I. INTRODUCTION

What is a Master Plan?

One of the most vital factors for orderly community growth whether it be rural county, suburban town, urban city, metropolitan or regional area, is master planning.

The development of a Master Plan is the process whereby a community seeks to understand where it is today, its assets and its problems, where it is going and extent of its future needs. It then develops a program, which is sufficiently comprehensive to seek solutions and to provide for future needs through the utilization of all its assets, human, nature and material.

There are certain things that must be understood about a Master Plan in order to make it fit properly into the municipal scheme of things. First, perhaps, we should list what a Master Plan is NOT -

A Master Plan is not a legally binding document like regulations (although it may suggest certain regulations be adopted as a means of carrying out the plan).

A Master Plan is not a straitjacket that prescribes a rigid and specific formula for achieving municipal reforms.

A Master Plan is not a zoning ordinance or a zoning map. Zoning is merely one of the tools or methods by which certain aspects of the Master Plan can be implemented (such as land use or population density).

A Master Plan, most of all, is not a panacea for all municipal problems. It is only a guide or tool which has been designed to be used by municipal officials in addressing these problems. If the plan is not understood by the community, or if it is not properly used, it is worthless.

Since we have considered what the Master Plan is NOT, we should now consider what it IS -

The Master Plan is a collection of maps, studies and reports which, together, attempt to visualize the long-range growth of a community. It will consider past trends and future potential, major problems which seek solution, and directions or objectives that can be developed as guides to new growth.

The terms comprehensive plan, master plan and town plan mean basically the same thing, and we often use them interchangeably.

The Master Plan, therefore, is a framework or guide for the community as a whole to use in shaping its future course over the next 10 to 20 years.

To serve over an extended period of time, the Master Plan must be flexible. It must permit modification and adjustment to all of its parts without unduly damaging its basic structure.

The Master Plan must be, as its name implies, far-reaching. It must deal with all aspects of the community's growth, not just one small area. What is in the best interest of the community and region as a whole, not just one property owner or one interest group?

Thornton's Master Plan includes the facts and information about what exists in Thornton now, existing land use, housing, population, natural resources, etc. Also discussed are past trends and future predictions. This information together with results of an extensive opinion survey was used to help the Thornton Planning Board develop the recommendations for the goals and objectives, which establish Thornton's future direction. It is hoped that by meeting these goals and objectives, future problems in Thornton can be minimized.

Implementation of Plan

The Master Plan occurs through the planning board in public hearing according to RSA 674:1

The implementation of the objectives of the Master Plan requires an understanding of these objectives by the various boards and departments of Thornton and by the residents and landowners of the Town.

To the Select Board falls the ultimate responsibility of governing the Town according to Federal, State and local laws, and the Zoning Ordinance adopted by the citizens. The local statutes are supported by regulations promulgated by the Select Board, Planning Board, Zoning Board of Appeals, etc., after public hearings. However, the personnel of the Select Board do not have the time necessary to determine town wide compliance with these laws/regulations. To a large extent it must therefore rest upon an interested and aware citizenry to ensure that they comply with these regulations and report any major non-compliance(s) observed to the town authorities. A town wide attitude of self-regulation would go a long way to improving Thornton and removing some of the irritating issues (such as junk cars) noted in our recent survey.

In the near term this will have to suffice as the position of Compliance Officer is vacant. The Select Board and Planning Board will provide direction and guidance to steer the Town in the direction envisioned in this Master Plan.

II. A BRIEF HISTORY

Thornton is a triangularly shaped town in the eastern part of Grafton County, bounded northeast by Livermore, Waterville and a small part of the county line, north and west by Lincoln, Woodstock and Ellsworth, and south by Campton and Sandwich.

The surface of the town is rough and uneven. In some places there are small mountains. There is good farming land. The soil is deep and fertile and there is good interval land along the rivers.

The Pemigewasset River flows through nearly the center of the town, north to south. The stream has several tributaries, Mill Brook from the east, Bagley Brook from the west, and Mad River (with several tributaries of its own) passes through the southeastern part of town to unite with the Pemigewasset in Campton.

The township was granted to Matthew Thornton and others in seventy-three shares on July 6, 1763 to contain 23,000 acres. It was named in honor of Mr. Thornton, who later became a member of the Continental Congress and a signer of the Declaration of Independence. No settlements were attempted under this grant and a new charter was issued on October 21, 1768, including an additional 17,071 acres. The total was now to be divided into ninety shares.

The settlement of the town began with Benjamin Hoit in 1770. Benjamin was married to a sister of Abel Willey from nearby Campton. Their son, Benjamin, Jr. was the first born child in town. Three years later the town's population grew to seventy-four.

By 1783, the population had increased to 280. In 1783, the General Court was petitioned to grant the township incorporation privileges. The petition, dated May 31, 1781, was signed by Abel Willey, Ezekiel Elliot, William Varnum, John Brown, Moody Cook, John Fletcher, Edmund Elliot, Richard Patee, Alexander Lang, Sam C. Fuller, James Rankin and William Webster. In answer to the petition, the town was incorporated November 24, 1763.

From this time, the population gradually increased. By 1800, there were 535 inhabitants. In 1880, Thornton had a population of 774. In 1885, the town had ten school districts with ten common schools valued at $3000. There were 184 children attending. Eleven of these children were pursuing higher grades. There were two male and twelve female teachers.

There is no central village in the town but it is divided into numerous areas known as Thornton Gore, Knocker's Hole, Millbrook, Thornton Center, Ghost Hollow, Groggy Harbor, Mad River, Goose Hollow, Chickenboro, Sandwich Notch and West Thornton.

James Rankin and his wife Margaret, from Scotland, were among some twelve persons to establish the first church in Thornton. Mr. Rankin was made an Elder of the church. Rev. Experience Estabrook was ordained the first minister in 1780 and Rev. Noah Worcester followed in 1787.

In 1784, the town voted to build the first meeting house. Previous meetings were held on the east side of the river in a log schoolhouse or someone's barn. After several meetings and changes in the plans, it was decided to build across the road from the current town house. It was completed in 1789. Both religious and business meetings were held here.

In 1823, the name "Old Meeting House" was changed to Town Hall and later to Town House. Around 1860 the building was moved across the road and added on to, where it stands today as the "Thornton Town House."

In 1820, the United Congregational Society was founded and they built a church across the road from the present Central School. There were as many as 75 parishioners attending. In 1866 it was torn down. The present Methodist Church was built in 1866 as the West Thornton Union Church, replacing a chapel built on the same location in 1857.

The first road in Thornton ran along the east side of the Pemigewasset River, now known as Route 175. By 1786 roads were built on both sides of the river from Campton to Woodstock. By the early 1790's Millbrook Road and (Upper) Mad River Road came into being. By 1796 the Sandwich Notch Road opened for local and commercial traffic to the Seacoast.

It was around 1800 that Thornton Gore started to settle. These families came from the Merrimack Valley or Canaan, and shared common bonds of family and/or the Free Will Baptist religion.

Most areas of the town were hillside farming communities – Millbrook, Mad River, and Thornton Gore for examples. Farming, logging, saw mills and grist mills were the primary occupations at the time. Dairy products, wool, fruit (apples especially), vegetables and maple sugar were produced and used at home or sold commercially.

This was a way of life until after the Civil War. Young soldiers went to war and did not come home to work the family farms. Instead they chose to live in the cities to the south or head west to another "land of opportunity". As the farmers aged and could no longer carry on, their farms were sold to neighbors wanting to enlarge their holdings, or they were sold to the NH Land Company. Logging became a thriving business for this giant company. Log drives were held each spring on the Pemigewasset River with the landing being near the old Robbins Nest Bridge. The logs were put in there and sent down river to the Merrimack River, eventually reaching big mills in the Lawrence, Massachusetts area.

Some of the larger farm homes took in summer boarders – and thus started the so called "tourist trade." With the expansion of the automobile in the 1930's, small sets of cabins, known as motor courts, were built along Route 3. Nearly all of them had a tea room where light sandwiches, pastries, tea and coffee were available. Restaurants and gas stations popped up. Times were pretty good for a while. Then, in the mid-1960's Interstate 93 came into being. Route 3 was bypassed and the cabin and restaurant business went the way of the farms. Real estate speculators started buying up large tracts of land and major development of homes and condominiums began. Because of the proximity to the Interstate and the numerous ski areas these speculators did quite well. Many of the older homes were purchased and restored, as well.

Many of Thornton's newest residents have come to seek employment opportunities created by the ski and recreation industries.

III. LOCATION

The Town of Thornton is located in the foothills of the White Mountains in the Pemigewasset River Valley approximately 50 miles north of Concord. The town is bisected by Route 3 and Interstate 93. The location of these major roadways allows for easy commuting to the major population centers of New Hampshire as well as the Northeastern United States.

The Thornton Location Map (See Figure 1) illustrates the proximity of the major population centers Boston, New York, and Montreal and their travel times to Thornton. With the pressure to develop extending from the south and the emergence of Northern New Hampshire as a place to live, work, or vacation, Thornton becomes even more attractive to residential development. Its location near major ski areas and the White Mountain National Forest contributes to tourism and the second home market.

IV. A VISION FOR THORNTON

A Master Plan requirement is for: "A vision section that serves to direct other sections of the Plan. This section shall contain a set of statements, which articulate the desires of the citizens affected by the Master Plan, not only for their locality but also for the region and the whole State of New Hampshire. It shall contain a set of guiding principles and priorities to implement that vision."

Based on 553 responses (about 28%) to the Master Plan update questionnaire mailed to 1973 residents and land owners in the summer of 2009, several desires are overwhelmingly apparent. (The full results of the Master Plan questionnaire responses are included in Appendix 3 to this Plan.)

First and foremost 96% of the responses to the question show that Town growth should be continued at the present rate or slower and the rural and scenic character of the Town should be preserved.

Nearly all the other desires of the respondents derive from the above vision although there are several seeming contradictions, which can be resolved by looking at the region rather than just Thornton alone. These desires are addressed in the following sections. Although commercial/industrial zones were established nearly forty years ago, residential house lots, agriculture and timber are the primary usage in those zones. Most job opportunities are provided in the surrounding towns of Plymouth, Campton, Waterville Valley and Lincoln.

Given that the tax structure in New Hampshire is based on property taxes, the second home market continues to be the best way to contain taxes. Taxes were highlighted as the most significant problem and second homes do not introduce additional strain on the school system which represents 70% of our tax rate.

Second homes in the "cluster development" concept help to preserve open space while serving the housing market.

Limiting excavation operation to those in existences or to commercial/industrial areas is a high priority of the respondents.

Rivers and streams within the Town should be protected to avoid contaminants from entering as well as maintaining the rural character of the land in close proximity to these rivers and streams. There also appears to be great interest in protecting other land of special interest such as wetlands or forests.

There are many opportunities for outdoor recreation in Thornton and nearby towns but little interest in devoting additional money to developing other formal recreational venues. The Thornton Central School acts as our community center and is used for social, cultural and recreational activities.

Finally, respondents have indicated a strong desire to see Thornton improve the image that we present by beautifying the landscaping around the Town Office and ridding the town of 'junk cars' (in accordance with RSA 236:111-129 and the Thornton Zoning Ordinance).

Acting on this strong desire from our residents, the Thornton Beautification Committee has been established. Much of the land between Town Offices and Route 3 is under the jurisdiction of the State. The committee contacted the Department of Transportation as well as the Grafton County Master Gardener and all indication is that they will work to clean up and dress up this area. The committee also commissioned a local sign company which made a marquee type sign that displays meeting dates. Plantings will enhance the area as well.

V. LAND USE

This section translates the vision statements into physical terms. Based on a study of population, economic activity, and natural, historic, and cultural resources, it will show existing conditions and the proposed location and extent of future land use.

Thornton land use is governed to a large extent by the Zoning Ordinance adopted over 40 years ago and the fact that nearly 50% of our land mass is federally controlled. The Ordinance has been modified only slightly in the interim such as restricting sand pits to the industrial and commercial zones and permitting wind generation of electricity in all zones.

As mentioned above nearly one half of the land in Thornton is included within the White Mountain National Forest. Most of the land in the Northeast and Southwest parts of town is included in the designated Forest boundaries. The remaining land is zoned as shown on the Zoning Districts Map (See Figure 2). Current land use does not completely follow the designated uses specified in the Zoning Ordinance due to "grandfathered" use and exceptions, both approved and "de facto". Several of these uses are along Routes 49 and 175.

The commercial and industrial zones are at present devoted primarily to agricultural land and residences with a few commercial uses. This trend would, in large measure, appear to continue into the foreseeable future (particularly with the current lull in economic

vitality) as Thornton has developed into a bedroom community. In this regard "cluster" housing such as Link Side at Owl's Nest or what is called a "Village Plan" which was added to RSA 674:21 by the 2002 Session of the Legislature and adopted by Thornton in 2004. This should be encouraged to conserve open space in lieu of residential sprawl realizing that the requirement of one acre is still in force. Thus the "open land" is set aside through subdivision and deed restrictions.

The current land use in Thornton is provided in Table I.

TABLE I

Thornton's land area = 32,520 acres

USE	ACREAGE	PERCENT
WMNF	15403	47%
Current use	8172	25%
Industrial	215	1%
Public/Semi public	30	0%
Residential	2000	6%
Commercial	300	1%
State and River Basin	600	2%
Unimproved	5800	18%

This allocation has not changed significantly from the previous Master Plan and is not expected to deviate much in the next decade. More on existing land use is included in Section 9.

VI. NATURAL RESOURCES

Thornton's basic natural resources are described in this section. They include climate, topography, geology, soils, surface water, groundwater, vegetation, and fish and wildlife.

The type and distribution of Thornton's natural resources influences the location and type of potential development. The information provided in this section will allow an understanding of Thornton's physical components. This knowledge can be used to determine compatible uses for certain land areas. It is evident that some areas are better suited for a particular use than others.

The understanding of natural resources such as topography, geology, wetlands, and flood plains as an indicator of potential conflicts for particular uses is critical for proper development. Roadway, residential, and industrial locations should be identified for desirable use such as recreation or preservation.

A. CLIMATE

Climate is the starting point for the description of Thornton's natural environment. Climatic conditions have a long-term effect on all other natural resources. By creating certain ranges of temperature, precipitation and humidity, climate controls physical habitats and thus the kinds of plant and animal life that can survive in any perspective since little data is available for the town itself.

Data was collected from various sources where Thornton was part of, or close to, the research area. Although the climate in Thornton varies with altitude, it is classified as humid continental with short cool summers and long cold winters. The climate can be characterized by the changeability of the weather, a large range in both daily and annual temperatures and equable distribution of precipitation.

Thornton lies in the heart of the middle latitudes and the majority of the air masses flow from west to east. During the winter months there are usually northwesterlies and during the summer months the air generally flows from the southwest bringing warm maritime air masses to the region.

TABLE 2
TEMPERATURE (°F)
(Averages for 1981-2010)

Month	Daily Max.	Daily Min.	Monthly Mean
January	27.9	5.8	16.8
February	32.8	7.9	20.4
March	41.0	17.5	29.3
April	54.6	29.4	42.0
May	66.7	38.8	52.8
June	74.9	48.7	61.8
July	79.6	53.7	66.7
August	78.5	51.7	65.1
September	70.1	43.6	56.8
October	57.7	32.6	45.1
November	45.0	25.1	35.1
December	33.3	13.7	23.5
Yearly Average	55.2	30.7	43.0

The growing season in Thornton can be calculated from the probability of the last spring frost to the first fall frost.

The growing season in Thornton is approximately 120 days; however, this can vary greatly from year to year.

The annual precipitation in Thornton is approximately 44 inches. Average annual snowfall is approximately 70 inches. The following tables indicate the area has a small variation in monthly precipitation rates while snowfall and melt make spring a particularly wet time of the year. But again, one has to remember that the weather is unpredictable and a drought could happen at any time.

TABLE 3

PRECIPATION (Averages for 1981-2010)		**SNOWFALL (Averages for 1981-2010)**	
Month	**Mean**	**Month**	**Mean**
January	3.24	January	19.9
February	3.00	February	15.3
March	3.30	March	12.9
April	3.35	April	3.4
May	3.81	May	0.0
June	4.15	June	0.0
July	4.11	July	0.0
August	4.09	August	0.0
September	3.35	September	0.0
October	4.31	October	.1
November	4.05	November	3.20
December	3.57	December	14.9
Yearly Average	**44.33**	**Yearly Average**	**69.7**

B. GEOLOGY

Geology takes a look at the materials, which compose the earth, and the processes by which these materials are formed and transformed. Geology also attempts to reconstruct geologic events to understand the historical evolution of a particular area.

The three dimensional nature of geology in terms of both materials and processes has important implications for land use. There are four major ways that the understanding of geology benefits planning:

1. The identification of valuable resources, such as construction materials.

2. The evaluation of natural and man-induced hazards such as subsidence, landslides, earthquakes, flooding, erosion, and groundwater pollution.

3. The evaluation of the suitability of a site for construction (including a septic system).

4. The evaluation of groundwater resources.

Understanding the particular geologic processes and features of Thornton permits some prediction of the effects of any proposed action.

The geologic substrate, outcrops of bedrock and stony till in the Thornton area was exposed some 12,000 - 13,000 years ago when the glacial ice sheet retreated northward. Bedrock is derived from highly metamorphosed sedimentary rocks of the Littleton formation and the granite rocks of the Kinsman formation.

The Littleton formation, which occupies approximately one third of the town, is metamorphic rock as indicated on the Simplified Bedrock Geologic Map (See Figure 3). Metamorphic rock results from changes in preexisting igneous, sedimentary or other metamorphic rocks brought about by high temperatures and pressures and chemical activity deep within the earth. The Littleton formation is made up of schist's (mica-quartz and mica-schist) and quartzites. Originally these were shale and sandstone but over a period of some 500 million years were uplifted and horizontally compressed, becoming schist and quartzite. Almost 400 million years ago, these materials started out as layers of mud and sand deposited in a sea; continual deposition led to the compression of these sediments into shale and sandstone.

The Kinsman formation is made up of granitic rock. This is igneous rock formed from molten rock that originated at great depths beneath the surface and has been pushed upward. If the magma solidifies before reaching the surface, the formation is termed plutonic or intrusive; molten rock that reaches the surface and then cools is called volcanic or extrusive. The Kinsman formation is an example of the

first kind and intruded into the Littleton formation about 330-340 million years ago. The formation is a white to gray, coarse to medium-grained granitic rock with quartz, mica and feldspar crystals commonly two to three inches long.

C. SURFACE GEOLOGY

While some of the effects of glaciation may be significant, the basic topography of a mountainous area like Thornton looks much the same today as it did before the coming of the ice. The most substantial alteration to the landscape occurred in the river valleys where meltwater enlarged the river channels, and sand and gravel, brought down from the north, were deposited. The very extensive deposition of till determined the topography of Thornton in the river valleys. The last era of glaciation, the Pleistocene, is responsible for the surficial deposits, the river valleys, and many bogs and lakes.

Till is material that has been deposited directly by the glacier. Rock fragments and soil that accumulated within the ice were laid down in very compressed form as the glacier retreated.

The material was unsorted and this accounts for a significant characteristic; variability of particle size type of original rock, and density. The thickness of till also varies depending upon the position in the landscape as indicated on the Schematic of Glacial Soil Types (See Figure 4). The variability of the till deposits results in considerable variation in soil and groundwater characteristics.

Where meltwater of the retreating glacier was the agent of deposition, the material was sorted out to a certain extent according to particle size. The stratified sand, silt and gravel deposit is a type of glacial deposit known as outwash. Primarily these deposits are located in river and stream valleys and in flatland areas. More recent stream deposits also have produced sand and silt layers. Sand and gravel deposits are found in kame terraces, eskers, valley trains, crevasse fillings, and small outwash plains. Most of these deposits in Thornton occur along the Pemigewassett River Valley.

The sand and gravel deposits are valuable in two respects:

1) as an economic resource for the local construction industry and
2) as a groundwater source for private and municipal water supplies and for maintenance of the river quality.

Future activities should be reviewed to evaluate their impact on the sand and gravel deposits.

D. TOPOGRAPHY

The mountains that flank Thornton and the Pemigewassett River Valley are dominant topographic features that help give a sense of place and belonging to the Town's residents. Topography also affects several natural processes, such as erosion and drainage, and thus imposes limitations on human activities. Generally, land that is fairly level is regarded as desirable for development, though a modest slope can assure proper drainage. Good exposure to the sun and natural protection from cold winter winds can reduce a site's energy demands.

Thornton ranges in elevation from 585 feet above sea level on the Pemi to 2609 feet on Fisher Mountain on the Thornton/Waterville townline and about the same altitude on the West flank of Dickey Mountain also on the Waterville line in the White Mountain National Forest as noted on the Natural Resource Map (Figure 5). Most of the higher elevations in the Town are:

Hix Mountain	2198 feet
Cone Mountain	2132 feet
Wanosha Mountain	1777 feet
Blake Mountain	1561 feet

Most of the private land in town lies between the elevations of 600 feet and 1300 feet. The lower elevations generally follow the Pemi and Mad River Valleys.

The majority of the development is along the major highways skirting the Pemi and Mad River Valleys, Routes 3, 175, and 49 except for those areas protected as wetlands.

E. SOIL

Soil has different meanings to different people. Farmers regard soil as the medium in which plants grow. Prospective homeowners usually regard soil as a place to build a house and grow a lawn. Engineers have traditionally considered soil as all the unconsolidated material overlying bedrock.

Soil is the layer of the earth's surface (normally three to six feet deep) which supports plants, animals and people. It contains minerals, organic matter and living organisms. With the interaction of time, climate, parent material, topography and organisms, soil has formed. In recent geologic time, man has also played a role in creating and modifying soils.

Physical, chemical and biological properties differ from one soil to another. There are over 100 different soils in New Hampshire; over 1,000 in the Northeast.

Evaluation of soils is done according to particle size and shape, moisture, color, compactness and various other characteristics. This evaluation leads to the

further classification of soils based on texture, structure, drainage, permeability, erodibility, etc. Characteristics of the soil present different conditions (favorable and unfavorable) for the support of various land uses. Any activities upon soil by humans should be carried out in such a fashion as to avoid undue pollution or soil erosion.

1) SOIL SURVEY

Information for Thornton soils was initially gathered by the United States Department of Agriculture (USDA) soil scientists. They took samples to depths of a least 40 inches and examined the soil for various characteristics, among which were color, structure and texture. From this information, lines were placed on aerial photographs delineating the boundaries of different soils. Symbols identifying each soil were placed within the mapping units along with a slope designation. It is important to realize that changes from one soil to another are gradual rather than abrupt. Therefore, the border outlining a soil represents a transition zone rather than absolute exact soil boundaries. On-site examination is needed to determine a specific soil boundary/zone. The original aerial photographs of Thornton used for mapping purposes are on file at the Soil Conservation Office in Woodsville, NH.

2) SOIL DEVELOPMENT POTENTIAL

In December of 1985 the Grafton County Conservation District published a Soils Potential Ratings Report to assist local planners, developers, engineers and others in their planning activities. This report is a collection of data on soil performance for septic tank systems, roadways and dwellings and other aspects for low density development (single-family units). The report is not included in the Master Plan, but is available through the Grafton County Conservation District Office in Woodsville, NH or online at www.graftonccd.org.

The purpose of this report is as an indicator of the soils potential for low density development. The ratings are useful for a better understanding of problems that may be encountered during and after the construction phases of development.

The Development Capability Map for Thornton (See Figure 6) prepared by the North Country Council is based on this report and illustrates the composite rating for each soil found in Thornton. This map was formed by locating the individual soil types on the map and categorizing each one according to the soil type's potential rating system. The composite rating is an indicator of the soil's overall development potential, but the report should be reviewed in detail for any specific planned development.

F. WATER RESOURCES

1) WATER CYCLE

Water moves in a continuous, interdependent manner known as the water cycle. All water is involved in this cyclic movement which will continue indefinitely. Water vapor condenses in the atmosphere and falls to earth as precipitation.

Once the water reaches the ground, it can be categorized in one of the three following ways:

- Runoff - flows over the surface.
- Groundwater - percolation through the soil with underground flow.
- Surface Storage - collection in depressions in the land to form lakes and ponds.

In any of these categories, heat from the sun can evaporate water and return it to the atmosphere to start the cycle once more as shown schematically in the Water Cycle Diagram (See Figure 7). Plants also play a role by intercepting precipitation as it falls, absorbing water from the soil and losing water in the form of water vapor known as transpiration. Loss of water by evaporation from lakes, ponds, streams, soils and vegetation is collectively called evapotranspiration.

2) SURFACE WATER

a) RIVERS/STREAMS

Thornton is part of the Pemigewasset River Basin. The Pemigewasset River runs southerly through Thornton from headwaters at Profile Lake in Franconia Notch State Park. A major tributary in Thornton is the Mad River, which runs southwesterly generally along the Thornton/Campton town line and joins the Pemigewasset River in the Town of Campton.

Numerous other streams flow into Mad River and Pemigewasset River to drain the Thornton landmass. Many of these are unnamed. Among the named streams are: Hubbard Brook, Mill Brook, Hackett Brook, Johnson Brook, Bagley Brook, Eastman Brook, Talford Brook, Lee Brook, Smarts Brook and Chickenboro Brook.

Since the Pemigewasset River flows through many communities and the watershed comprises nearly 1000 square miles, it is an important asset for the region and entire state. Its protection in terms of water quality; scenic beauty and wildlife habitat will influence the quality of life and the economic vitality of the region into the foreseeable future.

In 1988 the New Hampshire Legislature established the New Hampshire Rivers Management and Protection Program (RSA 483). Portions of the Pemigewasset River were included in this Program in 1991 and the Pemigewasset River Advisory Committee (PRLAC) was created and charged with developing a management plan for the section of the Pemigewassett River from the northernmost Thornton Town line to its confluence with the Winnipesaukee River in Franklin. This Plan entitled the "Pemigewasset River Corridor Management Plan" discusses numerous problems, both real and potential, and provides some recommendations for protection of the river corridor without significantly infringing on the rights of the riparian landowners. This plan is hereby included in our master plan by reference.

b) FLOOD/FLOOD HAZARD

Floods are normal occurrences in nature. During regular stream flow, water runs in the channel, but when runoff is high, water level increases and rises over the banks. This water will flow onto the floodplain where the energy of the water can be dissipated through its greater surface contact with vegetation and other natural floodplain features. Floodwaters frequently damage buildings which are located on the floodplain.

Dam and levee construction as regulated by RSA 483:9-aa are measures taken to protect structures susceptible to flood damage, or at least keep damage to a minimum. We now realize that there are significant detrimental by-products of both with dams causing unnatural flow regimes (and associated problems), and levees constraining the breadth of the river which serves to retard the river's use of the floodplain to dissipate energy. The result is greater erosional damage to downstream property owners, and a channel that tends to wander. Land use regulations can prevent flood damage by keeping damageable property away from flood hazard areas and by protecting the important functions of the floodplain by preserving undisturbed vegetative cover.

The National Flood Insurance Program has been promoted by the Federal Government. This program requires that towns regulate construction in areas of flood hazard in order to qualify for flood insurance sales. If a community does not join in the program, all

property owners in town are ineligible for flood insurance. Thornton entered the program in the early 70's and the requirement imposed by this program is incorporated into the Thornton Zoning Ordinance Article XIV.

Most of the immediate areas along the Pemigewasset River are in a flood hazard area. This was most recently demonstrated by the 1987 spring floods, which were classified as 25-year floods. Area along the Mad River is also in flood hazard zones as indicated on the Flood Hazard Map (See Figure 8). Some other flooding may occur in isolated wetlands or streams but is minimal compared to the Pemi areas.

c) WETLANDS

A wetland is an area characterized by little or no slope, poor drainage and standing water during at least part of the year with water tolerant vegetation present. Wetlands may also be thought of as a transition zone between dry land and open water. The following general functions are performed by wetlands:

i. floodwater storage and peak flow reduction
ii. biological and chemical filtering
iii. settling area for sediments
source of food, shelter, breeding and nesting sites for wildlife -groundwater recharge
v. home to unique and valuable plant and animal life
vi. recreational and educational resource

Though these are important functions, a particular wetland's value depends on its location, size, vegetation, and various other characteristics.

Drainage and filling in of wetlands are major causes of concern. This will damage a wetland's ability to perform the aforementioned functions.

Excessive nutrient loading in upstream locations can result in an acceleration of the wetland's natural aging process (eutrophication). In later stages, algae and weeds can deplete oxygen levels in the water resulting in fish kill.

Wetlands are normally defined in one of two ways. They may be defined in terms of vegetation, since vegetation growing in a wetland is usually distinct from vegetation on non-wetland areas. A second way to define wetlands is through soil evaluation since wet area soils differ from dry area soils.

Wetlands are identified on the wetlands map and consist of poorly and very poorly drained soils. These areas in town are generally associated with surface waters of the land.

Wetlands in Thornton have not been inventoried or studied. The best information available is the drainage classifications of soils by the Soil Conservation Service. This information is used to delineate wetlands on the Wetlands, Surface and Groundwater Map (See Figure 9).

d) GROUNDWATER

Groundwater occupies the spaces between soil particles and rock fragments. The upper level of the saturated zone is known as the water table. Surficial glacial deposits and bedrock fractures zones in New Hampshire are tapped for groundwater supplies.

A groundwater aquifer is a geologic formation, which transmits water and contains sufficient amounts to be extracted by wells. Physical characteristics of an aquifer determine the rate of water flow and the volume held. An aquifer recharge area is an area on the surface of the land through which rainfall and runoff infiltrate to replenish an aquifer. A recharge area does not necessarily lie directly above the aquifer it supplies; it may be close by or at a distance. Geology, slope, soil, vegetation, and land use affect the ability of surface areas to recharge aquifers.

A United States Geological Survey (USGS) Investigation contains general information regarding groundwater and aquifers in Thornton. The publication is the "Availability of Groundwater in the Pemigewasset and Winnipesaukee River Basins, Central New Hampshire" by John E Cotton. The investigation's accompanying USGS maps, at a scale of 1:250,000 delineate approximate boundaries of high, medium and low potential yield aquifers.

Aquifers shown on the USGS maps generally coincide with areas of sand and gravel deposits. These deposit locations can be seen on the Wetlands, Surface and Groundwater Map (See Figure 9).

Areas of high potential yield are located all along the Pemigewasset River in Thornton. These areas are inferred to be underlain by medium to very coarse sand or sand and gravel with sufficient saturated thickness to have high potential to yield water. Included are areas with fine-grained surficial deposits, which are inferred to be underlain by medium to very course sand and gravel. Wells located by systematic groundwater exploration within these areas should yield sufficient quantities of water to

meet or augment municipal and industrial requirements. Where deposits are thinner wells would be less productive along the margins of these areas.

In addition to producing a source of water for private and community use, aquifers also aid in maintaining water levels. They absorb water during periods of high flow and release it gradually during dry times.

Aquifers, as valuable water supplies, do face potential problems. Septic system failure can result in untreated effluent being carried via groundwater into nearby aquifers, thus polluting them. High bacterial counts in water from deep wells may be an indicator of this problem. Contamination can also occur from road salting, solid waste disposal, agricultural practices, outside storage of chemicals, and pesticide use.

Aquifers are also in possible danger of depletion. Increased development can place excessive demand on aquifers thereby depleting the water reserves. The speed and amount of run-off increases when development increases, because this water is blocked from entering the soil. Stream and drainage containment in pipes and culverts also reduce groundwater recharge.

While the majority of homes rely on relatively shallow wells into gravel aquifers, as development increases, more and more homes rely on deep wells drilled hundreds of feet into bedrock to extract water from fracture zones.

Presently, the Town of Thornton's residents rely on groundwater as their main supply of potable water. The protection of the town's aquifers is of the utmost importance.

Future water supplies must be protected now or costly alternatives will become a reality in the immediate future.
Design and location of septic systems and domestic wells are regulated by State and local controls.

G. DRINKING WATER PROTECTION

Thornton does not have a town wide public water system and is unlikely to have one in the foreseeable future due to many factors, among them geology and geography. (There are at present 13 small community wells serving primarily condos and some residences at Owl's Nest). Most people in a sparsely populated town such as Thornton do not think of their water supply until it either runs out or becomes unfit to drink. Then it may be costly to fix the situation.

Along the river valleys of the Pemigewasset and Mad Rivers there are stratified drift aquifers which can provide this water, but are subject to various sources of pollution from disposal of hazardous household chemicals to spills at the scene of traffic accidents. Rules to prevent these occurrences, compliance enforcement and mitigation plan must be near the top of our future considerations.

Many homes in Thornton rely on wells drilled into fractured bedrock. These may be less subject to the pollution sources mentioned above, but in general provide much less water for per dollar invested. Protection of these areas is equally important.

H. RIVER CORRIDOR PROTECTION

Over the past several decades some towns along the Pemigewasset River from its source at Profile Lake in Franconia to its confluence with the Winnipesaukee River in Franklin to form the Merrimack River have enacted various rules and ordinances to limit detrimental impact to the quality of the river water. Several towns did not.

The confusion over the various requirements was greatly reduced in 2008 when the New Hampshire Legislature modified the Comprehensive Shoreland Protection Act and included the Pemigewasset River and all fourth order streams in the State under its regulations. In Thornton the fourth order streams are all of the Pemigewasset River, the Mad River, and Eastman Brook downstream from the juncture with Johnson Brook.

As stated above, even though confusion was reduced in 2008 it still motivated a powerful lobby who wanted fewer restrictions than those contained in that version of RSA 483-B. The 2011 session of the legislature has significantly eased the protections so as to make them far less protective of the river water quality than those of the 2008 RSA.

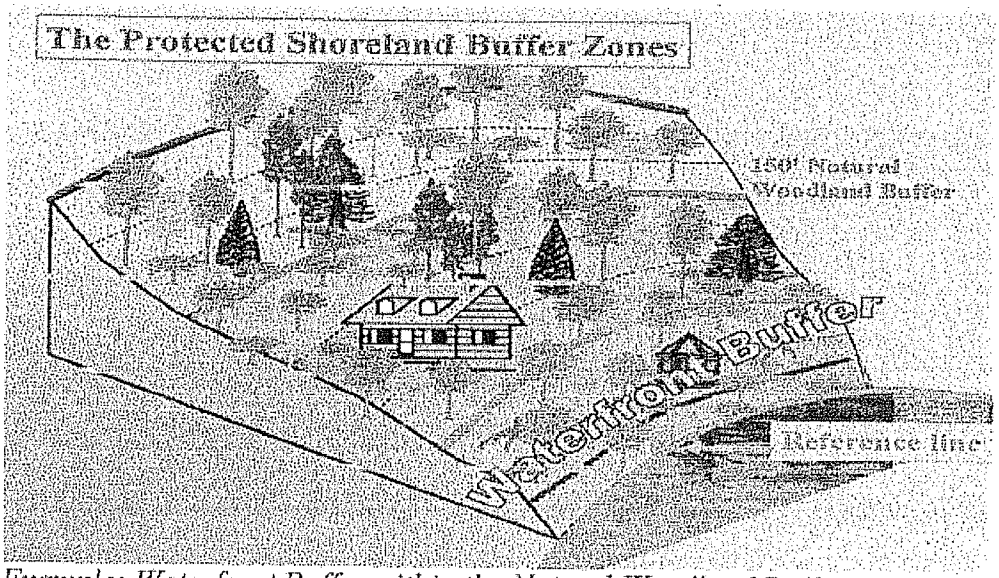
In 2011 the CSPA was modified and renamed the Shoreland Water Quality Protection Act (RSA 483B). The Shoreland Program provides multiple services to the public. Permitting staff review Shoreland permits, waiver and variance requests for compliance with the SWQPA. The review process is designed to provide a level of oversight for construction, fill, and excavation activities to ensure that projects are carried out in a manner that protects water quality. Permitting staff are also available to meet with applicants prior to the official submission of their permit application to review the project for completeness and compliance.

While a town has the authority to impose more strict rules, this has not occurred in Thornton. The following summary of the Shoreland Water Quality Protection Act (RSA 483-B) provides the key elements of this Act which apply to any development within 250 feet of the river bank.

Shoreland Water Quality Protection Act Requirements Summary

Vegetation is a key component in preserving the integrity of public waters and is also a critical element of wildlife habitat. The New Hampshire Shoreland Water Quality Protection Act, RSA 483-B, has protected a 150 foot wide natural woodland buffer adjacent to public waters since July 1, 1994. Public waters are defined in RSA 483-B as lakes, ponds and artificial impoundments greater than 10 acres, rivers and streams that are 4th order or higher, designated rivers and all tidal waters.

Changes to the Comprehensive Shoreland Protection Act in 2008 modified the way RSA 483-B protects vegetation. These changes established a new waterfront buffer zone within the larger woodland buffer zone. Further changes were implemented in 2011 including a name change to the Shoreland Water Quality Protection Act. The natural woodland buffer extends 150 feet from the reference line but, the first 50 feet extending landward from the reference is now considered the waterfront buffer. The purpose of the buffer is to protect the quality of the public waters while allowing the homeowner discretion with regard to water access, safety, view-scape maintenance and lot design.



Example: Waterfront Buffer within the Natural Woodland Buffer Zone

Vegetation Maintenance within the Waterfront Buffer

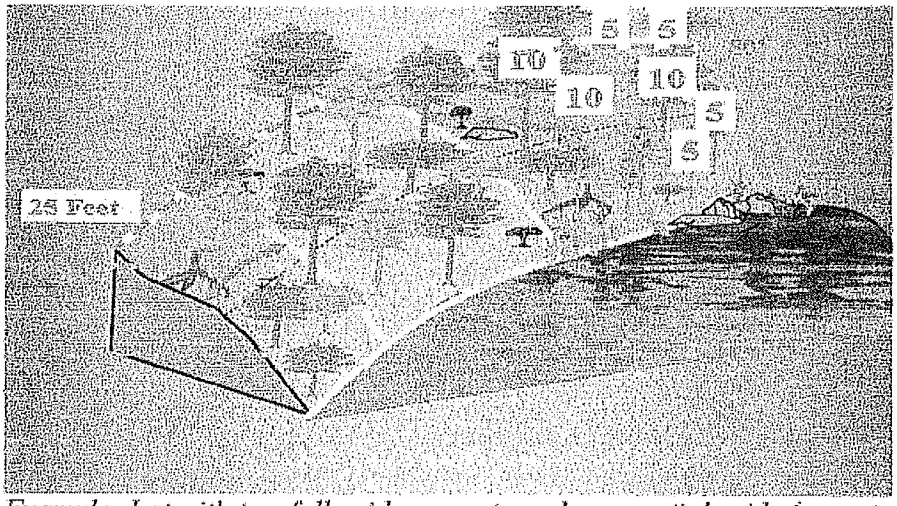
Within the waterfront buffer, branches may be trimmed, pruned and thinned to the extent necessary to protect structures, maintain clearances and provide views. Limbing of branches for the purpose of providing views is permitted so long as this activity does not endanger the health of the plant. Owners of lots that were legally developed prior to July 1, 2008 that have cleared areas within the waterfront buffer such lawns or beaches are not required to replant or restore these areas. Owners may continue to maintain these areas as they have in the past, but may not enlarge them, with the exception of beaches provided the Wetlands Bureau issues

a permit for their expansion. However, owners are encouraged to plant non-invasive species of ground cover, shrubs and trees to meet the criteria shown below.

Ground cover is protected within the waterfront buffer. Vegetation generally less than three feet in height, rocks, stumps and their root systems must be left intact however, clearing ground cover for a six-foot path to the water body is allowed provided the path is designed in such a way not to concentrate storm water runoff or contribute to erosion. During construction a temporary twelve foot path is allowed.

Live trees and saplings may be removed provided certain criteria are met. Starting from the northerly or easterly boundary of the property, and working along the shoreline, divide the waterfront buffer into 50 foot by 50 foot segments. Within each segment a minimum combined tree, sapling and other vegetation score of at least 50 points must be maintained (see below). If for any reason there is insufficient area for a full segment, the number of points required to be maintained is proportional to the requirement for the full segment.

For instance, a segment that measures 50 feet by 50 feet, would only need to maintain at least 25 points worth of trees, saplings and other vegetation.



Example: Lot with two full grid segments and one partial grid segment.

To determine if trees and saplings may be removed, the owner must first verify that at least the minimum score will remain within the affected grid segment. To accomplish this, at a height of 4 1/2 feet above the ground measure the tree and sapling diameter within each grid segment and score in accordance with the table below. Once the tree and sapling score reaches the minimum point score required to remain within a grid segment, then trees and saplings beyond the minimum score may be removed. If the score within a grid segment is less than 50 points or below the minimum score to remain within a partial grid segment, then no removal shall take place. The stumps of felled trees and saplings may be ground flush to the ground, but the stump and root systems must remain in the ground and care must be taken to avoid removal of surrounding ground cover.

Calculating the tree and sapling score within a 50 foot by 50 foot segment:

Determine each tree and sapling diameter 4 ½ feet above the ground and score as follows-

1 to 3 inches	1 point
3 to 6 inches	5 points
6 to 12 inches	10 points
12 to 24 inches	15 points
Greater than 24"	25 points

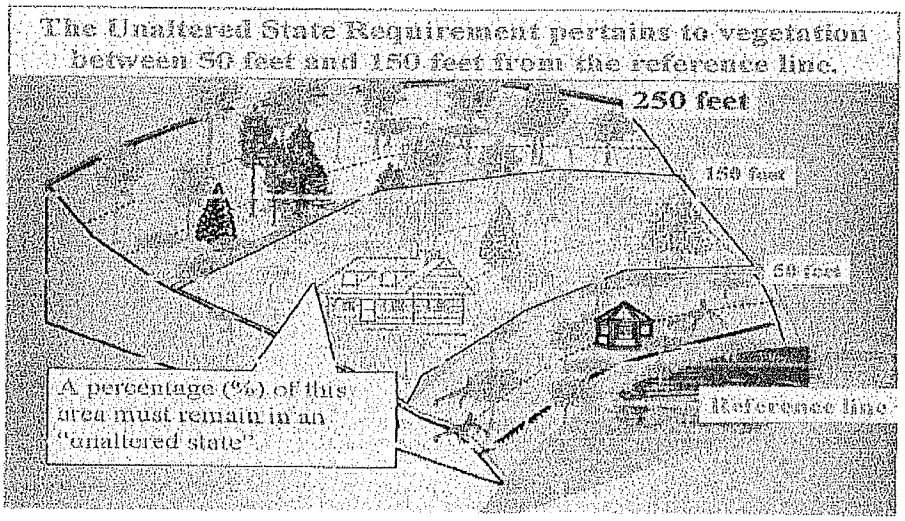
also; four square feet of shrub is allotted 1 point and 50 square feet of ground cover is given 1 point with a limitation of 25 points within a segment.

If possible, owners are encouraged to retain dead trees as they provide valuable wildlife habitat and nesting opportunities. However, dead, diseased or unsafe trees are not included in the scoring and may be removed provided no damage occurs to surrounding trees and saplings, damage to ground cover is minimized and erosion and sedimentation of the water body is prevented.

No fertilizer, except limestone, can be used within 25 feet of the reference line. From 25 feet to 250 feet slow or controlled release fertilizer may be used on vegetated areas.

Vegetation Maintenance within the Natural Woodland Buffer

Within the Natural Woodland Buffer (from 50 feet to 150 feet) the vegetation, except lawns, within at least 25 percent of the area must be left in an unaltered state. "Unaltered state" means native vegetation that is allowed to grow without cutting, limbing, trimming, pruning, mowing or other similar activities. Lawns are modified surfaces and are considered altered areas. This does not prevent raking of existing lawns, the removal of non-native or invasive species, or the removal of dead vegetation.



There are additional requirements relating to impervious surfaces and the permitting process. For detailed information please refer RSA 483-B in the New Hampshire Statues on the state web site or the Department of Environmental Services web site.

Although only fourth order and higher streams are included in RSA 483-B, the Legislature had considered including third order streams in the 2008 legislative session, since pollution and other detrimental effects such as invasive plants can originate at any place upstream.

Since this did not occur, common sense restrictions should be considered by the land owner. This might include building setbacks and vegetative buffers along even first order streams, albeit less restrictive than the requirements of RSA 483-B.

I. ENERGY & CLIMATE CHANGE CONCERNS

The 2007 Town Meeting passed a petitioned warrant article that asked for a national effort to address climate change. State and town citizens were asked to work toward saving energy and reducing emissions. No energy committee has been formed in Thornton, however.

The 2009 Town meeting approved small wind energy systems for all zones in Thornton and several have been approved.

Renewable Energy Property Tax Exemption: NH RSA 72:61-72 permits cities and towns to offer exemptions from local property taxes for certain renewable energy installations.

These include solar thermal (for example, to heat water), solar photovoltaic (to generate electricity), wind (to generate electricity) and central wood-fired heating systems (not stoves or fireplaces).

The NH Municipal Energy Assistance Program, made possible through the NH Public Utilities Commission and the Greenhouse Gas Emissions Reductions Fund, audited town owned buildings and presented the report which summarizes greenhouse gas emissions and energy use for the year 2009. Those recommendations have been acted upon and will be incorporated as well in the renovations of the Town Hall and Police Station.

Municipal Greenhouse Gas and Energy Use Baseline: The focus of this report is the municipal operations of the town, with special emphasis on town-owned buildings. It does not encompass residential, commercial or industrial energy use. The following analysis of municipal energy use is based on data gathered from the municipality's utility bills for building electricity, building heating fuel, streetlight electricity, and municipal fleet vehicle fuel. Supporting data was also collected including building dimensions, hours of operation, number of streetlights, and vehicle types.

The data was then analyzed using two software tools, Portfolio Manager software provided online by the US Environmental Protection Agency (EPA) and the Small Town Carbon Calculator (STOCC) software developed by the university of New Hampshire and Clean Air-Cool Planet. The energy use per square foot is presented for each building, and Portfolio Manager allows for comparison of this metric to buildings of similar types across the US and in New Hampshire specifically.

This report was made possible by the Municipal Energy Assistance Program (MEAP), a collaborative project of Clean Air-Cool Planet, Jeffrey H. Taylor and Associates, the SDES Group, the Sustainable Energy Resource Group, Vital Communities, and Carbon Solutions New England and funded by the Regional Greenhouse Gas Initiative (RGGI). The community applied for support from the MEAP program and was selected to receive this base line energy inventory. Community officials, employees, and volunteers then assisted the MEAP Energy Project Assistant, who collected and analyzed the data in this report.

J. VEGETATION

The kind of vegetation found in an area is primarily influenced by climate, topography, and soils. The vegetation of Thornton is part of the northern hardwood ecosystem, and extensive forest type that extends from Nova Scotia to the western Lake Superior region and southward along the Blue Ridge Mountains. A northern hardwood ecosystem entails combinations of deciduous and coniferous species that may occur as deciduous or mixed deciduous-evergreen stands. Principle deciduous species include beech, sugar maple, yellow birch, white ash, basswood, red oak, red maple; the principal coniferous species include hemlock, white pine and red spruce.

The pattern of residential uses bordering and intermingling with transitional and older stands of forests provides vegetative diversity and edges. This diversity supports wildlife species than would not be commonly found in a totally forested environment.

K. WILDLIFE

The State of New Hampshire Fish and Game Department Wildlife Division reports statistics annually.

The estimated 2011 statewide deer harvest of 11,167 is up 14% from the 2010 preliminary estimate and is the highest estimated kill since 2007. At the time of the last call-in following Thanksgiving weekend, the estimated 2011 kill was only 4% above 2010 indicating that the late 2011 season was quite successful.

Grafton County reported deer kill for the past 5 years:

2007	2008	2009	2010	2011
2148	1811	1758	1300	1495

Wildlife is an integral part of the natural environment and is often considered to be an indicator of the 'health' of the natural environs. In Thornton, wildlife is important to hunters, fishermen, and the "observer" of wildlife who note the seasonal migrations of the local wildlife population. Thornton is part of the "F" Wildlife Management Area.

Species found in the Thornton area include white tailed deer, grey squirrel, pheasant, quail, ruffed grouse, woodcock, partridge, wild turkey, grey fox, red fox, coyote, black bear, raccoon, moose, snowshoe hare and fisher, bobcat, mink, otter, beaver, and muskrat. We have a Great Blue Heron rookery identified. Fish include trout, pickerel and bass.

In the past the US Forest Service has indicated that the deer population in the Thornton area is on the decline. This is due to the loss of agricultural land to reforestation and the advanced age of the present forest cover, which is approximately 70-90 years old. These forest characteristics do, however, favor moose and bear populations.

As residential development in Thornton increases, conflicts between humans and animal will increase substantially. The diversity and abundance of wildlife is directly related to development. The protection of critical resources such as agricultural land, water, and forests will help sustain a diversified and "healthy" wildlife population.

L. NATIONAL FOREST

The White Mountain National Forest comprises approximately 47% of Thornton's land area. This dominates the Northeastern portion of town and to a slightly lesser extent the Southwestern part of town. Most of this land is classified as Management Area (MA) 2.1 by the most recent White Mountain National Forest "Land and Resource Management Plan" released in September 2005. In MA 2.1 a full mix of recreational opportunities are permitted from low use hiking to highly developed campgrounds. These include mountain biking, snowmobile trails, hunting and fishing, roadside camping and developed camping. A few areas fall into other MA's which just allow semi primitive recreation and semi non-motorized recreation. (See the above referenced Management Plan for details. It is available on the internet at www.fs.fed.us/r9/white)

VII. ECONOMY

Employment levels, wages rates, and diversity of firms reflect the economic health of Thornton and its surrounding area. Comparing economic factors with other like towns in the region reveal the strengths and weaknesses of the particular town.

This section will describe basic factors of the area economy and provide a general picture of the economy and how it affects Thornton residents.

A. LABOR FORCE & EMPLOYMENT

In the past few years our nationwide unemployment figures reached the highest levels in our history since the Great Depression. Employment opportunities are the driving force in attracting people to an area as well as keeping longtime residents from leaving to find employment elsewhere. Unemployment in New Hampshire overall has been less than the national percentage.

May, 2012 showed New Hampshire's unemployment rate at 4.8%, ranking us fifth lowest in the nation. Nationwide unemployment averaged 7.9%. By the end of the year, New Hampshire ranked 14th overall.

In the information below, you can see how dramatically the national economy has affected our area.

	Dec 2012	May 2012	April 2011
Ashland	6.2%	4.9%	5.5%
Campton	6.1%	5.6%	5.6%
Lincoln	6.9%	8.0%	8.9%
Plymouth	5.4%	5.9%	4.4%
Thornton	5.4%	4.8%	5.8%
Woodstock	6.7%	5.8%	8.3%

Over the ten year period 2010 to 2020, the total employment in New Hampshire is expected to grow by 10.4%, an average of 1% per year. Estimated employment is expected to increase from 662,146 to 730,710, a gain of 68,564 jobs. Projected growth for the United States for the same period is 14.3%.

About 88.5% of all new jobs will be in services, while just over 8% will be in goods production industries.

Employment in Construction is expected to resurge, growing nearly 25% over 120 years.

Manufacturing is projected to add for the first time since the 1998-2008 projections.

Retail trade will continue to be the state's largest employing sector and is expected to add 6500 new jobs over the decade, an increase of 7%.

Health care and social assistance is expected to add the most jobs by 2020, accounting for nearly 30% of all new jobs in the decade.

Professional, scientific and technical services are expected to see growth of nearly 24% and add 7000 jobs.

B. PROPERTY TAX BASE

The tax rate for the Town is set by the NH Department of Revenue, usually in September or October, when all revenues and other factors have been established. The appropriations, less the revenues, equal the amount of money needed to be raised by property taxation.

There are five components which make up our property tax, which in 2011 totaled $ 6,589,316.

Of this amount, the town operation made up 21%; schools, both the local and regional, captured 57.4%, state education tax was 13.6% and Grafton County was 8%.

The tax rate or tax per $1,000 of property valuation is calculated by dividing the total appropriations, less revenues, by the net assessed valuation of all taxable properties, and for 2011 the tax rate was $17.31 per $1,000 of assessed valuation.

The State Department of Revenue determined the median ratio for the land, buildings, and manufactured housing in the municipality of Thornton to be 104.7% for tax year 2011.The median ratio is the generally preferred measure of central tendency for assessment equity, monitoring appraisal performance, and determining reappraisal priorities, or evaluating the need for reappraisal. It is important to note that it is unwise to compare tax rates with other towns, without knowing the basis of their valuations.

C. HOUSING

1) INTRODUCTION

Housing represents a large portion of a community's economic stability. Its production, or lack of, has far reaching implications throughout the local, regional and national economy. Housing provides shelter, financial security, jobs and income for a community. The quality of life and the character of a community are closely tied to the available housing opportunities. Therefore, housing is of utmost importance in local decision making. The data on housing is invaluable to local government, developers and businesses: it allows them to identify trends and demographic changes that can affect their decision making process.

2) HOUSING DATA

The general population and housing characteristics for the Town of Thornton, Grafton County, the State of New Hampshire and the United States are provided in appendix II. This data is from the 2010 census and is provided for comparison purposes.

The following table is provided to show selected comparisons from the 2000 census to the 2010 census for the Town of Thornton:

	2000 Census	2010 Census	% Change
Average household size	2.43	2.33	-4.00%
Average family size	2.86	2.73	-4.50%
Total housing units	1487	1862	25.20%
Occupied housing units	759	1070	40.90%
Seasonal housing units	728	792	8.80%
Homeowner vacancy rate (%)	3.10%	3.40%	9.70%
Rental vacancy rate (%)	5.10%	11.70%	129.00%
Total population	1843	2490	35.10%

The numbers in the table clearly indicate the housing market in Thornton has grown. This is indicative of the economic prosperity that was experienced in the beginning and middle of the last decade. How the housing market will react to the current environment needs to be closely monitored.

Local decision makers should pay particular attention to several trends. First is the decrease in the household and family size. Smaller more affordable homes may bear consideration in planning decisions. Second is the overall availability of existing housing units. This represents the supply of housing. If supply out strips demand, this will affect the value and ultimately the wealth of the market.

3) PLANNING

Housing development in the Town of Thornton is controlled by zoning and subdivision regulations. These are administered by a planning board comprised of members elected by the town's people. These are designed to ensure that development, including housing, is accomplished in a conscientious and appropriate manner, thus ensuring that the quality and value of living in the Town of Thornton is maintained.

VIII. TRANSPORTATION

The location, capacity, and condition of a community's transportation network affects the ability of residents to conveniently and safely travel between jobs, schools, stores, and homes; of business to efficiently move goods in and out of the community; and of visitors to travel in and around the area. A community's transportation network, particularly roadways, also affects community development patterns. Good highways and access are

necessary for most land uses and may serve to spark development in a particular area. Conversely, certain land uses generate an amount of additional traffic that may require expansion of the transportation network.

A. HIGHWAYS

Roads are placed in one of seven administrative classes depending on which governmental unit is responsible for the road as stated in NH RSA 229:5. Highway classification is as follows:

1) **CLASS I** highways consist of all those on the primary state system except those segments lying within compact sections of designated cities or towns. (RSA 229:5 V). Interstate and defense highways and turnpikes are considered to be Class I highways. The NH Department of Transportation pays the cost of construction, reconstruction, and maintenance of Class I highways.

2) **CLASS II** highways are those on the secondary state system with the same exceptions as Class I regarding segments in compact areas. The NH Department of Transportation controls and pays the costs of reconstruction and maintenance of Class II highways.

3) **CLASS III** highways consist of recreational roads leading to and within state reservations as designed by the Legislature. Class III highways are the responsibility of NH Department of Transportation.

4) **CLASS III-a** highways are boating access highways (none in Thornton).

5) **CLASS IV** highways are those which are located within the compact sections of cities and towns. The construction, reconstruction, and maintenance of Class IV highways are the responsibility of the municipality in which they are located. (Thornton has no Class IV highways.)

6) **CLASS V** highways consist of all other traveled highways which the town has the duty to maintain regularly and are known as town roads.

7) **CLASS VI** highways consist of all other existing public ways and includes all highways discontinued as open highways and made subject to gates and bars, and all highways which have not been maintained by the town in suitable condition for travel for five successive years or more.

The mileage of the various classes of roads in Thornton is shown in the following table.

CLASSIFIED ROAD MILEAGE

Class I	12.93
Class II	12.56
Class III	0
Class IV	0
Class V	49.00
Class VI	1.51

B. AIR SERVICE

The Plymouth Municipal Airport on Route 25 in Plymouth is a small, municipally owned facility with a 2,300 foot turf runway. The airport, located approximately fifteen miles from Thornton has no lights or other navigational aids. The airport is open to the public and it is used primarily by private planes.

The major airport in the area, however, is the Laconia Municipal Airport located approximately thirty-five miles from Thornton in Gilford. Laconia Airport is municipally owned and offers a wide range of services, including maintenance, storage and rental facilities. There is no scheduled service at Laconia. There is charter service available through Emerson Aviation and Sky Bright. Manchester/Boston Airport about 1 1/2 hours away has grown and offers excellent service throughout the country.

C. RAILROADS

The Concord to Lincoln line is the only rail line, which runs through Thornton. This 72.5 mile, state-owned line (6.3 miles of which are in Thornton) is currently inactive aside from a tourist/scenic railroad, the Hobo Railroad, which operates out of Lincoln/Woodstock on a seasonal basis.

D. PUBLIC TRANSPORTATION

There is no public transportation within Thornton or other area communities. Park and ride facilities are available at Exit 23 on I-93 for carpooling.

The North Country Council adopted a regional transportation plan and a Coordinated Public Transit and Human Services Plan which are both available on the NCC website at www.nccouncil.org. This is a policy document that will guide NCC, NH Dept. of Transportation, member communities and partner organizations in making important decisions regarding transportation and other key issues. The lack of access to public transportation and transit makes it difficult to access employment, health care, shopping and recreation for the large portion of people without personal automobiles.

Transport Central focuses on the 19-town Plymouth area and serves people through volunteer drivers. TC recently hired a mobility manager that is arranging these rides. TC is trying to develop relationships with other providers with vehicles in the area. Genesis Behavior Health is willing to coordinate and they have a vehicle. Service has started in Ashland, Holderness and Plymouth and they are trying to recruit drivers. Vans service the Senior Center in Plymouth.

E. BUS SERVICE

Interstate bus travel by Concord Trailways is available. Concord Trailways has a Route between Boston and Plymouth and Boston and Littleton which both stop at Main Street Market in Plymouth, approximately 8 miles from Thornton.

Chartered bus service is available from Buckboard Transportation and Robertson Transportation. Taxi service to and from Thornton is available from Apple Valley and Buckboard Transportation located in nearby towns.

F. STATE OF NH DOT TRAFFIC REPORT

Average Annual Traffic

Bureau of Planning, Traffic Section, Traffic Reports										*12-Feb-13*	
Town: THORNTON											
STAT	**TYPE**	**LOCATION**	**FC**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
449057	82	NH 49 at Mad River Bridge (SB-NB)(81449055-449056)	07	*	2000	*	*	1800	*	*	1900
449059	82	NH 175 at Benton Road	08	*	1200	*	*	1400	*	*	1700
449060	82	Sullivan Dr. north of Yarding Lane	09	*	*	30	*	*	20	*	*
449061	82	Thornton Gore Rd at Woodstock Town line	09	*	*	130	*	*	200	*	*
449062	82	Cross Rd over Pemigewasset River	09	*	*	770	*	*	670	*	*
449063	82	Upper Mad River Rd over Mad River	09	*	*	320	*	*	380	*	*
449064	82	NH 49 over Lee Brook	07	*	2400	*	*	2100	*	*	2200

IX. EXISTING LAND USE

A. INTRODUCTION

Thornton's present land uses are limited in number compared to surrounding communities. The mix of land uses and their development pattern is influenced by the physical and political boundaries of the Town.

The following information and Existing Land Use Map (See Figure 11) contains a generalized description of existing land uses. Present land use patterns are important to evaluate in order to identify trends, which may affect future planning decisions.

Thornton's land area is estimated at 32,640 acres. Of this, the White Mountain National Forest controls 15,276 acres (47%). The WMNF land encompasses the western and eastern sections of town. This limits future development to corridors along the Pemigewasset and Mad River Basins. The one exception is a large land area of approximately 700 acres, at the end of Mill Brook Road that is subdivided into approximately 109 residential parcels.

TABLE V

Thornton's Land Area = 32,520 acres

USE	ACREAGE	PERCENT
WMNF	15403	47%
Current Use	8172	25%
Industrial	215	1%
Public/Semi-public	30	0%
Residential	2000	6%
Commercial	300	1%
State and River Basin	600	2%
Unimproved	5800	18%

B. CURRENT USE/UNIMPROVED LAND

It has become increasingly obvious that New Hampshire's open lands are being developed at an alarming rate. Forest, farm and open lands are being transformed into shopping malls, commercial and industrial zones and housing of all types. The N.H. Legislature has tried to stem this trend by enacting RSA 79-A "The Open Space Law."

The purpose of this statute is to:

1) Encourage the preservation of open space.
2) Provide a healthy and attractive outdoor environment for work and recreation.
3) Conserve land, water, forest and wildlife resources.
4) Maintain the character of the state's landscape, and
5) Prevent the conversion of open space land to more intensive use, with a minimum of disturbance to the existing tax base.

Tracts of land qualifying for current use must meet certain standards. In most cases they will be at least 10 acres in size and actively devoted to agriculture, horticulture or silvaculture uses. Once placed in current use status, they are assessed at the state's predetermined values between $15 and $590 per acre. The vast majority of this acreage falls under "Forestland" with assessed value of $28 to $50 per acre, for tax purposes.

As of September 2012 Thornton had 8,172 acres of land in current use. The majority of this land (7,210 acres) is in "Forestland".

A 10 percent penalty is assessed to the landowner if the land is taken out of current use. This penalty does little to discourage the selling of the property since it is passed on to the purchaser.

The large amount of undeveloped land in Thornton is a reflection of the large land holding in private ownership and the natural characteristics of the land (slope, soils, and ledge) which limits the type of development. Approximately 6300 acres excluding current use acreage is undeveloped. The limitations of this land will eventually be overcome when the present supply of suitable land is exhausted. Over the last decade current use land has increased from 6340 acres to 8082 acres. In a different view, the fully taxable land has decreased by approximately 16% in the last ten years.

C. INDUSTRIAL

The main industry in Thornton is sand and gravel operations. Approximately 340 acres of land are being utilized for sand and gravel excavation. The surface geology makes many areas in Thornton ideal for gravel excavations. As present operations expand or relocate the Town must enforce RSA 155-E Earth Excavation. RSA 155-E provides the Town with the authority to regulate earth excavations. A permitting system for new excavations ensures certain standards for locating, development and reclamation of the site are followed. The Planning Board is the regulating body.

Grandfathered pits (those in existence prior to August 24, 1979) are encouraged to comply with reclamation but are not easily convinced to comply.

D. COMMERCIAL

The Town of Thornton has a limited amount of land actually devoted to commercial use. The majority of land is occupied by motel/tourist accommodations along Route 3 and grandfathered and home business along Route 175.

The present limited commercial activity may increase somewhat if subdivision development potential is realized. Proper regulation must be developed and utilized to ensure compatibility with surrounding uses.

E. RESIDENTIAL

Residential development is by far the largest land use in the Town of Thornton. Approximately 2,000 acres of land is designated for residential use. This acreage is subdivided into lots of between 1 and 10 acre average.

Information from the 2010 census shows a total of 1862 housing units. Of these 691 (37.1%) are seasonal, recreational or occasional use units.

Residential development is generally occurring along the Town's major travelways. As residential development expands, the impact on the natural environment increases. Provisions for septic and water systems for each new development should be evaluated for their impact on surrounding land uses; specifically, groundwater.

F. COMMUNITY LAND USE

Thornton has about 40 acres devoted to community facilities which include cemeteries, public schools, an athletic field and a fire station.

G. OTHER

Thornton's other land use include a State Highway Department facility on Route 3 and approximately 600 acres of land utilized by the Interstate 93 corridor and the Pemigewasset and Mad River Basins.

X. COMMUNITY FACILITIES

Community facilities and services are essential in promoting and protecting the health, safety and general welfare of the community. Adequate facilities help to make a town a pleasant and convenient place to live and work. However, changes in population, community expectations, legal requirements and technology often result in the need to rehabilitate existing facilities and/or develop new ones. It is important that the Town evaluate the adequacy of its various facilities and services and establish priorities for improvements, as they become necessary.
Thornton currently shares several facilities with surrounding towns; the transfer station the fire and ambulance service. The transfer station is managed by the Town of Thornton which bills the towns of Ellsworth and Campton for its services. The fire and ambulance service is governed by an independent group of fire commissioners. These commissioners are appointed by the selectboards of Campton and Thornton.

The model presented by the transfer station and fire department has worked very well. It is certainly less costly than maintaining separate facilities for each of the towns. As the need for additional resources for other town departments presents itself, this model should be considered. An example might be the salt shed needed by the highway department. It might be possible to locate such a facility near the border between Campton and Thornton and have the two towns share it.

The following is a brief description of the major services and facilities provided in Thornton or in neighboring towns for Thornton's residents.

A. TOWN BUILDING

The Town authorized and constructed in 1989 a new Town Building containing 4,200 square feet located at 16 Merrill Access Road just off Route 3. The building provides working space for the Town Administrator, Town Treasurer,

Town Clerk/Tax Collector, Health/Welfare Officer, Assessing, Planning Board Secretary and the Police Department. Select Board Meetings, Planning Board/Zoning Board Meetings and Budget Committee Meetings take place in the Town Building. In 2003, the Town authorized an addition to the office, garage and storage facilities used by the Police Department. The Town Building is currently in need of additional office and storage space.

The Capital Improvement Plan has identified a need and provisions for future improvements are included in it. A Building Committee was established to evaluate the needs of the building and forwarded their findings to the Selectboard. The remedy for this is underway.

B. POLICE PROTECTION

The Police Department is headquartered at the Town Building. In addition to office space, there is a holding cell for emergencies and a two bay garage. The Police Department consists of four (4) full time officers, three (3) part time officers and three (3) cruisers. Calls for assistance are handled locally via the Plymouth Dispatch Center. Calls for assistance have been increasing. There has been an increase in reported criminal cases (+10% in two years).

The enhanced 911 Emergency response systems became operational in 2002 so that a person calling 911 does not have to know their location, but the dispatch center automatically has that information. In 2012 the department will be rebuilding their website.

C. FIRE PROTECTION

Fire protection is provided by the Campton/Thornton Fire Department dispatched from three fire stations; one at the corner of Route 3 and Cross Road, the main station at Route 49 just west of I-93 and one in Campton on Route 175 just north of the Blair Bridge Road. The department is made up of the Chief, three full time employees and thirty-two volunteers, twenty-two of which are trained EMTs. Equipment consists of five engines (pumpers); two are located at the Thornton substation, two at the main station and one at the Campton substation. The department also has a rescue truck, a forestry truck and an ambulance, all of which are housed at the main station. The Fire Department responded to 696 calls in 2011, up from 646 the previous year. The overwhelming number of calls was for ambulance service, numbering 417. The department continues to get new EMTs on the squad and is always looking for additional help with emergency medical technicians and firefighters. The Thornton station is not large enough to house some of the department's equipment and so, in conjunction with the Town Building needs, the selectboard is also studying the appropriate course of action for the fire station. This need has also been identified in the Capital Improvement Plan.

In addition to taxpayer provided funds, the department is continually applying for and receiving grants to purchase specialized pieces of equipment.

The Fire Department has also had training in Swift Water Rescue. Local towns involved in this training along with Campton/Thornton are Woodstock, Ashland, Plymouth, Bristol and New Hampton.

D. AMBULANCE SERVICE

The Campton/Thornton Fire Department purchased its own ambulance in 2007. By doing this we lessened our dependence on the Plymouth Ambulance Service. Three full time EMTs are now members of the department, primarily to cover the first shift Monday through Friday. The balance of the coverage is provided by the twenty-two volunteer EMTs. The Campton/Thornton Fire Department is a member of Lakes Region Mutual Aid, wherein equipment from surrounding towns is provided to assist Campton/Thornton as needed.

E. HIGHWAY DEPARTMENT

The maintenance of Thornton's roads is done under the guidance of a Road Agent. Since the Town owns limited equipment, much of the work is contracted, although Thornton is gradually acquiring facilities and equipment to permit more efficient use of funds. The Highway Department is headquartered in a garage located adjacent to the town building. The department also stores sand and salt on the property for winter road maintenance. EPA regulations may require the building of a shed to contain this material. This need has been identified and provided for in the Capital Improvement Plan. Refer to Appendix 4 for the list of roads and their condition.

F. POSTAL SERVICE

In 2006 Thornton received its own ZIP code (03285). Residents receive their mail at the Campton Post Office or via rural delivery. FedEx pick up and UPS services are available in the area.

G. PUBLIC LIBRARY

In 2010 the Thornton Public Library was moved from its location in the Central School on Route 175 to a separate facility adjacent to the school. It is now housed in the two temporary classrooms purchased by the School District in 2007. Placed on a permanent foundation and upgraded to withstand the added weight of the books, the library will continue to serve as the school library in its new location. Free WiFi is available as well as access to Ancestry.com.

A town book club has also been established. A steering committee was formed in 2010 to establish the "Friends of the Thornton Public Library" and has reached out to the community to join the group. The 'Friends' will support programs and promote the use of the library throughout the community.

H. SOLID WASTE

Use of the landfill was discontinued at the end of 1994. Since then waste has been handled via recycling and a transfer station. Capping of the landfill site was completed in 1996 and monitoring of any settling and ground water wells is continually conducted. Costs for the recycling center and transfer station are shared with Campton and Ellsworth.

Recyclables, construction debris, appliances, textiles, waste oil, automotive batteries, and electronics are separated at the Transfer Station. Household Hazardous Waste Collections occur annually at neighboring transfer stations in the district.

Increasing Thornton's recycling participation is important because it saves natural resources and the costs of landfilling what are otherwise usable materials which we market. More NH towns are marketing with other communities and some with curbside service are collecting co-mingled materials. Market prices vary from month to month and storage capacity helps.

Thornton also supports reuse of furniture, toys, equipment, etc with the "mall" located at the Transfer Station. Branches and other debris from tree storm damage and pruning can also be deposited when there is room.

I. HEALTH CARE

Basic hospital and related care are available in Plymouth at Speare Memorial Hospital, ten miles from Thornton. Care is also available at the Littleton Hospital as well as Lakes Region Hospital in Laconia. All hospitals provide emergency room care, intensive care, outpatient services and surgery. There are several physician practices in Plymouth as well as many dental offices.

The DART helicopter is available for emergency transport to the Dartmouth Hitchcock Medical Center in Lebanon, NH.

There are a variety of Health and Welfare associated agencies such as Red Cross, Lakes Region Community Services, Plymouth Regional Senior Center, ADAPT, Pemi Baker Youth and Family Services, Pemi Baker Home Health Agency, etc. , which Thornton supports each year with financial contributions.

J. CEMETERIES

There are several known cemeteries in Thornton; Pine Grove, Mad River, Hanson-West Thornton, Orris, and Tripoli/Gore. The two currently being used, Pine Grove and Mad River are nearing capacity. Additional property has recently been acquired to expand the Mad River Cemetery. All cemeteries are maintained via trust funds or at town expense and are administered by the Cemetery Trustees.

K. THORNTON SCHOOLS

Thornton is in School Administrative Unit (SAU) 48, headquartered in Plymouth. The district school (Thornton Central School) is on Route 175 and accommodates grades K through 8. Enrollment as of January, 2012 was 214. During the summer of 2010 the school added four new class rooms, bathrooms for the middle school, moved the entrance away from Route 175 and added increased security. The school has 22 full or part time teachers and 28 support staff including administration, guidance, nurse, kitchen and teaching support staff.

At the high school level, Thornton students attend the Pemi-Baker Regional High School in Plymouth. The present high school was originally the Plymouth Elementary School, but underwent major renovation in 1990 when it became the high school. A further major expansion renovation has recently been completed.

TABLE VI
School Enrollment

	Thornton Central School	Pemi Baker Regional HS
2002 / 03	189	926
2003 / 04	179	909
2004 / 05	185	868
2005 / 06	190	905
2006 / 07	194	880
2007 / 08	197	845
2008 / 09	214	805
2009 / 10	205	748
2010 / 11	212	721
2011 / 12	214 *	691

* October, 2012 the enrollment has climbed to 228

L. GOVERNMENT

Thornton's fiscal and policy matters are decided via the "Town Meeting" form of government wherein the administration of the Town is governed by a five person elected select board, five elected school board members for the local school and one elected member for the regional school board.
The planning board, town treasurer, town clerk, overseer of public welfare, and various trustees are also elected positions.

M. UTILITIES

The Town of Thornton is serviced by private utilities only. No public or governmental utilities are provided within the town.

1) ELECTRIC SERVICE

Electrical service is provided by two companies, Public Service of New Hampshire (PSNH) and New Hampshire Electric Co-op. (NHEC).There are other consolidators as well. For instance, NHEC is buying power for the Thornton Central School from a new company, Constellation. The entire town is covered by electric service, the majority with NHEC. Service is located on established roadways and is the responsibility of the homeowner or property owner to cover the cost of connection to the grid. In most cases the electric company will provide service for a given distance from their transmission line.

At this time, the supply of electricity appears adequate. The town does not have any large scale electric generating facility within its borders. Therefore, all grid power is produced outside the town and transmitted in. This means that the town has no control over the cost of this electricity. Some attempts at controlling cost through electric deregulation have been tried from the state level with little or no success.

2) TELECOMMUNICATION

Phone and data service is available through several providers; Fairpoint and Time Warner being the two prominent ones in Thornton. These two companies provide the wire infrastructure throughout town. Time Warner is the sole cable television provider and services a majority of the town. Not all areas are serviced by cable. Satellite service is available throughout the area. Time Warner also provides high speed internet and telephone through its cable system.

High speed internet appears to be one area of deficiency in the telecommunication infrastructure of the town. With the increased use of technology for everyday living, this type of data service is becoming increasingly important to residents. Thornton Cable Franchise Committee has been established to address residents' concerns regarding data services.

3) GAS AND FUEL

Due to the rural nature of Thornton a natural gas or fuel delivery system is not viable. Fuel such as LP gas, heating oil and kerosene are delivered by truck and stored on an individual basis.

4) SEWER SYSTEM

The Town of Thornton does not have a municipal sewerage system. Sewerage from individual homes and businesses must be dealt with on site through the use of septic tanks and leach fields. The development of a municipal sewer system would have to be geared towards a specific location. At this time, no areas of town have sufficient density to warrant such a system.

5) WATER SYSTEM

The Town of Thornton does not have a municipal water system. Some private water systems exist throughout town but are not controlled by the town. These water systems are meant to service only a given development or group of homes.

The Campton water system does service several homes on Mad River Road. This is due to the fact that the Campton water system utilizes a storage tank located just north of the intersection of Mad River Road and Upper Mad River Road. In addition, Waterville Estates village district, located on the southern edge of Thornton also maintains a water system for the individual homes within its jurisdiction. These private water systems are governed by the State of New Hampshire rules and regulations.

The development of a municipal water system in the town would be limited at best. At this time, there is no real need or concern for this type of system. In the future, if pollution or degradation of a given water resource negates its use by homeowners, some type of water system may be necessary.

N. RECREATION

Thornton is located within the southern portion of the White Mountain National Forest with 47% of the land in town being forest. The forest provides a wealth of four season recreational activities for all. Hiking, biking, skiing (both Alpine and Nordic), kayaking, canoeing, camping and golf are all available within Thornton and its neighboring towns. Within less than a half hour drive, residents have access to over 600 miles of hiking trails, three Alpine ski areas, three Nordic ski areas and three golf courses. Public ice skating is available in Waterville Valley as well as the newly opened Ice Arena and Welcome Center at PSU. Formal youth sports programs are available in Plymouth. Not surprisingly, when asked what they liked about Thornton, 62% of survey respondents stated that it was the outdoor recreational opportunities.

In spite of the opportunities listed above, over 50% of the people responding to the questionnaire rated the town's recreational facilities as being only average or poor. However, slightly less than half of the respondents wished to see town funds used to develop recreational facilities. The committee believes that much of the dissatisfaction with recreation opportunity stems from the lack of a community center that can be used by groups of all ages for various activities. The only large gathering place in the town is the multi-purpose room in the school. School sports and other activities make heavy use of this room, making it difficult for other organizations to access the space.

XI. CAPITAL IMPROVEMENTS PLAN

Each year various communities of all sizes undertake a variety of projects, which are major in scope and require the expenditure of large sums of public monies. These projects become the town's municipal facilities and are often referred to as capital improvements.

Municipal facilities are the physical components of the community including buildings, land, equipment, and the system of public services. These facilities add immeasurably to the quality of community life.

Demand for community facilities and services increases as a community expands, as the population grows, as new jobs are created, as older facilities deteriorate, and as living standards and expectations rise. In many communities, services that were thought of as luxuries a few years ago are now regarded as necessities.

Community projects that will become municipal facilities in the future compete for limited available funding. It is frequently easier to respond to regulations and public pressures than it is to determine and adhere to planned spending priorities. However, communities desiring to maximize the use of available funds must have a method of doing "first things first". A capital improvements program (CIP) can ensure that town funds are being wisely spent.

A National Council on Governmental Accounting report entitled "Governmental Accounting, Auditing, and Financial Reporting" put forth a definition of a capital improvements program that has been accepted nationwide. The report defines a capital improvements program as, "a plan for capital expenditures to be incurred each year over a fixed period of years to meet capital needs arising from a long-term work program." The capital improvements program is a strong, directional statement regarding a community's future and presents a rational guide for development and growth.

Structuring major expenditures into a planned scheme coupled with appropriate planning and implementation is the primary function of a capital improvements program.

Additional functions of CIP can include:

1) combining Thornton's Master Plan and fiscal plan into a physical growth and development plan.
2) estimating needed capital requirements.
3) establishing budget priorities, working with department heads and the elected selectboard.
4) developing a project revenue policy for each proposed capital improvements project.
5) coordinating various departmental activities to address the proposed time schedule of each capital improvements project.

A CIP is comprised of several capital improvements projects. The definition of a capital improvements project is extremely variable, but can be broadly stated as being any major project requiring the expenditure of public funds, over and above public operating expenses, for the purchase, construction, or replacement of the physical assets of a

community. The value of each capital improvement project to be included in the program may range from ten thousand dollars upward. The time frame of the Thornton capital improvements program is ten years. It has been used as a guide for warrant article proposal for the 2009 and 2010 Town Meeting.

As the Thornton capital improvements program is updated it will be necessary to study the Town's financial history and identify possible future trends. A list of capital improvement projects, based on the community's goals and objectives, may then be assembled. This list may then be prioritized, funding sources identified and an implementation schedule determined.

The following possible funding sources may be viewed as typical of the methods to obtaining funding and each may be used separately or in conjunction with other methods.

A. CURRENT REVENUE OR "PAY AS GO" - This method is the financing of improvements from current revenues such as general taxation, fees, service charges, special funds or special assessments.

B. RESERVE FUNDS - In reserve funds financing, funds are accumulated in advance for capital construction or purchase in capital reserve funds. The accumulation may result from surplus or "earmarked" operational revenues, or the sale of capital assets. These funds are often appropriated at Town Meeting for specific purposes.

C. GENERAL OBLIGATION BONDS - Through this method, the taxing power of a community is pledged to pay interest upon and retire the debt. General obligation bonds can be sold to finance permanent types of improvements such as schools, municipal buildings, parks and recreation facilities. Voter approval of this funding method is required.

D. REVENUE BONDS - Revenue bonds are frequently sold for projects such as water and sewer systems that produce revenue. Such bonds are usually not included in the state imposed debt limits as in the case of general obligation bonds. The reason for this is that revenue bonds are not backed by the full faith and credit of the community, but are financed in the long-run through service charges and fees. The interest rates are almost always higher than those for general obligation bonds and voter approval may or may not be required.

E. LEASE PURCHASE - Local communities choosing this method must first prepare detailed specifications for a needed public work that is then constructed by a private authority or company. The facility is then leased by the community for a given number of years. At the end of the lease period the title to the facility can be conveyed to the community without any further payments since, over the years, rental fees will have paid the total original cost plus interest. Thornton has used this method to fund police and fire vehicles in the past. Voter approval of this funding method is required.

F. AUTHORITIES OR SPECIAL DISTRICTS - Authorities or special districts may be created to provide single-purpose activities such as schools, sewer, water, and the like. Special authorities or districts may be financed through revenue bonds retired by user fees, although they may also have powers of taxation to raise funds.

G. SPECIAL ASSESSMENTS - Public works that benefit particular properties may be financed more equitably by special assessments; in other words, by those who directly benefit from the project. Local improvements financed in this manner include street paving and the installation and improvements of sanitary sewer and water mains.

H. STATE AND FEDERAL GRANTS - State and federal grants-in-aid programs may include street, water and sewer facilities, airports, parks and playgrounds. The cost of funding these facilities may be borne completely by grants or a local matching share maybe required. This funding would need acceptance by the Board of Selectmen at a public hearing depending on amount received and when it is received.

I. TAX INCREMENT FINANCING This method provides front-end monies for large-scale improvements. This method requires that a district around the proposed development/improvement area is designed with a tax base equivalent to the values of all properties within the area. The tax revenues paid to taxing units are computed on the initially established tax base during the project period. The area is then improved using funds provided by the sale of tax increment bonds. These bonds are sold by the community or specially created taxing district for acquisition, relocation, demolition, administration, and site improvements. Due to the higher value of the newly developed property in the district, more tax revenue is collected and the tax "increment above the initially established level goes into a fund to retire the bonds." After the development is completed and the bonds are retired, the tax revenues from the enhanced tax base are distributed more normally.

J. CHARITABLE FUND RAISING Charitable contributions are generally made to be used for a specific project. This method is often used for libraries, parks, hospitals and fire equipment. This funding would need to be appropriated at town meeting or accepted by the Board of Selectmen at a public hearing depending on amount received and when it is received.

K. BONDING RESALE FINANCING This method requires that the community bond a particular parcel of land, develop it for a previously determined use, and sell the developed site or sites to regain the investment. This "turn-key" approach has worked well for developing industrial parks and cemeteries.

L. STATE HIGHWAY FUNDS to obtain State Highway funds a community submits a proposal for a highway project to the Planning Board and Engineering Division of the Department of Transportation. The Division reviews the proposal and gives the project a priority status. Actual funding originates as a federal disbursement to the State.

XII. POPULATION

A. INTRODUCTION

The key to planning for future growth is to study the past and present conditions, as well as the future projections of the number, age and characteristics of the people within the town. A list of statistics may seem to be rather dry and unexciting way to describe life in Thornton. Numbers, however, can be excellent indicators of the social health of the community. Current data and that from the recent past establish benchmarks of how the town stands today and the most relevant trends.

B. POPULATION TRENDS

Thornton's population has continued to grow through the past fifty years. This is in lock step with the State of New Hampshire as a whole. In 1960 Thornton had 480 residents and by the year 2000 it had grown to 1843. The 2010 U.S. Census Bureau shows our populace at 2490. The steady rise of the population is largely due to the easy access provided by Interstate 93

The median age of our citizens is 45.5 years whereas the median resident age of Grafton County is 38.4 years and the State figure is 37.1 years of age.

The economic downturn in recent years has slowed building as we can see by the number of building permits for single-family house construction fluctuated from 70 in 2004 and steadily decreasing to 8 in 2010.

Table VII
CHANGES IN TOTAL POPULATION FROM 1960 TO 2010

	Thornton	Grafton County	NH
1960	480	48,857	737,578
1980	952	65,806	920,610
2000	1843	81,743	1,235,786
2010	2490	89,118	1,316,470

C. MIGRATION

New Hampshire saw migration fluctuate in the past decade with a high of 46,500 and the remaining decade in the high to low 30,000 range.

Migration out of New Hampshire remained consistently in the high 30,000 range throughout the entire decade.

When looking at Table VIII, however, Thornton and most of our surrounding towns saw considerable increases in population during this same time period.

TABLE VIII

POPULATION FIGURES – SURROUNDING TOWNS

	1980	1990	% Change	2000	% Change	2010	% Change
Campton	1694	2377	40.3%	2719	14.4%	3333	22.60%
Ellsworth	53	74	39.6%	87	17.6%	83	-4.60%
Groton	255	318	24.7%	456	43.4%	593	30.00%
Lincoln	1313	1229	-6.4%	1271	3.4%	1662	30.80%
Plymouth	5094	5811	14.1%	5892	1.4%	6990	18.16%
Rumney	1212	1446	19.3%	1480	2.4%	1480	0%
Thornton	952	1505	58.0%	1843	22.5%	2490	35.10%
Warren	650	820	26.2%	873	6.5%	904	3.60%
Waterville Valley	180	151	-16.0%	257	70.2%	247	-3.90%
Wentworth	527	630	19.5%	798	26.7%	911	14.20%
Woodstock	1008	1167	15.8%	1139	-2.4%	1374	20.60%

XIII. GOALS AND OBJECTIVES

A. INTRODUCTION

Goals and policies were generated from the community attitude survey recently conducted. In this step of the planning process, the aspirations and needs of the Town are tempered with the realities of limited resources and the reluctance to change demonstrated in the response to question #10 of the survey included as Appendix 2 and noted in the vision for Thornton under Section IV.

B. NATURAL RESOURCES

1) GOAL

Preserve the quality and quantity of Thornton's rural character through conservation and preservation.

2) POLICIES

a) Comply with state mandate to create a Natural Resource Inventory.
b) Seek a more accurate identification of what comprises the floodplain in Thornton and work with the appropriate agencies to adopt this identification for Thornton.
c) Educate residents about the Shoreland Water Quality Protection Act.
d) Review natural resource inventory.
e) Earth excavation regulations should be strictly enforced to ensure the proper location, operation, maintenance, and reclamation of the site.

C. COMMUNITY FACILITIES

RECREATION

1.) GOAL

Preserve and encourage the recreational opportunities in the Town of Thornton.

2.) POLICIES

a) The Town should sponsor and/or encourage the development of recreational programs for the community.

b) The Town should consider obtaining gifts of land to increase the Amount of parks/playgrounds available to the residents of Thornton.

c) The Town should consider obtaining land easements for recreational use such as bike and/or walking paths.

HISTORIC FEATURES

1) GOAL

Encourage the preservation of historic buildings, landmarks and cemeteries.

2) POLICIES

a) Develop inventory of the historic buildings, landmarks, and cemeteries.

D. TOWN ROADS

The highway road sheet has been updated with the maintenance performed this summer year to date by the Thornton Highway Department. The scores and descriptions shown in the excel sheet represent the paving planned to be completed for the summer of 2012 (see Appendix 4).

The changes updated in this annual report only depict the roads the highway department has improved since April 2012 when the town hired a new Road Agent, all other scores are set using the previous Road Agent's best recommendation. The following grading scale as referenced in Appendix 4 is defined below:

A- Satisfactory (Needs No Improvements)
B- Above Average (Above Average)
C- Average
D- Below Average
F- Dysfunctional (Needs Major Improvement)

1) GOAL

a) Ensure adequate levels of highway maintenance to meet the demands on the Town's roads.

2) POLICIES

a) The Town should strictly adhere to the policy of the Board of Selectmen to only accept roads that meet town road standards.

b) Continue to use the procedure that decisions regarding roadway improvement should follow the road evaluation schedule. (evaluation schedule is located as an addendum to the Master Plan).

E. GENERAL

1. GOAL

a) Consider a noise ordinance.

b) Consider working with state and other local governments to promote ride sharing and/or create a local park and ride.

c) Consider zoning ordinance changes to better accommodate +55 housing developments by special exception.

XIV. FUTURE LAND USE PLAN FOR THORNTON

A. INTRODUCTION

The future land use plan establishes guidelines for the future use of land within Thornton that is not in the nearly 50% of Thornton included the White Mountain National Forest. It provides a basic long-range development pattern for the community and, in general terms, indicates what type of development should occur and where. In a sense it is a physical representation of how to achieve many of the goals and objectives established by the Planning Board and the Community Attitude Survey.

The Future Land Use Map (See Figure 12) illustrates how future land use patterns should develop in Thornton. It should be kept in mind when viewing this map that the boundaries between areas are only approximations.

The future land use plan breaks the town into various future land use areas. The factors used in developing this plan include existing use patterns, established goals and objectives, and natural capability of the land. In designating areas for future land use, the general philosophy is to protect Thornton's unique character and its natural resource base for homes, businesses, industry, and municipal services. The land use patterns existing in Thornton provide the unique opportunity to develop Thornton in a fashion which allows "something for everyone".

The Town is divided into several categories or land use areas. Each category is shown on the following map and discussed in the following narrative.

B. CONSERVATION/OPEN SPACE

The basic premise on which land is developed in Thornton is that growth should occur in areas that can support it both environmentally and at least expense to the taxpayer. Some land in the Town is unsuited for high intensity use such as roads, homes, or commercial buildings. These areas include terrain of over 15 percent slope, wetlands and floodplains. Development of these areas would lead to excessive expenditures of public funds to provide future services and could lead to environmental degradation.

Many areas designated on the future land use map, as conservation/open space areas are some of the most scenic and recreational important areas in the Town such as the Pemigewasset and Mad River Basins. By conserving them, we not only protect the health, safety and welfare of the community, but also assure the importance of Thornton's beautiful scenery and hunting and fishing grounds as recreational areas. The response to question of 13d of the survey (Appendix I) shows that the people of Thornton support (59%) the town acquisition of land having special values such as wetlands and forest.

C. AGRICULTURAL LAND

Agricultural land is another important natural resource. Agricultural land preserves the rural landscape, the scenic vistas, the historic character of Thornton, and provides open space and recreational opportunities. Thornton's remaining agricultural land should be protected from uncontrolled development including the commercial stripping of topsoil.

Present agricultural land is not currently protected by any state or local regulations although the FEMA (Federal Emergency Management Agency) map of the Flood Insurance Rate Maps and the New Hampshire Model Floodplain Development Ordinance which are included in the Thornton Zoning Ordinance place restrictions on development in the Floodplain where much of our agricultural land is located. Steps to protect this land should be developed. One method, clustering, is part of local land use regulations.

Clustering, in general, is the grouping of homes on one part of land and leaving the remainder in open space. This open space could be used for agriculture, open space recreation, woodland etc. This open space would be protected as open space with no future development.

In cluster development adequate provisions for sewage disposal, water, and roadways etc. must be made. Cluster development is not only very successful in protecting land for open space but it also allows the owners to retain the economic value of the land.

This method also reduces the developer's building costs, reduces road building requirements, and creates a more efficient use of land. The efficient use of land, maintains the visual appeal important to the quality of life and the tourist industry.

D. RESIDENTIAL

Thornton's present zoning regulations allow for residential development in all zoning districts with a 1-acre per dwelling unit minimum for single-family or multi-family development. The Town presently has no public water supply or sewage collection system and unless unforeseen development occurs it is unlikely that this will change.

Large-scale residential development such as townhouses, condominiums or multiple single-family subdivisions of 1-acre parcels should only be permitted after their effect on the surrounding environment is determined. Areas designated for residential development vary as to their ability to support homes, roads septic systems, etc. Since public water and sewer will not service these areas the development density within these areas must be adjusted according to the capability of the land to support it.

Detailed soils information is the best available measure of land capability; the type of soil present should determine lot sizes in these areas. The density of housing units should be higher on the better soils (well drained, level, deep, etc.) than on poorer soils or terrain.

The New Hampshire Department of Environmental Services has adopted rules for septic systems that may require lot sizes larger than the minimum specified in the Thornton Zoning Ordinance.

Open space, as previously discussed, should be encouraged in order to maintain as much open space as possible. If a tract of land to be subdivided contains some excellent soils for homes and some that are marginal, the configuration of lots should be allowed to vary if clustered.

As stated previously the Town's land use regulations allow residential development in all the districts including the Commercial and Industrial I & II zones. The practice of allowing this type of mixed use can lead to conflicts. Mixed uses may need to provide mitigation to avoid conflicts that may arise.

Small-scale commercial uses may be appropriate in residential districts but unrestricted commercial activity would again lead to conflicts. Large shopping centers, hotels, professional offices would change the character of an established neighborhood and are prohibited in the Rural Residential and General Residential Zones.

Within a purely residential development limited home-based commercial activity is allowed such as home occupations or by special exception a neighborhood grocery store to service the needs of the area's residents. However, no activities should be or are allowed that would generate extensive traffic to or through these areas.

E. COMMERCIAL

There are two commercial areas delineated on the future land use map and the zoning map. Each has its own characteristics, needs, advantages and disadvantages. Certain types of commercial activities require a great deal of land for large buildings, displays, storage and parking. These are referred to as Highway Commercial. Other activities include small retail shops and convenience stores requiring only small parcels and depend on the surrounding neighborhoods for business. These are referred to a Neighborhood Commercial.

Commercial activity in Thornton is limited in nature and in scope. Thornton is within easy reach of the large commercial areas of Plymouth and Lincoln. This fact may limit any large commercial developments in Town and with continuing residential development neighborhood commercial areas should be established to service residential needs, either by zoning changes encouraging home occupation or by special exceptions.

In any commercial development strict adherence to land use regulations should be enforced to ensure proper setback, access onto highways, buffer zones, native screening, parking, sign location and size, and lighting.

F. INDUSTRIAL

The use of lands for industrial purpose is typically the most intensive use to which it can be used. Many industries have the potential of creating toxic wastes, air and water pollution, noise and traffic congestion. The location of industry in town is important even though the amount of land may be small as indicated on the Zoning Map (See Figure 2).

Industrial development in the Town of Thornton will be limited over the next 5-10 years without an active campaign to attract industrial development. The Town offers no public water or sewer to developers, thus limiting potential industries.

Industrial land may need to be further restricted so as to not conflict with residential development, which has taken place in these zones. Industrial sites should have good highway access with available amenities such as power, water and sewer available off or on site. The siting of the industrial area adjacent to the Route 3 and Interstate 93 interchange takes advantage of the highway access. It also utilizes the Interstate 93 property as an abutting neighbor.

G. PUBLIC LANDS

Thornton presently owns relatively little property. The Town should continue to look towards its future needs for land for cemetery expansion, potential expansion of the school system and other town needs.

The acquisition of property through a capital improvement plan or through land donations to the town should be reviewed and initiated before the need becomes critical.

H. MULTI USE

In effect the Commercial and Industrial areas along Route 3 are multi-use districts for industrial, commercial and high-density residential development and remain so in our future land use planning. The Thornton Planning Board felt that this area is best suited for a mixed-use district due to its proximity to the interstate and its linkage to the Lincoln Woodstock and Plymouth areas.

Developments proposed for this district should be examined carefully to avoid any negative impacts to the existing uses. A mixed-use district has to be scrutinized thoroughly to avoid potential conflicts, especially between any residential and industrial/commercial uses.