking and cross country skiing.
8. Rollins State Park - hiking trails at Mt. Kearsarge

As indicated in the Master Plan survey, there is a need for more youth/teen recreation activities, possibly in the form of a community building. The Board of Selectmen also indicated that further recreation opportunities could be created by better utilization of Town-owned land, including the Chandler Reservation, which includes 1,345 acres of land in the Mink Hills, future use of the Town reservoir, and land fronting along the Warner River. Other locations that present possible recreational opportunities include Carriage Trail Acres, land behind Simonds School, and the

railroad beds that run through Town.

The future land use map indicates that future population growth should be concentrated within close proximity to the village center so that improvements in the areas mentioned above, or in Riverside Park, would allow for easy access to the majority of Warner's population. Although no park and recreation development plans have been formulated, it is clear that additional facilities will be required as Warner's population grows.

## **Police Department**

Respondents to the 1997 Master Plan Survey indicated that the Police Department was doing a good job (61.1%) but that police protection was the community service needing the most improvement. This is probably due, in part, to the increase in activity requiring department attention during the last ten years. Table 6-2 illustrates this increase in activity, as reported by the Warner Police Department.

The Police Department now has four full time police officers, two part time police officers and two police cruisers, a 1994 model and a 1997 model. The Town voted, in 1999, to replace the 1994 cruiser. The Police Department estimates that it will need a third cruiser in the year 2000, due to increased patrols, investigations and court time.

The current status of the Warner Police Facility consists of all seven employees working out of three rooms in the Town Hall. As previously determined by the 1988 Master Plan Survey, the Police Department's present quarters continue to be inadequate with intensifying space restrictions, increased liabilities, and safety being of great concern.

In January of 1997, the New Hampshire Municipal Association Property-Liability Trust conducted a visitation/inspection of the current facility. The inspection called attention to the many deficiencies that exist at the present time. Some of the inadequacies include the need for: a secure lobby, a secure booking area, gun lockers, evidence storage, temporary holding facility with separate juvenile/adult facilities, safe communications room, alternate back up power system, and interviewing area.

The Police Department has received recommendations for a future facility from Compensation Funds of New Hampshire and the Police Standards & Training Council. Any new facility must be compliant with all building and fire codes, as well as with the Americans with Disabilities Act. A new station must be built with an eye toward the future. It should be able to accommodate a growing police force and have expansion capability.

After careful consideration and research, a facility of 4,800 square feet has been proposed to meet the needs and requirements of the Warner Police Department. This proposed facility would allow for efficient, liability conscious, day-to-day operations to be completed in a professional manner.

**Table 6-2:  
Warner Police Department Activity 1990-1998**

Type	1990	1991	1992	1993	1994	1995	1996	1997	1998
Motor Vehicle									
Accidents	29	17	27	23	43	50	58	45	49
Summonses	118	73	92	72	27	40	61	72	90
Check Ups	n/r	n/r	n/r	26	62	62	115	99	69
D/E Warnings	n/r	n/r	576	568	334	379	285	461	349
Sub Total	147	90	695	689	466	531	519	677	557
Criminal									
Investigations	n/r	n/r	90	77	195	190	261	226	243
Juvenile	23	13	12	10	11	13	19	45	41
Untimely Deaths	0	2	1	3	4	4	4	5	1
Bench Warrants	9	4	18	0	8	4	2	7	12
Arrests	24	13	17	15	7	17	27	31	59
Sub Total	55	32	138	105	225	228	313	314	356
Alarms	n/r *	n/r *	13	67	62	83	26	51	79
Total Activity	n/r *	n/r *	846	861	753	842	858	1042	992
Total Calls Received	n/r *	n/r *	2,389	2,754	2,231	2,885	2,881	2,839	2,886

Source: Warner Police Department

n/r \* = not reported

## Fire Department

With the addition to the Fire Station in 1992, which doubled the space of the Fire Department, the space needs of the Fire Department are met for the foreseeable future. If needed, one or two trucks could be housed at the new Highway facility, if additional bays were added to that structure.

In 15-20 years, a sub-station located either in the village center or to the south of the village, will probably be needed, since this is where the Fire Department responds to most of its calls. Any substation or new station should be in a central location for visibility and for safety reasons during emergencies. Table 6-3 below shows Department activity since 1991.

Since approximately 50-60% of calls are medical emergencies, the Fire Department has an Emergency Medical Technician (EMT) on retainer Monday - Friday from 7am-5 pm. Although Warner has 8 EMT volunteers, the majority of volunteers work out of Town and are available mostly at night and on the weekends.

Since the last Master Plan, the E-911 system has become operational in Town. The 911 system has enhanced emergency capabilities, however it has also increased the number of “nuisance calls” to the Fire Department. The Department responds to many more calls that would not have been considered “emergencies” in past decades.

The fire department is staffed entirely by volunteers, however, it is expected that a full time Chief, and possibly other personnel, may be needed at some point in the future. One change since the 1989 Master Plan that has occurred is that it is harder to get people to volunteer their time to the Fire Department because many residents have jobs out of Town, making it more difficult to respond to calls. Also, volunteering requires a substantial time commitment.

The Fire Department equipment inventory is listed in Table 6-4.

**Table 6-3:  
Warner Fire Department Activity**

Type of Call/Alarm	1991	1992	1993	1994	1995	1996	1997	1998
Auto Accident	22	29	27	24	32	31	35	36
Brush/Grass	2	1	2	4	0	5	4	5
Chimney Fire	8	11	15	10	8	7	9	3
False Alarm	18	23	27	23	28	18	15	23
Medical Aid	86	62	88	119	96	110	108	129
Other/Misc.	13	13	5	0	13	7	32	41
Service Calls	10	3	28	18	23	10	0	0
Motor Vehicle Fire	1	9	4	9	4	0	4	5
Mutual Aid to Allenstown	0	0	0	0	0	0	0	1
Mutual Aid to Boscawen	0	0	0	0	0	0	0	1
Mutual Aid to Bradford	2	1	7	6	5	3	2	8
Mutual Aid to Bow	0	0	0	0	1	0	0	0
Mutual Aid to Concord	0	0	0	2	0	0	0	0
Mutual Aid to Henniker	0	1	0	0	1	2	0	1
Mutual aid to Hillsboro	0	0	0	1	0	1	0	0
Mutual Aid to Hopkinton	3	4	7	5	3	2	2	8
Mutual Aid to Newbury	2	0	1	0	0	0	0	0
Mutual Aid to Salisbury	0	1	0	2	0	0	1	2
Mutual Aid to Sutton	3	0	3	2	2	0	1	7
Mutual Aid to Webster	4	2	1	3	1	1	2	2
Structure Fire	5	6	2	4	3	2	5	40
Smoke Investigation	3	2	3	3	3	1	1	0
<b>TOTAL</b>	<b>182</b>	<b>168</b>	<b>220</b>	<b>235</b>	<b>223</b>	<b>208</b>	<b>222</b>	<b>276</b>

**Table 6-4:  
Warner Fire Department - Capital Equipment Inventory**

Equipment	Life Expectancy	Replacement Cost	Replacement Date
1999 Freight Liner	20 yrs	unknown	2019
1988 Ford Pumper	20 yrs	\$225,000	2008
1973 GMC Pumper	20 yrs	\$165,000	1993
1981 GMC Tanker	20 yrs	\$ 75,000	2001
1964 Ford Tank Pump	unknown	\$ 125,000	2000 or 2002
1952 Tanker	unknown	Belongs to State	n/a
1960 Jeep and Trailer	unknown	Belongs to State	n/a

## Cemeteries

Maintenance of town cemeteries is the responsibility of the Trustees of Town Cemeteries, an elected five member board. Table 6-5 lists the cemeteries in Warner under the responsibility of the Trustees.

**Table 6-5:  
Town Cemeteries**

Name and Location	Number of Lots	Lots Available
Davisville Cemetery, Route 103	208	some
New Waterloo Cemetery, Route 103	352	yes
Schoodac Cemetery, Webster Road	242	some
Bartlett Graves, Newmarket Road	private	no
Bean Graves, off Bean Road	private	no
Coal Hearth Cemetery, Pumpkin Hill Road	81	no
Colby or Collins, off Melvins Road	22	no
Ferrin Graves, off Red Chimney Road	private	no
Gore or French's Brook Cemetery, Kearsarge Mt. Rd.	45	no

<b>Name and Location</b>	<b>Number of Lots</b>	<b>Lots Available</b>
Hoyt Cemetery, Old Henniker Road	5	no
Johnson Cemetery, Collins Road	7	no
Kittredge Cemetery, Collins Road	11	no
Lower Warner Cemetery, Route 103	97	no
Magdalen College Cemetery	private	no
Melvins Cemetery, Route 103	47	no
Morse Cemetery, Route 103	10	no
Old Warner Village Cemetery, Main St	194	no
Page Cemetery, Page Road	45	no
Parade Ground Cemetery	127	no
Peaceful Retreat Cemetery	21	no
Poor Farm Burial Ground, Pumpkin Hill Rd.	5	no
Poverty Plains Cemetery	unmarked	no
Pumpkin Hill Cemetery, Old Pumpkin Hill Rd	54	no
Sanborn Cemetery, past Bear Pond	6	no
Seavey Cemetery, Tory Hill Road	private	no
Sisco Cemetery, off Route 114	69	no
Tory Hill Cemetery, Tory Hill Road	private	no
Waterloo Cemetery, Newmarket Road	183	no
Wheeler Grave, Willoughby Colby Road	private	no

As shown on Table 6-5, three cemeteries have lots available. The New Waterloo Cemetery is the main cemetery that has lots for sale to the past and present residents of Warner. The property was donated in the 1960's, logged, filled, graded, and seeded. The Cemetery Trustees have had the back section of New Waterloo Cemetery surveyed and marked. About 55-60 lots have been sold since the 1970's, with approximately 10-15 lots being sold per year. The Trustees estimate that there is more than adequate space for the foreseeable future.

There is no full time cemetery attendant or staff in any of the Town cemeteries. The summer maintenance of mowing is contracted out to landscapers. Ongoing maintenance projects include painting and replacing gates, and straightening and repairing stones. The Trustees recommend that a "Friends of Cemeteries" Committee be established to deal with on-going maintenance and upkeep.

## **Education**

Kearsarge Regional School District, SAU #65, is located in New London. The district is composed of seven towns governed by one regional School Board consisting of nine members. Warner and New London each elect two representatives to the regional School Board, while the remaining towns elect one. The towns represented in the District are: Bradford, Newbury, New London, Springfield, Sutton, Warner and Wilmot.

Warner students in grades 1 - 5, attend Simonds Elementary School, located off Main Street behind Town Hall. Students in grades 6-8, attend Kearsarge Regional Middle School in New London, and high school students attend Kearsarge Regional High School in Sutton.

### *Simonds Elementary School*

The physical plant at Simonds consists of the original 1871 two story brick school building onto which two additions have been constructed. The original building consists of 4 classrooms, a nurse's room, 3 rooms designated for Speech, Occupational Therapy and Resource, and a storage area. The first addition, built in 1960, consists of 4 classrooms, offices for the principal and secretaries, a guidance room, teachers room, library and learning disabilities room. The second addition, built in 1987, consists of 3 classrooms, an art and music room, reading rooms, conference room, and a multi-purpose room (gym, cafeteria). Currently, the school has the capacity for 250 students.

### *Enrollment Trends and Projections*

The following numbers were compiled by the New Hampshire Office of State Planning for the 1999 update of the Warner Master Plan. Please note that these figures are based on past enrollment projections and should be used only as a basis for future planning. All future projects should be based on the changing conditions within the Town and District, such as new residential development, and based on a yearly accounting of enrollment figures.

Figure 6-1 shows the historic enrollment figures from 1980-1999 for the Kearsarge Regional School District. After a sharp decrease in enrollment in the early 1980's, the figures have climbed steadily to a high of 2,046 students for 1999.

Figure 6-2 shows the school enrollment figures from the Town of Warner in the KRSD.

Although the historic figures for the KRSD and the Town of Warner show an upward trend, specific projected enrollment numbers for the Town of Warner show that the Town's number of children enrolled in the district will decline over the next decade. Figure 6-3 shows three different types of projections. Grade progression projections are based on the ratios of historic numbers that are carried out for ten years.

Figure 9-1

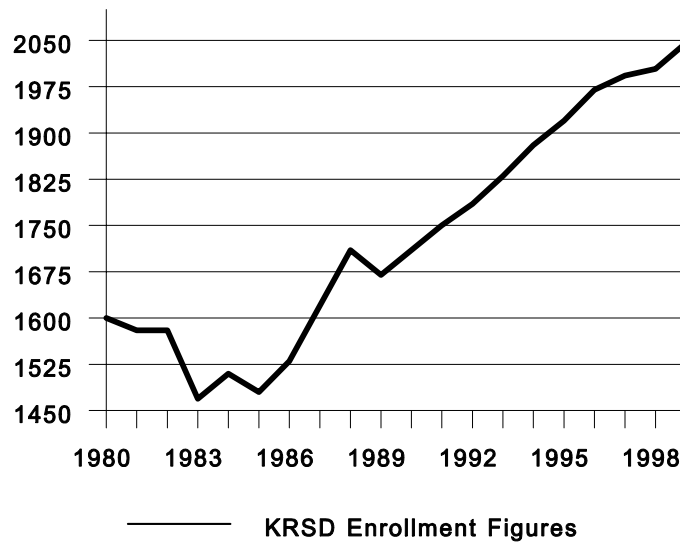


Figure 9-2

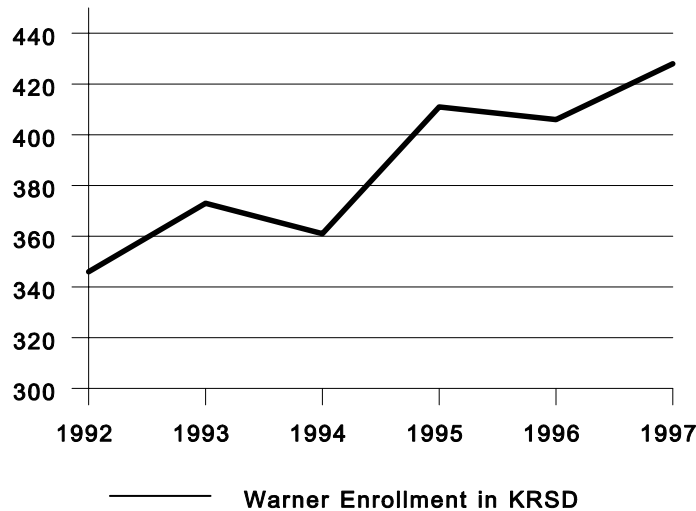
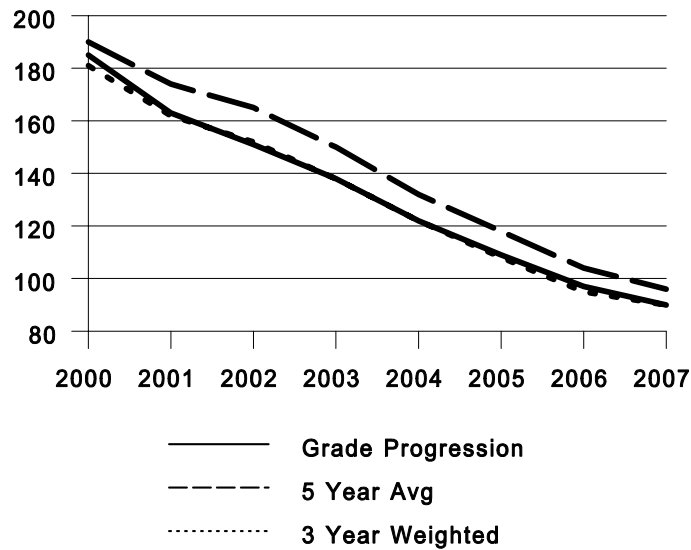


Figure 9-4



The five year average projections are the average of the grade to grade progressions over the last five years. The three year weighted average progression ratio gives greater weight to the last three years of enrollment figures. All three methods show that barring some unforeseen events, such as a new housing development or a baby-boom, the number of school enrollments in KRSD from the Town of Warner may decline over the next 10 years.



Projections for grades 1-5 at the Simonds Elementary School were made using the same methods as described above. Figure 6-3 shows that school projections will decline significantly in the next decade.

## **Highway Department**

The Highway Department is located on Route 103, near the Town's Transfer Station and the State Department of Transportation Highway Facility. The Highway Garage consists of a steel facility that was constructed in 1998. The Highway Department received very favorable ratings in the 1997 Master Plan Survey for both road maintenance (74.1% rated this as "good") and snow removal services (81.2% "good" rating).

Table 6-6 summarizes the inventory of equipment used by the highway department as of November 1998, and includes replacement costs and dates.

The Town Road Agent recommends a number of long term highway projects to keep the road system properly functioning:

1. Shim and Pave Program. This program maintains and extends the life of the current road system.
2. Road Construction Program. There are a number of roads that need to be completed either by paving or by improvements to the road base. These roads include Newmarket Road, Plains Road and Bean Road. Please refer to the Transportation Chapter for more information.

Other needs of the Highway Department Include:

1. New Sand/Salt Shed that is environmentally sound.
2. Addition of staff, such as a full time mechanic, maintenance person, part time transfer station operator, and snow plow operator.

Other Highway Department projects relate to downtown improvements. Sidewalk replacement is recommended to replace the existing sidewalks with brick, for both safety and aesthetics. The development of a municipal parking lot is also recommended. The limited parking available is perpendicular to Main Street, resulting in backing maneuvers in and out of parking spaces onto Main Street. Safety could be improved and congestion could be lessened by providing an off-street parking lot in the downtown area.

**Table 6-6:  
Warner Highway Department Equipment Inventory**

Description	Date Purchased	Current Miles/Hrs	Life Exp Yrs	Replacement Date	Replacement Cost
Cat 206 Excavator	1987	9000 Hrs	10	1998	\$140,000
Gallion Grader	1999	13,559 Hrs	15	2013	\$170,000
Cat Loader 936	1990	11,706 Hrs	10	2000	\$120,000
Massey Tractor	1981	---	20+	---	---
F350 4x4	1993	85,151 M	7	2000	\$27,500
F350 4x4	1999	2432 M	7	2004	\$32,000
Mack* /Water Tank	1982	99,624 M	3	2001	---
Mack♦	1986	157,269 M	3	2001	---
Mack⊕	1991	81,676 M	10	2001	\$125,000
Mack∇	1997	31,000 M	10	2007	\$95,000
Mack*	1998	7,805 M	10	2008	\$115,000
Swenson Sander Steel	1986	---	4	2001	\$15,000
SS Highway Sander	1988	---	20	2008	\$17,000
SS Highway Sander	1991	---	20	2011	\$17,000
SS Highway Sander	1996	---	20	2016	\$18,000
SS Sander Pickup	1997	---	20	2017	\$6,000
Cub Cadet-Snow Blower#	1999	---	10	2009	\$20,000

\*1982 Mack will be sold in 2001   ♦1986 Mack will replace 1982   ∇ 1997 Mack has new plows and wing frame  
 ⊕ 1991 Mack will replace 1986 and in year 2001, a complete new truck, cab and chassis, dump body, plow and frames  
 \* 1998 Mack plow equipment will be 20yrs old and needs to be replaced at the time of trade  
 # Cub Cadet will be replaced with a 4-wheel drive tractor and attachments \$24,000

## **Library**

The red brick and granite Richardson Romanesque style Pillsbury Free Library building was constructed on a 0.3 acre parcel at the corner of Main Street and Depot Street in 1890-91, as a gift to the Town from the George A. Pillsbury family. When the Town voted to accept the library in 1890, it also voted to support the library annually with funds equal to 1/15 of 1% of the Town's net assessed valuation for that year.

Since the last Master Plan, the expansion which was the pressing need then is now a reality. The new addition, which brings the square footage of the library from approximately 1,800 to approximately 5,000, was completed in 1993, and dedicated in April, 1994. An added benefit of the expansion is that all the extra shelving, files and furniture that were crammed over the years into the original building, an elegant Richardsonian Romanesque design by a noted Minneapolis architect, have now been removed, allowing the main floor Pillsbury Room to be restored to its original glory.

The new wing, in addition to providing enhanced space for all the library functions, provides unrestricted handicapped access to both floors, something sorely lacking in the original building. The former children's room in the basement of the old building has been converted into a public meeting room, which has proven to be very popular with many groups in town.

The library is currently open 26 hours a week, has 1,850 cardholders, and 17,502 transactions a year. The collection includes 17,049 books, 1,053 recordings, 239 videos, and 74 current periodicals.

While the Pillsbury Free Library will enter the next millennium with a physical plant adequate to meet the needs of the community for many years to come, the challenge for the future will be dealing with the demands of new technology and the changing role of libraries, as computerized data storage systems and the Internet now compete with traditional printed materials for the library's limited resources. Students of all ages are increasingly using the library for research and homework help, as well as for leisure reading and after-school activities.

As computers have become more ubiquitous, one of the roles the library has assumed is in providing computer access for those who do not have access to a computer at home. The Pillsbury Free Library has already computerized its card catalog and circulation desk, and currently has 4 public use computers, a variety of research and educational materials on CD-ROM, and offers public access to the Internet. The library's public access computers have been used to create resumes, research health care options and write term papers. Many of these functions, while commonplace today, were unanticipated ten years ago and, with the rapid pace of technology, we can only speculate at what the future may hold for the Pillsbury Free Library.



Other future goals include increasing the hours the library, maintaining and enhancing the quality of the collection, and funding more staff hours in order to serve the community in new ways. Literacy programs, programs and exhibits for adults and young adults and more afterschool activities, such as the continuation of the very successful weekly after-school program that was initiated in 1998-1999, are a few of the services that the library would like to initiate in the future.

### **Warner Village Water District**

Also known as the "precinct", the District is a separate governing entity within the Town of Warner and was organized originally to provide fire protection, water and sewer services. The district includes the more densely populated Warner Village, including Main Street, Kearsarge Mountain Road, Geneva Street, Roslyn Avenue, Kirtland Street, School Street, Old Main Street, Mill Street and Depot Street. The executive body of the District is a board of three elected Commissioners, with an annual district meeting serving as the legislative body. The 1989 annual meetings of both the District and the Town voted to turn over administration of the Fire Department to the Town, effective January 1, 1990.

The district is comprised of 156 residences and 30 non-residential establishments, including commercial and governmental buildings. Funding is secured primarily through the collection of quarterly water and sewer charges, composed of: \$10 service availability fee, plus a water charge of \$2.00 per 1,000 gallons used, and a sewer charge of \$6.00 per 1,000 gallons. Property tax assessment is also available to support the District's operations, although this source has been reduced to a minimum amount of \$.15 per \$1,000 of valuation, in 1998.

## **Water System**

### *Source*

Until November 1991, District residents were provided with water from a reservoir created by an impoundment of Silver Brook, located on North Village Road, supplemented by an emergency bedrock well, located south of the reservoir. Utilizing 1987 Community Development Block Grant (CDBG) funds, the District installed a new gravel packed well at what is known as the Royce site, near a bend in the Warner River off Chemical Road. The determined maximum safe sustainable yield of the well, based on pump testing, is 250 gallons per minute (gpm). A second CDBG grant of \$350,000 was received in 1989 for construction of a pump station and 900 feet of 8 inch diameter ductile iron water main to connect the well to the existing transmission line on North Village Road. These improvements were completed in September, 1990, making this well the primary water source with the reservoir serving as backup until an additional groundwater source was secured. In 1995, a second well was installed, again with CDBG funding. This gravel-packed well, capable of producing 190 gpm, was located 40 feet from the primary well on the Royce site.

### *Storage*

In 1987, a 98,450 gallon concrete storage tank was constructed on Denny Hill to address several concerns: to equalize pressure in the system; to assure adequate quantities of water for normal daily demands; and to provide necessary storage capacity for the new well. A storage volume of 430,500 gallons was recommended to provide for sufficient flow in the district for fire suppression (DuBois and King, 1984). Available funding was not adequate to permit the construction of a facility with the recommended capacity. However, the storage tank was designed to accommodate an increase in storage capacity, through additional concrete modules. Currently, fire protection is provided through a combination of the water system for immediate response and the nearby Warner River so that all areas of the village are covered. In the future, consideration of an additional tank may be needed to deal with adequate fire suppression.

### *Distribution System*

Much of the distribution system was constructed in 1893, and consists of 10, 8, 6, and 4 inch cast iron pipe. The effective diameter of the pipes may be constricted by sediment build up and corrosion. There are 51 fire hydrants incorporated in the system. Until the winter of 1988-89, five blow-offs were employed to prevent water line freezing. These have been discontinued by the District. Steps have been taken to eliminate water line freeze-ups by insulating and burying entrance lines deeper. Currently, only three customers must run water during winter months to prevent water freezing.

As part of system improvements undertaken in 1986-87, several lines were added or replaced. To connect the new storage tank on Denny Hill to the system, 1,580 feet of 8 inch main was constructed. An additional 500 feet of existing main on School Street was replaced with new 8 inch pipe. Service connections were also replaced along School Street. DuBois and King also

recommended replacement of 6 inch water lines along Main Street, from Mill Street to Roslyn Avenue, with a 10 inch diameter water main, and replacement of existing 4 and 6 inch water mains on Kearsarge Mountain Road with 8 inch mains. The Kearsarge Mountain Road improvement was completed in the summer of 1991, and improved fire flow and water pressure to this part of the village. As part of its 1989 CDBG grant, the District received funding to replace water main along Main Street from Depot Street to Mill Street, a total of 1200 linear feet, with 12 inch diameter ductile iron pipe, at a cost of \$168,000. This improvement was completed in the fall of 1990. Water line improvements to replace 2,630 feet of 4 inch mains on Roslyn Avenue, Kirtland Street and Geneva Street with 8 inch pipe are scheduled to be carried out in the year 2000.

### **Sewer System**

The sewage collection system was installed in Warner in 1902, with outfalls discharging directly into the Warner River. Consistent with State and Federal efforts to eliminate such pollution, a sewage treatment facility was constructed on the south side of the Warner River, on Joppa Road, in 1975.

The design capacity of the plant, which operates on an aerobic system, is 170,000 gallons per day. The plant is currently processing an average of 45,000 gallons per day of sewage. The service area closely approximates that of the water system, and includes 181 service connections, 151 residential and 30 commercial establishments or public buildings.

All of the original collection piping consisted of tile pipe, with loose joints. In 1976, a major sewer line replacement was carried out, with 12,900 feet of tile pipe being replaced with 8 and 12 inch asbestos cement pipe. In 1980, the sewer collector main on School Street was replaced and lowered to accommodate gravity flow of effluent from several residences at the end of the street. In 1987, old sewer pipes on Church Street and North Main Street were replaced with new sewer line. A CDBG grant was awarded to the Town to replace approximately 1,400 feet of deteriorated sewer line on Kearsarge Mountain Road in 1991, in conjunction with a storm sewer project. Nine hundred and thirty-five feet of old sewer mains in Roslyn Avenue, Kirtland Street and Geneva Street will be replaced in the year 2000.

Loose joints in the sewer collection system are also susceptible to groundwater infiltration, which requires the plant to treat a greater volume of water than that produced by system customers. Currently, infiltration is only a problem during storm events. However, as system demand increases, infiltration will become more of an issue.

All sewage treatment systems produce a concentrated by-product called sludge. The sludge must then be disposed of in an environmentally acceptable manner. Although sludge has a greater solids content than the raw sewage entering the plant, it still contains a considerable amount of water. In order to decrease disposal costs as much as possible, sludge is dewatered in drying beds located at the treatment plant site. This method relies on evaporation and sand filtration to reduce the water content of the sludge. Although this method is effective, its operation in the Warner

plant has been a problem, especially in winter due to freeze-up and sludge accumulating faster than the beds can dry it.

To solve this problem, an innovative sludge drying technique was installed in the drying beds in 1987. Phragmites reeds, which have a high demand for water, were planted in the drying beds. The reeds can speed up the drying process by absorbing water through their roots. During the summer of 1989 and again in 1995, the sand filter layers were removed and replaced with new bedding material.

The roof panels on the drying bed building were removed and the reeds replanted. This procedure has resulted in healthier plant growth and more efficient operation of the sludge drying process. The plant operator estimates that the drying beds will handle the sludge accumulation for approximately five years, after which, the sludge will have to be removed. The drying bed walls were raised in 1999, as part of a system improvement project, with CDBG and State grants, to increase holding capacity of the beds. The next sludge removal is scheduled for 2001.

Before its closure, dried sludge had been disposed of at the Hopkinton landfill. The Concord Regional Solid Waste/Resource Recovery Cooperative incinerator in Penacook does not accept sewage sludge for disposal. Disposal at the Concord Sewage Treatment Plant has been used in 1995, and other disposal sites may be available. Land spreading is an option that could be cost effective, provided it can be accomplished in an environmentally sound manner.

## **Current Issues Relative to Water and Sewer Facilities**

### **Precinct Boundaries**

The capital costs associated with operating public water and waste water treatment facilities in Warner are borne by the people who benefit from these services. The Warner Village Water District is a separate entity within the Town of Warner with its own political boundaries. Property owners within these boundaries are subject to a property tax to cover certain operating and capital costs. In addition, precinct residents pay service fees for water and sewer usage to cover the bulk of the costs of operation and management costs. The situation has occurred, and will continue to do so, where a landowner outside of the precinct boundaries desires utility services. Where the District Commission determines that capacity exists to serve a customer outside of the precinct, and such service would not be detrimental to the District, both it and the potential customer are forced to negotiate a reasonable payment plan, on an ad hoc basis, to cover the associated costs.

Over the past ten years, the District has enlarged its boundaries to bring in new or existing customers. In accordance with RSA 52:5, the Selectmen of the town in which a precinct has been established have the power to change the precinct's boundaries. The process is initiated by a petition of ten or more residents of the precinct to the selectmen requesting a change. The

selectmen then hold a public hearing on the request, after providing notice to all interested parties, and render a decision, either allowing or not allowing the change. The petition, Selectmen's proceedings, and decision must be forwarded to the Precinct to be made a part of its official record.

The District has adopted two principles to guide it in the matter of changing its boundaries:

1. The first principle is that the limits of the precinct should include all residential and commercial users served by sewer and water.
2. The second principle is that residential and commercial entities outside the precinct, wishing to be connected to the water and sewer systems must first be required to pay for all necessary mains, properly sized and constructed, and related improvements. The precinct boundaries would then be changed to incorporate the area to be served.

The first principle was followed in the expansion of precinct boundaries to encompass several properties which had been receiving services for a number of years; two apartment complexes and two single family homes. The second principle applied in the extension of District services to the commercial area at I-89, Exit 9, where the initial mains and associated improvements were constructed at the expense of the business served.

### **Source of Water**

At the time of the last Master Plan update, the District needed a back-up source of water to augment the Royce well. The reservoir, while still available as a water supply would have required the installation of a filtration plant, at significant expense to the District. In 1995, the District installed a back-up well, in response to State and Federal requirements under the Safe Drinking Water Act (SDWA).

### **Available Capacity/New Service Connections**

The District has recently revised the fee schedules for new service connections. New residential customers are charged a tie-in fee of \$2,000 for water service. The service pipe must be installed to District specifications, at the customer's expense. The District is responsible for the service line from the main to the shutoff, while the customer is responsible for the line from the shutoff to the meter.

All sewer pipes from the main collector line to the building must be installed and maintained at the expense of the customer. An entrance fee of \$2,000 is charged for residential connections, and the material may be supplied, at cost, by the District.

Non-residential water and sewer connections are assessed a tie-in fee for service at \$8 per gallon per day for water and a like amount for sewer, although these rates are negotiable.

All costs of construction, including labor, materials, permitting, and any related costs incurred for the purpose of extending water and sewerage lines beyond the boundaries of the District to an entity outside its boundaries, shall be borne by the entity to be served by such extension. This includes the necessary costs of upgrading any lines within the District in terms of quality or capacity. All workmanship and materials must meet the approval of the Commissioners and applicable specifications.

## **Capital Facilities Inventory and Needs**

This section describes the adequacies and inadequacies of existing facilities to provide service to the existing customers, and to identify improvements necessary to accommodate new customers.

### **Water Supply**

Capacity of primary gravel packed well: 360,000 gallons/day

Capacity of back-up gravel packed well: 273,600 gallons/day

Existing average daily demand: 75,000 gallons/day

Maximum daily demand: 144,600 gallons/day

The new wells provide adequate capacity for existing water demand, and any likely service extensions in the foreseeable future. In 1990, the District acquired a 3.5 acre parcel of land west of the Royce site, along the Warner River, as a possible future well location.

### **Water Supply Storage**

Existing storage capacity: 98,450 gallons

Recommended storage capacity: 450,000 gallons

The recommended storage capacity was determined by DuBois and King in the 1984 Water System Master Plan. To meet fire flow requirements in the Village Center area, an estimated 375,000 gallons of storage were needed. Domestic storage needs were computed to be equivalent to the average daily demand, 57,500 gpd, at that time. During the 1991-1998 period, average daily demand has grown to 75,000 gpd.

Due to a lack of funding for the recommended storage capacity, the tank was designed to meet domestic needs, plus the need to supply a "first strike" supply in the event of a fire, with the Warner River providing the primary source of fire flow. The District should consider establishing a capital reserve fund to expand the capacity of the storage tank.

## **Distribution**

Total water main: 31,500 linear feet in sizes ranging from 4 to 12 inches

Ductile iron/cement lined main: 19,675 feet

Cast iron main: 11,125 feet

Asbestos main: 700 feet

Many of the original pipes remain in use today. Sediment buildup and corrosion have reduced the carrying capacity in some sections of piping. Line replacement has been recommended along Main Street, from Mill Street to Roslyn Avenue. In 1992, 750 feet of 6 inch ductile iron cement lined (DICL) pipe was installed on Depot Street and 200 feet of 4 inch DICL pipe on Kearsarge Street Extension.

In case of any service extension, the existing conditions of lines affected by such an extension must first be determined. The District by-laws require applicants for service extension to pay for any system upgrade necessitated by the service extension. The cost for the Main Street line replacement, which is 1,383 linear feet of 12" ductile iron water main for approximately \$62,000.

## **Sewerage System**

Treatment Plant Design Capacity: 170,000 gpd

Existing Average Daily Flow: 45,000 gpd

Although the plant has excess design capacity to process sewage, the actual design of the facility limits its capacity to 110,000 gallons per day. The processing and disposal of sewage sludge limits the ability of the system to handle increasing flows. A plan needs to be created to deal with the disposal of the final product.

As solid waste disposal costs increase in general, and sites for sludge disposal decrease, the District needs to investigate alternative sludge disposal and management practices, such as composting.

Other capital needs may include the replacement of piping where deteriorated conditions exist. These areas need to be identified and incorporated in the overall system plan.

Other Recommendations:

1. Continue to include utility needs in the Town's Capital Improvement Program to aid the Budget Committee, District Commissioners, and residents in their consideration of the annual budget. The CIP should include: an analysis of recent trends in capital and operating costs; the schedule of capital improvements over a six year period; and proposed funding sources for improvements, including the impact on the tax rate.

2. Continue the District policy of requiring applicants for service extensions to pay their share of the costs associated with system upgrade or expansion.
3. A problem, which affects the rural areas of Warner beyond the precinct limits, is the need to dispose of septage from pumping of on-lot septic systems. Settling lagoons and other methods of disposing of these concentrated wastes are becoming scarce. New technologies for converting these wastes into benign and useful materials are currently being developed. The District and the Town should cooperate with private septage haulers to examine opportunities for incorporating septage processing facilities at the sewage treatment plant as a long term disposal solution.
4. Although the sludge drying process has been greatly improved at the treatment plant, periodically the accumulated sludge must be removed and the beds restored and replanted with phragmites reeds. The District should pursue methods, such as the spreading the dried sludge on forest land or other environmentally sound areas under State permit, as a means of safely disposing of it.

A special thank you to the following people for their contributions to this chapter:

Allan Brown, Road Agent  
Richard Brown, Fire Chief  
William Chandler, Police Chief  
Nancy Ladd, Library Director  
Jim McLaughlin, Water District Clerk  
Bob Shoemaker, Member of the Trustees of Town Cemeteries

## **VII. TRANSPORTATION**

# **Chapter VII**

## **TRANSPORTATION**

### **Introduction**

A sound transportation system is based on a balance between the needs and desires of its users. Some considerations in developing such a system include: a desire for growth, a desire to keep a small town character, a need to move people from place to place safely, a desire to promote alternative modes of travel, and a desire to protect the environment.

The Transportation Chapter of the Warner Master Plan is divided into the following areas:

- 1) Introduction
- 2) A review of the existing highway system
  - a) Highway Classification
  - b) Roadway Function
  - c) Bridge Inventory
  - d) Regional Traffic
  - e) Review of Collector Roads with permanent traffic recorder volumes
  - f) Review of Local Roads with non-permanent traffic recorder volumes
- 3) Commuter and development patterns
- 4) Scenic roads
- 5) Future projections and recommendations
- 6) New road construction

One of the goals stated in the first chapter of the Master Plan is to maintain and enhance Town services, including Town roads, in relation to the growth and expanding needs of the Town. An objective to accomplish this goal is to establish a study committee to review the need for new roads, bridges, intersections and connector roads in Town.

### ***Existing Highway System***

#### **Highway Classification**

In New Hampshire, all highways are defined according to one of six highway classifications. See Table 7-1 and Figure 7-1 for road mileage by State Classification for Warner. These six highway classifications, defined in RSA 229:5, are as follows:

*Class I, Trunkline Highways* shall consist of all existing or proposed highways of the primary state highway system, excluding all portions of such highways within the compact sections of cities and towns listed in RSA 229:5, V, provided that the portions

of the turnpikes and the national system of interstate and defense highways within the compact sections . . . shall be Class I highways.

Class II, State Aid Highways shall consist of all existing or proposed highways on the secondary state highway system, excepting all portions of such highways within the compact sections of the cities and towns listed in RSA 229:5, V.

Class III, Recreational Roads shall consist of all recreational roads leading to, and within, state reservations designated by the legislature. Examples of such roads in Warner include Kearsarge Mountain Road to Rollins State Park, and Old Main/Denny Hill/Pumpkin Hill Roads to Carroll State Forrest.

Class IV, Town and City Streets shall consist of all highways within the compact sections of cities and towns as listed in RSA 229.5, V. The compact sections of any such city or town shall be the territory within such city or town where frontage on any highway . . . is mainly occupied by dwellings or buildings in which people live or business is conducted throughout the year and not for a season only. By definition, Warner has no Class IV roads.

Class V, Rural Highways shall consist of all other traveled highways which the town has the duty to maintain regularly and shall be known as town roads.

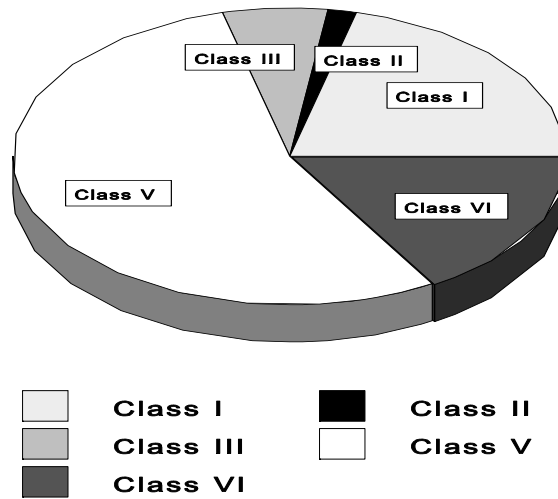
Class VI, Unmaintained Highways shall consist of all other existing public ways, and shall include all highways discontinued as open highways and made subject to gates and bars, all highways which have not been maintained and repaired by the town in suitable condition for travel thereon for five successive years or more.

**Table 7-1  
Road Mileage by State Classification for Warner**

Classification	Mileage	Percent of Total
Class I	24.26	21.24
Class II	1.97	1.72
Class III	6.91	6.05
Class V	62.57	54.77
Class VI	18.53	16.22
Total	114.24	100%

Source: NHDOT

**Figure 7-1  
Road Mileage by State Classification for Warner**



## Highway Function

Highway functional classifications for all roads in the Town of Warner are defined as follows:

### Interstate Highways

Interstate Highways are restricted access highways which move very large volumes of traffic over vast distances. Interstate 89 is the only Interstate Highway found in Warner.

### Arterial Roads

Arterial roads serve to move large volumes of traffic through a town or to connect one section of the town with another section. An example of an arterial road as defined by the State DOT is Route 9/202 to Keene. Currently, no roads classified as Arterial Roads exist in Warner.

### Collector Roads

Collector roads are highways that primarily feed traffic to/from local roads to/from arterial roads. Collector roads provide direct access to abutting properties. Routes 103, 114 and 127 are classified as collector roads.

### Local Roads

Local roads provide for internal movement within residential areas and for direct access to abutting property. Local roads consist of all those not mentioned above.

## Bridge Inventory

Bridges are a key component of the highway system, as they connect road segments across streams, lakes, rivers and other roads. Bridges are the most expensive sections of roads, and a lack of adequate bridges can create transportation bottlenecks, which are often difficult to remedy.

The New Hampshire Department of Transportation (NH DOT) maintains an inventory of all bridges in New Hampshire using Federal Sufficiency Ratings (FSR), a nationally accepted method for evaluating bridges. An FSR represents the relative overall effectiveness of a bridge as a modern day transportation facility. An FSR greater than 80 means that the bridge is in good condition overall. A bridge having an FSR between 50 and 80, is eligible for Federal bridge rehabilitation funding. A bridge with an FSR less than 50 is eligible for either Federal bridge replacement or rehabilitation funding. These ratings are based on modern, Federally accepted standards, and often historic bridges do not meet these standards.

Table 7-2 shows the bridges in Warner that are listed on the NH DOT list of "A structurally deficient @ (SD)" or "A functionally obsolete @ (FO)" bridges. The classification of SD or FO does not mean that the bridge is necessarily unsafe for use. Rather, it indicates that the bridge does not meet a particular standard, for example it is a one lane bridge or has a particular feature that is outdated. The historic covered bridges listed in this table will always have an SD rating because they will never meet the modern standards. Most of the bridges listed here are owned and maintained by the State as part of the State highway system. The bridges on the list should be updated by the State to meet the most current standards. The Town should investigate updating the Town-owned Bible Hill Lane bridge to meet current standards.

**Table 7-2  
Structurally Deficient or Functionally Obsolete Bridges in Warner**

Bridge	Location	FSR	Deficiency	Owner	ADT/Year
North Road	Meadow Brook	42	FO	Town	
Newmarket Road*	Warner River	14	SD	Town	290/94
Bible Hill Lane	Warner River	48	FO	Town	
I-89 (NB)	US 103	78	FO	State	8,500/96
I-89 (SB)	North Village Road	92	FO	State	8,500/96
Joppa Road West*	Warner River	13	SD	Town	120/94
I-89 (NB)	Joppa Road	59	FO	State	8,500/96
I-89 (SB)	Joppa Road	59	FO	State	8,500/96
I-89 (SB)	Warner River	89	SD	State	8,500/96
I-89 (NB)	Warner River	90	SD	State	8,500/96

FO= Functionally Obsolete  
NB= North Bound

SD= Structurally Deficient  
SB= South Bound

ADT= Average Daily Traffic  
\* Historic Covered Bridges

FSR= Federal Sufficiency Ratings

Source: NH DOT Bridge Summary

## Traffic Patterns

### Regional Traffic

The main routes for moving traffic through Warner are the primary and secondary highways, particularly Routes 103, 127, and 114, as well as I-89. Growth, both locally and on a regional level, can be seen in the increase of the Annual Average Daily Traffic (AADT) volumes on these major collector roads, as presented in Table 7-3 and 7-4. The DOT has established permanent traffic counters in different locations along these roads. The recorders are used to establish historic growth and seasonal fluctuations in traffic volumes on major roadways.

**Table 7-3**  
**NH DOT Permanent Counters in Warner Area**

Location	Year	AADT	Gain/Loss (%)
I-89 - Sutton Town Line	1992	11,115	
	1993	12,634	13.7
	1994	13,429	6.3
	1995	13,581	1.1
	1996	14,232	4.8
	1997	14,216	-0.1
	NH 114 - At Henniker TL	1992	2,902
1993		2,965	2.2
1994		2,953	0.4
1995		2,784	-5.7
1996		2,823	1.40
1997		2,934	3.9

Source: NHDOT Permanent Traffic Volume Recorder Data, 1998 CNHRPC Traffic Volume Report

### Collector Roads

The primary function of the collector roads is to move people from smaller local roads to arterial roads. Warner does not have any roads classified as arterial, instead, the collector roads function as direct links between local roads, Interstate 89 and other towns.

**Route 103** is the major route of travel in Warner, besides Interstate 89. This route travels from the southeastern corner and continues to the northwestern corner of the Town. There are three exits off

Interstate 89 in Warner and all of them exit onto Route 103. The stretch of Route 103 from the Bradford Town Line to Interstate 89 experiences heavy commuter traffic in the AM and PM commuting hours. This section of Route 103 serves as the main link for towns northwest and west of Warner to connect with Interstate 89. The area just east of the Exit 9 junction and overpass has experienced rapid growth in recent years. The segment of Route 103 east through the Village Center does experience some commuter traffic in the AM and PM commuter hours. This area also deals with a large amount of local traffic as it travels through the center of town. There are also several trip generating business along this stretch of Route 103, which increase the traffic volumes.

**Route 127** travels only a short distance inside Warner before it connects with Route 103. Route 127 carries a considerable amount of traffic from the towns of Webster and Salisbury through Warner to the Town of Hopkinton and the Village of Contoocook. Route 127 travels through a largely residential portion of Warner before it enters the more commercial area in the Village of Contoocook.

**Route 114** travels through only a small portion of the southwestern corner of Warner. This collector road functions to move people between Henniker and Bradford.

**Table 7-4  
NH DOT Non-Permanent Traffic Recorder Volumes**

Road	Location	1995 AADT	1996 AADT	1997 AADT
Burnt Hill Rd	North of Warner/Webster Rd	--	--	100
I-89	Hopkinton TL Exit 6-7	15,000	17,000	19,000
I-89	North of NH 103 Exit 7-8	16,000	17,000	19,000
I-89	South of NH 103 Exit 8-9	16,000	15,000	17,000
NH 103	Sutton TL	3,000	--	3,800
NH 103	Hopkinton TL	2,000	--	1,900
NH 103	Bradford TL	2,700		
NH 127	Webster TL	1,100	1,100	

Source: NHDOT Non-Permanent Traffic Volume Recorder Data, 1998. CNHRPC Traffic Volume Report

**Local Roads**

Local roads exist to connect neighborhoods and to move people to collector roads. In general, they function to move people around town. Many local roads in Warner experience low traffic volumes, often less than 500 cars a day, and many are partially or entirely unpaved.

Table 7-5 contains the average daily traffic volumes (ADT) collected by the CNHRPC between 1992-1998. The duration of these counts varies from two full days to one week. The roads on which these counts have been conducted were chosen by NHDOT and Town Officials. Please note that this data section is actual counts and is not in annual average daily traffic form, which accounts for seasonal fluctuations. As a result, the data in this table should be considered a random sample and should be used only as a guide. The data should be cause for further investigations and should not be considered as representative of the average or expected traffic on a particular road.

**Table 7-5  
CNHRPC Daily Traffic Counts**

Route/Location	1992	1993	1994	1995	1996	1997	1998
Bean Road (Paved)							73
Bible Hill Rd (at Melvin Rd)							91
Collins Rd (at intersection)							79
Denny Hill Rd (N of Old Main)	129		150		182		
Depot St (S of 103 & Main)	404						
Dustin Rd						590	
E. Roby Dist Rd							68
E. Sutton Rd						288	
Geneva St						165	
Iron Kettle Rd						677	
Kearsarge Rd	695						
Kearsarge Mt. Rd			950	769			
Kirtland St						96	
Mason Hill Rd				223			
Melvin Mills Rd							97
Melvin Rd							140
Mill St	539						
New Market St				305			
North Rd			300				
North Village Rd			500		576		
Old Main (S. Of Denny Hill)	161		150				

Route/Location	1992	1993	1994	1995	1996	1997	1998
Pleasant Pond Rd	539				663		
Poverty Plains Rd						139	
Pumpkin Hill Rd (N of School)	528						
Red Chimney Rd				119			
Schoodac Rd (E of Pov Plains)				893			
Schoodac Rd (E of Connors Mill)				659			
School St (E of NH 103)	591		680				
School St (S of Pumpkin Hill Rd)					889		
Waldron Hill Rd					332		
Warner Rd (by State Shed)				845			
Warner Rd (by Davisville)					886		
Waterloo St						85	
W. Roby Dist Rd							56
Willaby Colby Rd							33

Source: Central New Hampshire Regional Planning Commission 1998 Traffic Volume Report

## Commuter and Development Patterns

Route 103 and Interstate 89 serve as the major commuting corridors through Warner. The 1990 Census information shows that a large percentage of Warner's workforce commutes to towns and cities located south of Warner. Warner is fortunate in that I-89 can readily carry these large volumes of southerly commuter traffic. Route 103 also bears a fair percentage of the commuter traffic. The 1990 Census showed a large increase over the 1980 Census in the number of workers living and working in Warner: from 232 persons to 309 persons, a 33% increase. With a continuing increase in local job opportunities, Warner may experience a growing number of persons living and working locally, which will lead to additional strain of Warner's local transportation system.

The area east of I-89 has experienced a large amount of development in the past few years. This trend is likely to continue, due to the area's accessibility to the Interstate and its proximity to town center. Route 103 is the main roadway through this area and currently experiences some congestion problems at peak travel times. The additional construction of trip generating businesses, such as grocery stores, gas stations, or restaurants should be watched closely as these will greatly impact the traffic in this area.

## Scenic Roads

New Hampshire law allows communities to designate certain roads as scenic. The designation is beneficial in two ways. First, it establishes a procedure for protecting the rural landscape within a public right-of-way; and second, it can be a demonstrated public intent to maintain a road's rural qualities.

RSA 231:157 provides that: Any road in a town, other than a class I or class II highway, may be designated as a scenic road upon petition of 10 persons who are either voters of the town or who own land which abuts a road mentioned in the petition (even though not voters of the town), the voters of such town at any annual or special meeting may designate such road as a scenic road.

If a road is designated as a scenic road, any repair, maintenance, reconstruction, or paving work done with respect thereto by the State or municipality, or any action taken by any utility or other person acting to erect, install or maintain poles, conduits, cables, wires, pipes or other structures pursuant to RSA 231:159-189, shall not involve the cutting, damage or removal of trees, or the tearing down or destruction of stone walls, or portions thereof, except with the prior written consent of the planning board, or any other official municipal body designated by the meeting to implement the provisions of this subdivision, after a public hearing duly advertised as to time, date, place and purpose, two times in a newspaper of general circulation in the area, the last publication to occur at least 7 days prior to such hearing.

However, a road agent or his designee may, without such hearing, but only with the written permission of the selectmen, remove trees or portions of trees which have been declared a public nuisance pursuant to RSA 231:145 and 231:146, when such trees or portions of such trees pose an imminent threat to safety or property, and provided, further, that a public utility when involved in the emergency restoration of service, may without such hearing or permission of the selectmen, perform such work as is necessary for the prompt restoration of utility service which has been interrupted by facility damage and when requested, shall thereafter inform the selectmen of the nature of the emergency and the work performed, in such manner as the selectmen may require.

As used in this law, "tree" means any woody plant which has a circumference of 15 inches or more at a point 4 feet from the ground.

Designation of a road as a scenic road will not affect the rights of any landowner with respect to work on his own property, except to the extent that trees have been acquired by the municipality as shade or ornamental trees pursuant to RSA 231:139-156, and except that RSA 472:6 limits the removal or alteration of boundary markers including stone walls.

In the Warner Master Plan Survey, 63% of the respondents favored the Town designating some roads as scenic. The respondents favored Kearsarge Mountain Road, Pumpkin Hill Road and Burnt Hill Road for designation as scenic roads.

## **Future Projections and Recommendations**

The Route 103 corridor through Warner is the major area of concern for traffic congestion problems in the future. Populations in the towns to the north and west of Warner, as well as the population of Warner itself, are expected to continue to grow over the coming years. With this increase in population, traffic volumes are expected to rise steadily. Warner also experiences heavy traffic associated with tourists on weekends in the spring, summer and fall. This type of tourist traffic is expected to increase substantially as populations grow rapidly in the larger cities to the south.

The level of service (LOS) of Route 103 is hampered as it travels through the Village center. The decrease in the LOS is due primarily to the following: several intersecting roads, on street parking, local business parking areas and curb cuts. These factors may have to be looked at in the future to allow for Route 103 to continue to adequately serve the Warner area as traffic volumes increase. The increase of traffic on Route 103 in the Village center causes pedestrian problems as well. The use of traffic calming measures should be investigated to slow traffic as it passes through the Village.

## **New Road Construction**

Recognizing the need for transportation planning, the Master Plan Committee met with the Town Road Agent on several occasions to determine future transportation needs. The Committee analyzed the current paved and unpaved road system and compared it with a map of the unfragmented land, which is land that has no significant development.

The consensus was that there should be a plan for alleviating the future increase of traffic on Route 103 through the Village Center. As mentioned in earlier chapters, one of the goals of the Master Plan is to encourage concentrated development close to the village center and discourage development in the outer sections of Town. One way to accomplish this is to create roads that link the village center roads together rather than creating new roads on the fringe.

It was determined that there are three areas where the village roads could be linked to help alleviate Route 103 traffic.

1. Between North Road/Split Rock Road to Kearsarge Mountain Road. Because this route is the most viable option, it is strongly recommended that a feasibility study be commissioned to determine possible routes and cost estimates. This link would also serve a public safety purpose by providing an alternative means of access to Kearsarge Mountain Road in case of a fire or other emergency which closed the lower portion of the road to traffic.



2. Between Kearsarge Mountain Road and Pumpkin Hill Road. Due to the wetlands in this area, this option is less feasible, however it should still be investigated.
3. Reroute traffic in the area of Denny Hill, School, and Old Main Streets and construct a connector road from Denny Hill to Main Street. This link was recommended in the 1989 Master Plan and continues to be a recommendation strongly urged by the Road Agent for safety, as well as traffic relief.

### **Re-construction Program**

In order to advance the goal of keeping development along existing developed routes, the following roads should be completed and be funded by a schedule set forth in the capital improvements program:

#### Paving Projects

1. Retreat Road
2. Newmarket Road
3. Poverty Plains Road
4. Mason Hill Road

#### Reconstruction Projects (no paving)

1. Parade Ground Cemetery Road

## **VIII. NATURAL RESOURCES**

## **Chapter VIII**

### **Natural Resources**

#### **Introduction**

The natural resources of Warner pervade all aspects of historic and present land use in Town. The town originated on the Warner River, which provided energy to run the mills. The railroad followed the course of the river, and the picturesque scenery and steep terrain drove the tourist industry. Today, it is Warner's rural character and natural environment that continue to attract residents and visitors. The Master Plan survey revealed that respondents thought that the natural environment was the town's most important quality. Furthermore, over 80% of the respondents felt that the protection of the natural environment was an important ongoing activity in town. Another indication of the public's sentiment on the environment was that 77% of the respondents rated potential environmental impacts as very important in reviewing development proposals.

Given that natural resources are so important to the community and permeate the land use planning process, this section of the Master Plan is intended to document many of the town's natural resources. This is not an exhaustive inventory, rather it points out the important natural resource concerns that may have an impact on land use planning. A more in-depth inventory of Warner's natural resources is currently underway. In 1998, the Conservation Commission completed a natural resource inventory of the Willow Brook watershed. This project demonstrates the level of investigation necessary to make informed land use planning decisions. See Appendix B for more information. It is recommended that the rest of the town receive this same level of scrutiny over the next ten years.

This section of the Master Plan begins with a number of goals and objectives. The body of the Chapter begins with a description of the town's watershed, followed by other resources and land use descriptions. The last resource section is wildlife habitat, which ties many of the resource descriptions together. The wildlife habitat in town can be seen as an indicator of how well Warner is protecting its natural resources. Like the canary in the coal mine, the abundance and diversity of wildlife in Warner, indicates the health of the overall ecosystem.

## Natural Resource Goals, Objectives and Actions

The primary goal is to conserve and protect the natural resources of the Town.

Objective 1 Increase the amount of sensitive/priority areas within the Town that are protected through easements, covenants, or Town ownership.

*Actions:*

- 1) Identify sensitive/priority lands for protection.
- 2) Identify wildlife corridors and ensure that protected lands are connected to maximize protection.
- 3) Coordinate land protection with surrounding towns to establish vital wildlife corridors.
- 4) Encourage the donation of conservation easements to the town for the protection of open space and develop criteria for the acceptance of such easements.
- 5) Permanently protect town-owned lands for conservation purposes.
- 6) Use the timber tax revenues to expand the town forest.
- 7) Use income from the sale of timber on town lands to acquire additional forest land.
- 8) Examine opportunity acquisition as a means of land protection.

Objective 2. The Conservation Commission should continue to carry out watershed studies, such as the Willow Brook Watershed Study, to help the Town establish specific areas to be protected.

*Actions:*

- 1) Conduct natural resource inventories in each of the town's watersheds using the Willow Brook watershed project as a model. Identify priority conservation areas in each watershed and work to protect them, including the areas already identified in the Willow Brook watershed.
- 2) Recommendations for water quality:
  - a) Create a citizen volunteer monitoring program in town; and
  - b) Protect water quality by enforcing the 75' setback from streams and encouraging other Best Management Practices (BMPs). Also, help the NH Department of Environmental Services (DES) to enforce the Shoreland Protection Act, which applies to the Warner River.

Objective 3. Use the proceeds from the Current Use Tax for conservation purposes.

*Actions:*

- 1) Place all proceeds from the Current Use Change Tax and/or land transfer tax into the conservation fund.

Objective 4. Continue to promote the agricultural use of lands through the Current Use tax.

Objective 5. Encourage the use of sound land management practices for developed, forested and agricultural lands to promote diverse wildlife habitat.

*Actions:*

- 1) Strengthen town soil regulations. Adopt the site-specific soil standards and the recommendations from the current state interagency *ad hoc* committee on soils.
- 2) Inventory and identify significant wildlife habitats using the manual *Integrating Wildlife Habitat into Community Planning*.
- 3) The building regulations on unmaintained roads should be rigorously enforced.
- 4) Encourage the clustering of development to protect open space.

Objective 6. Investigate and enforce the use of stronger controls and protection for streams, ponds, floodplain and wetland areas.

*Actions:*

- 1) Enforce the 75 ft. setback from streams and more clearly define what activity is allowable within it.
- 2) Expand the 75 ft. setback provision to include wetlands and ponds.
- 3) Establish 100 ft. buffers around wetlands, streams and ponds that are not currently covered by the Shoreland Protection Act.
- 4) Document and protect floodplains and aquifers.
- 5) Acknowledge the importance of vernal pools and afford them adequate protection.
- 6) Protect the Warner River corridor.

Objective 7. Protect scenic ridgelines and hilltops, and encourage the responsible use of Mt. Kearsarge.

*Actions:*

- 1) The Planning Board should research the possibility of enacting a scenic ridgeline and slope protection ordinance to control the placement of buildings along scenic ridgelines and hilltops.
- 2) Opening of new roads for residential development outside of the village is premature. Building on Class 6 unmaintained roads should be discouraged in an effort to protect unfragmented forest lands.
- 3) Focus recreation in appropriate areas where there is currently access available, rather than opening up new areas.

Objective 8. Investigate alternative zoning regulations to protect forestry and agricultural activities.

*Actions:*

- 1) Document the importance of unfragmented lands in Warner for recreation, environmental quality and historical resources.
- 2) Create large lot zoning (50 acres) for forest areas in the Mink Hills. This zoning is for forest management purposes to ensure that the land remains used for forestry, and not residential development.

Objective 9. Protect important aquifers.

*Actions:*

- 1) Sand and gravel soils flank Route 103, Schoodac Road, and Poverty Plains Road. However, Warner's largest potential aquifer underlies this area. Protection of this resource should be considered.
- 2) Strictly enforce source water protection area.

## **Watersheds**

A watershed is the area of land which drains into a particular body of water. Watersheds are useful units of ecological analysis because all the land in a watershed is connected by the water which flows through it. Watersheds, along with the streams and ponds in them, have great value for groundwater recharge and discharge, recreation and wildlife habitat. The watershed should be the unit of analysis for further natural resource inventories and land use planning endeavors.

The Town of Warner is located within the Merrimack River principal drainage basin and its land drains into three subbasins: the Blackwater River, the Contoocook River and the Warner River (CNHRPC, 1974). The town can be further broken down into smaller subwatersheds. In 1996, the Warner Conservation Commission began studying each of the subwatersheds beginning with the Willow Brook watershed. A summary of this study can be found in Appendix B. The Conservation Commission has determined that careful examination of the natural resources of each of the subwatersheds is crucial in determining priority areas for conservation. In future Master Plans, the natural resources in the town would be best presented as they fall in each subwatershed, as has been done in the Willow Brook plan in the Appendix.

Table 8-1 is a summary of each watershed, listing its name, into which river basin it drains, its acreage within the town boundary, the length of the stream, and any ponds or other notable features. Map 8-1 at the end of the chapter, the "Warner Subwatershed Map", shows the locations of each watershed.

### **The Warner River**

As Table 8-1 indicates, all but seven of the 26 watersheds in Warner drain to the Warner River. The Warner River flows a total of 22 miles, 13.8 miles (63%) of which is within the Town of Warner. The river originates in Bradford and flows easterly and southeasterly through Warner and Webster, until it reaches its confluence with the Contoocook River in Hopkinton. Through Warner, the river drops 277 ft., from 641 ft. of elevation at the Bradford town line, to 364 ft. at the eastern border of Warner, for an average drop of 3.8 feet per 1,000 linear feet, or a slope of .38%.

The Warner River, at the Webster town line, has a drainage area of approximately 150 square miles, one third of which is within the Town of Warner.

The river serves as habitat for a number of fish and wildlife species. Among the most important attributes of the river are its water quality and floodplains. The water quality of the Warner River has been tested by the NH DES as part of its statewide ambient water quality testing program. Dissolved oxygen levels, a key determinant for fish viability are generally above standards in all parts of the river. Elevated bacteria counts have been measured at the covered bridge on Joppa Road but are not high enough to indicate serious contamination problems.

The Warner River is an important regional resource. Except for a couple of small dams, the Warner River is free-flowing, which is an unusual condition in New Hampshire. The free-flowing nature of the river, coupled with its locations and slope, have given the river an expansive floodplain area. This floodplain is home to many species of wildlife and is especially important for amphibians and waterfowl. The floodplain also protects the town from flooding.

Flooding is an important aspect of surface drainage to consider in land use planning. According to a 1986 study conducted by the Federal Emergency Management Agency (FEMA), the most severe flooding occurs in early spring as a result of snow melt and heavy rains. Heavy floods occurred in 1896, 1927, 1936, and 1954. The Warner River floodplain ranges from 45 to 1,050 feet in width with an average width of 246.7 feet. In Warner, there are 1,217 acres in flood Zone A, 963 acres in Zone AE and 126 acres in Zone B. Areas identified by FEMA as susceptible to the 100 year flood in the Town of Warner are shown on Map 8-2, at the end of this chapter.

The Town of Warner contains ponds with a total area of 175.4 acres, or 0.5% of the Town's area, as seen in Table 8-2. By statute, all of New Hampshire's natural bodies of fresh water ten acres or more in size, known as great ponds, are public water and are entrusted to the state for public use.

In addition, there are five unnamed ponds in Warner, including one that is 1.9 acres on Silver Brook, one that is 1.6 acres on Warner Brook, one that is 1.1 acres on an unnamed tributary, and two ponds that are 2.7 and 2.5 acres south of Pleasant Pond. There are also water bodies too small to be adequately mapped, or seasonal in nature.

**Table 8-1  
Warner Subwatersheds**

#	Name	River Basin	Acres	Stream length	Other features
1	Blackwater River	Blackwater	1,991	10,600 ft.	Class "A" drinking water supply
2	Meadow Brook	Warner	2,066	28,670 ft.	Drains to Stevens Brook
3	French Brook	Warner	1,720	21,428 ft	Drains to Stevens Brook
4	Stevens Brook	Warner	967	12,376 ft	
5	Frazier Brook	Warner	2,076	23,079 ft.	
6	Knight Meadow Brook	Warner	381	6,827 ft.	
7	Willow Brook	Warner	2,342	18,480 ft.	Tory Hill Meadow is a priority conservation area.
8	Mud Pond Brook	Warner	481	3,445 ft.	Mud Pond is 3.5 acres.
9	East Sutton Brook	Warner	250	7,510 ft.	
10	Birch Hill Brook	Warner	58	3,630 ft.	
11	Schoodac Brook	Warner	1,208	8192 ft	
12	Meadow Pond Brook	Warner	632	5,447 ft.	
13	Warner River	Warner	6,985	72,864 ft.	
14	Simmons Pond	Warner	204	Intermittent	Simmons Pond is 16 acres.
15	Davis Brook	Warner	1,138	9,600 ft.	Tributary of Slaughter Brook.
16	Slaughter Brook	Warner	1,092	11,634 ft.	
17	Silver Brook	Warner	1,549	9,458 ft.	
18	Bartlett Brook	Warner	1,692	8,104 ft.	
19	Bible Hill Brook	Warner	448	5,700 ft.	
20	Ballard Brook	Warner	1,034	11,927 ft.	
21	Lake Massasecum	Warner	2,074	14,660 ft.	Several streams flow to the lake.
22	Warner Brook	Contoocook	2,695	15,224 ft.	
23	Long Pond	Contoocook	894	Intermittent	Drains to pond in Hopkinton.
24	Bear Pond	Contoocook	442	Intermittent	Contoocook Village water supply.
25	Hardy Spring Brook	Contoocook	419	3,430 ft.	

**Table 8-2  
Warner Ponds**

Name	Watershed	Acres	Depth (ft)	Shoreline length
Bagley Pond	Frazier Brook	19	9	0.6 mi.
Bear Pond	Bear Pond	49	23	1 mi
Cunningham Pond	Warner Brook	22	--	--
Pleasant Pond	Warner River	15	20	0.7 mi
Simmons Pond	Simmons Pond	16	18	0.8 mi
Tom Pond	Warner River	31	14	1 mi.
Day Pond		7.5	--	--
Meadow Pond	Meadow Pond Brook	2.6	--	--
Mud Pond	Schoodac Brook	3.5	--	--

Sources:

Biological Survey of the Lakes and Ponds in Sullivan, Merrimack, Belknap and Strafford Counties, NH  
Fish and Game Department, Survey Report No. 8b

Characteristics Of Lakes, Ponds, And Reservoirs Of New Hampshire, With A Bibliography, U.S.G.S,  
Open-File Report 75-490

USGS 71/2 minute topography from GRANIT GIS.

**Wetlands**

Wetlands perform a variety of necessary environmental functions, including:

- Temporary flood control areas;
- Water quality maintenance by acting as a filter for silt, pollution, and absorbing water-borne chemicals and nutrients;
- Groundwater recharge and stream flow maintenance;
- Erosion buffers to protect upland areas;
- Timber production areas;
- Open space and recreational uses; and
- Wildlife habitat.

The State of New Hampshire uses three criteria to determine the presence of wetlands: wetland vegetation, hydric soils and hydrology which shows a flooding regime. This is in accordance with the 1987 Army Corps of Engineers wetland delineation manual. The National Wetlands Inventory (NWI) is an effort that maps wetlands across the nation based on soils and aerial photography. The NWI has determined that there are 1,710 acres of wetlands in Warner. (See map 8-3) However, the NWI is limited in that it does not always find small wetland, especially in conifer forests. The hydric soils of Warner have also been mapped by the Natural Resource Conservation Service (NRCS). The NRCS calculates that there are 2,399 acres of wet soils in Warner. This is likely an over estimate of wetlands since not all wet soils are wetlands. Therefore, the actual amount of wetlands is somewhere in between these two numbers.

The NWI uses the Cowardin system of wetland classification. This system differentiates wetlands by types, which is useful in understanding the functions and values of a particular wetland. The three main types of wetlands are lacustrine (associated with lakes), riverine (rivers) and palustrine (other wetlands). Palustrine wetland are further broken down as forested, emergent, scrub-shrub and unconsolidated bottom (open water). The wetland breakdown for Warner can be seen in Table 8-3.

**Table 8-3  
Warner Wetland Types**

Wetland Type	Acreage
Lacustrine	191
Riverine	13
Palustrine	
- Forested	674
- Emergent	211
- Scrub-shrub	376
- Unconsolidated	245

Source: National Wetlands Inventory, USGS, from NH GRANIT system.

Wet soils consist of those soils that are poorly drained and very poorly drained. These soils are listed in Table 8-4 for Warner.

**Table 8-4  
Acreage of Poorly and Very Poorly Drained Soils**

Soil Groups and Types	Acreage
Poorly Drained - Aga, AgB, AuB, RbA, RbB, RdA, RdB, Ru, Lm	1,375
Very poorly drained - organic base - Mp	594
Very poorly drained - mineral base - Mn, Sa, Sc	348
Marshes - Mh	82

Source: Soil Survey of Merrimack County, Soil Conservation Service.

## Topography

Topography is the general lay of the land, of hills, valleys and flat areas that show how the area looks. The surficial physical features are a function of the underlying geologic processes and climate. The physical features can affect water drainage and runoff, soil formation, and vegetation. Topography also influences land use by affecting the suitability of the land for development and influencing both the type and cost of development.

The Town of Warner has a varied topography, from a low of 364 feet above sea level in the southeastern corner of Town, to a high of 2,937 feet at the summit of Mt. Kearsarge in the Kearsarge gore. In general, there are four significant geographical aspects of Warner's topography:

1. The northern section, which is characterized by high elevations and steep slopes, including Mt. Kearsarge (2,937 ft.), Black Mountain (2,560 ft.), and Little Mountain (2,360 ft.);
2. The northeastern section, which is characterized by a series of low rolling hills with flat marshy valleys in between;
3. The Warner River valley, which is characterized by a narrow valley from the Bradford town line, to Bagley, where the river floodplain widens, becoming more than a mile wide in some locations; and
4. The southern section, which forms the predominant topographic area, encompassing almost half of the Town's area. It is characterized by very steep slopes and closely packed hills with very small valleys. There are approximately 22 hill tops over 1,000 ft. of elevation, three of which are over 1,500 ft. in the Mink Hills.

## Slope

Slope is defined as the ratio of change in vertical elevation to the change in horizontal distance. The degree of inclination of land influences soil erosion, runoff, and drainage capabilities. Land with steep slopes are more difficult to develop, and are more apt to adversely effect the environment than level sites. Therefore, slope is an important criteria in determining appropriate land use.

In order to categorize and discuss the limitations of slope, the Soil Conservation Service has divided slopes into the following categories and development limitations:

0-3% Flat - This is land which is essentially level. The slope would indicate easy accommodation of almost all land uses. Much of the land in this category within the Central Planning Region lies upon the floodplains of the major rivers. Other flat lands may have drainage problems if the soil proves to be relatively impermeable. Land with such drainage problems is generally best restricted to pasture and grazing, public open space, recreational use, or farming.

3-8% Gently Sloping - Land in this category is suitable for many uses. The slopes are not prohibitive for development, provide interest, and make for excellent natural drainage conditions. Most of this land may be found within the valley floors and river terraces of the planning region occupied by the glacio-fluvial deposits of the outwash plain.

8-15% Moderately Sloping - Slopes of this range begin to be restrictive for certain land uses, and may also prove too steep for most farming purposes. Low density residential development may be feasible if carefully planned and laid out. Most of this land is composed of glacial till deposits along the uplands of the region.

15-25% Steep Slopes - Substantial limitations exist for use of land in this category. Excavation and grading are almost always required, yet development, not intensive in its land coverage and carefully planned, may be accommodated with limited environmental impact.

Over 25% Very Steep Slopes - These lands are most subject to adverse environmental impacts and heavy construction costs. Intensive uses are prohibitive; however, the interest and amenity provided by such lands makes them a valuable recreational resource.

Slopes in Warner are shown on Map 8-4. Steep slopes are found in the Kearsarge Gore, and to the west of the Warner River. Flatter areas are located along the Warner River, in eastern Warner, and in the Davisville area of Warner.

## Soils

Soils are the result of various natural processes taking place at, or near, the earth's surface. Their development is dependent upon five major factors: parent material, topography, climate, biotic factors, and time. Soil information plays a prominent role in the determination and classification of land for various land uses, and subsequently in the evaluation of the effects of those uses on selected natural and man-imposed systems. (Frederick & Luty, 1972) Thus, consideration of soil types and characteristics is important in land use planning.

In *Natural Resources Inventory* (CNHRPC, 1975), soils with similar characteristics for planning interpretations were formed into Planning Soils Groups. These soils groups are defined and assessed for their development potential below. The corresponding soils groups identified on the Land Capability Map of the 1967 Master Plan are given in parentheses.

### Deep and Stony Soils (Till 1, Till 4)

Well over half the soils in the Region are from these unsorted glacial till deposits. They are generally found in the uplands and are deep to bedrock. Occasionally they have a deep pan layer. Includes the following soil types: Acton, Hermon, and Gloucester.

#### *Development Potential -*

While they provide good foundation characteristics, the deep and stony soils are usually difficult to excavate due to excessive stoniness. Much of these soils are on slopes too steep for development. However, where the slopes are gentle they have permeability characteristics generally suitable for septic tank absorption fields. Although steep slopes make landscaping and construction more difficult, they also offer a high potential for architectural design which takes advantage of the vistas and harmonizes with the surrounding topography and vegetation.

### Hardpan Soils (Till 2)

These soils are very similar to those in the Deep and Stony group. However, between eighteen and thirty-six inches below the surface they have a very dense layer which inhibits permeability and root growth unless it is disturbed. Generally these are found in small oval hills or drumlins. Includes the following soil types: Paxton and Woodbridge.

#### *Development Potential -*

Although these soils are commonly less stony than those in the Deep and Stony group, they offer other severe limitations. The hardpan reduces permeability to such an extent that septic fields cannot function. It also hinders road or building excavation, since it is difficult to penetrate when dry and keeps the upper layers of soil heavy with water when wet. During the winter there is the potential danger from frost action, while the wet season presents a potential slide hazard along building excavations or road cuts.

### Rocky Soils (Till 3 and Bedrock)

These soils have frequent rock outcroppings and are normally less than two feet thick above bedrock. However, they do contain pockets of deeper till soils. This group is generally found in rough terrain, on the top of ridges or mountains and along very steep slopes. Includes the following soil types: Canaan-Hermon, Gloucester, and Rock Outcroppings.

#### *Development Potential -*

Since rock is difficult to excavate and inappropriate for a leaching field, potential development must usually occur in the occasional pockets of deep soil. This requires a careful site investigation.

### Sand and Gravel Soils (Outwash 1, Outwash 2)

These soils come from glacial outwashes and were laid down as stratified deposits of sand and gravel. They generally occur in valleys above the flood plain and have more gentle slopes than the deep and stony soils. While most of the soil series in this group are droughty all year, about eight percent have a seasonally high water table. Includes the following soil types: Agawam, Belgrade, Cotton, Duane, Hinkley, Merrimac, Ninigret, Sudbury, and Windsor.

#### *Development Potential -*

Where slopes are not a factor and any required drainage is provided for, these soils provide excellent conditions for all types of road and building foundations. Permeability is frequently so high, however, that caution must be taken not to pollute nearby wells, lakes, and streams. Excessive grading will expose sand or gravel which must be recovered with topsoil before landscaping. Where clean and graded deposits of sand or gravel exist, they are in demand as a construction material.

### Wetland Soils (Map 3-2)

“A hydric soil is a soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.” Source: *Field Indicators for Identifying Hydric Soils in New England, Version I*, 1995, NEIWPC.

#### *Development Potential -*

Any sort of development is unsuitable due to standing water or the possibility of flooding.

### Floodplain Soils (Map 3-1)

Formed from recent river and stream deposits over older sand and gravels, these soils are still subject to flooding.

#### *Development Potential -*

Frequent flooding makes these soils very poor sites for any sort of residential, industrial, or commercial usage.

## **Agriculture and Farmland Soils**

Land use, for farming purposes in Warner, includes land whose soils are considered prime agricultural soils, as well as some land whose soils are not classified as prime. In order to identify and protect local farmland, Warner needs to consider not only soil type, but also what land is currently being farmed or has recently been farmed. Farmers may also rely on forest soils for maple products, firewood, timber, and Christmas trees.

In order to identify and inventory land considered the best for farming, the U.S. Department of Agriculture, Soil Conservation Service established a number of criteria for identifying important farmland groups based on soil types and characteristics. Important farmland in Merrimack County is defined as:

### Prime Farmland

Prime farmland is land best suited for producing food, feed, forage, fiber, and oilseed crops, and is also available for pasture land or forest land, but not urban built up land. It has the soil quality, growing season, and the moisture supply needed to produce sustained high yields of crops economically when treated and managed according to modern farming methods.

The following soils qualify as prime farmland:

<u>Symbol</u>	<u>Soil Type</u>
AfA	Agawam very fine sandy loam, 0 to 3% slopes
NnA	Ninigret very fine sandy loam, 0 to 3% slopes
Of	Ondawa fine sandy loam
Oh	Ondawa fine sandy loam, high bottom
PaB	Paxton loam, 0 to 8% slopes
Po	Podunk fine sandy loam
WoB	Woodbridge loam, 0 to 8% slopes

### Unique Farmland

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to modern farming methods.

Unique farmland has the following characteristics:

1. It is used for a specific high-value food or fiber crop.
2. It has a moisture supply that is adequate for the specific crop. The supply is from stored moisture, precipitation, or a developed irrigation system.
3. It combines favorable factors of soils quality, growing season, temperature, humidity, air, drainage, elevation, aspect, or other conditions, such as nearness to market, that favor growth of a specific food or fiber crop.

Examples of unique farmland in New Hampshire include apple orchards, lowbush blueberry lands, vegetable truck gardens, and maple sugar bushes.

#### Additional Farmland of State-wide Importance

This is land, in addition to prime and unique farmlands, that is of state wide importance for the production of food, feed, fiber, forage, and oilseed crops. Criteria for defining and delineating this land was determined by State and local agencies in New Hampshire. The soils in this category are important to agriculture in New Hampshire, yet they exhibit some properties that exclude them from prime farmland. Examples of such properties are erodibility or droughtiness. These soils can be farmed satisfactorily by greater inputs of fertilizer, soil amendments, and erosion control practices. They produce fair to good crop yields when managed properly. Some of this land is currently forest, but tree age is generally 20 years or less.

The following soil types qualify as farmland of state-wide importance:

<u>Symbol</u>	<u>Soil Type</u>
AcB	Acton fine sandy loam, 0 to 8% slopes
AfB	Agawam very fine sandy loam, 3 to 8% slopes
BcB	Belgrade silt loam, 0 to 8% slopes
GcB	Gloucester sandy loam, 3 to 8% slopes
GcC	Gloucester sandy loam, 8 to 15% slopes
HmB	Hermon sandy loam, 3 to 8% slopes
HmC	Hermon sandy loam, 8 to 15% slopes
MmA	Merrimack sandy loam, 0 to 3% slopes
MmA	Merrimack sandy loam, 3 to 8% slopes
MmA	Merrimack sandy loam, 8 to 15% slopes
PaC	Paxton loam, 8 to 15% slopes
WoB	Woodbridge loam, 8 to 15%

Prime farmland soils and farmland soils of state-wide importance are generally located in the Warner River valley and on hilltops, such as Burnt Hill.

Additional farmland of local importance includes all land which is currently being farmed, but is not considered prime by soil type. Capital investments of \$500 to \$1,000 or more per acre are required to convert grown up land to agriculture. This investment has been made on land currently farmed in Warner, and is part of the value of the resource.

## **Aquifers**

The two major sources for drinking water commonly used by towns are groundwater and surface water. Many communities initially utilized surface water as the primary source because of the ease of access and the ease in estimating the quantity available. Map 8-5 shows the major aquifers in Warner.

Until 1991, the Warner Village relied on Silver Lake Reservoir, on North Village Road, as its public water supply. This source was abandoned primarily because of State requirements for treatment of surface water supplies. The Warner Village Water District drilled a well near the Warner River, off Chemical Road and two years later, drilled a second well as a back-up in the same area. These sources provide abundant, clean water for the District's residents, businesses and public buildings.

The State of New Hampshire encourages communities to use groundwater as their source of drinking water because groundwater is less susceptible to surface pollution. The earth acts as a purifying mechanism to reduce minerals and other sediments that would normally have to be removed by filtration plants. It is important for the Town to identify the extent of its aquifers and their recharge areas to implement the protection of groundwater resources through planning and land use regulations.

Although all ground contains water to some degree, an aquifer is a geologic formation that is capable of yielding significant amounts of water to a well or spring. The three major types of aquifers are:

Stratified Drift - Aquifers made up of sand and gravel materials. This aquifer is a prime source of water for municipalities or other large volume users.

Till Aquifers - Till is a mixture of clay, silt, and gravel materials. These aquifers yield small volumes of water which may be adequate for small scale users such as private residential use.

Bedrock Aquifers - These aquifers are composed of fractured rock or ledge. If a well hits an extensive fracture system, the water yields may be high. On the average, these aquifers yield smaller volumes of groundwater than wells located within stratified drift.

In 1995, the US Geological Survey and the NH Department of Environmental Services released a report, titled "Geohydrology and Water Quality of Stratified-Drift Aquifers in the Contoocook River Basin, South-Central New Hampshire," which presents the results of extensive field work and mapping of the stratified drift aquifers in Warner. The amount of land underlain by these aquifers is 4,525 acres.

The sole source of water to the Warner River watershed is precipitation, which either returns to the atmosphere by evaporation; flows overland to streams, ponds or wetlands within the area; or infiltrates the soil. Some infiltration is stored temporarily as soil moisture and is subsequently returned to the atmosphere by evaporation, transpiration by plants or seepage into surface water bodies. The remainder percolates downward through porous rock materials to the water table, where it becomes ground water. Groundwater can reside in the saturated zone for many years, but it can also return to the atmosphere by evapotranspiration and seepage to surface water bodies.

The principal aquifer in Warner lies along the course of the Warner River from the area around Davisville to Tom Pond and northwesterly through the Village to the Exit 9 area. Extensions of this aquifer include Schoodac Brook into Webster, around Lake Winnepocket; and Stevens Brook along Interstate 89 and westerly along the Warner River and Route 103 to the Sutton Town line. Two isolated aquifers exist, one where the Lane River joins the Warner and a second along French Brook and Kearsarge Mountain Road, below Rollins State Park. The major aquifer in Warner is 6.5 square miles in area.

The Warner River aquifer contains a predominance of coarse-grained sediment, which was deposited by glacial meltwaters in kames and eskers. The maximum saturated thickness of the aquifer is approximately 120 feet near Tom Pond. This thick layer was deposited in a deep erosional bedrock channel that was scoured by sub-glacial meltwaters. Saturated thickness is generally less than 100 feet elsewhere in Warner. Estimated maximum transmissivity, a measure of capacity, exceeds 8,000 feet squared per day near Tom Pond, and transmissivities exceed 1,000 ft<sup>2</sup>/d westerly along the river. The aquifers in the Warner River watershed contain water with shorter residence times than water in other aquifers along the Contoocook River main stem. Hydraulic gradients of the Warner's aquifers are steeper than along the Contoocook because of the lenticular shape of the aquifers and the moderate to steeply sloping stream channel gradients. Municipal ground-water withdrawals are 0.05 million gallons per day from the municipal well by the Warner Village District. Total ground-water withdrawals for the entire Warner River basin by domestic and commercial users are estimated at 0.39 millions of gallons per day (Mgal/day). The total amount of ground-water storage from all deposits in the basin is 7,500 million gallons. The maximum potential average annual recharge to the stratified drift aquifer is estimated at 16 Mgal/d. The potential for additional aquifer yield is greatest at Tom Pond.

Aquifer yields along the Warner River are highly dependent on the capacity to induce infiltration from the Warner River because of minimal ground-water storage in the lens-shaped aquifer.

Source: US Geological Survey and the NH Department of Environmental Services, Geohydrology and Water Quality of Stratified-Drift Aquifers in the Contoocook River Basin, South-Central New Hampshire, 1995.

## **Bedrock Geology**

The state of New Hampshire lies entirely within the Appalachian Highlands, which extend northeast from Alabama to Newfoundland. Formed millions of years ago, this area is characterized by folded and faulted paleozoic sedimentary and volcanic rock. These sedimentary and volcanic rock structures were thoroughly metamorphosed and penetrated by large and small bodies of igneous rocks. Igneous rocks are masses of rock that have been solidified from magma at depth.

The metamorphic bedrock in Warner is known as the Littleton Formation. These rocks were created about 360 million years ago from sedimentary sandstones and shales. These sedimentary rocks, formed in Devonian times, were transformed into metamorphic rock (schists and gneisses) due to extreme temperatures and pressures generated by the land rising and folding. Schists and gneisses are found throughout the central and eastern portion of Warner. These consist predominantly of gray mica schists with some mica-quartz schists and gray micaceous quartzites locally conspicuous (CNHRPC, 1974).

The igneous rock in Warner is of the New Hampshire plutonic series, probably formed in the Upper Devonian period. According to the Natural Resources Inventory (CNHRPC, 1974), the following igneous formations are found in Warner:

Massasecum Pluton - This pluton is located in southwestern Warner, generally north of the Henniker town line along Route 114 and northwest into Lake Massasecum and Bradford. This rock type contains binary or Concord granite which is light gray to white in color with medium to coarse-grained biotite muscovite granite and quartz monzonite.

Cardigan Pluton - This pluton is located in the western half of Warner, from just west of the village of Warner to the Bradford town line, excluding the Massasecum Pluton area. This rock type contains Kinsman quartz monzonite ranging from a quartz diorite to a quartz monzonite with granodiorite predominating. It is dark to light gray and generally coarse-grained.

Weare Pluton - This pluton is located in the northeast corner of Warner along the boundary of Webster and Salisbury. This rock type is the same as the Cardigan Pluton.

Kearsarge Pluton - This pluton stretches from the village of Warner up to and surrounding Kearsarge Mountain. This rock type consists of weakly foliated to nonfoliated, spotted biotite quartz diorite, tonalite, granodiorite and granite; garnet and muscovite may or may not be present.

The source for geology information is the Bedrock Geologic Map of New Hampshire, Lyons, John B., W.A. Bothner, R.H. Moench, and J.B. Thompson Jr. 1997, U.S. Geological Survey.

## Forestry

Forest land is an important natural resource in Warner for many reasons. Forests provide income, not only to the town through timber taxes but also to Warner residents in the form of timber sale revenue, forestry related jobs, and transportation. Forest lands provide recreational opportunities, environmental benefits, and scenic open space. The forested landscape is also home to many species of wildlife who depend on the forest for food, shelter and migration areas.

Information provided to the Town through the collection of the timber tax, reveals the lumber yields in Warner in Table 8-5.

**Table 8-5  
Timber Tax Receipts**

	Amount collected
1997	\$21,707
1996	\$28,486
1995	\$25,511
1994	\$30,493
1993	\$23,712
1992	\$25,937
1991	\$15,972
1990	\$23,129
1989	\$15,094
1988	\$16,896
1987	\$24,464

As land is subdivided in Warner, woodlots become smaller, which tend to create a more fragmented forest structure as each parcel is individually managed. While not necessarily a bad trend, this does increase the difficulty in managing the long-term sustainability of the forest resource for a variety of uses. More disturbing, from a forestry perspective, is the gradual conversion of forest into developed areas. This carries the threat of permanently fragmenting wildlife habitat and creating conflict between forest management and residential quality of life.

Another forestry trend in Warner is the transition from a predominantly softwood forest to a predominantly hardwood forest. This is the result of the aging of the forest since agricultural lands were abandoned in the latter part of the 1800s and the early part of this century. Because of the slower regeneration rates of pine trees, as compared to that of hardwoods and the shade tolerance of hardwood seedlings, the selective harvesting practiced today will tend to favor the regeneration of hardwoods. Tim Fleury, the Merrimack County Forester, states that hardwoods require more time between harvests than softwoods, which means that more intensive forest planning is required to make sure that Warner's forests are properly managed to maintain present harvest rates.

Under the Current Use Tax program, the Town requires management plans for all timberland placed in current use. In addition to Current Use Tax, the Tree Farm Program is available to landowners to encourage forest management. This Federal program encourages management of woodlots for better species, better quality saw logs, more sustained yields, and maximum productivity, and is administered jointly in New Hampshire by the Society for the Protection of New Hampshire Forests and the New Hampshire Timberland Owners Association.

## **Wildlife Habitat**

Warner's landscape supports a diversity of birds, mammals, fish, reptiles, amphibians and insects that are necessary to maintain a balanced ecosystem and enhance the quality of life. If this diversity is to continue in the face of growing human population, Warner residents must integrate wildlife habitat consideration into their land-use planning process.

Wildlife are a critical part of all natural ecosystems and of our cultural heritage. What once provided our ancestors with a steady supply of food, today provides for recreation, both for hunters and those interested in viewing wildlife. Wildlife habitat continues to be important for Warner residents. In the recent Master Plan survey, 75% of the respondents were in favor using zoning regulations to protect wildlife habitat and 80% were in favor of the Conservation Commission working with residents to identify important wildlife habitat and preserve it.

Wildlife habitat is defined as those areas that provide food, shelter, water and space necessary to survive. Although many native species of wildlife find some or all of their habitat requirements

in forests, everything is habitat of some kind. Below is a list of habitat types that have been identified as significant by the New Hampshire Fish and Game Department's booklet *Integrating Wildlife Habitat into Community Planning*.

### **Agricultural and other open lands**

In the past, natural disturbances such as fire, hurricanes, ice storms, flooding and beaver activity combined to create open land habitat, such as grassy meadows and shrublands openings in the forest.

Increasing human influence on the landscape and more control over these natural disturbances have reduced the opportunity for this habitat dynamic to develop. Although agriculture created open habitat, much of this land has now reverted to forestland. Because Warner is now predominately forested, agricultural lands are particularly important for certain species.

The succession of abandoned forest land eventually created a habitat composed primarily of small trees and bushes. Like grasslands, these habitats have become increasingly rare or too small in size to support the species unique to shrublands. In addition to reverting farmland, shrubland can be found along powerline corridors and abandoned gravel pits. While these areas may appear to be devoid of habitat, they are key components of an effort to maintain habitat diversity.

In the Master Plan survey, 88% of the respondents felt that the current use assessment for agricultural uses should continue as a way of retaining active farms in town and 67% favored the acquisition of easements and development rights as way of preserving open areas.

### **Deer Yards**

As winter settles in and snow depths increases, deer move to areas of dense softwood cover, which are often referred to as deer yards. These can vary in size from a few acres to over one hundred acres. The softwood trees that comprise these areas are most commonly hemlock but may include some spruce and fir at higher elevations. During winter, cover takes precedence over food and is critical to the survival of Warner's deer population. Without adequate deer yards, populations of deer may go through extreme fluctuations. The Willow Brook Project identified mature hemlock stands as priority areas for conservation due to their rarity in the watershed and their value for certain species.

### **Floodplains**

Floodplains are very dynamic systems that provide habitat for many species of bird, reptiles, amphibians and mammals. The deep, moist soils of the floodplain support nut producing trees and abundant fruiting shrubs and vines. These food sources are important to a wide variety of wildlife species, especially during the late summer and fall as mammals prepare for hibernation

and birds beginning their long southward migration. Floodplains cover some 2,306 acres of Warner. See map 8-1. The Master Plan survey found that 77% of the respondents were in favor of town controlling the use of flood prone areas.

### **Habitat for Threatened and Endangered Species**

State and Federal law define endangered species as one which is in danger of extinction over all or a significant portion of its range, and threatened species as one which is likely to become endangered in the foreseeable future. The NH Fish and Game Department currently list 34 animals as threatened or endangered under the authority of the Endangered Species Conservation Act of 1979. The US Fish and Wildlife Service also list five of these species as threatened or endangered under the Endangered Species Act of 1973.

Wildlife species have become endangered for a variety of reasons, including over-harvesting or trapping, adverse affects of pesticides, and habitat loss or alteration, just to name a few. None of the currently listed animal species find critical habitat in Warner. As species protection and management leads to recovering populations, species such as the osprey may find breeding habitat in town. Information on the latest status of these species is available from the NH Fish and Game Nongame and Endangered Species Program.

### **Habitat for Species of Special Concern**

In addition to threatened and endangered species, there are other species of concern that warrant special attention but have no legal designation. The New Hampshire Natural Heritage Inventory tracks these species, as well as the threatened and endangered species. Biologists and experts in the state identify species of special management concern due to demonstrated population declines or suspected declines with insufficient data to make a determination. Several of these species are found in Warner. Habitats and potential habitats for these species should be identified and protection strategies developed. One key habitat that has already been identified are wetlands. All but one of the species on the state list is dependent on wetlands during their life cycle. This means that the protection of wetlands is tantamount to the protection of wildlife, especially species of concern.

### **Scarce Habitats and Special Land Features**

Some landscape features, found within the broader habitat types, provide significant or unique habitats in Warner. Rock piles and outcrops provide denning sites for porcupines and bobcats, nest sites for turkey vultures and hibernation sites for snakes. Deep caves and old mine shafts provide hibernaculum for several species of bat, which are extremely rare in New Hampshire. Some habitat types are rare in certain regions of the state and thus provide very significant habitats within a regional context. Mt Kearsarge and the surrounding lands above 2,500 feet support a different forest community comprised of spruce and fir trees and provide rare breeding

habitat in this region for Swainson's and Bicknell's thrushes and blackpoll warblers.

### **Shorelines**

The shorelines of major rivers and lakes provide important habitat for many wildlife species. This habitat type is among the most threatened in the state due to development. Warner still has several ponds with undeveloped shores, such as Simmons and Bear Ponds. These areas may provide nesting habitat for species such as spotted sandpipers and loons. Large trees along the shore serve as perch trees for piscivorous raptors, such as osprey and bald eagles, both of which use the area during migration. The Warner River corridor also has stretches of undeveloped riparian corridor that serve as a migration corridor for many birds and mammals. Eroding riverbanks provide nesting habitat for swallows and kingfishers.

A naturally vegetated shoreline also helps to protect the quality of the adjacent water thus protecting aquatic habitats for fish and invertebrates. Present town regulations provide a setback of 75 feet from all rivers, streams and ponds. The New Hampshire Comprehensive Shoreline Protection Act limits activities within 250 feet of the Warner River.

### **Unfragmented Blocks of Habitat**

Unfragmented blocks of habitat are those large pieces of land with no roads and few or no human structures. These blocks provide some of the most important long-term wildlife habitats. Within these areas contiguous natural habitats supporting a diverse array of native wildlife can usually be found, ensuring that species common to the area remain common. The variety of habitat conditions also support wide ranging species such as moose, bear, fisher, and bobcat, which cannot survive in a fragmented landscape.

In unfragmented lands, there are large enough acres for habitat dynamics to effect the landscape over time, these changes can occur naturally or as a result of timber management practices and create a variety of habitats. This dynamic pattern of change allows wildlife to continue to adapt to land use changes, including human induced changes, as long as there is enough area that a variety of habitats are always available.

The impact of a fragmented landscape on wildlife is tremendous. Road construction and the associated development leads to mortality, introduction of non-native species, an increase the population of predators that benefit from a human presence such as skunks and raccoon, and the introduction of new domestic predators, such as dogs and cats.

Recently, the Warner Conservation Commission contracted with Complex Systems at the University of New Hampshire (UNH) to determine the amount of unfragmented lands in the town. This was accomplished using Geographic Information Systems (GIS) to look at all forested areas larger than 500 acres that were not fragmented by open fields, development, roads

or waterways. It was found that 75.8% of the town, or 26,910 acres, fit those criteria. Much of this land is located in the Mink Hills. The Master Plan survey found that 67% of the respondents would be in favor of protecting the forestry uses of these areas through large lot zoning of 50 acres or more.

### **Vernal Pools**

Vernal pools are a unique type of wetland that are ephemeral in nature, supporting no fish population. These are critical breeding habitat for several species of amphibian, such as the spotted and Jefferson salamander, and important feeding location for many other species, including wading birds and spotted and Blandings turtles. These important natural resources can be impacted by changes in hydrology, the removal of a naturally vegetated buffer, as well as filling and dredging.

### **Wetlands**

One third of Warner's native wildlife species rely on wetlands at some point during their lifecycle for feeding, breeding or cover. There are many different types of wetlands covering about 6% of the town's land area. These include shallow open water marshes, which are often created by beaver activity, to forested wetlands, which may appear dry for several months during the year. Beaver created wetlands play an important role in the ecology of our area. Many species of plant and animal have evolved since the last glacier to take advantage of the dynamic nature of a beaver pond. The hundred or so year cycle of forest to flooded pond to meadow to shrubland and back to forest again takes place throughout the landscape. It is important to allow for the dynamic nature of this activity to continue to support the variety of species that use these areas.

The value of wetlands as wildlife habitat is enhanced by the presence of a naturally vegetated buffer. The optimum width of the buffer varies with each species. However, a 1995 publication by the Audubon Society of New Hampshire suggests that a minimum buffer of 100 feet is necessary to both provide minimal habitat and protect the water quality of the wetlands and associated streams and ponds.



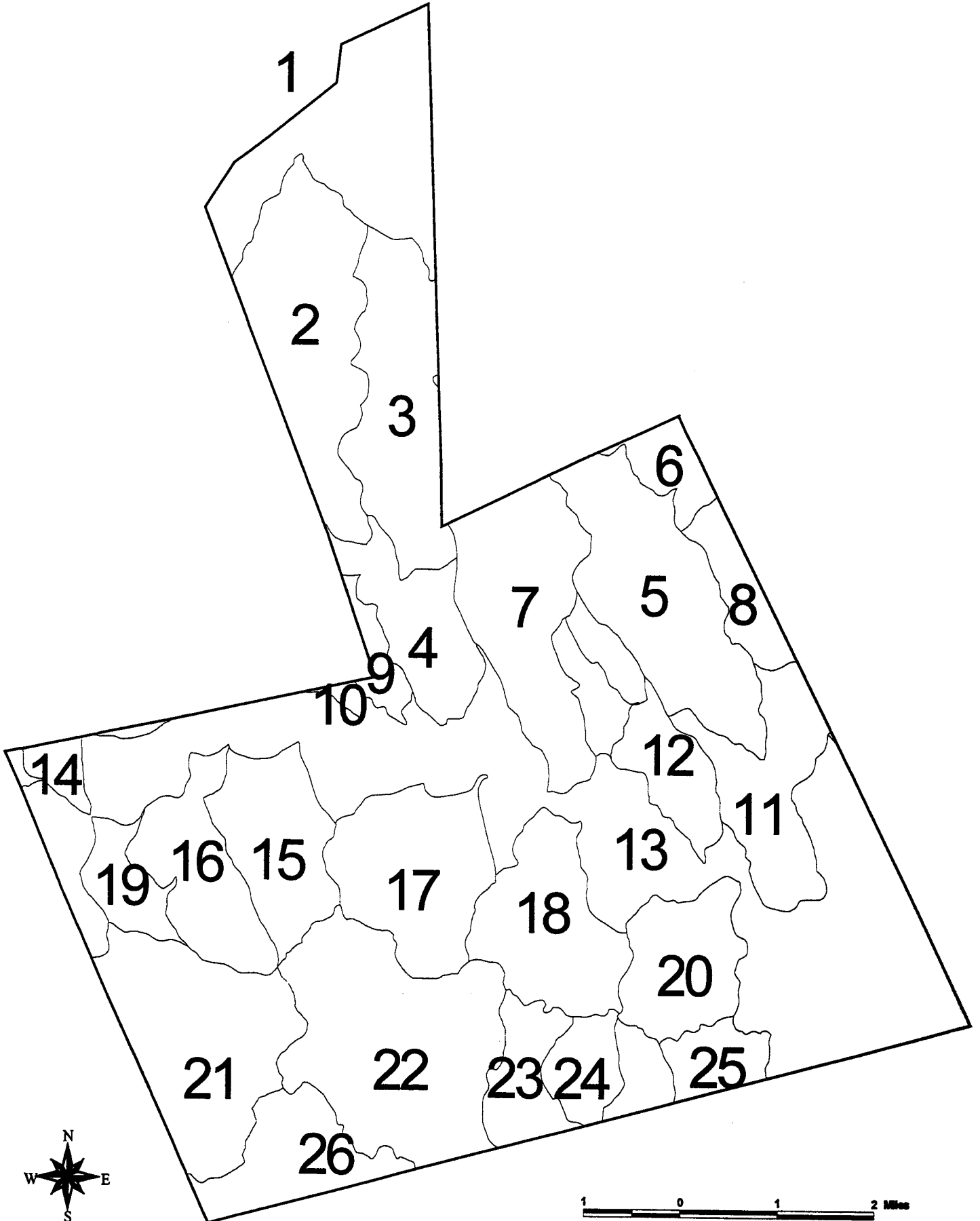
### **Wildlife Travel Corridors**

Wildlife travel corridor is a term used to describe a variety of different habitats that allow the movements of wild animals over both short and long distances. Wildlife often travel among feeding, watering, and resting areas along the same path. These travel corridors develop in areas where animals feel secure in their movements. For deer it may be a strip of pine or hemlock through a hardwood forest, for a rabbit it might be a row of shrubs between two fields. Medium and large mammals follow natural features like streams and ridge lines and generally take the path of least resistance, often using wood roads to move. Seasonal changes may cause changes in the movement patterns of some animals. Deep snow will force deer into stands of large conifers, while warm spring rains will initiate the movement of salamanders and frogs to vernal pools.

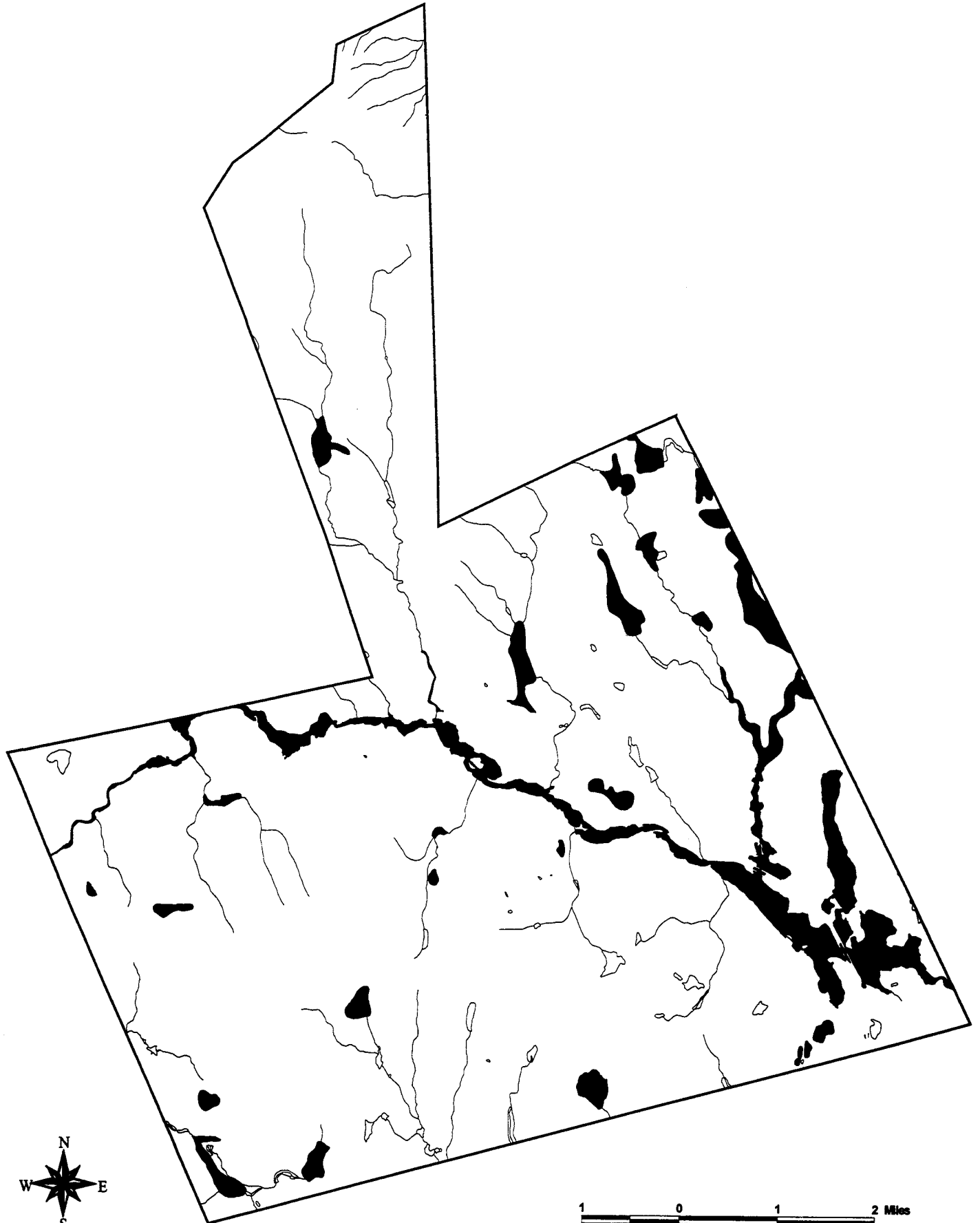
Migration routes often follow major river corridors. These can be of major importance to migrating birds returning in the spring. These areas usually see the first leaf-out and the first insect hatches, sources of food for birds. In the fall, these areas produce an abundance of berries and seeds, fueling the southward migration.

When planning to provide wildlife corridors, it is important to look at the distribution of conservation lands in the town and work on connecting these protected areas to support the movement of wildlife between these areas.

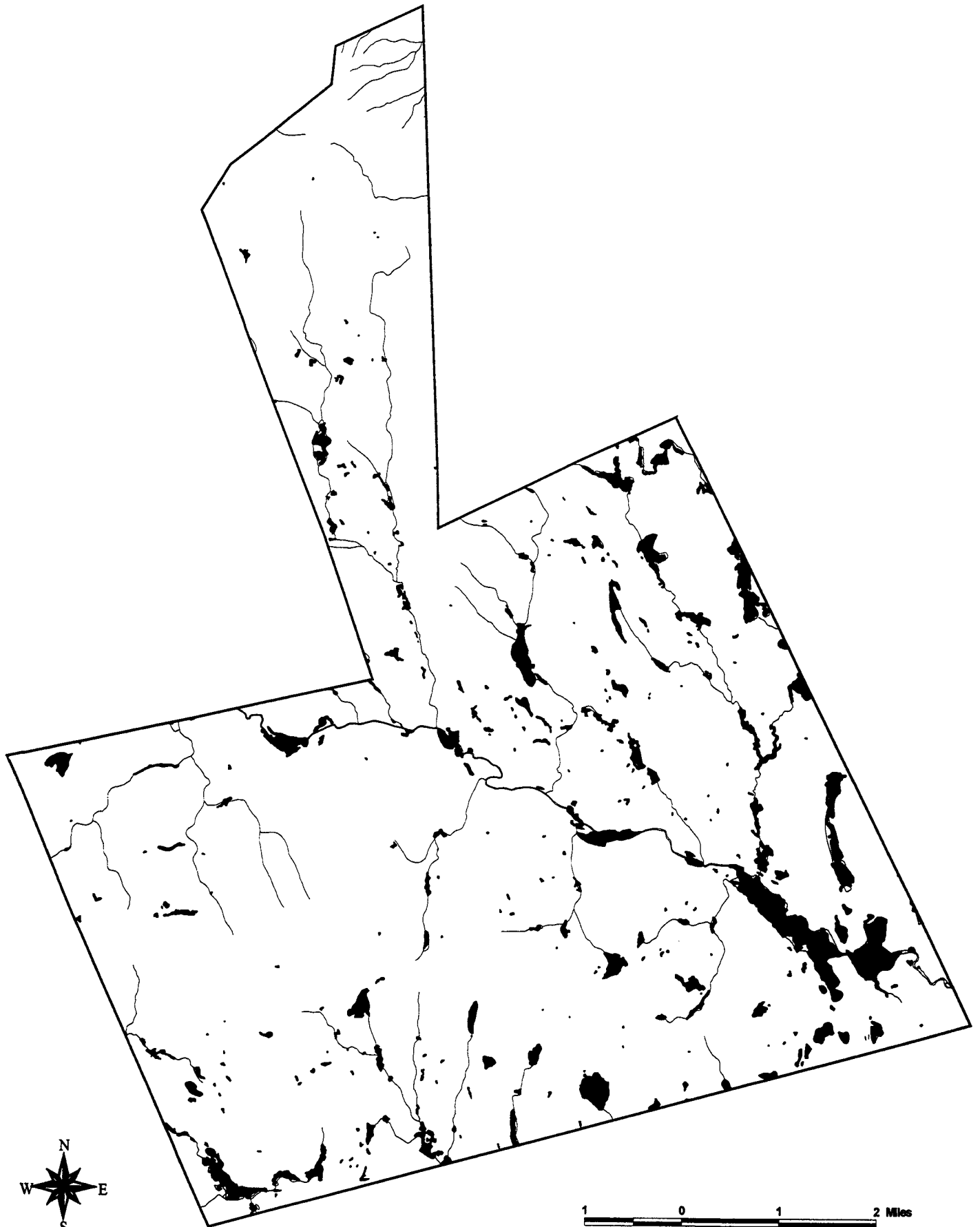
# Map 8-1 Warner Subwatershed Map



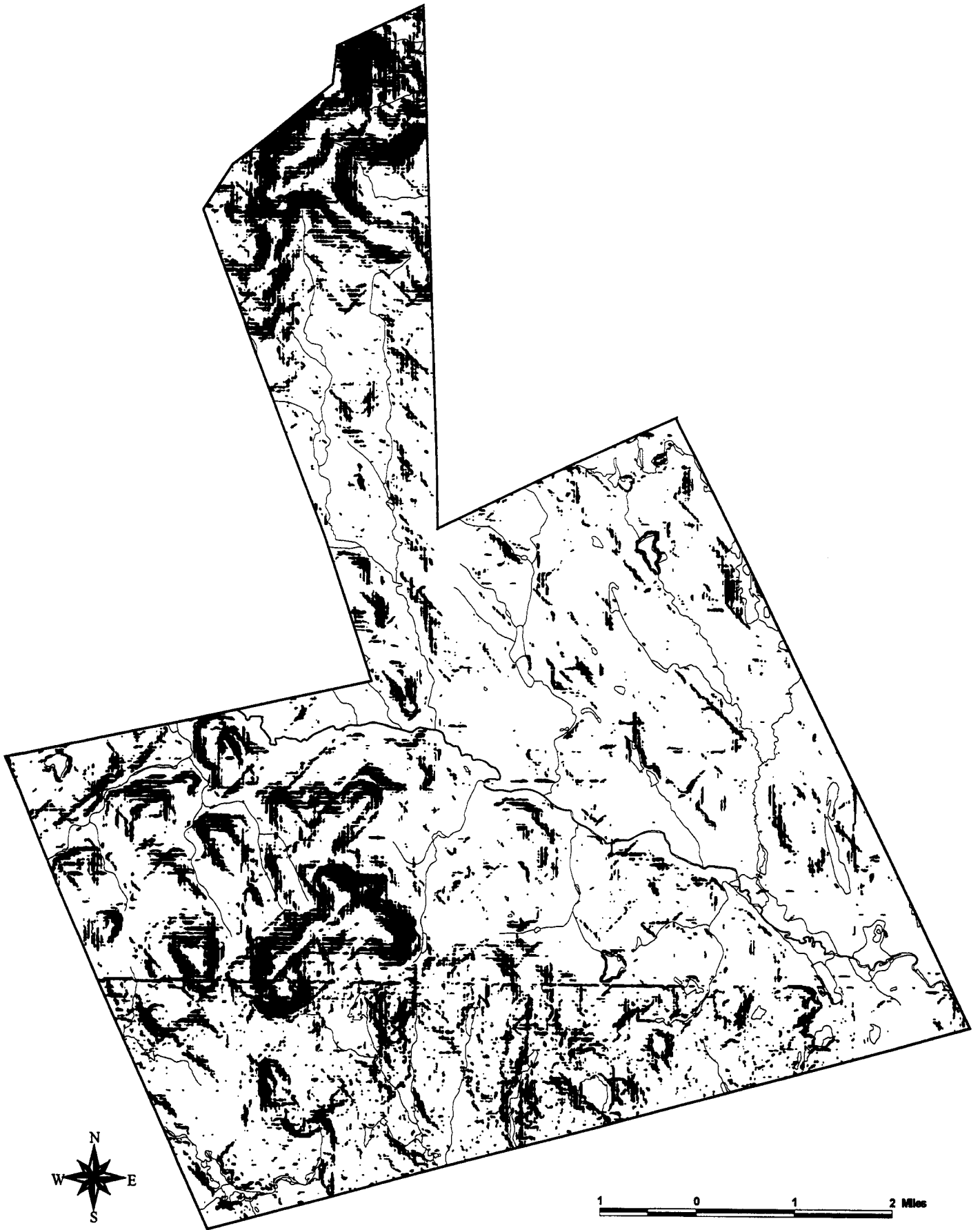
# Map 8-2 Warner Floodplains



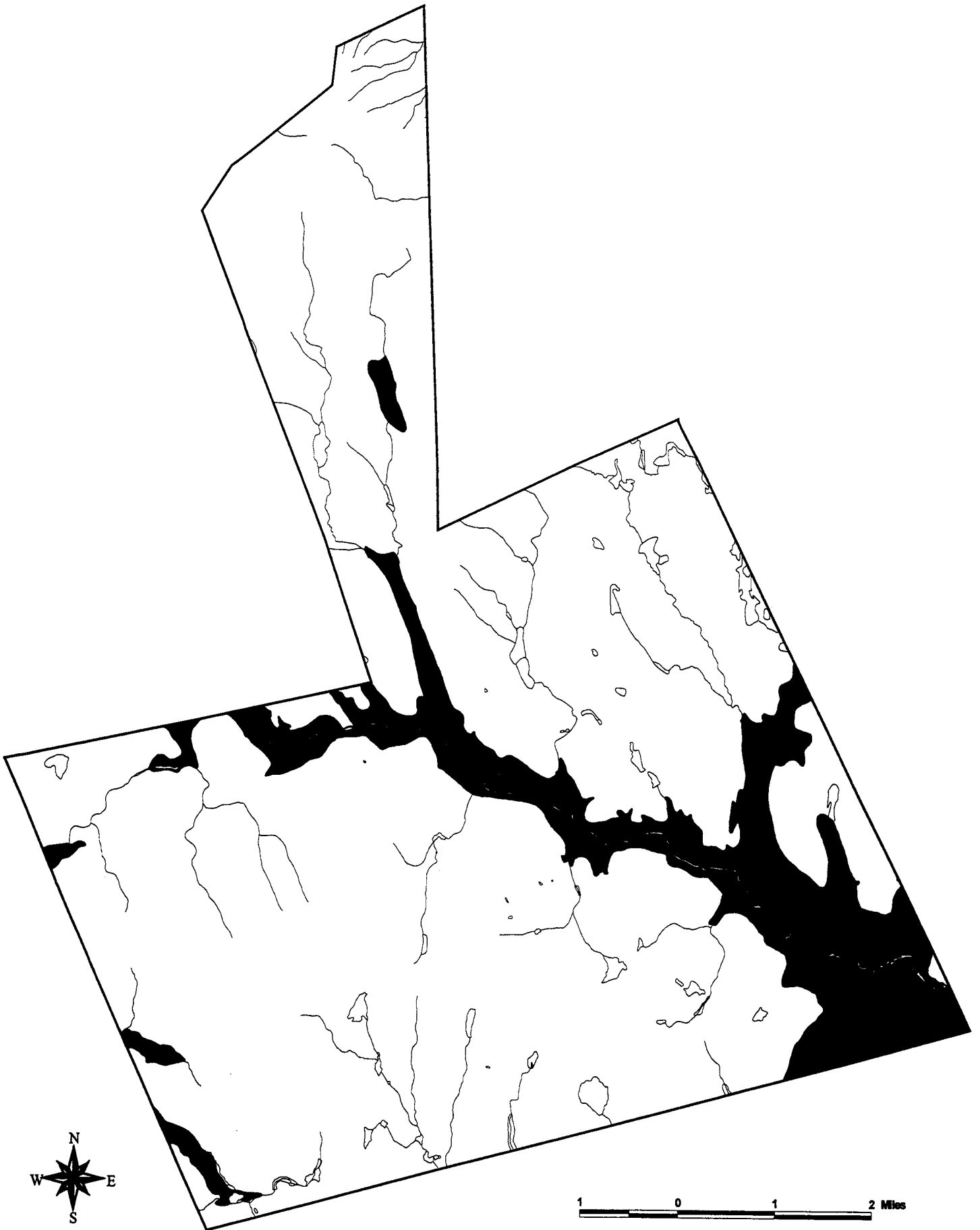
# Map 8-3 Warner Wetlands



# Map 8-4 Slopes greater than 25%



# Map 8-5 Warner Aquifers



## **IX. EXISTING LAND USE**

## **Chapter IX**

### **EXISTING LAND USE**



#### **Introduction**

The purpose of this chapter is to describe land use patterns within the Town of Warner. The land inventory and analysis presented here shows a picture of the Town as it currently exists, and is the basis for determining how land will be used in the future. The goals and objectives for the future are set forth in the Future Land Use Chapter.

The Town of Warner is comprised of a small, densely populated central village core situated along the Warner River, surrounded by large tracts of forest and agricultural lands, which have a low population density. Natural amenities abound in Warner, home to Mount Kearsarge, in Rollins State Park, and a host of other State and private reserves, as well as Town-owned forests.

Warner is located in Merrimack County, approximately 18 miles northwest of Concord, 26 miles northwest of Manchester, 34 miles northeast of Keene, and 89 miles northwest of Boston, Massachusetts. The land area of Warner totals approximately 35,390 acres (55.2 square miles).

The Town's present land use patterns mirror the historical uses of land in Town: a dense village district with a church, post office, library, fire and police departments, shops, and the Town Hall; and an out-lying rural district comprised of forests, agricultural fields, private homes and some commercial uses. The most significant commercial development that has occurred in the past

decade is the growth of the Exit-9 area off of I-89, with a fast-food restaurant, gas stations and grocery store. There also has been substantial growth in residential development, especially along Bean Road and Schoodac Roads, which were considered to be “outlying areas” a decade ago.

## **Land Use Survey**

In the Fall of 1998, the Warner Master Plan Committee conducted an existing land use survey of the Town. The most current tax maps were reviewed to determine the use and acreage of each parcel of land in Town. The tax assessment cards were entered into a database to help in the analysis. Each parcel was categorized as one of the following:

1. Residential:
  - Single Family
  - Duplex (two family)
  - Multi-family (three or more)
  - Manufactured Housing
2. Commercial/Industrial (Businesses, Commercial Industries)
3. Private Institutional (colleges, nursing homes)
4. Public/governmental (town hall, land owned by Town or State)
5. Vacant (no building)

Using the information from the data base, the Master Plan Committee conducted a windshield survey to verify the data and to identify features such as the location of residential structures, home businesses and new construction. The acreage figures for residential uses were determined by adding the actual acres of each residential parcel less than 2 acres. For parcels greater than two acres, residential uses were considered to use a maximum of 2 acres, with the remainder being vacant open space. The survey results are found in Table 9-1.

The numbers for the residential areas shows a significant discrepancy between the 1989 and 1998 counts. Because the methodology of the 1989 survey is not clear, it is difficult to make comparisons between these numbers. The numbers in the 1998 column reflect the actual assessed acres per residential parcel. However, it is possible to compare the other categories. There has been an increase in the number of commercial/industrial acres, due mainly to commercial development of the Exit 9 area. The public/governmental acres have also increased due to Town forest acquisitions.

As part of the existing land use survey, the Master Plan Committee prepared an existing land use map, which shows by parcel the development in Town. (See Existing Land Use Map at the end of the chapter) The most densely populated areas are along Main Street in the village area, around Pleasant and Tom Ponds and in the Davisville area. The remaining parts of Town are sparsely populated.

Although it is important to look at numbers of acres devoted to land uses, it is more telling to look at the number of residential and commercial establishments that exist within the Town and compare the growth that has occurred over the past decade. Table 9-2 presents figures for the different types of buildings in Warner.

**Table 9-1  
Existing Land Use**

TYPE	TOTAL ACRES 1989	TOTAL ACRES 1998
Residential		
<i>Single Family</i>	2,278.2	1,179.73
<i>Duplex (two family)</i>		22.42
<i>Multi-Family (more than 2)</i>	27.1	35.55
<i>Manufactured Housing</i>	67.2	76.72
Commercial/Industrial	245.5	340.48
Private Institutional (College, Nurs. Home..)		143.06
Public/ Governmental	3,817	6,099.9
Vacant	27,661.3	27,563.06

Source: Town of Warner Tax Assessment Cards; Windshield Survey

From 1990 to 1997, residential structures increased by only 89 units (12.5%), roughly 15 per year. Manufactured housing had a slight gain of 12 units, and multi-family housing gained 32 units, mostly due to the construction of the Pine Rock facility. Commercial property had the lowest increase over all, gaining 2 only units. In the windshield survey, there were roughly 30 home businesses identified, which are not counted as commercial properties.

**Table 9-2  
Residential and Commercial Buildings**

<b>Type</b>	<b>1967</b>	<b>1990</b>	<b>1997</b>
Residential	610	712	801
Manufactured Housing	22	148	160
Multi-family	1	133	165
Commercial/Industrial	43	50	52
<b>Total</b>	<b>676</b>	<b>819</b>	<b>1,095</b>

Source: 1967 figures are from the 1989 Master Plan;  
 1990 figures are from the US Census;  
 1997 Figures are from the Office of State Planning and  
 Town of Warner Property Inventory Master List, August 1998

## **Public and Semi-Public Land**

Public and semi-public lands make up approximately 7,126 acres, or 20% of the total land in Warner. This land use category includes land and easements owned by the State, the Town, and by private groups that allow public access to the land.

The figures in this category have almost doubled since 1987. In the 1987 Master Plan, the Town reported a total of 3,817 acres of public and semi-public land, which was 10.9% of the total land area. This increase is due to additions to existing reserves, such as Kearsarge Mountain and Chandler Reservation, and the creation of Carriage Trail Acres and Ashendon State Forest. Table 6-3 provides an inventory of the public and semi-public lands in Warner.

## **Current Use**

The Current Use law allows towns to assess undeveloped land at a lower rate than market value as long as the property remains within an open space classification. Any change in the property's use that does not qualify for the open space assessment will cause a tax to be levied on the property equal to 10% of the "full and true value of the property." Current Use has been an important tool for many individuals who desire to maintain their property as open space without suffering an economic penalty.

**Table 9-3  
Public and Semi-Public Land**

<b>Owner</b>	<b>Acreage</b>
State of New Hampshire	
Ashendon State Forest	168.3
Carroll State Forest	29
Davisville State Forest	18
Gilmore State Forest	37
Charles F. Goodnow Land (LCIP)	660
Harriman-Chandler State Forest	395
Kearsarge Mt. State Forest	2,852.1
Rollins State Forest	99
Steven Lowell Land (LCIP)	316
Town of Warner	
Ager-Lakeland Park	2.5
Carriage Trail Acres	871.5
Chandler Reservation	1,467
Riverside Park	17
Cemeteries	48
Public Buildings	48
Conservation Easements	50
Society for the Protection of NH Forests	47.5
<b>Total</b>	<b>7,125.9</b>

Source: Town of Warner, Board of Selectmen's Office

The Town of Warner currently has 22,425.2 acres, or 63.36% of the total land area, in current use. Table 9-4 presents a breakdown of land in current use into managed and unmanaged lands, including the number of acres found within each category and the percentage of total land area. Managed forest and unmanaged forest are the two largest current use classes in Warner, with a total of 20,499 acres. Together they account for approximately 58% of the total land area and 91% of all land in Current Use.

So long as property remains in current use it is protected from development. Recent studies have shown that open space has less financial impact on a town than development because it does not require town services. Although it is tempting to think that this land is “protected”, it is only so at the discretion of the land owner. It may be converted from open space simply by development of the property and payment of the current use change penalty. The Master Plan Survey showed that protection of the environment was highly favored. To further that desire, the Town should authorize the Conservation Commission to use the penalty tax to purchase ecologically sensitive lands for permanent protection.

**Table 9-4  
Warner Current Use**

Category	1989 Acreage	Percent of Land Area in 1998	1998 Acreage	Percent of Land Area in 1998
Managed Lands				
Farmland	393.55	1.12	605.12	1.71
Forest	13,604.93	38.76	15,028.23	42.46
Unmanaged Lands				
Farm & Forest	4,713.48	13.43	199.4	.56
Forest - Other			5,471.5	15.46
Inactive Farm	121.84	.35	125.68	.36
Unproductive	81.37	.23	83.07	.23
Wetlands	990.34	2.82	912.2	2.58
Totals	19,905.51	56.71	22,425.2	63.37

Source: 1989 Warner Master plan; Town of Warner Property Inventory Master List, August 1998

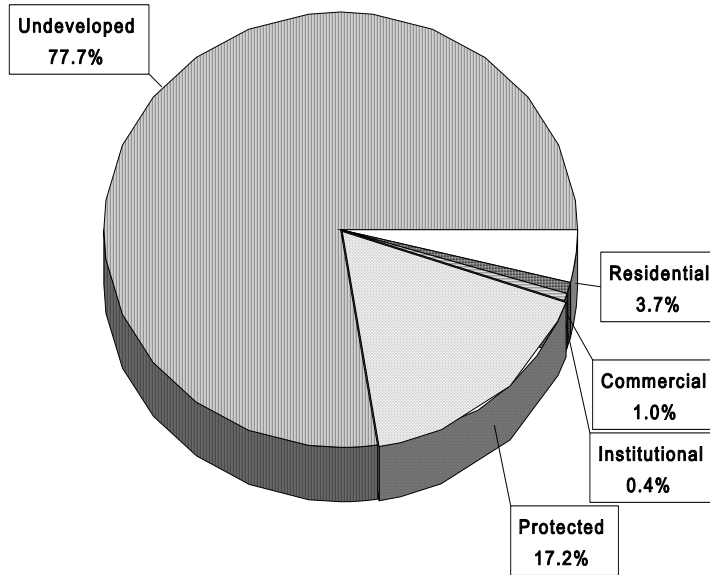
## Summary

Undeveloped land accounts for roughly 78% of the total land area in Warner. Protected lands include Town and State owned land, as well as private conservation lands. When added to the current use figures, the total figure for undeveloped land in Warner jumps to 95%. Figure 9-1 shows the breakdown of the major land use patterns in Warner.

The majority of the land in Warner consists of unprotected open space, meaning that there are no restrictive easements or covenants ensuring that the property remains undeveloped. Since the Master Plan Survey indicated that protection of the environment is a high priority, an important task that should be done is to identify the open lands in Warner that are environmentally sensitive

and review the zoning ordinance to make sure that these lands are protected from adverse development. Also, property owners with environmentally important lands should continue to be encouraged to donate land or grant conservation easements to the Conservation Commission, nonprofit organizations or to the State of New Hampshire.

**Figure 9-1  
Warner Major Land Use Patterns**



## **X. FUTURE LAND USE**

# **Chapter X**

## **FUTURE LAND USE**

### **Introduction**

Each of the preceding chapters describes the characteristics of Warner as they exist today and proposes recommendations based on community input. The Future Land Use Chapter draws all of the recommendations together and makes a statement about what the residents of Warner want the Town to look like in ten to twenty years. It is a vision of the future and a guide for the Planning Board and the Town in making future land use development decisions.

The first section of this chapter presents an overall picture of the desired future pattern of development based on general land use characteristics. These characteristics are separated into several categories, including residential, commercial, Warner Village, community facilities, rural character and natural resource protection. One of the major desired outcomes expressed during the master planning process, from community input from the survey and committee discussions, is the importance of preserving the rural character and natural resources of the Town. Especially of note in achieving these goals is the protection of the Mink Hills from over-development. The first section includes a discussion on one way to make this goal a future reality.

In the second part of this chapter, the Town is divided into watershed areas. This section provides a summary of resources and key points for the Planning Board to consider when making development decisions. As stated in the Natural Resources Chapter, an in-depth watershed inventory and analysis is key to making informed planning decisions. Within each watershed, the natural features, existing land use, unique characteristics, and future recommendations are summarized. These recommendations are specific to each area but are tied to the overall recommendations located in the first part of the chapter. Although all of the watersheds do not have a completed in-depth analysis, there is a significant amount of information readily available from the UNH GRANIT System, as well as through other sources, such that this type of presentation is appropriate and sets the format for future master plans. The Planning Board should make every effort to collaborate with the Conservation Commission to conduct additional watershed studies and to incorporate the findings into future Master Plans.

### **Future Land Use Overview**

Overall, the future land use map in Warner is similar to the existing pattern of land use. Please refer to the Future Land Use Map at the end of this chapter.

## **Residential Development**

High and medium density residential development are proposed to remain essentially the same as they are currently permitted by the zoning ordinance. Concentrated high density development should remain in the downtown village area, since this is where town water and sewer services are located. Medium density development should be focused in the immediate vicinity of downtown and along Route 103, where medium density development currently exists.

Low density residential development should be located in all other areas of Town, but limited to existing road systems. To protect valuable unfragmented open spaces, conservation land, and wildlife habitat corridors, a 500' maximum set back from the road should be required for all low density residential development. This will prevent the further fragmenting of valuable open spaces and wildlife habitat. Premature or scattered development should be discouraged and in-fill between currently developed land should be encouraged as preferable development. Also, residential development should be discouraged on Class VI roads. The possibility of NH State scenic road designations should be investigated and considered for a few key roads in Town.

## **Commercial Development**

Commercial development should remain concentrated generally in the same areas as it is today: off of I-89 at Exits 7 and 9 and in the downtown village business district. Exit 9 has seen significant development activity with the construction of the McDonald's, Market Basket, and reconstruction of the two gas station/convenience centers. The parcel of land at Exit 7, that once housed an old motel, now has a new self-storage facility. It is likely that these areas will continue to develop over the next few years due to their proximity to I-89, providing for day-to-day shopping needs for Town residents.

Commercial development of the village center should be encouraged to reuse existing structures. The former Cricenti's Market and a number of existing residential units could be reused or converted into other commercial ventures. The Planning Board should investigate the promotion of architectural guidelines in the Village Center as a way of maintaining the areas historic integrity.

## **Warner Village Area**

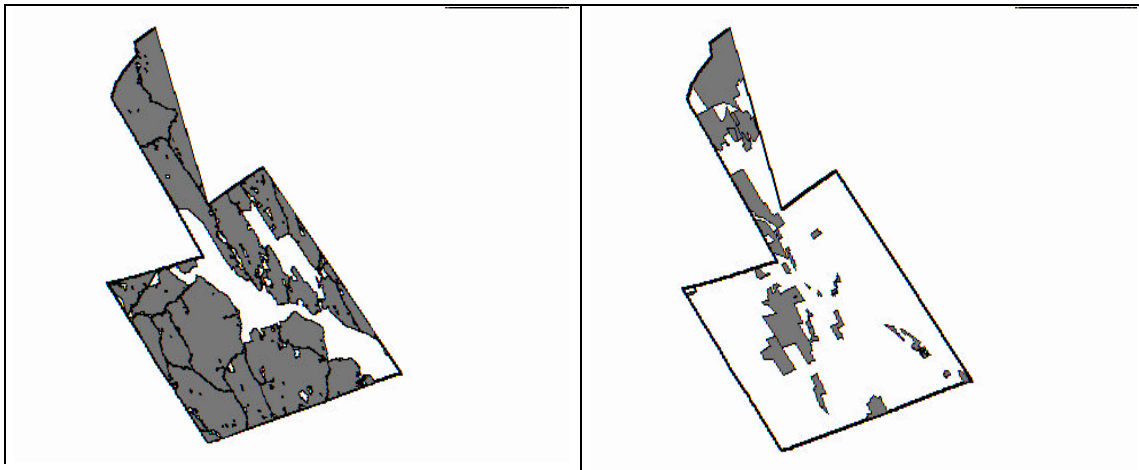
Concentrated, high density residential development should be encouraged in this area where services are readily available. The Planning Board should study the Geneva, Kirtland Street area for extending sewer and water to paper (dedicated but not built) streets, such as Grove Street, within the Village. Infill in this area should be encouraged through further subdivisions. Current dimensional requirements could be reduced to allow for more intense residential development. The Planning Board should review the dimensional requirements for the entire Village District, particularly the Business District and R1, for consistency with existing development and to determine if it hinders additional development in the area.

## **Community Facilities**

When considering the future expansion of all community facilities, the Town should focus on keeping the integrity of the village center intact by locating facilities within walking distance of the village center. An excellent example of this is the Post Office location in the Village center. When a proposal emerged to relocate it at Exit 9, community opposition to such a move forced reconsideration, and the eventual location at its present site on East Main Street.

## **Rural Character and Natural Resource Protection**

Warner, unlike many of its neighbors to the south, has large tracts of remaining undisturbed forest in town. These large tracts provide excellent opportunities for recreation, commercial and private forestry, and wildlife habitat protection. It is these forests which give Warner its rural feel. The map on the left below shows all unfragmented tracts of forest larger than 500 acres as the darkened areas.



Warner is blessed with a significant amount of conservation land, approximately 6,536 acres, which are depicted on the map on the right. This conservation land is located primarily through the center of the town, from Mt. Kearsarge extending south in scattered plots, to Bear Pond on the Henniker border.

Analysis of these two maps, along with survey results and input from the Master Plan Committee, suggests a few major recommendations to protect the community character and natural resources of the town. The first recommendation is to tie together the existing conservation lands held by the Town, State and private entities by linking and expanding these protected areas. (See Future Land Use Map) This will have the effect of creating a wide swath of protected lands traversing the town from North to South. The development of hiking trails or

multiple use trails throughout this area could create a spur for the Sunapee, Kearsarge, Ragged Mountain Greenway.

The second recommendation is to create additional land protection to the Mink Hills. The Mink Hills are primarily forest land, with large tracts that are used for various forestry purposes. Within the Mink Hills, zoning should be made more restrictive, premature development should be restricted and only very low density residential development, such as 25-50 acre minimum size lots, permitted. Such density and lot restrictions would promote the economic feasibility of the forest industry. A large lot of fifty acres has been found to be a minimum for sustaining a viable forestry/timber harvest industry. Such special protections should be created to maintain the working landscape of Warner's agricultural lands. Extra consideration for agriculture and forestry activities should be granted if best management practices are used. The Planning Board should also look at alternative development options for this area of Town.

Another recommendation is to protect the scenic ridgelines and slopes in Town. An important element in the Town's rural character is the rugged terrain and the prominent Mink Hills to the South, with their ridgelines providing scenic views from many parts of Town, especially from the Village. In order to protect these scenic views, the Town should consider extending its ridgeline zoning, now limited to communication towers, to residences and other structures. Provisions should be proposed which preclude the intrusion of such structures above the ridgeline and which minimize their visibility on hillsides through such measures as limiting the cutting of vegetation and certain aesthetic features, such as house paint color.

One other important aspect of the rural character in Warner is the agricultural use of land in Town. Many of the agricultural uses are in locations such as Schoodac Brook and Waldron Hill, and many more fields in town are devoted to forage crops for horses, sheep and other livestock. Horse farms, organic produce farms, and livestock farms are only a few examples of the proliferations of agricultural uses of land in Warner. The Town should support agricultural enterprises and also encourage the use of best management practices to protect water quality.

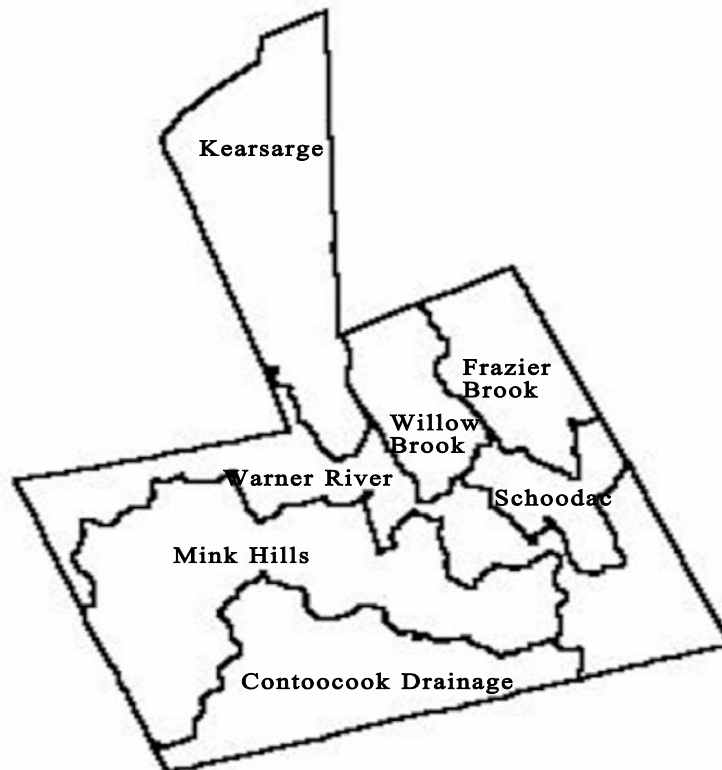
## Summary by Watershed Areas

In this section, Warner's sub-watersheds have been consolidated into seven planning areas. These areas include:

- Frazier Brook watershed;
- Kearsarge watersheds;
- Schoodac watersheds;
- Warner River drainage;
- Willow Brook watershed;
- Mink Hills watersheds; and
- Contoocook drainage.

Because the Willow Brook Watershed has undergone a complete in-depth analysis, it serves as the template for other watersheds. This level of analysis will help the Planning Board evaluate any development proposals within watershed areas and will help the Town in deciding where public resources and dollars should be allocated for conservation purposes. As more watershed studies are conducted, they should be added to future revisions of the Master Plan. A summary of the Willow Brook Watershed Project is contained in Appendix B.

### Warner Watersheds



## *Willow Brook Watershed*

### *Natural Features:*

The Willow Brook Watershed contains approximately 2,343 acres, or 6.6% of the land area in Warner. Tory Hill Meadow, a 50 acre wetland area, dominates the central portion of the watershed between Pumpkin Hill and Tory Hill. Willow Brook joins the Warner River in Warner Village area and is a Class B waterbody, which signifies a healthy stream system. An 84 acre high-yield aquifer underlies the watershed, providing a potential source for the municipal water supply system. The Federal Emergency Management Agency has mapped 85 acres of floodplain within the watershed. The watershed also contains abundant wildlife with many active beaver colonies and a large variety of birds.

### *Existing Land Use:*

The central and northern areas of the watershed are sparsely developed while the highly developed downtown village lies within the southern end of the watershed. Overall, 82% is forest, 8.5% is agriculture, and 3.0% is residential. The watershed is characterized with a low population density and low intensity land use.

### *Unique Characteristics:*

Uncommon forest types- mature mixed hardwood forests and hemlock-dominated forests, Tory Meadow, and there are large wetland complexes in the southeast and southwest of the watershed.

### *Future Recommendations:*

- Residential development should be encouraged in the downtown village, and limited to the existing roadway boundaries of Pumpkin Hill Road and Kearsarge Mountain Road.
- Priority Conservation areas include: Tory Hill Meadow, Willow Brook, southeast wetland complex, and southwest wetland complex (see Appendix B). These areas should be protected through purchase or conservation easement.
- Continued forest management for timber production should be encouraged in the watershed.

## *Kearsarge Mountain Watersheds*

### *Natural Features:*

The area consists of 6,744 acres, which is 19% of the land area in Warner. The most prominent feature in these watersheds is Mount Kearsarge, located in Rollins State Park. This area contains the most concentrated area of steep slopes in Town, and extensive unfragmented lands. A high yield aquifer runs through the center of the Stevens Brook watershed, under the I-89 corridor.

### *Existing Land Use:*

There is some low density residential development along Kearsarge Mountain Road. More than half of this area, 3,630 acres, is conservation land under State, Town and private ownership. Most of the Stevens Brook Watershed, which is at the bottom of this area, is zoned for commercial development.

### *Unique Characteristics:*

Mount Kearsarge, conservation areas such as Carriage Trail Acres and Rollins State Park, and the large amount of unfragmented lands.

### *Future Recommendations:*

- Connect the conservation areas located within this watershed with the large amount of unfragmented lands in the southern half of Warner. This could be done through easements or recreational trails, which would connect to the Kearsarge, Sunapee, Ragged Mountain Greenway.
- Protect ridgelines through ridgeline protection ordinances.
- Protect the aquifer from over-development through an aquifer protection ordinance that minimizes impervious surfaces and limits the types of activities within the aquifer protection area to those which do not use hazardous materials.

## **Frazier Brook Watersheds**

### *Natural Features:*

These watersheds make up 2,938 acres, which is 8.3% of the land area in Warner. The major features in this area are the abundant wetland areas, 271 acres, and 540 acres of floodplains.

### *Existing Land Use:*

Due to the predominantly wet soils, there is very little development in these watersheds.

### *Unique Characteristics:*

Conservation areas in Webster abut this area because of the Blackwater Dam and its associated flood protection zones.

### *Future Recommendations:*

- Limit future residential development by purchasing conservation lands or easements, and permitting very low density zoning.
- Encourage future development to be limited to existing roads.
- Classify the wetlands which show up on the National Wetlands Inventory (NWI) maps as important and place protective buffer overlays on them.

## *Schoodac Watersheds*

### *Natural Features:*

These watersheds consist of 1,840 acres, which is 5.2% of the land area of Warner. There are few steep slopes in this relatively flat area. A high-yield aquifer lies along the brook, however, the center of this area has no significant wetland areas.

### *Existing Land Use:*

Medium density development in the lower part of the watershed in the Denny Hill area and along Schoodac Road. Low density development along Schoodac Road near the Webster Town line.

### *Unique Characteristics:*

Agricultural lands along Schoodac Brook as well as a high yield aquifer.

### *Future Recommendations:*

- Future medium density residential development should be encouraged near existing residential development.
- Protection of Schoodac Brook by increasing the 75' setback.
- The aquifer and wetlands should be protected through zoning ordinances and mandatory Best Management Practices (BMPs).

## **Warner River Corridor**

### *Natural Features:*

This 7,532 acre watershed bisects the town, and accounts for 21.2% of the land area in Warner. There are steep slopes along the northern part of the river where it comes into town from Bradford. There are abundant wetlands and floodplain areas (1,331 acres of floodplain) along the length of the corridor and especially concentrated in the lower southeast corner. The entire corridor is underlain by high-yield aquifer, which is especially large in the southeast corner of Warner. Warner's water supply is located in this watershed.

### *Existing Land Use:*

Most of the corridor is relatively undeveloped as it runs through Warner. The corridor contains the most significant development as the river flows through the downtown Village Center.

### *Unique Characteristics:*

Except for a few small dams, the Warner River is a free-flowing class B river, suitable for both recreation and wildlife purposes. The extensive amount of pristine floodplain and floodplain forest is especially important not only for flood control but for wildlife habitat. The river has many historical resources such as old mill sites, railroad abutments and covered bridges.

### *Future Recommendations:*

- Allow higher density development in downtown village areas but mitigate the impacts through engineered solutions and groundwater protection.
- Protect the floodplain area from any further development through stricter floodplain development regulations, or through Town purchase or conservation easements.
- Strictly enforce setbacks from the river and consider additional shoreline protection.

## *Mink Hills Watersheds*

### *Natural Features:*

These watersheds contain 8,730 acres, which is 24.6% of the land area in Warner. There are concentrated areas of steep slopes within the Mink Hills, which are the dominant feature in these watersheds. Although there are very few wetlands or other water resources, the ones that do exist are important to the wildlife diversity of the area.

### *Existing Land Use:*

The Chandler Reservation and Harriman Chandler State Forest cover 2,017 acres of this area. This area is mostly undeveloped with scattered residential development.

### *Unique Characteristics:*

The extensive conservation lands and the Mink Hills make up a large portion of the unfragmented land in Warner. The Mink Hills are also rich in historical resources, such as cellar holes and old homestead sites.

### *Future Recommendations:*

- Link the conservation areas to the upper conservation areas, as mentioned in the Kearsarge Mountain Watershed section, to create a large corridor of unfragmented land within Warner.
- Enact very low density zoning requirements of 25-50 acre minimum lot sizes, in order to maintain unfragmented forest.
- Investigate alternative development options for residential subdivisions.
- Inventory and map cellar holes. Consider protection for these historic resources especially where they overlap with other important natural resources.
- Enact a ridgeline/slope protection ordinance for the Mink Hills.
- Minimize visual impacts of development in the Mink Hills through the use of ordinances regulating site design.

## *Contoocook River Watersheds*

### *Natural Features:*

This area consists of 5,399 acres, which is 15.2% of the land area in Warner. There are a number of wetlands in the lower southwest corner of these watersheds. This area drains into the Contoocook River, whereas the other watersheds in Town drain to the Warner River, with the exception of the top portion of Kearsarge Mountain which drains into the Blackwater River. There are also some floodplains near ponds and streams. The most dominant natural features are the steep slopes in Mink Hills.

### *Existing Land Use:*

There are 2,224 acres of conservation area within these watersheds, including parts of the Chandler Reservation and Harriman Chandler State Forest.

### *Unique Characteristics:*

The extensive conservation lands and the Mink Hills make up a large portion of the unfragmented land in Warner.

### *Future Recommendations:*

- Link the conservation areas to the upper conservation areas, as mentioned in the Blackwater River Watershed section, to create a large corridor of unfragmented land within Warner.
- Buffer unfragmented lands with very low density zoning requirements.

# **APPENDIX A**

## Appendix A

### Master Plan Survey with Tallied Results

1. What qualities of Warner are most important to you?  
Rank in order: 1, most important; 8, least important (Actual # of respondents)

	1	2	3	4	5	6	7	8
Location	25.3% (60)	21.1% (50)	12.7% (30)	13.9% (33)	7.6% (18)	4.2% (10)	1.7% (4)	13.5% (32)
Natural environment	33.2 (84)	20.9 (53)	18.6 (47)	6.7 (17)	6.3 (16)	.4 (1)	.8 (2)	13.0 (33)
Community Spirit	7.7 (19)	13.3 (33)	15.3 (38)	19.4 (48)	19.0 (47)	4.0 (10)	3.6 (9)	17.7 (44)
"Live & let live" attitude	10.5 (21)	8.0 (16)	13.5 (27)	10.0 (20)	11.5 (23)	13.5 (27)	9.0 (18)	23.5 (47)
Family ties	10.4 (21)	5.9 (12)	4.0 (8)	6.4 (13)	5.9 (12)	9.4 (19)	19.3 (39)	38.6 (78)
Character of town	23.5 (52)	21.7 (48)	16.7 (37)	14.0 (31)	6.9 (14)	3.6 (8)	1.8 (4)	13.4 (27)
Schools	5.8 (12)	6.3 (13)	5.8 (12)	6.3 (13)	7.7 (16)	17.8 (37)	16.3 (34)	34.1 (71)

2. Certain services are important or essential to the community. How would you rate the adequacy at present, of the following?

Service	Good	Fair	Poor	Undecided
Police Protection	61.1% (157)	19.1% (49)	3.5% (9)	16.3% (42)
Fire Protection	78.6 (187)	8.8 (21)	1.7 (4)	10.9 (26)
Medical/Health Services	20.8 (45)	26.4 (57)	30.6 (66)	22.2 (48)
Emerg. Med. Services	49.1 (105)	17.3 (37)	7.5 (16)	26.2 (56)
Schools				
<i>Grades 1-5</i>	38.2 (73)	17.8 (34)	4.7 (9)	39.3 (75)
<i>Middle School</i>	22.9 (46)	22.9 (46)	13.4 (27)	40.8 (82)
<i>High School</i>	23.1 (42)	20.3 (37)	13.2 (24)	43.4 (79)
<i>Vocational Ed.</i>	9.1 (18)	14.7 (29)	18.8 (37)	57.4 (113)
<i>Adult Continuing Ed.</i>	7.1 (12)	10.7 (18)	24.9 (42)	57.4 (97)

Service	Good	Fair	Poor	Undecided
Recreation				
<i>Youth</i>	47.0% (95)	18.3% (37)	7.9% (16)	26.7% (54)
<i>Adult</i>	22.1 (40)	29.8 (54)	15.5 (28)	32.6 (59)
<i>Town Beach</i>	47.8 (97)	23.1 (47)	5.9 (12)	23.1 (47)
<i>Sports Facilities</i>	39.9 (75)	27.3 (54)	8.1 (16)	26.1 (53)
<i>Trails</i>	51.5 (100)	22.2 (43)	5.7 (11)	20.6 (40)
Road Maintenance	74.1 (172)	18.5 (43)	4.3 (10)	3.1 (7)
Snow Removal	81.2 (194)	11.5 (127)	2.9 (7)	4.6 (11)
Transfer Station/Recycle	88.2 (201)	4.8 (11)	1.3 (3)	5.7 (13)
Town Forest Mgt.	46.3 (99)	15.0 (32)	1.9 (4)	36.9 (79)
Bldg. Code Enforcement.	29.8 (61)	23.4 (48)	15.4 (31)	31.7 (65)
Town Water (Precinct)	33.7 (61)	10.5 (19)	5.5 (10)	50.3 (91)
Sewer (Precinct)	32.0 (55)	8.1 (14)	5.8 (10)	54.1 (93)
Town Administration	56.3 (121)	26.0 (56)	7.9 (17)	9.8 (21)

3. Which of the above services do you feel need the most improvement?

- Police protection (27)
- Schools (25)
- Town Administration (17)

4. Below are some public projects that have been suggested by members of the community. How do you feel about the importance of each?

Project	Important	Not Important	No Opinion
Police Station	49% (118)	37% (89)	15% (34)
Public Kindergarten	55.7 (131)	25 (59)	19 (45)
Recreational Facilities	53.9 (124)	24.3 (56)	21.8 (58)
Youth Recreational Facilities	59.3 (137)	18.6 (43)	22.1 (51)
Public Lake and River Access	60.2 (130)	26.4 (57)	13.4 (29)
Protection of Natural Environment	82.9 (199)	7.9 (18)	9.6 (23)
Return of Bagley Covered Bridge	29.1 (68)	45.3 (106)	25.6 (60)
Revitalization of Main Street	55.6 (129)	3 (72)	13.4 (31)

5. Are there other specific projects you feel should be considered? Please specify.

New Roads  
Main Street

Recreation  
Community Building

**BUSINESS AND ECONOMICS IN WARNER**

1. Should the town encourage commercial / industrial growth?

Yes = 68% (168)      No = 32% (79)

2. Assuming some additional commercial / industrial development will occur in Warner in the future, which of the following would you prefer to be permitted? (Check all that apply)

Prof. business offices	67% (174)	High Tech Industry	53% (137)
Medical Offices	70 (183)	Light Industry	50 (131)
Banks	37 (97)	Movie/Theater	31 (80)
Personal Services	51 (133)	Convention Center	12 (32)
Restaurants	52 (134)	Auto gas/Service Repair	27 (71)
Home Occupations	55 (142)	Car Wash	32 (82)
Inns, B&Bs, Motels	54 (140)	Day Care	40 (105)
Retail Sales	48 (126)	Heavy Industry	9 (22)

3. In reviewing development proposals, how would you rate the importance of the following criteria ? Rate: 1 (very important), 2, 3 (not important)

Criteria	1	2	3
Jobs	55% (124)	29% (66)	15% (34)
Tax Base	71 (163)	22 (50)	8 (18)
Noise	64 (158)	24 (60)	12 (30)
Traffic	66 (157)	25 (60)	9 (22)
Location	68 (153)	26 (58)	6 (13)
Business Size	46 (100)	38 (82)	17 (36)
Safety	68 (154)	25 (56)	7 (16)
Aesthetics	68% (151)	22% (50)	10% (22)
Environmental Impact	77 (185)	18 (42)	5 (13)
Impact on Town Services	66 (131)	25 (50)	10 (19)
Property Values	70 (149)	21 (45)	9 (19)
Outside Lighting	37 (75)	31 (64)	(65)

4. In planning for locations for future commercial development what areas should be considered?

AREA	
Exit 7 (Davisville)	73% (189)
Exit 9	66 (171)
North Road	20 (53)
Route 114	22 (58)
All of Route 103	13 (35)
Route 103 From:	
Exit 9 to Bradford	31 (81)
Exit 9 to Village	17 (44)
Village to Exit 7	17 (44)
Exit 7 to Contoocook	41 (106)

5. Would you favor expansion of zoned commercial / industrial districts beyond existing districts (Downtown & Exits 7 & 9)?

Yes = 40% (92)      No= 60% (139)

6. Would you prefer to develop industry in a specific concentrated area (industrial park)?

Yes = 74% (177)      No = 26% (61)

7. Should large developments pay road and utility improvement costs?

Yes = 98% (243)      No= 2% (5)

7. Should forestry and agriculture be considered an important part of the town's economy?

Yes = 84% (209)      No = 16% (39)

8. What businesses can you envision to help revitalize the village center?

Pharmacy (27)	Medical/Dental (16)	Bakery (12)
Cafe/Coffee (19)	Restaurants (15)	Local artisans outlet/supplies (11)

10. To revitalize Main Street, should the Town provide incentives to new businesses?

Yes = 52% (104)      No= 48% (97)

11. The Warner Planning Board has the power to require that special studies and analyses be prepared to determine the impact of new development. The studies could include school impact analysis, traffic impact analysis, and environmental assessments. The applicant or developer is required to pay for studies, which typically cost \$500 to \$5,000. Are you in favor of the Planning Board continuing to require such studies for major developments?

Yes = 89% (186)      No = 11% (23)

## HOME BUSINESSES

The Warner Zoning Ordinance currently defines "Home Occupation" as "the use of a dwelling for a home occupation not involving the on-lot, full-time employment of persons not dwelling in the home provided, however, that such use shall be an accessory use to the principal use of the dwelling as a residence."

1. Do you want to make "Home Occupations"

More restrictive?	7% (16)
Less restrictive?	24% (53)
Left the way they are?	70% (156)

2. Should any of the following criteria be considered in permitting a "Home Occupation"? Rate: 1 (very important), 2, 3 (not important)

CRITERIA	1	2	3
Noise	85% (209)	12% (30)	3% (7)
Safety	74 (177)	19 (46)	6 (15)
Hours	54 (128)	37 (87)	9 (21)
Traffic	72 (176)	20 (48)	8 (19)
Signs	51 (117)	34 (77)	15 (35)
Odor	79 (170)	16 (35)	5 (10)
Environment	77 (187)	16 (40)	66 (16)
Outside Lighting	47 (101)	39 (84)	14 (30)
Neighborhood Impact	85 (202)	14 (33)	2 (4)

## HOUSING

1. What, if any, do you believe are some of the specific housing needs in Warner?  
Rate: 1 (very important), 2, or 3 (not important)

Housing Type	1	2	3
Over 65	50% (81)	30% (49)	20% (33)
Incomes under \$20,000	38 (63)	29 (48)	33 (54)
Rental	32 (52)	36 (60)	32 (53)
Condominiums	12 (17)	22 (33)	66 (97)

2. Do you favor encouraging residential development in and around the village where water and sewer are available, instead of in outlying areas?

Yes = 56% (122)      No = 44% (96)

3. Currently, Manufactured Housing is allowed in any zone where residential housing is permitted. (Manufactured Housing is any structure, transportable in one or more sections, which, in the traveling mode, is 8 feet or more in width and 40 feet or more in length, or when erected on site, is 320 square feet or more, and which is built on a permanent chassis and designed to be used as a dwelling unit with or without a permanent foundation when connected to required utilities.). Are you in favor of continuing this policy?

Yes = 51% (118)      No = 49% (115)

4. If no, would you support limiting manufactured housing to specific areas?

Yes = 74% (122)      No = 26% (42)

## **PARKING**

1. Do you think there is a need for additional parking in town (except during special events, such as Foliage Festival, Town Meeting, etc.)?

Yes = 32% (76)      No = 68% (161)

2. Is lack of parking limiting business?

Yes = 26% (56)      No = 74% (158)

3. Does available off street parking need to be better identified?

Yes = 68% (153)      No = 32% (72)

4. Is there a need for additional handicapped parking?

Yes = 21% (36)      No = 79% (136)

If so, where? Town Hall/Main Street

## **ENVIRONMENTAL CONCERNS**

### **Rivers and Streams**

1. Do you favor developing public access to the Warner River for boating, fishing or swimming?

Yes = 70% (167)      No = 30% (70)

2. Natural vegetative buffers along the banks of the Warner river and other tributary streams in Town provide important habitats for wildlife, and protect water quality. Currently, the Town's zoning ordinance restricts construction and cutting of existing natural vegetation within 75 feet of year round streams. Should the Town continue to implement this ordinance?

Yes = 89% (214)      No = 11% (27)

**Wetlands and other Natural Areas**

1. In general, State and Federal wetland regulations stop at the water's edge or fail to preserve sufficient buffer zones necessary to protect natural habitats. Would you be in favor of stricter enforcement of town ordinances, such as no-cut, no-build buffer zones around wetlands to protect habitats and natural landscape features?

Yes = 72% (176)      No = 28% (67)

2. Do you feel that **zoning** should be used to protect and preserve the natural landscape features, varied wildlife habitats, and diversity of plants and animals?

Yes = 75% (181)      No = 25% (59)

3. Are you in favor of having the Warner Conservation Commission, residents, and appropriate agencies, identify adjoining habitat zones, including wetlands, and work toward their preservation?

Yes = 80% (194)      No = 20% (49)

4. Are you in favor of increasing the town conservation fund to purchase land and conservation easements to preserve woodlands, wetlands, and natural landscape features in Warner?

Yes = 71% (169)      No = 29% (69)

5. Are you in favor of protecting natural landscape features and habitats by limiting negative impacts of recreation as well as those of development?

Yes = 74% (176)      No = 26% (63)

6. At present, approximately 18% of the land area in Warner is considered to have some form of conservation protection, such as the Chandler Reservation and the Harriman Forest. Do you feel that this percentage should be:

The same (96)	25% (95)	
50% (21)	75% (11)	Other (0)

7. Should the Town control the use of flood-prone areas?

Yes = 77% (171) No = 23% (51)

### **Forests and Farms**

The Town's farms and forests represent valuable, renewable, economic resources which also provide recreational opportunities, wildlife habitat, aesthetic enjoyment, and contribute to the Town's rural character.

1. Should the Town actively encourage good forest management practices?

Yes = 95% (235) No = 5% (12)

2. Some towns in New Hampshire have enacted forest / mountain districts (50 acre minimum lots) in their zoning for the more remote parts of their communities to encourage the land to be retained in timber production.

Would you support developing such a proposed zoning district, say in the Mink Hills and other appropriate areas in town?

Yes = 67% (158) No = 33% (78)

3. Farming was once the predominant land use in Warner. Do you support continuing current use assessment for agricultural uses as one way of retaining active farming operations in town?

Yes = 88% (218) No = 12% (29)

4. Do you support the acquisition of easements or development rights on important farmlands and forests as a way of preserving these open areas in agricultural use?

Yes = 68% (172) No = 32% (80)

5. Would you support the use of income from current use change penalties to fund the purchase of conservation easements or development rights?

Yes = 70% (160) No = 30% (69)

### **ROADS AND BRIDGES**

Designation of a scenic road restricts the cutting of trees or removal of stone walls within a specific distance from the roadway without a hearing. Cutting of trees and removal of stone walls near a scenic road would require approval by the Planning Board or other municipal body designated by the Town Meeting.

1. Should the Town designate "Scenic Roads"?

Yes = 63% (153) No = 37% (88)

If yes, what roads should be designated?

Kearsarge Mountain Road (25)  
Pumpkin Hill Road (18)  
Burnt Hill Road (12)

2. Would you support a study committee to look at the Town's needs for new roads, bridges, intersections, and connector roads as part of the Master Plan update?

Yes = 73% (171) No = 27% (64)

What projects would you suggest?

3. What concerns do you have about roads and bridges?

**HISTORICAL AND VISUAL CHARACTER**

1. Would you be in favor of protection for historic districts or structures?

Yes = 86% (196) No = 14% (33)

If so, which ones? Main Street/Village

2. Would you support regulations to maintain the natural landscape integrity of ridge lines and hill tops?

Yes = 76% (178) No = 24% (56)

3. Would you support regulations governing location and height of communications towers in town?

Yes = 79% (186) No = 21% (49)

**PERSONAL PROFILE**

1. How many are employed in your household?

0	1	2	3	4+
6	67	113	19	4

2. Where do you (they) work?

Warner	(101)	Lebanon area	(13)
New London	(20)	Manchester area	(34)
Concord	(92)	Out of NH, Where?	(45)
Hopkinton/Contoocook	(8)	Bradford	(3)

3. Are you self employed? Yes = 36% (82) No = 64% (147)

4. Do you work from home? Yes = 33% (72) No = 67% (148)

5. Members of your household by age group?

under 5	5 - 19	20 - 60	over 60
(22)	(106)	(329)	(123)

6. Do you own your home (233) or rent (8) ?

7. How long have you lived in Warner or been affiliated with Warner?

1-5 years	6-10 yrs	11-15 yrs	16-20 yrs	21-25 yrs	26-30 yrs	31-60 yrs	60+ yrs
35	47	28	48	21	47	50	10

8. What are your greatest concerns for the future of Warner?

- Maintain present small town character (42)
- Future growth to be well planned, thought out, and controlled (41)
- Future growth will be out of control (36)
- Taxes - losing control of property tax (24)
- Loss of natural environment (22)
- Overcommercialization of village (14)
- Preservation of wild lands (11)

## **Appendix A**

# **Master Plan Survey with Talled Results**

# **APPENDIX B**

## APPENDIX B

Summary of Willow Brook Watershed Project  
**Willow Brook Watershed Project**  
Natural Resource Inventory and Conservation Plan  
Summary  
Warner, New Hampshire 1998

### Introduction and Background

The Town of Warner, a largely rural New Hampshire town situated on two corridors, the Warner River and Interstate 89, has experienced an increased rate of commercial and residential development in the past 20 years. In 1997 the Warner Conservation Commission, recognizing the need to plan for the protection of water resources and ecologically sensitive areas, developed a plan to identify and document key natural resources in the town of Warner.

A pilot project was designed which would yield a report with two components: a Natural Resource Inventory to document certain natural resources and features in a portion of the town, and a Conservation Plan to make recommendations for appropriate use of these resources. This project was conceived as a model for future projects in other watersheds in Warner and beyond.

The watershed of Willow Brook, a tributary of the Warner River, was chosen as the area to carry out the pilot project. This area was chosen because it is a tributary to the Warner River, it is close to the downtown area, has a documented abundance of wildlife, and is valuable for recreation.

Watersheds are geographically defined segments of the landscape which are based on a single outlet for the flow of all surface waters, and thus make convenient, practical and ecologically based units for study. This watershed, which covers nearly 3,000 acres is the drainage area for Willow Brook. It extends in a north to south direction with its headwaters in the town of Salisbury and its outflow confluence with the Warner River in the downtown area of Warner. The study area is most populated along the eastern and western peripheries and where it crosses the central village area. Portions of the watershed are already protected as conservation lands.

In early 1997 the Conservation Commission applied for and received a Local Incentive Grant from the New Hampshire Department of Environmental Services. The grant, which was matched by the Wharton Foundation and by in-kind donations from the Conservation Commission, supported the hiring of a project coordinator/data collector, as well as services and supplies related to the work, including computer mapping.

This report, which may be amended or updated in the future, will help to inform planning on a town-wide basis, including the town master plan. It is also an important step toward promoting voluntary natural resource conservation in the Town of Warner.

## **Willow Brook Watershed Project - Findings and Recommendations**

The overall goal of the Willow Brook Watershed Conservation Plan is protection of the area's natural resources for today and for the future. Such a broad goal, encompassing many facets both human and natural, will require the cooperation of a varied constituency within the town.

This section contains recommendations for conservation in the Willow Brook watershed which are directed to the Town of Warner, its Board of Selectmen, Planning Board and Conservation Commission. Some of these recommendations involve changes to Town ordinances, and would therefore effectively conserve natural resources town-wide. Other recommendations are aimed at landowners and involve the sustainable management of watershed resources.

### **WATER RESOURCES**

The Willow Brook watershed is drained by Willow Brook, one of many drainages which supply the Warner River. The Warner River flows into the Contoocook River, which in turn flows into the Merrimack River which empties into the Atlantic Ocean in Massachusetts. Willow Brook is classified as a second order stream.

The total Willow Brook watershed area is 2,946 acres. 2,343 acres are in Warner, with the remaining 613 acres in Salisbury. This amounts to 6.6% of the total area of the town of Warner. For the purposes of this report, references to the "watershed" shall mean the Warner portion of the Willow Brook watershed including the Children's Brook portion. Children's Brook is the name given to the lower portion of Willow Brook.

#### ***Streams and Ponds***

##### **Findings:**

The Willow Brook watershed contains more than 8 miles of streams. The streams of the watershed provide habitat, fishing, scenic enjoyment and groundwater recharge

The results of any human activities that adversely affect stream water quality, such as agricultural runoff, road salt and unwise forestry practices can potentially affect downstream areas, including the Warner River and its aquifer.

Maintaining shade along the stream corridor is important for clear, well oxygenated stream water. Keeping vegetation intact along stream corridors maintains shade, stabilizes sediments, promotes cool temperatures and helps to filter out pollutants.

The Town zoning ordinance currently requires a building setback of 75 feet from ponds greater than 10 acres, perennial waterways or streams, buildings or storage tanks and the maintenance of at least 50% of the existing natural vegetation within this buffer zone (Article IV, Provision J.). However, the "50% natural vegetation" clause is not specific enough to prevent excessive clearing within the 75 foot buffer zone.

A water quality survey of Willow Brook conducted by the NH Department of Environmental Services in 1997 found elevated levels of sedimentation in the brook, primarily caused by inadequate erosion controls on gravel roads adjacent to the brook.

There is currently no program in place for long-term water quality monitoring in the watershed.

Recommendations:

Board of Selectmen: Ensure landowner compliance with the 75 foot zoning setback.

Board of Selectmen: Take measures to control erosion from gravel road in the proximity of Willow Brook and its tributaries.

Planning Board: Propose an amendment for Town approval to Section J, Article IV, General Provisions of the zoning ordinance to read as follows (Bold text is new):

J. Warner River, bodies of water and waterways: Any lot bordering the Warner River shall have a minimum frontage of 100 feet. All buildings, including storage tanks, shall be set back a minimum of 75 feet from the Warner River, ponds greater than 10 acres and all perennial waterways and streams as shown on standard 7.5 minute USGS quadrangle maps. **In addition, where existing, a natural woodland buffer shall be maintained within 75 feet of the Warner River, all great ponds and perennial streams. Not more than 50 percent of the total number of trees, and not more than 50 percent of the total number of saplings shall be removed for any purpose in a 20 year period. A healthy, well-distributed stand of trees, saplings, shrubs and ground covers and their living, undamaged root systems shall be left in place. Replacement planting with native or naturalized species may be permitted to maintain the 50 percent level.**

In addition to these changes, add two new definitions to Article III, as follows:

AB. "Sapling" means any woody plant which normally grows to a mature height of greater than 20 feet and has a diameter less than 6 inches at a point 4.5 feet above the ground.

AC. "Tree" means any woody plant which normally grows to a mature height of greater than 20 feet and has a diameter of 6 inches or more at a point 4.5 feet above the ground.

Conservation Commission: Inform citizens about the importance of observing the existing 75 foot setback and vegetated buffer zoning restriction.

Conservation Commission: Develop a long term water testing program to monitor stream water quality using N.H.D.E.S. or other model.

Conservation Commission: Promote and actively seek private land conservation in key stream corridor areas, especially along Willow Brook.

## ***Aquifers***

### Findings:

The watershed contains 84 acres of the high-yield Warner River Aquifer, as well as other smaller aquifers. The Warner River Aquifer provides the water for the Town water supply. Other smaller aquifers are used as private water sources.

Human activities at the aquifers or their sources, such as street runoff of salt and automobile fluids or industrial chemical leakage have the potential to adversely affect the portion of the Warner River aquifer in the watershed.

Portions of two Wellhead Protection Zones are located in the watershed, one of which is for the town water supply.

The Town Subdivision Regulations prohibit the inclusion of land in areas necessary for the protection of aquifers and aquifer recharge areas toward the required minimum buildable lot size (Section IV, A., 1., b.).

No comprehensive aquifer protection regulations currently exist in the Warner Zoning Ordinance.

### Recommendations:

Planning Board: Establish aquifer protection overlay zoning districts for all high-yield aquifers in the watershed.

Planning Board: Adopt an Aquifer Protection Ordinance.

## ***Wetlands***

### Findings:

Nearly 140 acres of wetlands have been identified in the Warner portion of the watershed. Wetlands serve several important functions, including water quality maintenance and improvement, wildlife habitat, floodwater storage, ground water recharge/discharge, aesthetics and recreation.

The State of New Hampshire has jurisdiction over any activities that may directly impact a wetland, including dredging, filling, placement of structures and certain discharges. The U.S. Army Corps of Engineers and other agencies may also have jurisdiction over certain wetlands.

Wetlands are unsuitable for building or septic system installation.

Wetlands not categorized as ponds greater than 10 acres or as streams lack protection by any building setback or vegetation buffer in the Warner Zoning Ordinance.

Recommendations:

Planning Board: Amend the zoning ordinance to require a building setback and vegetated buffer of 75 feet from any wetland identified in the Willow Brook Watershed Natural Resource Inventory. This wording could be included in Section J, Article IV of the Zoning Ordinance (see page 33).

Planning Board: Amend Town site plan review and subdivision regulations to require that all wetlands within a proposed impact area be delineated and mapped by a Wetlands Professional as part of the application process.

Conservation Commission: Inform citizens about the importance of maintaining wetland buffers.

Conservation Commission: Encourage and actively seek private land conservation by the use of easements or other methods in key wetland areas, especially in the southern portion of the watershed.

## **BIOLOGICAL RESOURCES**

### ***Wildlife Habitat***

Findings:

A wide range of habitat for wildlife is located in the watershed, with especially high concentrations in the vicinity of Tory Hill Meadow and other wetlands. The watershed is known to support at least 118 species of animals for a portion of their life cycle.

Both game and non-game species of wildlife provide a significant recreational opportunity for residents and visitors, and help to support the local economy.

Fragmentation of open space by road construction and development decreases its value as wildlife habitat, and may extirpate certain species.

Protection of wildlife populations must concentrate on the protection of wildlife habitat to be effective. Wildlife does not recognize property or political boundaries when utilizing habitat.

Recommendations:

Conservation Commission: Promote and actively seek private land conservation in key wildlife habitat areas, including the Tory Hill Meadow area, softwood-dominated forestlands and stream corridors.

Conservation Commission: Inform citizens of the value and diversity of wildlife habitat in the watershed.

Conservation Commission: Encourage the enhancement or restoration of wildlife habitat by landowners.

### ***Forests***

#### Findings:

Forested lands constitute more than 82% of the land area of the watershed. Forests provide wildlife habitat, timber and firewood, water retention, erosion control, temperature control and scenic beauty.

Erosion of soils exposed by construction or careless timber harvesting can cause the loss of nutrients essential for productive forest growth.

#### Recommendations:

Conservation Commission: Inform and encourage landowners to use sustainable forest management practices on their forest lands, as outlined in Good Forestry in the Granite State.

Conservation Commission: Promote the benefits to landowners of developing and following a forest management plan, and of using the services of a qualified, certified forester.

## **PHYSICAL RESOURCES AND FEATURES**

### ***Soils***

#### Findings:

The erosion of soils diminish the productivity of forest and agricultural lands, and degrade surface water quality.

Soils with limitations for land use due to hydrology, including poorly drained and very poorly drained soils, floodplain soils and organic soils account for 8.3% of the watershed area.

The Town Subdivision Regulations encourage the use of practices which conserve soil during construction.

The Town Subdivision Regulations prohibit the inclusion of lands with ledge which is exposed or lying within 4 feet of the soil surface, or land covered by any soils listed by the NH Water Division as Groups 5 and 6 (hydric soils) toward the required minimum buildable lot size (Section IV, Provision A., 1., c & e..).

**Recommendations:**

Conservation Commission: Inform and encourage landowners to use practices which conserve soils by minimizing erosion and preventing contamination from the dumping or leaking of hazardous materials.

***Floodplains*****Findings:**

87 acres of floodplain areas have been mapped within the watershed. 84 of these acres are in the Warner River floodplain, and are classified zone □A□ as most likely to flood. Floodplains provide unique plant and wildlife habitat, as well as scenic enjoyment and recreation.

The Town of Warner recently adopted a Floodplain Development Ordinance, which addresses construction standards, water and sewer systems and development standards for construction in flood-prone areas as they appear on Town maps. This ordinance applies to portions of the Willow Brook watershed which are designated flood hazard areas, most notably the 87 acres in Zone “A” at the confluence with the Warner River.

The Town Subdivision Regulations prohibit the inclusion of lands designated as Flood Plain toward the required minimum buildable lot size (Section IV, Provision A., 1., a.).

**Recommendations:**

Conservation Commission: Familiarize landowners with the specific areas which are designated as flood plains on Town maps, especially those areas in high-density and high-use parts of town, such as the downtown area.

Conservation Commission: Inform landowners of the practical and ecological reasons for avoiding development and certain incompatible uses in flood plains.

***Slopes*****Findings:**

The watershed landscape has a variable topography with 3.8% of the area exceeding a 25% grade slope. Areas with steep slopes, especially those over 25%, pose problems for forest management, and are unsuitable for road or building construction, due to their inaccessibility to equipment the high potential for soil erosion.

The Town subdivision regulations prohibit the inclusion of land with slopes in excess of 25% toward the required minimum buildable lot size (Section IV, Provision A., 1., c.).

Recommendations:

Conservation Commission: Inform landowners of the practical, legal and ecological reasons for avoiding construction and road building on slopes greater than 25% grade.

## **PRIORITY AREAS FOR CONSERVATION**

The Natural Resource Inventory identified four areas within the watershed which were judged to be in special need of conservation, and were thus designated as Priority Areas.

***Tory Hill Meadow Area:*** (including wetlands and 300 ft. surrounding upland border) High diversity of wetland types; less common wetland types; vernal pools; Heron rookery and other wildlife habitat; within floodplain area; soils with limitations; high scenic value.

***Willow Brook above Tory Hill Meadow:*** (including an upland border extending 100 ft. from each stream bank) Diverse wildlife and fish habitat; limiting soils; tributary to Warner River and Tory Hill Meadow.

***Southeast Wetland Complex:*** (including an upland border extending 100 ft. from each wetland boundary) Forested and wet meadow wetland; high visibility and proximity to roadway; direct connection to Willow Brook; soils with limitations.

***Southwest Wetland Complex:*** (including an upland border extending 100 ft. from each wetland boundary) Unusual suite of forested wetlands; special wildlife habitat; partially within floodplain area.

Recommendations:

The Conservation Commission should focus its efforts to:

Identify land parcels within the Priority Areas which are key to their protection.

Approach landowners in the Priority Areas and encourage and assist them in preparing management plans for their properties which would protect the sensitive resources there.

Identify an existing demonstration project which has applied sustainable land management practices to a property. Introduce Priority Area landowners to the Project and encourage them to adopt sustainable practices on their own land.

Determine if all eligible parcels in the Priority Areas are under Current Use assessment. Encourage the owners of any parcels that have not been so placed to consider reassessment.

Initiate a program to inform landowners in the Priority Areas of the benefits and techniques of formal land protection.

Work with landowners in the Priority Areas for the donation or bargain sale of property or conservation easements to protect these areas.

**Other Areas of Concern:** Uncommon Forest Types

These two relatively uncommon forest types which have special value for wildlife habitat and/or resource protection were also identified by the Natural Resource Inventory.

***Mature Mixed Hardwood Forest Stands:*** Uncommon forest type for watershed; high wildlife value, including black bear and wild turkey

***Hemlock-dominated Forest Stands:*** Relatively uncommon forest type for watershed; high value as wildlife habitat; maintains shade, coolness and oxygenation of streams.

Recommendations:

The Conservation Commission should focus its efforts to:

Identify landowners whose property supports these forest types and inform them of the special resource on their property.

Provide information to the landowners of the importance of these resources and of ways that they can help to preserve them, such as the use of sustainable forestry practices or granting of conservation easements.

**CONCLUSION**

The Willow Brook Watershed Project has been the most comprehensive study of natural resources in the Town's history. It was conceived as a pilot, the design of which could be applied to the other watersheds in Warner. Several of the conservation recommendations in this report should be applicable not only to the Willow Brook watershed, but to other areas throughout the town as well.

This report can also serve as an educational resource. The results may be of interest to landowners in the area, or to students of conservation. The report findings, as well as the numerous maps will be made available to the public for their use.

The results of this Conservation Plan will be considered for inclusion in the updated Master Plan for the Town of Warner. As a planning tool the report will play a central part in shaping the future of natural resource conservation in Warner.

## **APPENDIX B**

### Summary of Willow Brook Watershed Project **Willow Brook Watershed Project** Natural Resource Inventory and Conservation Plan