# Bethlehem Master Plan

Bethlehem, New Hampshire

2004

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Prepared by the
Citizens of Bethlehem

Adopted by the
Bethlehem Planning Board

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Cover Photo: Aerial view of Bethlehem town center looking west.
*Photo courtesy of photographer Paul Lister, Bethlehem, and pilot Bruce Blaney, Bethlehem, flying an American Champion Super Decathlon 8KCAB owned by Susan Simpson, Franconia.*
Inside Photos: P*rovided by Tanya Tellman, Stanley Harrison, and Lon Weston.*

# ADOPTION OF BETHLEHEM, NEW HAMPSHIRE MASTER PLAN

In accordance with New Hampshire RSA 674:4, Master Plan Adoption and Amendment, and New Hampshire RSA 675:6, Method of Adoption, the Bethlehem Planning Board, having held duly authorized public hearings on the Bethlehem Master Plan on June 9, 2004 and June 30, 2004 hereby adopts and certifies the Master Plan dated July 2004.

| | |
|---|---|
| John Seely, Chairman | Roland Shick, Vice Chairman |
| Kristen Reinhold, Exofficio | Harold Friedman |
| Alecia Loveless | David Tellman |
| Erin Woo, Alternate | Matthew MacKinnon |
| Tandy Brown, Bethlehem Town Clerk | Date of Signature by Planning Board |

Date Filed:_____

NOTE: The original document with original signatures is on file with the Town Clerk.

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# Introduction

# Introduction

## Bethlehem, New Hampshire

The town of Bethlehem is located in northeastern Grafton County, with its northern boundary serving as the county line between Grafton and Coos counties. Situated in the Ammonoosuc River Valley of the White Mountains, Bethlehem enjoys spectacular views of the Presidential Range. Relatively high in average elevation, the town is influenced by its location and enjoys cool summers, and winters with significant snowfall. Typical of mountain locations, summer showers and winter snow flurries can occur almost without warning. The town is bounded on the west by Littleton, the regional commercial center, and Interstate 93, which passes through the southwest corner of Bethlehem. The towns of Sugar Hill, Franconia and Lincoln are to the south. The town of Carroll is to the northeast and the unincorporated place of Harts Location is to the east. The Towns of Whitefield and Dalton are to the north. US Route 302, one of the major east-west highways in northern New England, divides Bethlehem and serves as the Town's Main Street. New Hampshire Route 116, that serves as the major north south corridor between Littleton and Whitefield, runs through the northernmost area of Bethlehem.

## Historical Perspective

Bethlehem was founded in 1774 as Lloyd Hills, a name retained until 1799, when it was incorporated as the Town of Bethlehem. Initially, Bethlehem depended heavily on its abundant natural resources for its economic base. Early development took place along the rivers and roads built to serve farms and mills or to link major cities. With the arrival of the passenger railroad in the late 1800s Bethlehem became a popular summer vacation destination and experienced the rise and fall of the grand hotels. In the last forty years the town has experienced an increasing level of land subdivision for year-round and seasonal dwelling units. The town remains a tourist destination, especially during July and August and during fall foliage.

## Planning

In the 1960s Bethlehem residents became increasingly concerned about haphazard and premature development in the community. This concern led to the establishing of the Bethlehem Planning Board in 1969, and the creation of zoning, subdivision, and site plan review regulations in the 1970s. Bethlehem's first Master Plan was then published in 1979. Over the past thirty years the community has experienced periods of rapid growth and Bethlehem's regulatory tools have evolved greatly. A Master Plan update was completed in 1993, and the 2004 Master Plan update will now guide planning and zoning in Bethlehem into the future.

## The Master Plan

The purpose and description of master plans were changed considerably by legislation effective July 14, 2002. It was recognized by the legislature "that growth and development are changing the look and feel of New Hampshire, against the desires of most citizens". The newly enacted legislation was designed to provide more definitive guidance in planning and managing future growth, not only within a municipality, but within the region as well.

The purpose of the master plan is to set down, as clearly and practically as possible, the best and most appropriate future development of the area under the jurisdiction of the Planning Board. The master plan should aid the Board in designing ordinances that preserve and enhance the unique quality of life and culture of the Town and of New Hampshire. The master plan will then guide the Board in the performance of its duties in a manner that achieves the principles of smart growth, sound planning and wise resource protection.

The Bethlehem Master Plan is a set of statements and land use and development principles for the Town with accompanying maps, diagrams, charts, and descriptions. This document gives legal standing to the implementation of ordinances and other measures by the Planning Board. The master plan is a public record. Bethlehem's Master Plan includes the required vision section that serves to direct the other sections of the Plan in accordance with New Hampshire RSA 674:2. It also includes the required land use section upon which all following sections are based. This plan also includes the remaining recommended sections, as listed below:

| | |
|---|---|
| *Transportation* | *Natural Resources* |
| *Community Facilities* | *Recreation* |
| *Utilities and Public Services* | *Cultural and Historic Resources* |
| *Population & Housing* | *Community Design* |
| *Economic Development* | *Regional Concerns* |

*Implementation*

A master plan is not a legally binding document, nor is it meant to serve as a rigid or specific guide for achieving an end. It is not a zoning ordinance or a zoning map, but rather a means to visualize the long-range growth of the community. It considers past trends and future potentials, major problems which require solution and directions or objectives that can be developed as guides to responsible growth. This master plan should serve as a road map to the future, but planning is a dynamic process. If community attitudes change, or new technologies, regional development, or trends within the town require a new focus, then they must be addressed. Future planning boards and concerned citizens are urged to recommend changes to the plan as the needs of the community dictate. In the near future it would be beneficial to create an executive summary document, in poster or booklet format, which briefly presents information and policy recommendations from the Master Plan in an attractive format that can be easily distributed to residents.

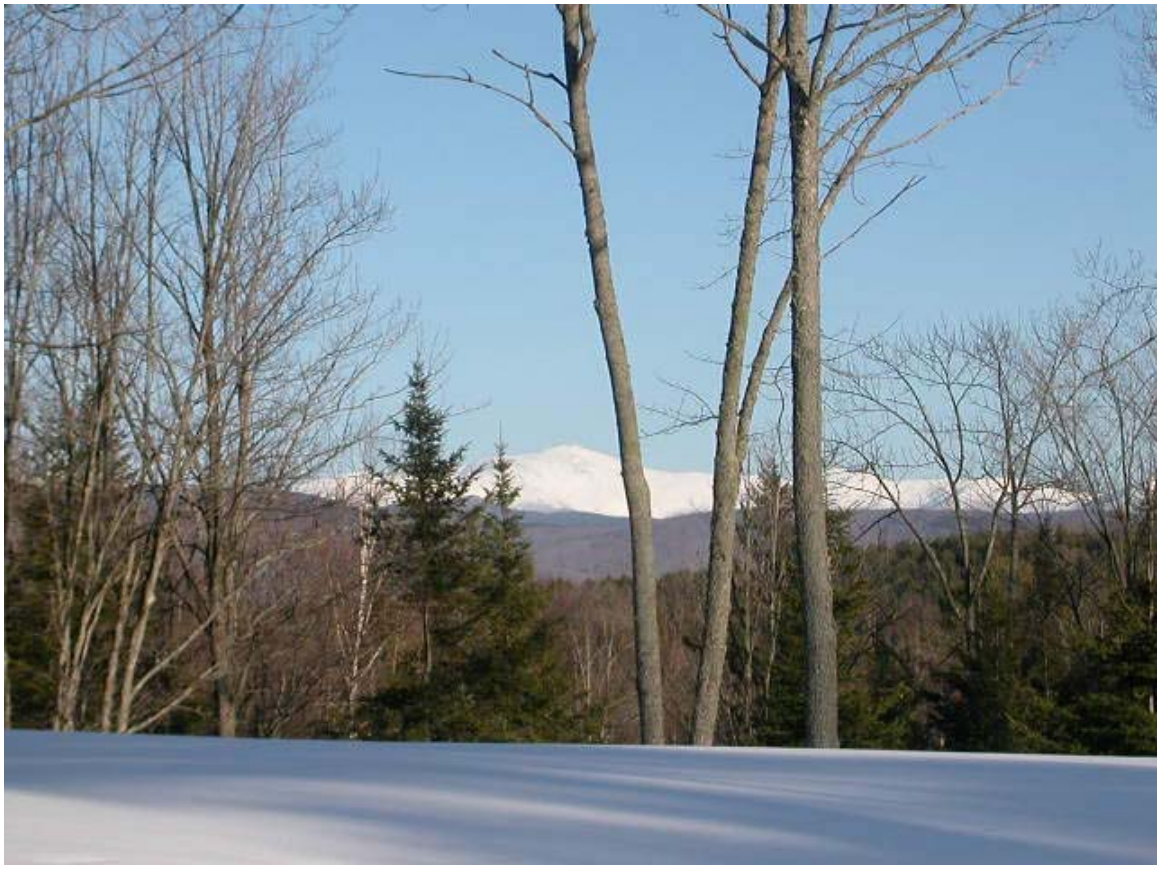
## Acknowledgements

The Planning Board began work to revise the 1993 Master Plan in 1998, drafted and sent to Bethlehem taxpayers a Community Attitudes Survey in April 2001, and held public hearings in October 2001, April 2003 and June 2004. Many meetings were devoted partially or entirely to Master Plan work and hundreds of hours were devoted to the task Planning Board members no longer on the Board participated in the effort as did members from other boards, commissions and committees. A number of private citizens provided valuable assistance, advice and expertise. Stacy Doll and James Steele from North Country Council were most helpful – Stacy in getting the Board focused and energized early in the process and James for his skill in translating verbal requests into a series of maps that take the place of untold numbers of words. Jeff Taylor, and especially Steve Whitman, of Jeffrey H. Taylor & Associates, took the various narratives with statistics, research documentation, ideas and recommendations completed by the Board and compiled them, often filling in weak or missing portions, into a cohesive and well-laid out document. Without these people and many others the Plan would not have been completed.

## A Word for the Future

Drafting a completely new Master Plan is a monumental task for a volunteer board that must also attend to required business every week. Future planning boards should revise sections or write new ones as they are needed rather than waiting until the Plan requires total revision. Future boards should also seek financial support from the Town to contract for professional assistance in preparing a revised or new Plan.

# Chapter 1
# A Vision for Bethlehem



# Chapter 1
# A Vision for Bethlehem

## 1.0 Vision Statement

*A "Vision Statement" defines a preferred future. It is broad and may be idealistic, but it should be attainable.*

Bethlehem takes pride in its past and has worked to maintain a balance between development and preservation of its small town character. The town works to meet the challenges of sustaining its character while providing its residents with a safe and friendly environment in which to live, work, shop, learn, and play. Residential and commercial development are planned and guided in a manner that retains open space for forestry, agricultural, wildlife and plant habitat, and recreation. Town infrastructure and facilities are planned and constructed to keep pace with development while prudent fiscal management keeps tax rates on an even keel. With nearby Littleton serving as a regional hub for commercial and industrial development, and with many residents working in that and other towns, Bethlehem is a proactive player when regional initiatives or developments affect the town. Citizens of Bethlehem take an active role in governance of the community and the region, and in determining the future growth of the town.

Five vision principles emerged from the responses to the Community Attitude Survey, input of from Town boards, commissions and departments, and from interested citizens:

1. Maintain the rural landscape
2. Foster a vibrant, livable village district
3. Direct new growth into areas that can develop as compact neighborhoods which allow for a mix of uses
4. Encourage economic vitality
5. Protect environmental quality

## 1.1 Goals

*A "Goal" identifies what the Town intends to accomplish. It should be broad, not identifying specific activities. It is oriented toward achieving the Vision.*

Goals help identify and prioritize the actions required to achieve the Vision. They are all equal in importance. Subsequent chapters provide background, specific objectives, and actions needed to fulfill the goals.

**Goal 1** Provide a safe, functional and well-maintained transportation system which implements the land use plan. It should include roads, parking, sidewalks and non-motorized opportunities.

**Goal 2** Prepare, with full citizen participation, a long range plan for relocating, building or renovating Town facilities. This plan should include target dates and funding sources.

**Goal 3** Require private developers to compensate the Town when a proposal will have a major impact on Town services, infrastructure, and/or schools.

**Goal 4** Pursue policies and capital improvement expenditures that facilitate growth in designated areas, thereby protecting and conserving open space while providing public facilities and services efficiently and cost effectively.

**Goal 5** Develop, and keep current, a plan for the acquisition and operation of a Town-owned transfer station. This plan should identify trash disposal options and funding alternatives, in preparation for the eventual closure of the Trudeau Road landfill.

**Goal 6** Draft and approve a plan to ensure the Town has a lead role in monitoring the Trudeau Road landfill when the facility is closed.

**Goal 7** Encourage economic development that emphasizes tourism and recreation, and with increasing emphasis on commercial growth in specific areas.

**Goal 8** Adopt and implement innovative land use ordinances and regulations. These should discourage strip development by designating concentrated areas, appropriately located and zoned, for a variety of types and intensities of new development.

**Goal 9** Maintain the rural character of the town, and the natural ecosystems of the region, by promoting land use practices that maintain open space in large, contiguous parcels.

**Goal 10** Protect the Ammonoosuc River corridor from development that degrades water quality and the aesthetics of this ecosystem; adopt a shoreland protection ordinance and work with other towns and the Department of Environmental Services to protect the entire Ammonoosuc watershed.

**Goal 11** Identify, and keep current, inventories of natural and scenic resources, wetlands, flood plains, groundwater, and important habitat areas.

**Goal 12** Provide a coordinated and comprehensive system of public and private recreational facilities, programs, and open space. These efforts are needed to meet the active and passive recreational needs of all citizens and visitors and enhance community design, identity, and vitality.

**Goal 13** Recognize new technologies (such as personal wireless service facilities) which may affect the town's view sheds, existing utility infrastructure, and development in specific areas. The town should adopt ordinances or regulations which will minimize adverse impact of these facilities, and should control exterior lighting so as to maintain the night sky free from light and glare.

**Goal 14**. Preserve the town's historic, cultural, scenic, and architectural heritage.

**Goal 15** Maintain consistent and predictable tax rates by balancing population growth and economic development with long-range needs for capital improvements and education expenses.

**Goal 16** Revise and update Town Ordinances and Regulations so that more people, residences, and businesses can be accommodated in areas better suited for greater density of development.

**Goal 17** Eliminate, or bring into conformity, activities that are in violation of Town Ordinances and Regulations.

**Goal 18** Consider and adopt, if appropriate, new forms of organization and governance best suited to guiding and administering the town in the 21st century.

**Goal 19** Take the lead, or actively participate with other towns and regional organizations, to address new initiatives or existing problems facing the region (such as, but not limited to, education, transportation, housing, economic development, and the environment).

# Chapter 2
# Land Use and Community Design

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# Land Use and Community Design

## 2.0 Introduction

Bethlehem is the third largest town in New Hampshire. It has many land uses, most of which can be grouped together in general categories. This chapter describes factors which have influenced land use within the community, and paints a picture of present land use patterns. A short history of land use planning in Bethlehem is also included, as it plays an increasingly important role in guiding development. It is necessary to understand what land use patterns exist now before determining what future patterns should be. Similarly, it is important to understand how effective planning and well-crafted ordinances and regulations can be used to guide development in positive ways.

## 2.1 Existing Land Use

The Town of Bethlehem has a land area of approximately 58,165 acres, plus approximately 45 acres of water. Of these, 30,993 acres (or over half of the town) are within the White Mountain National Forest. The remaining area, approximately 27,217 acres, consists of open space, or is occupied by residential, commercial, industrial, recreational, educational or governmental land uses. Map A in the Appendix illustrates the existing use of land in Bethlehem. It should be referred to as the various land uses are discussed.

The primary factor influencing land use in Bethlehem for more than 200 years has been topography. More than half of the town is within the White Mountains. Elevations range from 880 feet above sea level to 4,761 feet above sea level. Eighteen mountains and hills within Bethlehem exceed 2,000 feet in elevation. Much of the remaining land is within the Amonoosuc River basin and its tributaries. The river bottomland and terraces are generally the settled and populated portions of the community. A high plateau, at over 1,400 feet above sea level, is the setting for Bethlehem Village, a mixed use, densely developed area along U.S. Route 302, which has served as the town center for much of Bethlehem's existence. While the slope and elevation of Bethlehem's terrain still somewhat affects development in Bethlehem, other factors such as roads, and the availability of Town services have assumed greater importance in recent years.

### 2.1.1 Transportation

Major roads are channeling growth and land use changes within the region. U.S. Route 302 is the major east-west corridor for truck traffic from Canada, Vermont and New Hampshire off of Interstate 93 to and from Maine. With U.S. Route 302 also serving as the Main Street in Bethlehem, small commercial establishments have sprung up along the road taking the place of the large hotels and larger businesses that once thrived here. For most of the 1990s, population increases and development activity were relatively low and the town did not experience significant changes along this corridor. However, a number of new subdivisions and commercial endeavors in the past five years have brought more significant change. Current zoning regulations allow for this type of strip development, and for additional development along U.S. Route 302 in Bethlehem. New regulations promoting nodes of development, instead of strip development, would preserve the capacity of the roadway to handle future volumes of traffic.

U.S. Route 3, another major transportation route, is heavily traveled, but is almost completely surrounded by the White Mountain National Forest where it passes through Bethlehem. U.S. Route 3 is connected to U.S. Route 302 by Trudeau Road, a Town maintained road, which has become more heavily traveled by trucks going to the private commercial landfill, and by passenger vehicles.

New Hampshire Route 116, which skirts the northern edge of town, has experienced a dramatic increase in local as well as intra-state travel both east-west and north-south. Many people work and/or shop in Littleton and use NH Route 116. Commercial vehicles use the road to and from Interstate 93 and to points north and south along the Connecticut River Valley. Until 2000, there was limited residential development along NH Route 116 except near the Littleton town line. In 2001 and 2002 there was increased interest in this area for residential development. There are two industrial enterprises on NH Route 116 and two smaller commercial operations toward the Whitefield town line. In 1999, to encourage industrial and heavy commercial businesses to locate in Bethlehem, a new District was designated along the eastern end of NH Route 116 which permits a number of industrial and commercial uses.

New Hampshire Routes 142 and 18 have not seen significant increases in traffic, but will likely be the focus of increased development especially within the central part of the Village (NH Route 142) and in the vicinity of the Interstate 93 and NH Route 18 interchange. Brook Road, a Town road linking U.S. Route 302 to southeast Littleton and NH Route 116, has seen a significant increase in traffic. Two major subdivisions were approved on or near Brook Road in the 1990s and a 142-acre commercial district, Zoning District 4, was created near the Littleton town line in 1999.

### 2.1.2 Current Use Assessment

New Hampshire RSA 79A, adopted in 1972, provides a property tax incentive to all qualifying landowners (generally owning more than 10 acres) who agree to maintain their land in an undeveloped condition. The assessed value of this land is based on the

capacity of the land to produce income in its *current use* – whether it be managed forest or farm, or unmanaged open space – and not its *potential use.* Current Use Assessment has helped maintain Bethlehem's rural character and its attraction for tourists by keeping land open for productive forests and farms, recreational enjoyment, and wildlife habitat. Open space also helps reduce the costs of municipal services. A penalty is assessed for land taken out of the Current Use program.

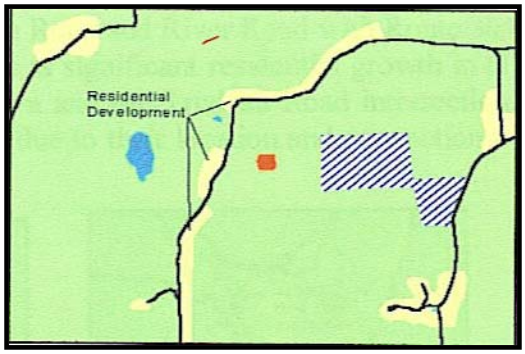
Bethlehem landowners have taken advantage of the Current Use Assessment incentive. Table 2.1.2 presents the number of acres in Current Use in Bethlehem. The total number of acres in Current Use in Bethlehem in 2002 was 16,771, or approximately 62% of the town's land area outside the White Mountain National Forest.

**Table 2.1.2 Land in Current Use (Acres)**

| Category | 1978 | 1990 | 2002 |
|---|---|---|---|
| Forest Land | 3,700 | 8,300 | 14,207 |
| Farm Land | 0 | 199 | 1,754 |
| Unproductive Land | 0 | 2,856 | 810 |
| Wetland | 0 | 210 | 0 |

Source: 1978, 1990 and 2002 Department of Revenue Administration Current Use Reports.

### 2.1.3 Residential Development




Residential development is taking place in most areas of town. As in the past, most development is occurring along existing roads, but recent subdivisions have been approved with multiple lots located off new roads. The lots are served by dead-end public or private roads, which enter existing roads. Most new residential construction has been in Zoning District 2 and requires a minimum 80,000 square foot lot. Land historically used for forestry and agriculture uses has become sufficiently valuable to acquire and develop. Acreages for lots in these subdivisions are often more than the minimum acreage, and the houses tend to be quite large.

*Land with steeper slopes or with wetland areas, which was avoided in the past, is becoming more attractive as favorable building sites become scarce.*

Interest in developing along the Ammonoosuc River and on steeper slopes can be expected. The modest population increase of 8% from 1990 to 2000 suggests that some of the new lots and/or homes were purchased for use as second homes, or by older individuals without children since school populations have not increased with the overall population increase.

The existing residential housing stock consists of many older single and multi-family homes in generally fair to good condition. Most of these dwellings are located in or near the village center. New residential units constructed over the past 12 years have been scattered throughout the town. There are a significant number of manufactured housing units located either on scattered sites before adoption of the Manufactured Housing Ordinance, and in the cooperatively-owned Rambling Woods manufactured housing park on Maple Street. Few of the new housing units built, or units improved since the mid-1980s, were built or renovated for the lower end of the housing market, placing increasing importance on the town's rental housing. Demand for land and houses, with concurrent speculation on land and residential property in the late 1980s, and again beginning in 2000 and continuing through 2003, has made it less attractive to lease houses. Many existing rental properties are deteriorating and may pose potential health and safety risks for their primarily low and moderate-income residents. There is one elder housing development in the community that has an average two-year waiting list. Affordable housing and housing for the elderly have not been issues in the past, but may become an area of concern.

Residential development within Zoning Districts 1 and 2 is likely to continue. Bethlehem has been a desirable location for second homes for many years and this trend will likely continue. It also has land available at reasonable prices, which make living in the town an attractive option for the increasing number of people employed in Littleton.

Conversion of open space to residential development can conflict with the desire to maintain the rural character of the town. While lot sizes may be large, street after street of 2 acre lots each with a large house would eventually look much like a suburb of a large city. Wildlife habitat suffers, and scenic vistas may be lost. Without sewers, additional septic systems can have a long-term impact on water quality. Town services, especially road maintenance and school transportation, will become increasingly expensive. A large number of dead end streets accessing a single road or highway may lead to traffic bottle necks especially since residents in these areas will mostly be dependent on the use of an automobile to get to work, school, shopping, or to seek entertainment.

Present zoning ordinances and regulations have had the effect of encouraging residential development on large and dispersed lots within Zoning District 2. Existing zoning ordinances and regulations need to be examined critically to be sure that they are not encouraging development that may destroy what residents cherish most about Bethlehem.

### 2.1.4 Village Center

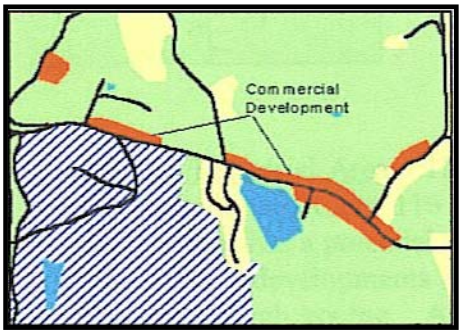

Bethlehem has a downtown core located between the top of Long Hill (intersection of Lewis Hill Road) and the Maplewood Country Club. This pattern of mixed use and downtown community development extends primarily along Main Street (U.S. Route 302) creating a very linear pattern. Zoning ordinances place Main Street in one district (District 1-Main Street) and the branching and parallel streets in another (District 1). Even though mixed uses are allowed in both districts, the development pattern is a linear downtown surrounded on both sides by primarily residential development. Only limited commercial development exists along NH Route 142 in the downtown area, and on other town streets off of Main Street.

It appears that the zoning ordinances may be contributing to the linear development of the village center by limiting expansion of existing District 1 – Main Street businesses and residences since most of the lots and structures in this area existed before there were zoning ordinances. The streets immediately off Main Street in District 1 require a minimum lot size of 40,000 square feet and road frontage of 150 feet. The size of lots, road frontage, setbacks, and other requirements discourages the kind of density, mixed use and walkable community that is needed if the village center is to expand in all directions rather than continue purely in a linear fashion.

Many of the town's remaining historic structures and architectural treasures are in the village center. Fortunately, many of the older homes and other structures have been renovated and are well-maintained by their owners whether as private residences, inns, bed and breakfast operations, or commercial buildings. A change to General Provision 7 of the Town Ordinances was adopted in 1999. This provision provides that new structures must conform… "in architecture and character to other structures and dwellings in the neighborhood…," and was intended to help preserve historic structures and areas of the town. While this may have helped, more must be done. The Bethlehem Heritage Society, formed in 1997, has, as one of its primary missions, the preservation and protection of Bethlehem's rich heritage, and should be called upon to work on an ordinance or regulation which will better address this issue.

Another issue for the village center is the lack of public parking, and the many driveway cuts into Main Street from residences and businesses. Of particular concern is the Town Building and Post Office complex, and much of the area from the Town Building to the Gazebo.

### 2.1.5 Commercial Strips




Along U.S. Route 302 there is a strip of commercial development forming near the intersection of I-93 and continuing to the bottom of Long Hill. Although most of the commercial developments are spread out along this area, it is possible that the remaining open areas could be developed incrementally, causing more driveway cuts, and resulting in more traffic and potential accidents. The 2002 approval of a private recreational area on Long Hill may worsen this problem. Lack of sidewalks from Brook Road to the top of Long Hill poses a danger for pedestrians, especially in the summer when the motels and cabins are fully occupied.

The area of U.S. Route 302 in the vicinity of Trudeau Road has also experienced some commercial growth in the past 12 years. More growth is likely given the good access to U.S. Route 3 via Trudeau Road, and the reasonably good automobile access to NH Routes 142 and 116 via River Road and Wing Road.

### 2.1.6 Commercial/Industrial Development

Expansion of the Commonwealth Wood Pressure Treating facility and a new bulk fuel and lubricants facility, both on NH Route 116, were the only new industrial developments during the 1990's. The pressure treating business then ceased operations in late 2001. The facility is presently a firewood and mulch processing business. The Pine Tree Power plant on NH Route 116 remains the town's largest industrial operation. The Garnet Hill warehouse at the intersection of NH Route 18 and I-93 expanded in 1997, but closed in 1999 after Garnet Hill consolidated its warehouse and shipping operations in Ohio. The warehouse has been sold, and is being utilized as offices and small commercial businesses.

The private landfill on Trudeau Road continued to operate and expand its operations throughout the 1990s. The landfill is addressed separately later in this chapter. Owners of the Maplewood Country Club proposed renovation of the Maplewood Casino and a 120-room motel in 1998. The Planning Board approved both projects. The Casino renovation was completed, but the motel was not built. A later proposal to build 100 plus condominiums, and/or houses, on and around the Maplewood Country Club never progressed beyond preliminary discussions. The Casino and Country Club were sold in early 2004, and new development proposals are anticipated.

The Bretton Woods Hotel Partnership that purchased the Mount Washington Hotel and surrounding properties in the early 1990s has expanded the ski areas and real estate development. A portion of the Partnership land holdings are within Bethlehem, and an expansion of the ski area within the town was first approved in the late 1990s. The Planning Board approved a further expansion of the ski area in February 2002.

Condominium development was also expanded into Bethlehem with 15 units approved by the Planning Board in 2001. The approval came after the Bretton Woods Partnership obtained a variance from the Zoning Board of Adjustment for additional density. The Partnership has indicated that more condominium units will be proposed for Bethlehem in the future. The 929.05 acres owned by the Partnership in Bethlehem that are being used for skiing and condominium development are approximately 11 miles from the Bethlehem/Carroll town line on U.S. Route 302. The area is in Zoning District 2, which has larger lot requirements than similar development which has taken place in Carroll. Bethlehem's Condominium Ordinance was not promulgated for condominium construction in this area and will require ZBA action for each expansion. With ski area and condominium infrastructure present in Carroll, the small size of the area in Bethlehem and its distance from other populated areas in town, the Planning Board has considered a proposal for the formation of a new zoning district for this area. The proposed district would provide for existing activities and future expansion modeled after Carroll's zoning provisions that are applicable to the much larger Bretton Woods development in the Town of Carroll. The Partnership would no longer be required to seek variances for most of its projects and the ski operations and high-end condominium units could add significantly to the town's tax base.

Christmas tree farm operations by the Society for the Protection of New Hampshire Forests, at their Rocks Estate property on U.S. Route 302, have proven to be very successful. This land use attracts a large number of people to the community between mid-November and Christmas. Finnegan's Fine Firs, a Christmas Tree farm on Cherry Valley Road, has been similarly successful adding to late fall and early winter visits to the town to acquire a tree or wreath. Visitors purchasing a tree or wreath at one of these businesses often make visits elsewhere in Bethlehem, and stay in inns or motels in Bethlehem or the surrounding communities.

Most new commercial activities have been confined to Main Street in existing commercial buildings. Commercial activities in the remainder of Bethlehem have been scattered and include auto repair facilities, a tree service, day care facilities, kennel, bookstore and mail order operation, and various home based businesses with no, or limited, retail activity.

In 1998, the Planning Board took the initiative to encourage commercial and industrial development in Bethlehem by proposing two new zoning districts to be carved out of District 2. A number of commercial and industrial endeavors would be permitted outright or by special exception. The voters approved these new districts, District 3 and District 4. A bulk fuel and lubricants business in District 3 is the only new business that has been built in either of the districts.

### 2.1.7 Interstate 93 Interchanges

Limited development has occurred at the two I-93 interchanges located within Bethlehem. Exit 40, Interstate 93's intersection with U.S. Route 302, is mostly undeveloped due to the fact that the Society for the Protection of New Hampshire Forests

owns the land on three of the four corners. The remaining corner is partially occupied by an inn and bookstore operation. At Exit 39 , Interstate 93's intersection with NH Route 18, there is also limited development. This may be due to the fact that it is not a full four-leaf clover intersection design.

With the rapid growth of commercial businesses in Littleton, Bethlehem may be affected by development around Exit 41 which is in Littleton, but on the Bethlehem town line. New residential subdivisions have been proposed, or approved, on Gilmanton Hill Road and on Old Route 302 in Bethlehem. New businesses in the vicinity of Exit 41 may further spur development in this area of town.

### 2.1.8 Recreation

Recreational opportunities in and around the town have attracted visitors and new residents to Bethlehem for many years. Recreation is an important consideration when looking at land use within the town. Its importance was highlighted in the 2001 Community Attitudes Survey. Many hiking and cross-country ski trails are close by in the White Mountain National Forest, and within the town as well. The Appalachian Trail passes through the town within the WMNF. Recent state highway improvements have included extra space on the roadways for bicycles, stemming largely from urging by the Bethlehem Conservation Commission. The Bethlehem Country Club, owned and operated by the town, and the privately owned Maplewood Country Club offer two 18 hole golf courses within the community.

Snow machine trails offer winter recreational opportunities. All terrain vehicles are becoming more popular and, while controversial due to the ways they can impact the land, may become a more important recreational draw in the future. Ample opportunities exist for hunting, fishing, quiet watching of birds and other wildlife, or enjoying wildflowers on private as well as public land. In addition to the WMNF, Bretzfelder Memorial Park, Strawberry Hill State Forest, an 80-acre New England Forestry Foundation forest on Lehan Road, and the 1300 acre Rocks Estate offer areas to enjoy the out-of-doors. The Town provides an excellent summer recreational program, and maintains ball fields, and tennis courts, and until 2003 a public swimming pool. A privately owned driving range, miniature golf, and batting cage recreational area was approved for construction in September 2002. It will be located on the south side of U.S. Route 302 on "Long Hill" across from the Bethlehem Country Club.

### 2.1.9 Town Properties

Town properties have changed little since 1993. The largest land holdings are the Bethlehem Country Club, the Town Building complex including fire, police, swimming pool, playground, and the Information Center/Bethlehem Heritage facility. The Town Highway Garage is in the same location on Prospect Street, but with a new garage completed in 1992. In 1998, the voters approved taking an "owner unknown" parcel and an abutting property to become a Town Forest. The Town acquired a 15.7-acre parcel on Pleasant Street in 2001 for eventual use as a portion of the Country Club.

Sale or otherwise disposing of properties taken for taxes, or which are classified as "owner unknown" continues to be a problem. Required legal and administrative actions make it very difficult and time consuming to dispose of these properties. At the end of 2002 more than 35 properties were listed as having been acquired through Tax Collector's deed or were listed as owner unknown. A very successful auction, of 21 properties taken for taxes, was conducted in November, 2003 that netted $260,400 for the town, and will return these properties to the tax roles. These properties ranged from fractions of an acre to over 60 acres in size. The most valuable remaining property is the Chase Tennis Camp on Main Street. It has been evaluated as a possible land area for expansion of Town offices or facilities.

### 2.1.10 Sand and Gravel Excavations

Bethlehem has a number of active sand and gravel pits. Excavations are controlled by the State in some respects under RSA 155-E, but towns retain most powers to regulate the removal of earth to be used as construction aggregate. Most State land use statutes do not give the planning board enforcement powers. Excavations are an exception. The Planning Board is the "regulator" and is also given enforcement powers under RSA 155-E. The Planning Board adopted excavation regulations on November 18, 1992.

Four "grandfathered" pits are operational within the town. These include two pits owned by Donald Stone, one by Daniel Tucker on Trudeau Road, and the pit owned by John Wedick on Wing Road. Grandfathered pits and pits used exclusively for public roads by a unit of government are not subject to Town permitting, but must adhere to State operating and reclamation standards. In addition to the four grandfathered pits, the Town of Franconia owns a pit in Bethlehem off NH Route 142 on the Class VI Gale River Road. Five permitted pits operate within the town. They include a third pit owned by Donald Stone on Trudeau Road, a second pit owned by Daniel Tucker also on Trudeau Road, a pit on River Road owned by Fred Kendall, a pit on Little River Road owned by Franz Szakmary, and a pit off Route 116 owned by James Powers. Sand and gravel operations can be found on Map A in the Appendix.

The Planning Board inspects permitted pits each year and, if all is in order, a permit is issued for the next year. All of the permitted pits have opened since 1990 following application by the respective owners, a public hearing, and formal approval by the Planning Board. One additional pit was opened off U.S. Route 302 on land owned by Malcolm Washburn for the exclusive use by an agent of the State for improvement of U.S. Route 302 during 2000-2001.

Bethlehem has significant sand and gravel resources due to the glaciers that covered the area 12,000 years ago, and the deposits they left behind. Much of the sand and gravel was removed before State or Town regulations existed. Nature has reclaimed most of these former pits, but some represent concerns from a safety and/or environmental aspect. The Planning Board and Conservation Commission checked many of these abandoned pits in the early 1990s. None were deemed an immediate safety or environmental hazard,

but a few were noted as potential problem areas should they be disturbed, or if development should take place nearby. One such pit on West Forest Lake Road was partially regraded and seeded by an owner before selling the lot in 2000.

### 2.1.11 Commercial Landfill Operations

The privately owned landfill on Trudeau Road (opened in 1976) was sold by SANCO in 1992 to Consumat Sanco, Inc., which became North Country Environmental Services (NCES) in 1994. NCES is a Cassella Waste Management Corporation entity. Private citizens and a citizens action committee began efforts in the late 1980s to try to prohibit any further expansion of the landfill. A warrant article to this effect was passed in 1992. A series of actions by private citizens, interest groups, the Selectboard, the Zoning Board of Adjustment, and the Planning Board followed to stop or at least establish some degree of local control over the landfill. Lawsuits were initiated in the 1980s by private citizens, but beginning in 1992, Town Boards became involved as plaintiffs or defendants, and this situation continues into 2004.

In February 1999, and further clarified in April 1999, the Grafton County Superior Court ruled that NCES may both operate and expand its landfill on the 41 acre lot to the extent permissible under the zoning ordinances as they existed when the use was first established and under conditions granted by the ZBA by special exception in 1986. The 41 acres combined with 10 acres approved by the Town for landfill operations in 1976, meant that a total of 51 acres were available for landfill operations with very limited control by the Town. The Grafton County Superior Court decision was appealed by the Town to the New Hampshire Supreme Court, which in May 2001 affirmed the decision of the Grafton County Superior Court.

While the suit was under consideration by the courts, the voters passed a height ordinance in March 2001, limiting landfill height to 95 feet. During this period NCES applied to the New Hampshire Department of Environmental Services (NHDES) for the next stage of landfill operations within the 51 acres. The permit was approved. In the summer of 2000, a corporation with a close contractual relationship to NCES applied to the NHDES to construct and operate a facility to evaporate leachate generated by the landfill. The Corporation, Commonwealth Bethlehem Energy (CBE), obtained an operating permit and operations commenced in April 2001. The Planning Board requested that the corporation apply for site plan review for the a "Landfill Gas Utilization Facility", but was informed by NCES and CBE attorneys that site plan review in most regards was not required based on earlier landfill permits and/or was pre-empted by state regulations. This controversy and others revolving around local control of the landfill resulted in a new lawsuit being filed against the Town by NCES in September 2001. This was followed later in the year with the filing of a counter-suit by the Town. The case went to trial in Grafton County Superior Court in December 2002.

In the summer of 2002, NCES made application to the NHDES to expand landfill operations beyond 51 acres. The Town vehemently opposed the proposal, but it appeared

to have NHDES support. The issue of expansion beyond 51 acres was included in the December 2002 trial.
The Grafton County Superior Court's Notice of Decision issued on April 24, 2003, supported several of the Town's contentions. Perhaps most important was the ruling that the Town's 1992 zoning amendment could be used to prohibit expansions of the landfill beyond 51 acres. The ruling also stated that the Town's height ordinance could be applied to any development within the 51 acres and that some limited portions of the Town's site plan review regulations were applicable to operations within the 51 acres unless specifically preempted by the State.

The Town and NCES promptly appealed the order of the Superior Court to the Supreme Court of New Hampshire on differing aspects of the decision. In its opinion, issued on March 01, 2004, the Supreme Court affirmed in part, reversed in part, vacated in part and remanded in part the order of the Grafton Superior Court. The Supreme Court ruled that State law largely preempted NCES operations within the 51 acres, including landfill height. Not preempted is expansion beyond the 51 acres and the Town may prohibit such development. The Supreme Court remanded back to the Grafton Superior Court issues requiring additional factual findings. Issues remanded include whether the 1992 zoning amendment is a lawful exercise of zoning authority and "whether the Town's existing site plan regulations are applicable, lawful and consistent with RSA Chapter 149-M". Also remanded were issues pertinent the Landfill Gas Utilization Facility (LGUF) since State preemption under RSA 125-C (State Air Pollution Control Act) "contains no provision authorizing additional municipal regulation." As of May 2004, the Grafton Superior Court has set no date for the consideration of the remand issues.

In 2002, the Town had an independent appraisal conducted of the NCES landfill property. The very comprehensive appraisal resulted in a much higher valuation being placed on the property and consequently a much higher tax assessment. NCES appealed the appraisal to the NHDES stating that the landfill was primarily a "pollution control facility" and thus largely exempt from property taxes. After initially denying this line of reasoning the NHDES reversed its decision and stated the landfill should be primarily exempt because it controls pollution. The Town requested a rehearing of the latest decision and has said it will appeal the decision the Supreme Court if necessary. The Town also hired a lobbyist, following voter approval in March 2004, who is working to amend the law (RSA 72-12) to make privately owned landfill ineligible for tax exemption based on being pollution control facilities.

Existence of the Trudeau Road landfill has been a divisive issue for the Town. It often has an impact on other problems or initiatives that have no direct connection with the landfill. It is reasonable to assume that litigation between the Town and NCES will continue until all issues are resolved or until the existing and permitted landfill space owned by NCES is exhausted and the landfill is closed.

The closure of the Town-owned municipal landfill located on Prospect Street was completed in 1995 with the assistance of NCES. Funds saved in the closure process were placed in a trust fund to help finance post-closure care for the 30 years required by state

law. In 1997, NCES expanded recycling operations at the transfer station operated for the Town on Trudeau Road. In addition to adding significantly to recycling opportunities, NCES assumed responsibility for sorting and hauling plastic milk cartons and soda bottles to the Littleton recycling facility. The Bethlehem Conservation Commission had done the sorting and hauling of the plastic containers from 1992-1997.

Regardless of the outcome of issues between the Town and the NCES, the Town will eventually need to identify and construct a new Town-owned disposal site or contract with a facility to which the Town can send its waste. The Town will also be faced with having a large closed landfill in the community that will require long-term monitoring and maintenance. While many tasks associated with the closed facility will be the responsibility of NHDES and/or private contractors, the Town will be remiss if it is not an active participant in the process. A plan should be in place well before the landfill closes.

### 2.1.12 Open Space

Bethlehem is fortunate to have a great deal of open space and undeveloped land. This is due in large measure to the land within the White Mountain National Forest, but several large parcels are also scattered throughout the town outside of the White Mountain National Forest boundaries. The Forest Service's primary use for its land in Bethlehem is for timber production and recreational activities. Approximately 440 acres of timber are harvested on Forest Service lands within the town on an annual basis. The WMNF ten year plan which is under revision (2003) projects similar annual harvests. Most of the large parcels outside the WMNF are forested, and several have seen extensive timber harvest operations over the past 12 years.

Only a few farms remain, and most are small. The Lyster Mid-Acre Farm on Prospect Street is probably the largest. Most farm operations are of the "hobby" variety, but a number of smaller farms such as the Dodge family's Misty Meadow Farm on Brook Road are successful horse riding, training and boarding operations. The Symmes Farm on Main Street (U.S. Route 302 near the Littleton line) raises fallow deer. Farm fields that once provided vistas to the mountains have largely grown up to forest or now have been subdivided for house lots.

The number of large land holdings (over 200 contiguous acres) has been falling over the past 12 years. The recent sale of the Washburn land on Beech Hill, and the Gray/Cartwright land on the Ammonoosuc River, will have a significant impact if subdivided. Subdivision of the Beech Hill land was approved in December of 2003 creating 17 new lots with the potential for eight or more additional lots.

The town identified its rural character and outdoor recreation opportunities as two key elements that define what Bethlehem is and why people choose to live in the community. It is important to keep these open areas in mind while planning future uses and land use patterns for Bethlehem.

## 2.2 Planning History in Bethlehem

In the early 1960s, Bethlehem residents were becoming concerned about haphazard and premature development. There was also growing awareness that development was affecting the environment and the character of the town. On March 11, 1969, the Bethlehem Planning Board was established "to work with the Board of Selectmen for the purpose of making recommendations with reference to planning and zoning for the town and to propose regulations for consideration at future town meetings or special meetings". On March 9th, 1971, the Bethlehem Planning Board was given the authority by voters to regulate the subdivision of land and was granted site plan review authority "to review and approve or disapprove plans for non-residential development" on March 04, 1975. The Planning Board drafted and adopted regulations governing subdivisions and site plan review, and worked with the Board of Selectmen on other land use ordinances during the 1970s . To aid in long range planning for Bethlehem, the town's first master plan was drafted and published in 1979.

The rapid growth of the town in the 1970s made necessary more definitive means to control development. The 1979 master plan provided the basis for a number of new ordinances and regulations adopted in the 1980s. Innovative land use was explored resulting in the adoption of a cluster development ordinance in 1984. Manufactured housing and manufactured housing parks were evaluated and then addressed in the zoning ordinance. New state regulations prompted the town to adopt its own excavation regulations, floodplain ordinance, and to draft and update other ordinances and regulations.

Work began in 1989 to revise the 1979 master plan. Lobdell Associates of Landaff were retained by the town to assist in the process. The plan was updated in three phases with the final phase completed in 1992 and subsequently accepted by the Board of Selectmen on March 01, 1993. With the revised Master Plan nearing completion, the Planning Board updated its subdivision and site plan regulations in 1992. In November 1992 excavation regulations were adopted to govern the operating sand and gravel pits within the town and to deal with the many abandoned pits throughout the community.

In 1993 the Board drafted, for voter approval, a Capital Improvements Program to link the Master Plan and the overall planning process to the town's budgetary process. Adoption of a Capital Improvement Program allowed for the implementation of an Impact Fee Ordinance, making it possible to assess impact fees if new development would have a substantial impact on municipal facilities and services. The ordinance was approved by the legislative body in 1994.

Increased concern for providing suitable areas for light industry and commercial development led to the adoption of two new zoning districts (Districts 3 and 4) in March 1999. Not a lot of interest has been shown in these districts so far, but they allow for commercial and industrial ventures in areas which will not have adverse impact on

existing residential or commercial properties. The Town's Flood Plain Ordinance was completely revised in 2000 and the new ordinance was approved by the voters in March 2001. A new Telecommunications Facility Ordinance was drafted in 2000 to deal with a technology not even envisioned when the 1993 master plan was adopted. The increasing number of telecommunications towers dotting the hills and mountains, and offers being made to Bethlehem residents to lease property for telecommunication towers, prompted this effort to have a means by which the Town could control tower placement and appearance to ensure safety and to limit, when possible, the aesthetic impact. The ordinance was approved overwhelmingly by the voters on March 13, 2001.

The need to deal with new technologies, continuing population increases, residential development, and interest in commercial and industrial development gave new impetuous for the 2004 master plan revision. The Board began revising the Plan in 1998, but limited progress was made. Work began in earnest late in 2000 with the drafting of a Community Attitudes Survey which was mailed to all taxpayers in April of 2001. Of the over 900 surveys that were mailed or handed out, 454, or approximately 50% were completed and returned. A copy of the survey with results can be found in Appendix 2. In 2000 the Board of Selectmen opted not to fund for a private contractor to assist the Planning Board with the revision, but rather to contract with North Country Council to assist the Board. Payment was to be in the form of hours and certain other deliverables charged against property taxes assessed against the North Country Council property located in Bethlehem.

In August of 2001 a great deal of work began to update the 1993 master plan. Members of Bethlehem's town boards and community members all chipped in to update chapters. In 2003 many of the chapters were relatively complete, but the document still needed further editing and formatting. Thanks to a generous and anonymous gift from a Bethlehem resident, and some additional Town funds, Jeffrey H. Taylor and Associates was retained by the Town to coordinate this final stage of the update.

### 2.2.1 Land Use Ordinances and Regulations

A brief summary of Bethlehem's current zoning districts is necessary for a better understanding of how zoning has affected the town and its role in future development.

The current zoning ordinance divides the town into five zoning districts: District I, Main Street; District I; District II; District III and District IV. A summary of the provisions for each of the zones follows:

District I, Main Street – includes property along U.S. Route 302 in the center of town. Uses include residential and small commercial businesses. Minimum lot frontage is one-hundred feet, minimum lot size is twenty-thousand square feet and the principal access for all lots in this district shall be Route 302.

District I – includes the properties surrounding the Main Street District. Uses are residential, motels, recreation, churches, day care, and apartments. Small businesses and

other uses are allowed by special exception. The minimum lot frontage is one-hundred and fifty feet and minimum lot size is forty thousand square feet.

District II – is the largest district. Uses include residential, farms, forestry, sand and gravel, and aviation. Manufacturing and industrial uses as well as utility buildings and condominiums on private water and sewer systems are allowed as a special exception. Minimum lot frontage is two-hundred feet and minimum lot size is eighty thousand square feet.

District III – which is an industrial and commercial zone, is an area along Route 116 from Alder Brook Road to the Whitefield town line. Uses include most District II uses and manufacturing, industrial, public utilities, saw mills, and other similar uses. Construction yards, animal hospitals and research labs are allowed by special exception. Minimum lot frontage is two-hundred feet and minimum lot size is eighty-thousand square feet.

District IV – a light industrial and commercial zone of 140 plus acres on Brook Road. Uses include most of those allowed in District II and light industry. Any other manufacturing or heavy commercial use is allowed by special exception.

General Provisions – These are regulations that address such subjects as junk yards, non-conforming uses, setbacks, parking requirements, landscaping, signs, landfills, sludge and lighting. For the most part the general provisions pertain to the entire town regardless of zoning district.

Other Ordinances and Regulations – Other ordinances and regulations in Bethlehem address specific subjects and are listed below. Copies are available at the Planning and Zoning Office.

- Signs
- Sludge
- Lighting
- Condominium Development
- Condominium Conversion
- Multi-Family Dwelling Unit Development
- Cluster Developments
- Manufactured Housing
- Floodplain
- Capital Improvements Program
- Excavations
- Impact Fees
- Telecommunications

Many of Bethlehem's land use ordinances are the same as when they were adopted, which in some cases was as long ago as the 1960s. Changes have been made as necessary and the ordinances and the regulations implementing them have served the town well. They do need a thorough review after the Master Plan revision is complete to

be sure that they reflect what exists in 2004 and, more importantly, support the vision for Bethlehem. This task should be a primary objective of the Planning Board. Regardless of any updates and revisions, the ordinances must also be recodified to make them easier to use and understand. Table 2.2.1 illustrates the volume of activity before the Bethlehem Planning Board between 1990 and 2003.

**Table 2.2.1 Bethlehem Land Use Applications 1990-2003**

| Year | Approved Subdivisons | Lots | Acres | Withdrawn not Approved | Site Plan Review | Lot Line Adjustments | Condominiums |
|---|---|---|---|---|---|---|---|
| **1990** | 5 | 10 | 226.12 | | 4 | 2 | |
| **1991** | 3 | 9 | 121.57 | | 1 | 3 | |
| **1992** | 3 | 6 | 24.44 | | 3 | 4 | |
| **1993** | 5 | 27 | 299.68 | | 6 | 1 | |
| **1994** | 2 | 6 | 11.07 | | 4 | 4 | |
| **1995** | 6 | 19 | 405.3 | | 4 | 1 | |
| **1996** | 4 | 11 | 84.76 | | 1 | 7 | |
| **1997** | 2 | 4 | 107.8 | | 4 | 2 | |
| **1998** | 3 | 6 | 81.12 | | 5 | 4 | |
| **1999** | 3 | 14 | 183.97 | | 5 | 2 | |
| **2000** | 4 | 13 | 387.12 | | 4 | 1 | 21 units - Maplewood |
| **2001** | 3 | 9 | 82.16 | | 10 | 2 | 12 units - Lahout |
| **2002** | 5 | 21 | 193.14 | | 4 | 2 | |
| **2003** | 7 | 61 | 1608.8 | 21lots on 95 acres | 14 | 2 | |

### 2.2.2 Enforcement of Ordinances and Regulations

In 1997, the Town Meeting voted to exempt all single family home construction from the BOCA code. Over the next few years, the Building Inspector position became dormant. Enforcement of Bethlehem's ordinances has been very erratic in the past. For example, the Town has had an ordinance since 1971 that "no junkyard may continue as a non-conforming use for more than one year after the effective date of the regulation without special permit from the Board of Adjustment." Attempts have been made from time-to-time to bring junkyards into compliance with the ordinance and with State statutes, but an inventory, conducted in March 2000, documented 66 sites within the Town that would

likely meet the State definition of a junkyard. Bethlehem's citizens who responded to the Community Attitudes Survey (See Appendix 2) ranked junkyards as the number one commercial activity that they did not want to see in Bethlehem. Enforcement of all Town ordinances and regulations is necessary and must be consistent if they are to be effective and serve their intended purpose. The Board of Selectmen was designated by the town as the enforcement agent for many years. The Board of Selectmen, in 2003 employed a part-time Building Inspector/Code Enforcement Officer, and have developed a comprehensive enforcement policy.

The zoning ordinance requires a building permit be received prior to commencement of construction activity with a value over $3,000. In response to a number of construction projects that occurred without permits, in 2002, the Selectmen adopted the building permit enforcement policy and hired a Building Inspector to enforce the building permit policy and the zoning ordinances related to construction. The Building Inspector performs site visits as necessary to ensure compliance. Certificates of Occupancy are issued after approvals from the Building Inspector and Fire Chief. Non-single family construction activity requires full inspection and compliance with all applicable codes.

### 2.2.3 Town Planner

The significant increase in subdivision and site plan review applications beginning in 2000 and continuing through 2003 has put a substantial burden on the Planning Board. In 2002 and 2003 the Board has met almost every week and often twice when a site visit is required. There is limited time that a volunteer board, staffed predominately by members who have full-time jobs, can devote to long-range planning, revision of ordinances and regulations and to regional issues that may impact the Town. In 2003 the Board of Selectmen proposed hiring a part-time planner who would be responsible to advise and coordinate planning, zoning, conservation and economic development issues amongst Town boards and commissions and with the public. This proposal was taken to the voters in March 2004 and was approved. The position was advertised in April 2004. Such a position is needed so that sufficient attention can be devoted to planning that will help ensure the Town grows in the manner that the majority of its residents want to see.

## 2.3 Future Land Use and Community Design

Through the years land that was reasonably level, dry and had access to a road was selected by individuals and by developers for development. Land with these features is becoming less available and/or affordable. Land further from existing roads that may be steeper, or in wetland areas, is now being developed. Long driveways and new roads are now being put in to access this land. Topography and access to existing roads are no longer the limiting factors they once were.

Maintaining the character of the town will require channeling future development activity to suitable land areas. Such areas should have limited areas of hydric soils, and should

not be on steep slopes. New subdivision roads should not end in cul-de-sacs or other dead-end configurations, but rather, wherever possible, access the subdivision from another location on the same road, or connect to a nearby development.

Looking to the future we see Bethlehem faced with a number of challenges to sustain its character while at the same time providing a quality living environment for a greater number of residents. With nearby Littleton becoming a hub for commercial and industrial development how does Bethlehem retain a separate identity? How will increased residential, and possibly commercial development, impact open space in the community? What will be required of Town infrastructure and resources? Growth will happen, but it must be guided in constructive ways to retain what is best about our community. We must look to the future, plan accordingly, and get all residents and property owners involved in the process.

### 2.3.1 Future Land Use Plan

The future land use plan needs to be further developed to create guidelines for the future use of land within the town of Bethlehem. It provides a broad perspective of how the community should look 5 or 10 years from now, and provides a basic long-range development pattern for the community. In a sense, it is the representation of how to achieve many of the goals established within this master plan.

A Future Land Use map (Map B in the Appendix) has also been developed to illustrate how future land use should develop in Bethlehem. This map is only approximate and more detailed maps would need to be developed to implement future land use planning through zoning amendments, or other regulatory tools, if necessary.

The future land use plan breaks the town into various future land use areas. The factors used in developing this plan include existing land use patterns, established community goals, and the natural capability of the land. The overall philosophy is to provide adequate growth areas for industry, commerce, homes, and municipal services while at the same time protecting Bethlehem's natural resources and quality of life.

### 2.3.2 Community Design

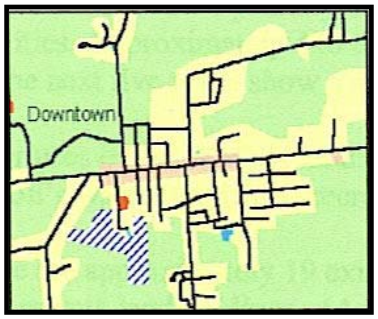
The Community Design section of this chapter is intended to identify positive physical attributes within Bethlehem, such as the village and abundant open spaces, and provide design goals and policies for future planning and regulation in these areas. This information will also be helpful in guiding private and public development in Bethlehem.

The Town of Bethlehem has identified several future growth patterns, and included these in the master plan's goals and objectives. They consist of nodal development, roadway connections, an industrial/heavy commercial node, rural residential developments, and open space developments. The main concept behind Bethlehem's future land use pattern is to identify nodes, or growth centers, in the town and to encourage development within

these nodes. Outside of the nodes, planning for rural residential development and the protection of open lands is critical to preserve the "rural character" that is Bethlehem.

**Nodal Development**

In the past Bethlehem identified the Bethlehem Village as one node, or growth center. Most of the town's municipal services are located within the village, residential development is dense, and commercial developments line Main Street. The zoning regulations identify the "District 1 – Main Street" zone as a separate entity from the other zones. However, the actual requirements in that zone do not encourage the existing development pattern to continue. In the District 1 – Main Street regulations, a new development must be setback from the highway substantially more than existing developments. Also, new developments require more land than the existing uses and structures. By requiring all new developments, and those developments that are replaced, to build to lower density patterns of growth, the town is requiring the dismantling of the village over time. The Planning Board and the community need to review the current standards for this area of town, and see if what they are requiring, in fact, prohibits what they actually want to see happen in the village.

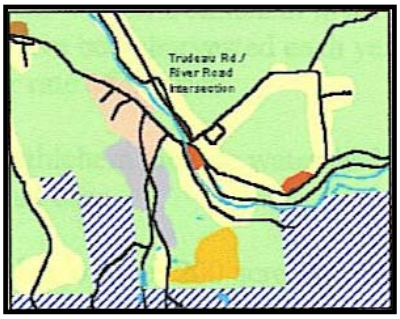



The village district is actually defined as a linear area instead of a traditional center or village. The District 1 – Main Street zone is identified as being only along Main Street. If the community's intention is to create a true village center, a nodal development pattern is desirable. In a nodal development pattern, the growth center or node is round, or square, not a linear shape. There is a core of activity in the center where development is dense, and walking, biking, and social interaction are easily obtainable. As you travel out from this core, the development should be at lower and lower densities and eventually resemble more of a rural development pattern. This will be discussed later in this chapter.

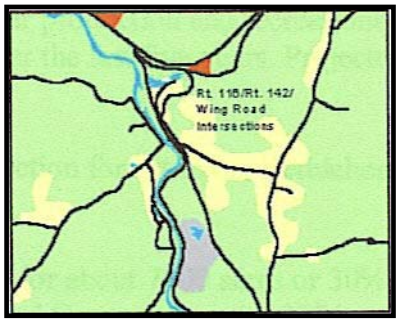
Although the current Main Street District does contain a mix of uses, higher densities, and social interaction, the shape of the zone is linear. A linear pattern lends itself more to strip commercial development. Currently, there is commercial development along U.S. Route 302 in several areas of town which are not continuously connected to the Main Street District. However, the town's regulations allow for commercial development to continue and connect along the entire length of U.S. Route 302, including the Main Street District, resulting in a long strip development pattern through Bethlehem. By identifying nodes for development, the town can disallow development or encourage lower density development, with less curb cuts and more landscaping, along the corridor in-between the nodes.

The village center which is the current Main Street District, as well as parallel streets and developments, form an obvious node. The specific location and boundaries of the node are not identified, but the concept of expanding the Main Street District to create a more

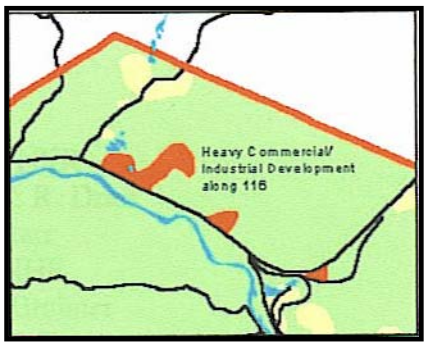
round or square area is essential to begin thinking of a true village center that will not encourage sprawl in the heart of Bethlehem.




Two other potential nodes were identified in the Town of Bethlehem, one at the intersection of U.S. Route 302 and Trudeau Road, and one near the intersection of Wing Road, NH Route 116 and NH Route 142. These nodes were identified because of their access to major highways and connector roads as well as the mixed uses currently taking place in those areas. The town may want to consider matching the uses allowed in the current Main Street District with those two additional nodes, or growth centers. With three nodal developments all connected by major roads and connector roads which allow a mix of development types, with higher density, the community would be creating areas where growth should occur and creating regulations that will encourage development to seek opportunity in those areas before other rural areas of Bethlehem. Also, by identifying growth areas, the Town can get a better handle on where transportation and utility infrastructure should be upgraded on a priority basis.




**Industrial/Heavy Commercial Node**




Current zoning regulations identify an Industrial/Heavy Commercial Node along NH Route 116 near the intersection of Wing Road. The town has recognized that there is a need to identify a specific area for this type of development. However, the way in which that identified area is developed is crucial to examine. Currently, several large industries that meet acreage and setback requirements could locate along NH Route 116. The problem with this is access and traffic. These industries could subdivide and develop into spaghetti lots, where the property is longer than it is wide, allowing many more curb cuts along this highway corridor. Traffic patterns along this section of roadway have the potential to create a bottle neck if many large trucks are turning into the various driveways located along the road.

Instead, the town should consider an industrial park or industrial node development pattern. The town should encourage limited curb cuts, and encourage the industrial developments to co-exist along an interior road network which connects in two places to NH Route 116. With this type of development pattern, these two curb cuts would provide access to the internal road network and potentially several industrial and heavy commercial businesses. This would make the whole developable area less intrusive to

the existing traffic on NH Route 116. Also, if there is an identified residential and mixed use node near that intersection on the adjacent side of NH Route 116, a controlled intersection with landscaped buffering between the village/residential node and the industrial/commercial node would separate the two visually without disconnecting them physically.

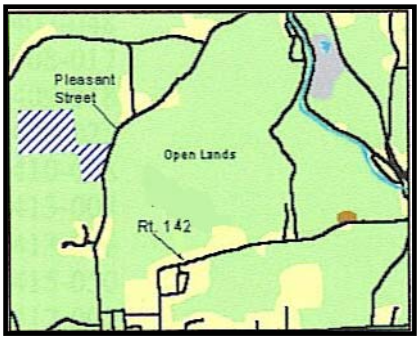
***Tri-Town Industrial Park***

There is currently an initiative underway to develop a Tri-Town Industrial Park on Brook Road in Bethlehem. This two phase project would create 10 lots. The revenue from any future property tax income will then be split equally between Bethlehem, Lisbon, and Littleton. The land, with a value of one hundred seventy five thousand dollars, will be donated to the three towns; leaving room for twelve other buildings, that will be on the portion of the parcel retained by the owner.

Bethlehem, Littleton and Lisbon have recently signed the initial agreement necessary for Tri-Town to apply for a two million dollar grant from the EDA. The cost of preparing the cooperative industrial park, is four and a half million dollars.

This includes extending water, sewer, and three phase electric service from Littleton; upgrading the Redding St. Union Street intersection to reroute 116 truck traffic; replacing the Redding St. Bridge; and upgrading Brook Rd. Combining the DOT eighty per cent reimbursable funds for the road, and bridge improvements; with the EDA grant leaves a balance of one hundred sixty five thousand dollars. Littleton is expected to pick up that entire cost, to compensate Bethlehem and Lisbon, for the non Tri-Town benefit of replacing the Redding St. Bridge.

**Rural Residential Developments**




Although the town recognizes the need to create nodes of development, Bethlehem also has the need for rural residential units. The misconception has always been that everything in the town is rural. The node, or downtown area, has more of a village character. In the rural areas you would not find mixed uses and amenities. In the rural area you would find houses at much lower densities and a great deal of open space. The key is to monitor the amount of development activity within the area. If there are no means to keep the number of structures in the rural area at a lower density the area will continue to be developed over time, and will lose its rural character.

Once the town has specifically delineated village node areas where mixed use development will be allowed, the town should also identify rural residential areas and the desired densities. Required minimum lot sizes and the availability of innovative land use

tools, such as open space development regulations, will dictate the future development patterns, density, and character of these areas.

The community should keep in mind that open lands will not remain open unless restrictions are placed on the parcels. Techniques for preserving rural residential lands include encouraging open space developments, and encouraging private home owners to put a portion of their land into a permanent conservation easement. In the second scenario, the property owner still has ownership of this piece of property, and can continue to conduct farming or forestry activities, but with the understanding that the bulk of it will remain undeveloped. It is crucial the town set standards for development in these rural areas to keep the areas rural, and to continue to provide access to large tracts of undeveloped land.

**Open Space Developments**

To foster the idea of preserving rural lands in Bethlehem, the town should encourage open space development. In an open space development, developers are given incentives to leave a buildable portion of their development undeveloped and protected. The protected areas should provide significant habitat or natural resource protection, and connections to adjacent protected lands is very important. For instance, if the town requires an open space development to have 33% open space, the developer would have to leave at least that portion of the developable portion of the parcel undeveloped.

Using a required design process, developers could be expected to identify key natural and cultural resources on the site, identify the developable areas on the site, position the units based on the allowable density, and then connect the units with roads and trails. This should result in leaving contiguous forested areas and/or agricultural fields undeveloped and in keeping with the consistency of the rural areas of Bethlehem. In return, the town can allow the developer a decrease in lot size and/or setbacks, additional units, narrower roadway standards, and other incentives. Designed correctly, an open space development can be a great means for allowing residential development in a rural area without losing the rural character.

**Roadway Design**

The Town of Bethlehem should adopt and maintain a street or transportation plan in accordance with NH RSA 674:9. This plan would identify Bethlehem's transportation infrastructure, and would help the town know where their priorities lie for future improvements and expansions. If the town identifies growth centers or nodes, roads in those areas should be the first to be improved in order to facilitate development there. Improvements should not merely consist of laying more asphalt. Improvements should also include needed sidewalks and bicycle lanes, parking facilities, on-street parking if in a node or growth area, and redesign of critical intersections and connections.

Dead-end roads should be avoided. A transportation plan should identify roads that dead-end currently, but could be connected in the future. A transportation plan may identify new roads that do not currently exist except on paper and in plans. If new connections need to be made in order to alleviate traffic, those need to be mapped and identified. The town can then make requirements in the subdivision and site plan regulations for the construction of these planned roads. A developer looking to develop and build a parcel of land which shows a future roadway should be responsible for developing that roadway to the specifications the town has identified.

In the same context, rural roads need to be examined and identified. If the town has identified a rural area for low growth or rural residential growth, the town should prohibit certain types of roadways which may cause increased traffic and speeds and are not compatible under the hierarchy of streets discussed in the Transportation Chapter of this plan. Not all roads in Bethlehem need to be thirty feet wide with gutters, sidewalks, and bike lanes. Those areas of town identified as rural should remain rural in land use, and transportation.

***Establishment of Official Map***

Upon adoption of a major street plan in accordance with NH RSA 674:9, the Bethlehem Planning Board should petition the legislative body to establish an official map of the town in accordance with NH RSA 674:10. Provision should be made in the ordinance that the official map be amended on a periodic basis, or when advisable or necessary for the public interest. A street plan and official map will aid in planning for future growth of Bethlehem.

# Chapter 3
# Transportation

# Chapter 3
# Transportation

## 3.0 Introduction

The location, diversity, condition, and efficiency of a town's transportation system has a direct affect on the community and the region. The general mobility of the residents and visitors, as well as the general economic prosperity of the community are functions of the town's roads and transportation services. Good highways, road access, pedestrian facilities, bicycle lanes, and multi-use trail networks compose the infrastructure that contributes to the quality of life for residents and visitors, and may serve to spark development in a particular area.

Conversely, certain land uses generate an amount of additional traffic which could require expansion of various aspects of the transportation network. Transportation connections to the outside world are crucial to the economic growth of a community by providing needed access to goods and services not found in the town. Issues resulting from transportation in and through the town may point to access management problems, the need for traffic calming techniques, the location of parking facilities, and the need to create a more "walkable" downtown with landscaping and design, crosswalk placement, and pedestrian amenities.

The historical relationship between the existing land uses and the transportation network is important, and helps us understand how Bethlehem has evolved into the community it is today. However, it is also important to approach transportation planning based upon projected and desired community development patterns and character. Some transportation facilities are under the Town's authority for planning, financing, construction and maintenance, and others, serving the larger region, are controlled by the state and federal governments, and are influenced by the town through advocacy, legislation, and cost-sharing.

## 3.1 Existing Transportation Facilities

### 3.1.1 Roadway Classification

The task of providing a road network is a governmental function and responsibility. Distribution of capital expenditures for highway construction can have a vital influence on the economic health and future prospects of a community. A highway circulation system generally contains elements of different capacity, each of which performs a specific role, and serves varying types and volumes of traffic.

This functional classification may be described in four basic categories: limited access, arterial, secondary, and local.

> **Limited Access**: designed for rapid movement of heavy volumes of traffic, both direct access to adjacent property and parking in the right of way is eliminated.
>
> **Arterial/Primary Highways**: designed for movement of through traffic/heavy local traffic, these are constructed for speed and volume and have crossings at grade with access to adjacent property generally regulated.
>
> **Secondary/Collector Streets**: designed to link local streets to arterials, these collect traffic from several local streets and also bypass traffic around residential neighborhoods.
>
> **Local Streets**: these serve traffic at the generation points, providing access to adjacent property, parking and loading are allowed in the right of way and discourage through traffic.

These functional road classifications are combined with administrative classifications, depending upon which governmental agency is financially responsible for the highway:

> **Class 1** highways consist of all those on the State primary system, except those segments lying within compact sections of cities or towns with populations of 7,500 or more. Interstate highways and toll turnpikes are considered to be Class 1 highways as are those designated as Trunk Line Highways. The NH Department of Transportation is responsible for the construction, reconstruction, and maintenance of Class 1 highways. In Bethlehem Class 1 highways include Interstate 93, U.S. Route 302, and U.S. Route 3.
>
> **Class 2** highways are those on the State secondary system with the same exceptions as Class 1 highways, regarding segments on compact areas. The NH Department of Transportation is responsible for the construction, reconstruction, and maintenance of Class 2 highways. In Bethlehem Class 2 highways include NH Route 116, NH Route 142, and NH Route 18.

**Class 3** highways consist of recreational roads leading to and within state reservations as designated by the Legislature. Class 3 highways are the responsibility of the NH Department of Transportation. No such roadways exist in Bethlehem.

**Class 4** highways are those located within the compact sections of municipalities with more than 7,500 inhabitants. The construction, reconstruction, and maintenance of Class 4 highways are the responsibility of the municipality in which they are located. Bethlehem does not have an urban compact area at this time.

**Class 5** highways consist of all other traveled highways for which towns have responsibility. In Bethlehem this includes all of the remaining public roads maintained by the Town.

**Class 6** highways consist of all other public way and include 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.

**Other** highways consist of federal forest service roads and/or private roads.

Within its borders, Bethlehem has 109.1 miles of roads, with 51.7 of them being local town-maintained roads (Class V). Table 3.1.A breaks down the existing roadway mileage by state classifications:

**Table 3.1.A Highway Mileage in Bethlehem**

| CLASSIFICATION | # OF MILES |
|---|---|
| I - Trunk | 17.6 |
| I- Interstate | 4.6 |
| II – State | 12.5 |
| III – State | 0 |
| IV – State | 0 |
| V – Local | 51.7 |
| VI – Gates & Bars | 1.6 |
| Other – National Forest, private roads | 21.1 |
| Total | 109.1 |

Source: NH DOT – 2002

### 3.1.2 State Highways

Bethlehem is served by a variety of state and federal highways including Interstate-93, U.S. Routes 302 and 3, and NH Routes 18, 116 and 142.

Interstate 93 is a Class 1, limited access highway which provides access to points north and south, running nearly 5 miles through the southwestern corner of town.

Bethlehem is served by the east-west U.S. Route 302, a major arterial highway, Class 1 Trunk line linking the northern portions of Vermont and New Hampshire with Portland, Maine, and the Maine seacoast. It is also a major route for Canadians on their way to recreational activities in southern Maine. U.S. Route 302 divides Bethlehem into north and south sections, and serves as Bethlehem's Main Street, running approximately 10 miles from one end of town to the other.

U.S. Route 3 is the other major arterial, Class 1 Trunk Line Highway that travels north-south and runs primarily through the National Forest in Bethlehem, except for a small segment at the north end of town. It is a major corridor for traffic leaving I-93 and heading north to Berlin, the Great North Woods in northeastern New Hampshire, and Northern Maine via US Route 2.

Three less-traveled state Class 2 highways serving both as arterials and collector streets in Bethlehem include NH Route 116, which runs north-south and connects NH Route 10 in Haverhill with U.S. Route 3 in Whitefield; NH Route 142, a short collector state road which begins in Franconia, crosses U.S. Route 302 on Main Street, and ends just over the Bethlehem line in Whitefield; and NH Route 18 which connects Franconia with U.S. Route 302 near exit 40 of I-93 in Bethlehem.

### 3.1.3 Local Streets and Roads

Bethlehem contains 51.7 miles of Class 5 roads, 1.6 miles of Class 6 roads and 21.1 miles of private and non-classified roads (mostly Forest Service roads in the White Mountain National Forest). Of the 51.7 miles of town roads, about 15 miles are dirt or gravel.

As Bethlehem's roadways are maintained, improved, or expanded it is important to recognize their function in the overall transportation system. The design of the roadway should then reflect its function. Over time, as development continues and traffic patterns shift, some roadways will begin to function in very different ways and the town's design standards should serve as guidelines for any improvements .

The amount of traffic currently using town roads varies from local traffic serving only four or five homes in a subdivision, to roads that act as major arteries between communities. This is true of Old Franconia Road (Gilmanton Hill Road) which connects Franconia and the western portion of Bethlehem to Littleton, Brook Road which is a "short-cut" from Littleton's Union St. to U.S. Route 302 in Bethlehem, and Trudeau

Road which connects U.S. Routes 302 and 3. The village area alone contains over 15 miles of roadways. Many of these roads are short and over 20 of them are dead ends.

In an effort to create safe roads, often an unforeseen result of roadway design standards, has been the over-design of rural and lower density residential streets. Typically, over-design of these streets includes elements such as unnecessarily wide pavement widths, as well as sidewalks and curbing which are generally suited for more urban and higher density locales. Table 3.1.B includes the current road design standards in Bethlehem which are based on the New Hampshire Department of Transportation's current "Suggested Minimum Design Standards."

**Table 3.1.B Bethlehem's Road Design Standards**

| | Average Annual Daily Traffic (AADT) | | | | |
|---|---|---|---|---|---|
| | 0-50 vehicles | 50-200 vehicles | 200-750 vehicles | 750-1500 vehicles | 1500 or more vehicles |
| Pavement Width (ft) | 18 | 20 | 20 | 22 | 24 |
| Shoulder Width (ft) | 2 | 2 | 4 | 4 | 8-10 |

Below are a set of street design standards created during the Route 2 Corridor Study that could serve as a model for future changes to Bethlehem's standards. The New Hampshire Department of Transportation provided funding and partial oversight for this project in an attempt to deal with access management and traffic calming issues on local roadways, and to promote a hierarchy of roadways within New Hampshire communities.

**Table 3.1.C Street Design Standards**

| Standard | Minimum Local Street | Minor Local Street | Major Local Street | Collector Street | Arterial Street |
|---|---|---|---|---|---|
| Number of Dwellings | 2-6 dwellings | 7-40 dwellings | 41-150 dwellings | 151-500 dwellings | >500 dwellings |
| Average Annual Daily Traffic | 20-60 vehicles | 60-400 vehicles | 400-1500 vehicles | 1500-5000 vehicles | >5000 vehicles |
| Surface Width | 16 feet | 18 feet | 20 feet | 20 feet | varies |
| Shoulder Width | n.a. | 2 feet | 2 feet | 4 feet | varies |
| Minimum Right of Way | 36 feet | 50 feet | 50 feet | 50 feet | varies |
| Design Speed | 15 mph | 15 mph | 20 mph | 25 mph | varies |
| Minimum Length of Vertical Curve | 80 feet | 80 feet | 115 feet | 155 feet | varies |
| Minimum Horizontal Curve radii | 45 feet | 45 feet | 90 feet | 165 feet | varies |
| Minimum Grade | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| Maximum Grade | 12% | 10% | 10% | 8% | 8% |
| Site Distance (both directions) | 150 feet | 200 feet | 200 feet | 250 feet | 400 feet |

FOOTNOTES:
[1] Shall be future anticipated traffic. (Assuming 10 trips per day per dwelling unit).

[2] All cross-section horizontal distances shall be measured perpendicular to straight-line sections and radii to curved sections.

[3] All season safe sight distance is defined as a line which encounters no visual obstruction between two (2) points, each at a height of three feet nine inches (3'-9") above the pavement and allowing for a snow window and /or seasonal vegetation. The line represents the critical line of sight between the operator of a vehicle using the access (point 1, ten feet (10') back from the road pavement) and the operator of a vehicle approaching from either direction (point 2).

### 3.1.4 Scenic Roads

The NH Legislature allows towns to designate roads as scenic under RSA 231-57. Only two roads in Bethlehem have received this designation – Swazey Lane and Old Franconia Road (Gilmanton Hill Road). Swazey Lane is a mile-long, dead-end, dirt road located southeast of the Village and runs between U.S. Route 302 and the White Mountain National Forest. It currently has about 7 homes located along it.

Recently, the Planning Board has become concerned about the impact future subdivision may have on this road. Its current right-of-way of 33 feet and travel width of 14 feet will not handle much additional traffic safely. Yet to widen the road may detract from its scenic values. Alternatives available to the Planning Board include limiting growth on the road to allowable safety limits only, or having the right-of-way enlarged and the road made safer for additional traffic while sacrificing the qualities that make it a scenic road.

The second scenic road, Old Franconia Road, was adopted in March of 2003. This paved road is located to the west of Interstate 93, and runs parallel to the Interstate. Old Franconia Road (Gilmanton Hill Road) begins, on the southern end, in Sugar Hill and passes through Bethlehem to Littleton. Most of the 2.8 mile road lies within Bethlehem.

A National Scenic Byway, the White Mountain Trail, passes through the Town of Bethlehem,. The scenic byway runs through Franconia Notch on Interstate 93, cuts through Bethlehem via U.S. Route 3, diverges south in Twin Mountain along U.S. Route 302 to the Kancamagus Highway, then west to its intersection with Interstate 93. Although most of the land in Bethlehem along U.S. Route 3 is in the White Mountain National Forest, the town plays an important role in the protection of the scenic and intrinsic qualities of the Byway. Such planning techniques as access management, environmental protection, historic protection and landscaping are recommendations stated in the White Mountain Trail Corridor Management Plan for those areas abutting the Scenic Byway. It is in the Town of Bethlehem's best interest to work with New Hampshire Department of Transportation, and the US Forest Service, on any construction or roadway improvements along this section of roadway.

### 3.1.5 Traffic Counts

According to the NH Department of Transportation's annual average daily traffic flow on I-93 in Bethlehem in 2002 was 6800 vehicles, a 42% increase from the 4800 vehicles in 1990. Table 3.1.D and Table 3.1.E provide traffic count data for several other locations in Bethlehem, and document the increase in traffic since 1990.

**Table 3.1.D Traffic Counts**

| | Average Annual Daily Traffic | | | | Percent |
|---|---|---|---|---|---|
| **Location** | **1990** | **2000** | **2001** | **2002** | **Change** |
| I-93: Bethlehem; North of Route 18 | 4800 | | | 6800 | 42% |
| U.S. Route 302 & 10: Bethlehem; Ammonoosuc River | 3100 | 2899 | | | -6.5% |
| U.S. Route 302: Bethlehem; W of Prospect St. | 4100 | 5300 | | | 29.3% |
| U.S. Route 302: East of St. Mary Rd. | 4100 | | 5100 | | 24.4% |

Source: NH DOT, 2003

Analysis of the traffic patterns indicates that U.S. Route 302 continues to be utilized as a commuter route during the weekdays. The higher counts in the PM hours on U.S. Route 302 indicate that is when the commuter traffic is augmented by through traffic.

Traffic counts were performed during weekdays in July of 2002 at four locations in Bethlehem. Table 3.1.E summarizes the results of these counts conducted by the North Country Council.

**Table 3.1.E July 2002 Traffic Counts**

| **Location** | **Average Annual Daily Traffic** | **Peak Hour Volume** |
|---|---|---|
| NH 142 across from town hall | 1767 | 6 PM |
| NH 142 at Agassiz Street | 2097 | 4 PM |
| US 302 at Arlington Hotel | 4465 | 4 PM |
| US 302 at Maplewood | 6799 | 4 PM |

Source: North Country Council, 2002

Truck counts were performed by North Country Council on June 4, 2002 at exit 40 where I-93 meets U.S. Route 302. The total number of trucks using the intersection between 8 AM and 4 PM was 649. The breakdown was 285 headed north on 1-93, 211 headed south on I-93, 125 headed east on US Route 302 and 28 headed west on US Route 302. According to the North Country Council, the incidence of relatively high truck traffic, when compared with overall AADT (Annual Average Daily Traffic) counts and rural population figures, clearly points to a need for a regional transportation management system.

Often referred to as Intelligent Transportation systems, these management systems utilize the internet for disseminating routing, weather, and incident information. Intermodal freight options could also be created to combine truck and rail freight for the most efficient transportation of goods with the least impact on the transportation system. The potential of the Tri-Town Industrial Park on Brook Road in Bethlehem and Littleton may provide an opportunity to design truck routes which are the most efficient, and have the least impact on existing land uses and neighborhoods.

### 3.1.6 Multi-use Trails and Paths

There are a multitude of trails and paths in Bethlehem serving walkers, hikers, mountain bikers, horseback riders, cross-country skiers, snowmobilers, and other users. Much of this network, outside of the White Mountain National Forest, is informal and privately owned, with no formal agreements for continued use or signage. There have also been discussions around the creation of a formal multi-use trail along the old railroad beds in Bethlehem. The only formal motorized use trails in Bethlehem are snowmobile corridors. The Mount Agassiz Trail Association manages these trails.

### 3.1.7 Problem Areas

Unfortunately, no inventory of Bethlehem's streets and roads has ever been completed, and a long-range highway plan has not been developed. However, several problem areas have been identified by the Town Road Agent. They include:

- Trudeau Road
- River Road
- St. Mary's Road (dirt section)
- Old Franconia Road (Gilmanton Hill Road)
- Cross Street Extension
- Upper/Lower Brook Roads

Trudeau and River Roads have relatively high levels of traffic, and Trudeau Road has a high level of truck traffic. Re-paving may be necessary in the near future.

Sidewalks, located primarily in the village district, have been targeted in several studies since the 1980's as an important priority for improvement in terms of extending the network, repairs, and design improvements. Sidewalks are owned by the village district but are plowed by the town in the winter. Many of the walks are heaved or cracked. Additionally, the lack of sidewalks along NH Route 142 to the Rambling Woods Mobile Home Park, and along U.S. Route 302 to the west has been sited as a safety hazard. Opportunities exist to incorporate repairs, design, and landscaping into the anticipated Village Transportation Enhancement Project to improve pedestrian amenities and circulation.

## 3.2 Public Transportation Facilities

### 3.2.1 Railroads

There were several rail lines located in the northern part of New Hampshire. Rail service has deteriorated substantially in the last 40 years, and many lines have been abandoned or are relatively inactive.

Only one line currently exists in Bethlehem that is labeled "active" - although no use has been made since 1997. The line was owned by Gilford Transportation Industries, but was bought by the State of New Hampshire in 1992. Although the section of line through Bethlehem is still considered "active", the line is inactive from Woodsville to Bethlehem and from Jefferson to Gorham.

Two abandoned lines exist in Bethlehem and their grades are still in evidence in several locations. One connected Wing Road Station with Twin Mountain and the other connected Bethlehem Junction with the Profile Station in Franconia. Both were abandoned in the 1920s.

The town has discussed the possibility of a multi-modal trail system in town on these abandoned railroad grades. Unfortunately, most of the abandoned lines have reverted back to land owners, or have been purchased and the rights of way added to private properties. The Town of Bethlehem should research the Rails-to-Trails Program and decide how the town could best preserve any remaining right-of-ways for recreational, historical, and cultural purposes.

The NH Department of Transportation's Bureau of Rail and Transit recently developed the New Hampshire State Rail Plan in 2001. A section of this plan relates to abandoned railroads in which the State plan sets a goal for preserving these corridors for future transportation and/or public use. Currently, the State owns approximately 500 miles of railroads, 300 of which have been converted to trails.

### 3.2.2 Air Facilities

No regularly scheduled air service is currently available in Bethlehem, or in the North Country as a whole. Air service is limited to private aircraft, which can fly into one of the nearby registered commercial airports, including Whitefield, Twin Mountain, and Franconia. There are registered heliports in Franconia (state owned), and at the Littleton hospital. The nearest scheduled air service is in Lebanon, NH, about 70 miles south. Manchester, NH is the closest airport with international flights, and is located approximately 120 miles south of Bethlehem.

### 3.2.3 Bus Service

Only one bus line services the Bethlehem area. Concord Trailways offers 2 passenger service routes north and south from Logan Airport in Boston along Route 16 to Berlin

(about 45 minutes to the east), and from Logan Airport to Littleton, NH along Interstate 93. Although the Trailways bus passes through Bethlehem, the nearest stops are in Franconia and Littleton. Recently, winter service was canceled north of Littleton. Until 1989, Vermont Transit provided service from Burlington, Vermont to Portland, Maine via Route 302. However, this service was canceled.

No regularly scheduled public transportation is available in Bethlehem currently, but several regional organizations do provide transportation services to their clients. Examples of this service are Tri-County CAP and Littleton Regional Hospital. Littleton Regional Hospital's "Care a Van" service is available to transport patients between home and the hospital for scheduled appointments. In the future, efforts could be made to coordinate these services through a central dispatch, and serve a greater number of people in the greater Littleton area with a demand response service.

### 3.2.4 Park and Ride Lots

There are currently no formal park and ride lots in Bethlehem. The addition of park and ride lots in the future may help increase carpooling among commuters, and may be used to reduce congestion locally during peak traffic periods. Park and ride lots also serve as good locations for public transportation stops.

## 3.3 Special Transportation Issues

### 3.3.1 Access Management

Access Management is the process of managing the placement of driveways on roadways. This is especially important on roadways classified as arterials. Arterial highways are similar to limited access freeways in that their primary function is to move people and goods over long distances quickly and efficiently; however, arterials do not have the benefit of strict access controls to adjacent parcels that limited access highways do. The speed, volume, and safety of traffic on an arterial is greatly reduced by vehicles entering and exiting side streets and driveways. In general, access management policies involve the regulation of the number of driveways, the design and placement of driveways, and the design of any roadway improvements needed to accommodate driveway traffic.

### 3.3.2 Traffic Calming

When traffic congestion reaches a saturation point, usually during the peak hour, motorists often seek alternative routes through neighborhoods. Traffic calming techniques can be utilized to slow down and control traffic on streets where it is necessary for traffic and pedestrians to co-exist. The village area is a prime location for traffic calming.

### 3.3.3 Context Sensitive Solutions

On state routes the Town of Bethlehem should work with the New Hampshire Department of Transportation to ensure that the designs of any proposed transportation improvements are "Context Sensitive Solutions" (CSS). The intent of CSS is to ensure that roads are not designated solely by the requirements of motor vehicle traffic. Transportation facilities should preserve the scenic, historic, and environmental resources of the places they serve, and allow for a variety of users beyond motor vehicles. The involvement of the Bethlehem Conservation Commission and Planning Board in requesting bicycle lanes on Routes 3, 302, and 116 resulted in expanded shoulders for bicycle traffic.

### 3.3.4 State Transportation Planning and Legislation

Bethlehem is fortunate that its heaviest traveled roads are owned and maintained by the State of New Hampshire. In 2001 U.S. Route 302 was reconstructed from Pierce Bridge to Twin Mountain. U.S. Route 3 is currently being reconstructed from Trudeau Road to Twin Mountain. A portion of NH Route 116 was reconstructed during 2002-2003. The design of these roads includes a four foot paved shoulder, which accommodates bicycle traffic very well. Although this design enhances access through Bethlehem, it is important to note that the community must advocate heavily for the design they would like to see built.

The greatest change in state legislation affecting transportation planning the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). ISTEA brought about several changes to the way the state, the region and the towns plan for future transportation needs. The Act includes several sub-categories which are increased public involvement, statewide planning factors, management and monitoring systems, and federal transportation funds.

Federal transportation funds include interstate, transit, bridges, National Highway System (NHS), Congestion Mitigation and Air Quality (CMAQ), and the Surface Transportation Program (STP). The STP was established as a means of distributing federal transportation dollars. The program calls for a certain amount to be set aside for transportation enhancements and a certain amount to be set aside for safety issues. The rest of the funding is distributed among the towns for various transportation projects. There are processes communities must follow in order to apply for the funding. The Town of Bethlehem has applied for Transportation Enhancement funding through the STP for the correction of traffic and pedestrian safety deficiencies including sidewalks, curbing, crosswalks, signing, and lighting in the village along U.S. Route 302. The project application was accepted, and is now part of the State Transportation Improvement Program and is scheduled to begin construction in 2004.

Other state legislation that affects the way Bethlehem plans for its transportation needs arose in 1997 with a revision to the New Hampshire State Statutes. As of July 1, 1997,

> "the legislative body of a municipality may vote to collect an additional fee for the purpose of supporting a municipal and transportation improvement fund, which shall be a capital reserve fund established for this purpose . . . . for cities and towns, respectively".

The fee can be used in part or wholly for:

> "improvements in the local or regional transportation system including roads, bridges, bicycle and pedestrian facilities, parking and intermodal facilities and public transportation. The funds may be used for engineering, right-of-way acquisition, and construction costs of transportation facilities, and for operating and capital costs of public transportation only."

The Town of Bethlehem should consider allocating additional fees for road improvement projects not funded, eligible for funding through the transportation funding programs, or as a funding match for these programs. Bethlehem should also create and endorse a street plan for the entire town.

# Chapter 4
# Community Facilities

# Chapter 4
# Community Facilities

## 4.0 Introduction


Community facilities and services are provided to meet the health, safety, and welfare needs of the public. The need for community facilities is based largely on the demographics of the town, land use patterns, future growth projections, and the need to replace existing facilities. This chapter of the master plan includes an inventory of existing facilities, and evaluation of their performance, and projected needs for the future in Bethlehem. Community facilities are depicted on Map C in the Appendix.

Town properties have changed little since 1993. The largest land holdings are the Bethlehem Country Club, the Town Building complex including fire, police, swimming pool, playground, and the Information Center/Bethlehem Heritage facility. The Highway Garage is in the same location, but a new garage was completed in 1992 with a further addition added in 2003. The voters in 1998 approved an "owner unknown" parcel and an abutting property as a Town Forest. The Town acquired a 15.7 - acre parcel on Pleasant Street in 2001 for eventually being able to reconfigure a portion of the Country Club.

At the end of 2002 more than 35 properties were listed as having been acquired through Tax Collector's deed or were listed as "owner unknown." A very successful auction, of 21 properties taken for taxes, was conducted in November, 2003 that netted $260,400 for the town, and will return these properties to the tax roles. These properties ranged from fractions of an acre to over 60 acres in size. The most valuable remaining property is the Chase Tennis Camp on Main Street..

## 4.1 Town Building

The Town Building, constructed in 1913 and located in the center of the village, is a three story stone structure and serves as the center of the community. Table 4.1 includes a breakdown of space utilization by floor.

**Table 4.1 Town Building Utilization**

| Level | Uses |
|---|---|
| Lower Level | Fire Truck Bays (4) |
| | Police Department Bay (1) |
| | Fire/Police Department Offices |
| | Restroom |
| | Boiler |
| | Storage Room |
| | Town Clerk and Tax Collector Offices |
| First Floor | Selectmen's Office |
| | Planning Board Office |
| | Library |
| | Restroom |
| Second Floor | Meeting Room |
| | Storage Room |

The building is structurally sound. However, a variety of maintenance and code issues need to be addressed. These include:

- Inadequate egress
- Lack of handicap access
- Leaking roof under certain winter conditions
- Water damage to exterior mortar
- Sinking front steps and damaged walkway
- Inadequate and unsafe access to Main Street for police and fire department vehicles

The Selectmen have obtained a grant to design handicapped access and adequate egress for the building. A plan and cost estimates was presented to voters in 2004 for the remaining building deficiencies that have not already been addressed. An article to raise and appropriate $960,000 failed to garner the required 3/5 vote in March of 2004. The proposal will be reworked and offered to the voters again in March of 2005.

The Selectmen and the Fire Department are developing a plan for better Main Street access. This will most likely involve physically separating the paved portion of the town property from the paved area to the east around the post office.

## 4.2 Library

The Bethlehem Public Library has been located in the Town Building since 1913. Housed in three rooms on the first floor, the library is a well utilized public facility. The library currently has 1,700 cardholders, and a yearly circulation of 13,000. The number of volumes available at the library is approximately 17,000. This is an increase from the 13,000 piece collection a decade ago. The library offers a variety of audio and visual

materials. The library recently obtained a grant and installed two computers with high speed internet access for public use. The library has one full-time position and one part-time position currently. Table 4.2 shows the breakdown of the library budget for 2003.

**Table 4.2 Library Budget, 2003**

| **Income** | |
|---:|---|
| Town Funding | $39,862 |
| Book Sales and Fines | $1,453 |
| Other | $523 |
| | |
| **Expenses** | |
| Salaries | $27,362 |
| Books and Periodicals | $10,000 |
| Operational | $4,300 |

The library continues to face a growing and severe space problem which is currently limiting the services that can be offered. The 2000 town meeting voted to raise $125,000 to establish a capital reserve fund for the purpose of constructing a new library. In March of 2001, the Library Board of Trustees established a Library Building Committee which was charged with establishing the needs for a new library, and selecting an architectural firm to design the solution to the needs identified. During 2002, the Library Board requested, and was granted, the use of town property on Main Street to the east of Prospect Street as the site for the proposed library. In 2003 the Board selected an architectural firm to design the approximately 7,500 square foot building which could be built for approximately $1.3 million. An article to raise and appropriate the necessary funds failed to garner the required 3/5 vote in March of 2004. The proposal will be reworked and offered to the voters again in March of 2005.

## 4.3 Fire Department

The Bethlehem Fire Department and Ambulance Squad is a volunteer "call" force of approximately 36 men and women. Personnel are only paid for their time responding to incidents. The fire station is part of the town building and is a one story, four bay structure. The station houses two pumper trucks, one ladder truck, a tanker, and an ambulance. Two rescue/utility vehicles are housed off site. In addition the town belongs to the Twin State mutual aid group, and can call upon other participating communities when necessary.

Water is obtained from fire hydrants throughout the Village District, and several located outside the district boundaries. For emergencies in the northern part of town near NH Route 116 the department can use water obtained from the Pine Tree Power Plant with whom the department has an agreement. All other fires must be fought with water tanked from nearby surface water supplies.

The Fire Department is currently operating on a budget of about $104,400. Table 4.3.A shows a breakdown of the 2003 budget for the department.

**Table 4.3.A Fire Department Budget 2003**

| | |
|---|---|
| Salaries | $32,300 |
| Equipment | $45,000 |
| Services, Supplies, Repairs | $16,000 |
| Other | $11,100 |
| **Total Budget** | **$104,400** |

The following problems related to the Fire Department have been identified over time:

- Access to Main Street from the fire station
- Aging pumpers
- Lack of adequate training area and meeting space
- Engine fumes migrating into the office spaces within the Town Building
- Aging rescue vehicle

The Fire Department is currently developing a plan to build a new fire station. The Selectmen hope to present a final plan to the voters in 2005.

The Fire Chief sees the future of the Fire Department moving more and more towards automobile crash scene and emergency medical care then fire fighting. This is not to imply that fire fighting is not important, but that it will not be the majority of what the department responds to in the future. The Fire Chief stated that in the past the town would see eight to ten structure fires per year. Today the town only sees one to two structure fires on average per year. The Fire Chief attributes this to better codes, building construction, and better education and information.

The department will need to replace some of the aging equipment. Currently the town has one pumper that is almost 20 years old, and the second pumper is even older. The next purchase will be a new pumper truck. At this time when an automobile accident occurs, two (2) vehicles and five (5) personnel are dispatched to the accident. One vehicle has the rescue equipment, and the other is a pumper truck to hose down the pavement and handle any fire at the scene. The new vehicle would let dispatch send one vehicle with an entire crew. The second new vehicle would be something the Fire Chief called a “quint”. It’s a pumper with a water tank, and a 75 ft. ladder. This would allow for the disposal of the current ladder truck which is also very old. The current ladder truck is seldom used, but the Town still has some large buildings where a ladder would be very useful. If the town creates one or more full-time positions, a vehicle should then be purchased for the chief and other personnel. Table 4.31 reflects these proposed changes compared to the current supply of vehicles.

**Table 4.3.B Current and Proposed Fire Department Vehicles**

| Apparatus | Current | Proposed |
|---|---|---|
| Pumper | 2 | 2 |
| Ladder | 1 | 0* |
| Tankers | 1 | 1 |
| Rescue/Utility | 2 | 1 |
| Ambulance | 1 | 1 |
| Historic | 1+ | 1+ |
| Other | 0 | 1** |

* The ladder truck would be replaced by a new combination pumper/ladder vehicle (Quint).
**A new vehicle may be needed if full-time staff are hired.

The proposed cost of additional station space and new vehicle purchases is in the range of $350,000 to $500,000.

## 4.4 Police Department

The Bethlehem Police Department is located in the lower level of the Town Building. The department has a chief and four full time officers. This allows the town to provide police coverage twenty-four hours a day seven days a week. The department has two police cruisers, and relies on dispatch services from Grafton County Dispatch. The department is continuing to update its communication and information systems to a state of the art level.

The 2003 police department budget was $219,147, and is further broken down in Table 4.4.

**Table 4.4 Police Department Budget 2003**

| | |
|---|---|
| Salaries | $202,647 |
| Vehicle maintenance | $2,500 |
| Fuel | $4,000 |
| Supplies | $10,000 |
| **Total** | **$219,147** |

The department replaces cruisers on a regular schedule, according to the Capital Improvements Program, and the town meeting has been appropriating $10,000 to the Police Cruiser Capital Reserve Fund on a regular basis. The department has expressed a need for enclosed parking spaces for the two cruisers. A plan is being developed to provide this space, but no cost estimates are currently available.

## 4.5 Highway Department

The Highway Department is responsible for repair and maintenance of town roadways. The department is located on Prospect Street. The Highway Department equipment currently consists of the following:

- 6 Dump trucks
- 1 Grader
- 1 Street sweeper
- 1 Loader
- 1 Wheeled excavator
- 1 Roadside mowing tractor

The department is staffed by one Road Agent and five full time employees. The department's 2003 budget is broken down in Table 4.5.

**Table 4.5 Highway Department Budget 2003**

| | |
|---|---|
| Salaries | $249,594 |
| Materials | $99,000 |
| Fuel and supplies | $38,000 |
| Utilities | $8,700 |
| Repairs | $5,356 |
| Equipment | $48,000 |
| Other | $9,000 |
| **Total** | **$457,650** |

A $50,000 expansion of the highway garage was largely completed in 2003 with only some interior work remaining to be completed in 2004. The Highway Department participates in the Capital Improvements Program, and has listed its extensive equipment needs there. A Highway Truck Capital Reserve was established at Town Meeting, and appropriations are being made annually.

## 4.6 Swimming Pool

The Town owns and operates a municipal swimming pool. The pool was built in 1939 and is 60 feet wide by 105 feet long with a maximum depth of 11 foot. Changing and bathroom facilities, and a snack bar, are available in an adjacent building.

In 2001, the Board of Selectmen chartered a Citizen's Advisory Committee to investigate and recommend solutions to long term facilities' needs. For various reasons, the Committee focused on the swimming pool. The problems with the existing pool are primarily age related, and secondarily location related. To address these problems, the Committee has developed plans for a new pool to be located on tax-deeded town property due east of the Little League baseball fields. The cost estimates for this project range from $500,000 to

$1,000,000. In 2004 the pool will not be open or available for use due to serious leaks and aging filteration and chlorination equipment that could pose health risks.

## 4.7 Cemeteries

The Town owns and operates two cemeteries known as the Maple Street Cemetery and the Main Street Cemetary. In 1998 the Town acquired land adjacent to the Maple Street cemetery to allow for expansion of burial space. In 1999, Town Meeting established a Capital Reserve Fund for improvements to the cemetery expansion area, and has since regularly appropriated $8,500 to the fund each year. The improvements are approximately 25% complete, and will be continued until completion.

## 4.8 Education Facilities

Bethlehem Elementary School and the Profile High School underwent some major renovations, and large repair and maintenance projects since 1990. A comprehensive study of the Profile High School in 2002 resulted in a report recommending substantial upgrades and/or repairs to the School. Several recommendations were made to correct existing problems and to bring the School into the 21st century. High-end options included the building of a totally new school on a larger piece of property or perhaps consolidating with Littleton High School. Regardless of the course of action eventually selected, the town faces a major expense within the next few years. The enrollment at the Bethlehem Elementary School over the last decade can be seen in Figure 4.8.A. Figure 4.8.B shows Bethlehem's portion of the enrollment at the Profile High School during the same time period.

**Figure 4.8.A Bethlehem Elementary School Enrollment 1993-2003**

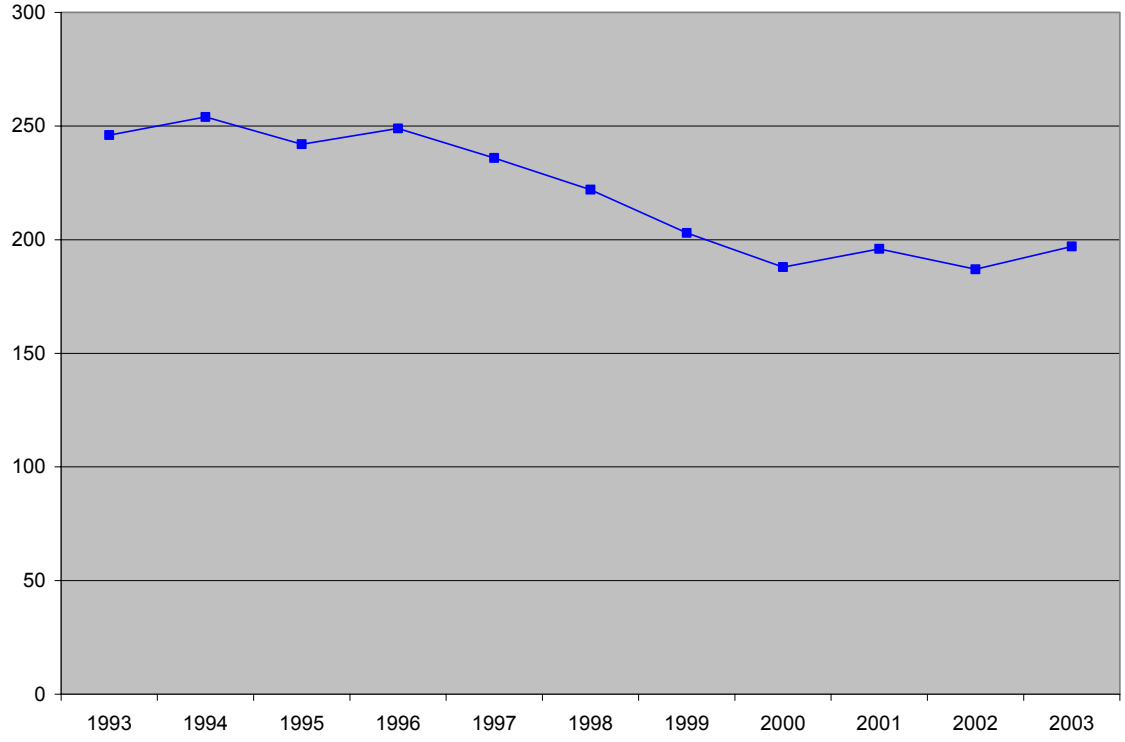
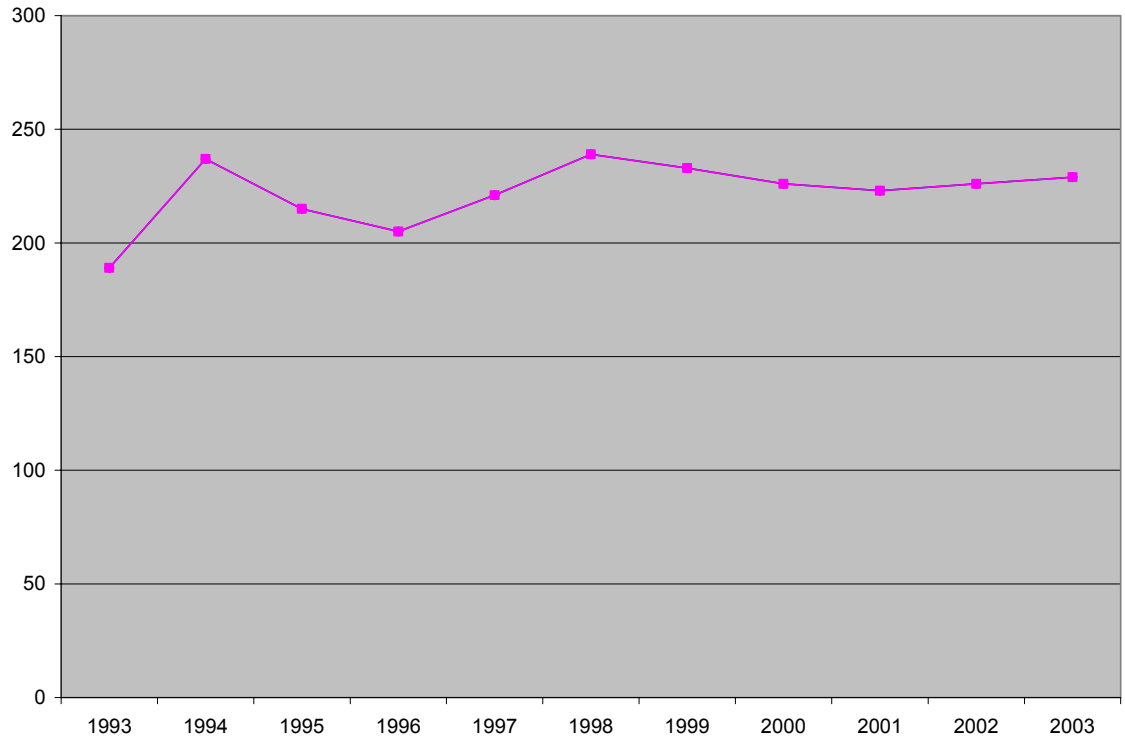



**Table 4.8.B Profile High School Enrollment 1993-2003**



The private White Mountain School maintains a viable enrollment. A new dorm was approved in 2002, and should be in service by 2004. A private religious school began operating in the mid 1990's on Maple Street. When it outgrew the house being used for classes, the school purchased the old Hay Fever Relief Association property where one of the original buildings was renovated and made into a classroom. Twenty-five children now attend the school. Bethlehem's education facilities can be found on Map D in the Appendix.

## 4.9 Non-profit Organizations

Bethlehem has a number of non-profit or not-for-profit organizations within the community. Some are well-known and highly visible. Others may be small and less known, or serve a function and/or cliental that make it preferable that they not be highly visible. Many provide services that are of benefit to the community. Some serve the North Country and beyond. Schools and government entities are included in this category, and have been addressed elsewhere in this chapter.

# Chapter 5
# Utilities & Public Services

# Chapter 5
# Utilities & Public Services

## 5.0 Introduction

In every community there are aspects of daily life that are unseen or unnoticed. A reliable supply of clean drinking water is often taken for granted until a water ban is instituted, or a new water source is needed. Electricity may be taken for granted until the power goes out, and solid waste disposal may be taken for granted until the community must seek other waste disposal options. All of these matters come under the general heading of *infrastructure*, and the master plan examines the current status and likely future need for the various types of infrastructure in Bethlehem.

## 5.1 Electricity

The Public Service Company of New Hampshire (PSNH) provides electricity in Bethlehem. With offices located in Lancaster, the company is part of the New England Power Pool, and receives power from throughout New England as needed. One major transmission line brings power into Bethlehem, and is located at the western end of the town. PSNH distributes the power and maintains all the lines throughout the town.

There is currently one power producer in Bethlehem. Pine Tree Power, located on NH Route 116, is a wood chip to energy electrical producer that sells its power to PSNH. The plant produces about 15 megawatts of power. It was built in 1985, and uses approximately 30 tons of wood chips per hour.

## 5.2 Telephone Service

Verizon provides telephone service in Bethlehem. Operators and services are not located in Bethlehem. Currently there are 775 residential, and 116 business phone customers in town – up about 20% from 1985.

Long Distance and cellular services are available through many providers, including MCI, AT&T, Verizon, and more. Internet connections also are available through such

companies as Earthlink, NCIA, and AOL, and high speed Internet is available through Adelphia.

According to the NH Public Utilities Commission, new switching facilities were put into place in Bethlehem in 1990, improving expanded touch-tone capabilities.

## 5.3 Cable Television

Cable television has been available in Bethlehem for many years although, service is not available in some rural portions of the community. The Adelphia Cable Company owns and operates the system. Their office is located on 380 Union St in Littleton, NH.

## 5.4 Telecommunications Facilities

Telecommunications facilities being located in Bethlehem was not a subject that was covered in the 1993 Master Plan. As wireless technology has evolved telephones, pagers, and other high-speed digital communications devices have become more common in the North Country. With the requirement for line-of-sight transmitting and receiving capability for many new devices, and with increased users, facilities are needed much closer together. Placement must be at higher elevations, or the facility needs to be high enough to provide the needed coverage. In the early 1990s, Stan Harrison applied for permission to have a 120' tower erected on his property atop Mt. Agassiz. A variance was required and was sought from, and eventually approved by, the Zoning Board of Adjustment. Subsequently, site plan approval was granted by the Planning Board. The tower atop Mt. Agassiz was one of the first in the area, but others soon followed in surrounding towns. There was some opposition, and concerns were expressed regarding the impact of the Agassiz tower. Most concerns centered on the visual impacts.

As more towers have been constructed opposition has became more vocal. Bethlehem had no further requests for towers for several years, but in 2000 a tower builder approached a number of Bethlehem landowners with offers to lease land on a long-term basis for the purpose of constructing a tower. Several residents who were contacted expressed their concern about more towers appearing in the town. Also in 2000, the State legislature enacted a new statute governing towers or, as the legislation calls them "Personal Wireless Service Facilities". The Planning Board took the initiative to draft a telecommunications ordinance, and presented a comprehensive ordinance at Town Meeting in March 2001. It was approved by a wide margin and Bethlehem became one of the first towns in the North Country to have a Telecommunications Ordinance. The Town cannot prohibit towers, but it can dictate where they may be built. Height, appearance, safety, removal, and other considerations are also addressed in the ordinance. Tower location has regional implications, and any proposed tower in Bethlehem would require noticing all towns within a 20 mile radius. Other towns must provide similar notice for towers in their jurisdiction.

## 5.5 Solid Waste

### 5.5.1 Landfill

The Bethlehem Municipal Landfill located on Prospect Street was closed and capped in 1995. The total closure cost for the Prospect Street Municipal Landfill was $229,370. Direct cost to the Town was approximately $127,451. An additional amount of approximately $101,919 in services and materials was donated by North Country Environmental Services. The area covering the landfill must be mowed annually and monitored periodically for an extended period (20-30 years). Final closure of the landfill required Littleton Water and Light to reroute its existing water line from the Gale River intake to Littleton, which was routed under the landfill, to an area skirting the closed landfill.

### 5.5.2 Transfer Station

The Town currently uses a transfer station owned and operated by North Country Environmental Services adjacent to the NCES landfill. Access to the transfer station is controlled by a town employee who ensures that all municipal waste is contained in Town bags (the "pay-per-bag" system), and who collects fees for construction and demolition debris, which is charged on a volume basis. These fees are set at rates to cover the waste disposal, and related costs to the Town. The Town currently pays tipping fees of approximately $77.00 per ton for municipal solid waste, and over $80 per ton for construction and demolition materials. The transfer station uses several containers for recycling. Recycling is voluntary. Aluminum, tin, glass, certain plastics, newspaper and magazines, boxboard, and corrugated cardboard are currently accepted for recycling. The recycling rate in 2002 was approximately 12%.

In 1997, the Board of Selectmen chartered a Citizen's Advisory Committee to investigate and recommend a long-term solution for the community's solid waste disposal needs. In 1998, the Committee reported its findings. In summary, over the long term the Committee found that there would be a cost advantage to the Town if it owned and operated its own transfer station, and negotiated its disposal fees from a position of independence. The Committee identified two potential properties as suitable locations for a new transfer station.

The March, 1998 Town Meeting established a Capital Reserve Fund to construct a transfer station, and appropriated $100,000 to fund it. The March, 2001 Town Meeting voted to discontinue this fund, and returned the funds to the General Fund.

Unsure of the life expectancy of the NCES landfill, and with cost and space factors in mind, the Selectmen are investigating the possibility of contracting with the Mt. Carberry Landfill in Success, NH, as a long term solid waste disposal solution. Mt. Carberry projects landfill capacity for the next 30 years. Current estimates of disposal costs (including trucking) are from $10 to $13 per ton less than current NCES charges.

There are currently no cost estimates available for the construction of a new transfer station.

### 5.5.3 Village District Waste Collection

Originally created by charter in 1893 as the Bethlehem Village Precinct, the precinct was reorganized in 1925 under a new charter and became the Bethlehem Village District. The Bethlehem Village District Commissioners have been granted similar powers within the district that selectmen have in town affairs. The Bethlehem Village District regulates the use of water, sidewalks, sewerage system, Fire Department, shade trees, and highways within the district, and has played an important role in the development of the town over the years.

The Village District, through taxes raised for this purpose, provides weekly collection of District inhabitants' solid waste. The District also provides bi-weekly curbside collection of recyclable materials.

### 5.5.4 Wastewater Collection

The Bethlehem Village District is served by a wastewater collection system that dates back to the 1880's. The present system consists of a state of the art $2 million dollar wastewater treatment facility on a 43-acre site located on the north central portion of the District, off Maple Street. This secondary wastewater treatment facility consists of three aerated lagoons, and a pre-treatment system. The system is designed to handle .34 million gallons per day. Maximum storm water flow through the facility is calculated at 1.5 million gallons per day. (See Map E, Appendix 1)

The facility meets all water quality standards set by the State of New Hampshire and the Federal government. The lagoons are operating well, and no major sludge buildup has occurred. There is, in fact, a substantial fish population inhabiting the lagoons. The facility does accept septic tank waste (septage) from properties within Bethlehem. System users pay a fee for connection (new users), and an annual use fee. In 2003 the fees paid to the District were in excess of approximately $152,000.

The facility has the capacity to handle average projected growth in the next five years. The wastewater collection system continues to be upgraded through capital expenses raised at the District's annual meetings. In the past eight years the collection lines have been replaced on Jefferson St., Cottage St. (partial), Edelweiss Dr., a collector which parallels Agassiz St., and a section of the collector which parallels Main St. The lines have been replaced by 8" diameter PVC pipe with manholes, which meets present best engineering practices. This process continues on an annual basis.

## 5.6 Water Supply

Water for the Village District system is supplied from two surface water sources. The South Branch of the Gale River, with a drainage area of 2.95 square miles, and the Zealand River with a 6.3 square mile watershed. The lines from these intakes bring water over 12 miles to a treatment facility, and a 1.25 million gallon storage facility. The current treatment facility was installed in 1996, and has done much to improve the drinking water quality for the District water users. The combination of surface water intakes and the sand filter treatment facility has been an excellent system. It allows for minimal use of treatment chemicals as opposed to other deep well systems located in the New England States. (See Map E, Appendix 1)

System users pay a fee for connection and an annual use fee. In 2003 the fees paid to the District for water were in excess of approximately $247,000. The system has the capacity to handle the average projected growth, within the District, for the next five years. At the present time the Commissioners have approved a moratorium, which does not allow for any water connections outside of the Village District boundaries. Map E in the Appendix shows the extent of the current system.

The water distribution system is upgraded annually with permission of the District voters at their Annual meeting. In the past ten years distribution lines have been replaced in the following areas; Jefferson St., Pinewood Ave., Pleasant St., Elm St., Birchmere Ave., West Cross St., Cottage St. (partial), James St. (west), Agassiz St. (partial), South Road (partial), Maple St. (partial), Turner St., Congress St., Harrigan St., Edelweiss Dr., and Corey St. The District will continue to replace distribution lines, with voter approval, on an annual basis.

At this time the District is in the process of completing an income survey of water users with the hope that they may be able to access grant money from various sources to replace more of the distribution system in the near future, and possibly home service lines for low/moderate income users. This would help during the long cold winter weather when users must allow their water to run in the hope that their service lines do not freeze. The older distribution lines are a mixture of various types of pipe that is sized from 1” to 6” in diameter, and are generally cast iron. The District is replacing these lines with 8” diameter ductile iron pipe, with valves, hydrants, and connections according to present engineering best practices. The District is also burying these lines a minimum of 7’ deep and covering them with two inches of Styrofoam insulation to negate future frozen water lines. All of the pipe, valves and hydrants are of the same style and manufacturer so that the District can carry a much smaller stock of repair items for the system in the future.

# Chapter 6
# Population & Housing

# Chapter 6
# Population and Housing

## 6.0 Introduction

Bethlehem's population and housing characteristics are directly related to land use decisions, and they contribute to the character of the community. This chapter of the master plan examines the changing characteristics of Bethlehem's population and housing stock. The first half of the chapter focuses on the historical growth rate of the population, as well as the demographics of the current population.

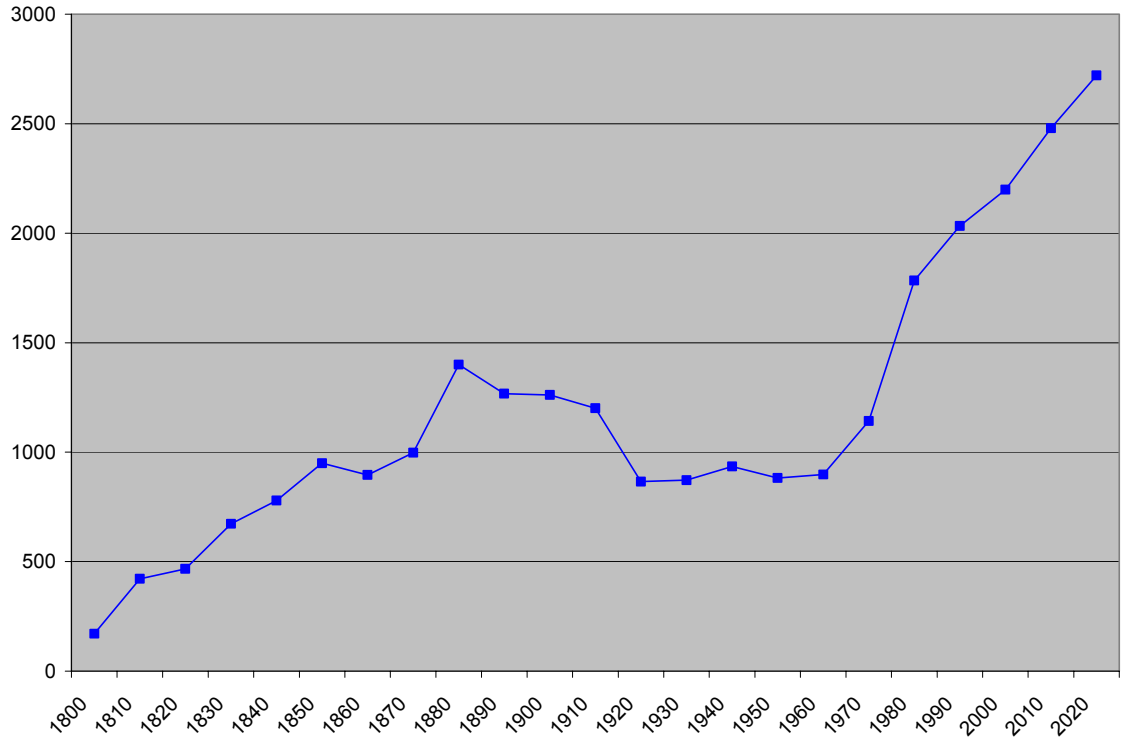
The second half of the chapter provides information on the changing dynamics of Bethlehem's housing supply, and residential real estate market. An overview is presented about total housing growth, changes in housing mix in terms of the types of housing units constructed, and the affect that this housing growth has had on historical land use patterns. This is followed by an assessment of housing costs, as well as an assessment of the availability of affordable housing.

# 6.1 Population

## 6.1.1 Population Trends

The population for Bethlehem in 2000 was 2199, an increase of 166 (8%) since 1990. In 1990 the population was 2033, an increase of 249 persons (14%) since 1980. This represents a continuation of the trend of decline in the growth rate since the largest ever population boom from 1970 to 1980, when the population of Bethlehem grew an amazing 56% from 1142 to 1784 persons. In 1980, the population finally surpassed the all-time high of 1400 persons in 1880, the heyday of the tourist industry in town. These trends are illustrated in Table 6.1.1.A and in Table 6.1.1.B.

**Table 6.1.1.A Bethlehem Population 1800 - 2020**




As identified in Table 6.1.1.A, Bethlehem's growth rate of 8% for the past decade is below average for Grafton County as a whole (9%), and less than the State's average growth rate of 11.4%. Overall population trends in Bethlehem, Grafton County and the State have fallen steadily since the phenomenal growth from 1970 to 1980. Some of the exceptional growth experienced in Bethlehem from 1970 to 1980 could be attributed to former Franconia College students who chose to remain in the area.

**Table 6.1.1.B Bethlehem Population Growth 1970 - 2000**

| | 1970 | 1980 | 1970-1980 % Change | 1990 | 1980-1990 % Change | 2000 | 1990-2000 % Change |
|---|---|---|---|---|---|---|---|
| **Bethlehem** | 1142 | 1784 | 56% | 2,033 | 14% | 2,199 | 8% |
| **Grafton County** | 54,914 | 65,806 | 20% | 74,929 | 14% | 81,743 | 9% |
| **New Hampshire** | 737,681 | 920,610 | 25% | 1,109,252 | 21% | 1,235,786 | 11.41% |

**Source: US Census**

### 6.1.2 Population Projections

Projecting population is not an exact science by any means. The New Hampshire Office of Energy and Planning is responsible for providing periodic population projections for New Hampshire towns. In 1981, they projected Bethlehem's 1990 population to be 2196. The actual number of residents was 2033, which is only a 6% difference. The Office of Energy and Planning projected the 2000 population to be 3120, as compared to the actual population of 2199. This was not as accurate a projection, due to the unforeseen recession in the early 1990's, and its ripple effect on population growth.

In the 1978 Master Plan, a 1 to 1.5% growth rate was projected for the 1990 population, a range of 2025 to 2300. Again, the actual 1990 population of 2033 was well within all of the previous projections.

Table 6.1.2 provides three population projections. The first is the latest by the Office of Energy and Planning. A 1.4% annual growth rate projection is based on the growth over the past decade in town. Finally, a 1% annual growth rate is projected which provides for less growth in Bethlehem than in the 1980's

**Table 6.1.2 Population Projections**

| | 2005 | 2010 | 2015 | 2020 |
|---|---|---|---|---|
| **NH Office of Energy and Planning** | 2226 | 2249 | 2288 | 2353 |
| **1.4% Growth Rate** | 2370 | 2506 | 2687 | 2881 |
| **1% Growth Rate** | 2311 | 2429 | 2553 | 2684 |

**Source: NH OEP, NCC**

As is evident from these figures, the Office of Energy and Planning has revised its population projections downward. However, it may be prudent to take the conservative 1% annual growth rate as potentially the most accurate. Therefore, the population in 2020 should be projected to reach approximately 2,684 persons.

### 6.1.3 Net Migration

Population increases because births in a community exceed deaths, and because more people move into a town than those moving out. An analysis of birth and death statistics for Bethlehem indicates that for the decade from 1980 to 1990, births exceeded deaths by 126 persons, while from 1990 to 2000 births exceeded deaths by 89 persons. These figures, when subtracted from the population growth for the respective decade, yield the figures for net migration. Table 6.1.3 summarizes these results and shows that in both decades the population grew nearly equal from births, and from the result of people moving into Bethlehem (in-migration).

**Table 6.1.3 Natural Increase**

| | **1980 – 1990** | **1990 - 2000** |
|---|---|---|
| **Births** | 250 | 258 |
| **Deaths** | 124 | 169 |
| **Natural Increase** | +126 | +89 |
| **Net Migration** | +123 | +77 |
| **Total Population Increase** | 249 | 166 |

Source: NH Department of Health and Human Services

### 6.1.4 Seasonal Population

While Census figures reflect only resident population, seasonal populations in New Hampshire can be important considering the fact that their impact on town services can be dramatic in some cases. Further discussion of tourism is contained in Chapter 7 – Economy. In 1998 the Tourism Development Department of Plymouth State College generated an estimate of 2 million visitor days spent in the immediate area of Bethlehem, or approximately 660 thousand visitor trips. Additionally, they estimated that there were approximately 340 seasonal households in Bethlehem. This compares to the 2000 Census which found 383 housing units vacant at the time of the census, with 251 of those seasonal. In 1998, there were 16 fixed-roof commercial lodgings providing 258 rooms, and 2 campgrounds providing 95 campsites. Ninety-three of these units were described as operating year round, 119 of these units were devoted to exclusive use by Hassidim. Table 6.1.4 provides an estimate of the peak summer seasonal population to be 4,126, nearly double the year-round resident population.

**Table 6.1.4 Estimated Peak Summer Population**

| **Population** | **# of Persons** |
|---|---|
| Residents* | 2199 |
| Seasonal Home Population ** | 1044 |
| Tourist Accommodations *** | 883 |
| Institutional | +12 |
| Peak Seasonal Population | **4126** |

**Source: Plymouth State College and US Census**
Notes: * 2000 census
** # units in 2000 census x 4 persons
*** campgrounds, motel, cottage units x 2.5 persons

### 6.1.5 Population Distribution

Age distribution can provide a good base for assessing the needs of a community. If a town has a large preschool population, for example, it may indicate a need for additional school space. Likewise, a large, increasing elderly population may indicate a need for more housing options, transportation, or health care services. Table 6.1.5 presents the age group distribution over the past 30 years in Bethlehem.

**Table 6.1.5 Bethlehem Age Group Distribution 1970 – 2000**

| Group | 1970 | Percent | 1980 | Percent | 1990 | Percent | 2000* | Percent |
|---|---|---|---|---|---|---|---|---|
| **0 - 4** | 111 | 10 | 151 | 8 | 158 | 8 | 120 | 5 |
| **5-17(5-19*)** | 281 | 25 | 396 | 22 | 409 | 20 | 459 | 21 |
| **18-64 (20-64*)** | 643 | 10 | 1,058 | 60 | 1,275 | 63 | 1384 | 63 |
| **65+** | 107 | 9 | 179 | 10 | 191 | 9 | 236 | 11 |
| **Total** | 1142 | 100% | 1784 | 100% | 2033 | 100% | 2199 | 100% |

**Source: US Census**
***Notes a change in the age categories in the 2000 Census**

#### Preschool Population

The 2000 Census figures indicate a dramatic decrease in the preschool population. Not only the overall number of preschool age children has decreased, but also the percentage of the total population in this age group has also decreased from 8% to 5%. This segment of the population represents the students entering the school system by 2005.

#### School Age Population

School age children are a very important segment of the population because they represent the potential labor force of the next decade. This segment of Bethlehem's population has remained fairly steady since 1990. The 2000 figures include 18 and 19 year olds in this category, and with this taken into consideration, the increase of 50 individuals may be seen as remaining stable.

#### Labor Force Population

The labor force in a community is actually all of the individuals who are of prime working age, usually between the ages of 18 and 64, although the categories have changed in 2000 to include only ages 20 to 64. With this reduction of 2 years in the

comparison, it is evident that there has been a slight increase in this segment of the population. This increase is most probably where the in-migration to the community has occurred.

**Elderly Population**

The number of elderly increased in the decade from 1990 to 2000, with the increase in the percent of the total population increasing from 9% to 11%. According to the Census this percentage of the total population may see a larger increase in the next decade as the first wave of " Baby Boomers" reach 65 years of age in 2011, assuming that those currently residing in Bethlehem choose to remain in town, or are matched by those migrating in. The percentage of this age group is comparable to the County and State percentages of total population.

## 6.2 Housing

### 6.2.1 Introduction

Housing is an important aspect of individual lives, and for a community it represents a valuable social, economic, and physical resource. This portion of the chapter focuses on the general physical characteristics, the supply of housing units in Bethlehem, the cost and affordability of housing, and the activities of public and private agencies intended to affect either the supply or quality of housing in Bethlehem. Special attention is provided to elderly and low-income housing issues. Housing trends and needs have been compared where appropriate with Grafton Country, and the State.

### 6.2.2 Housing Supply

Using census figures from 1980 to 2000, we can look at changes in Bethlehem's housing stock over the past 20 years. Table 6.2.2.A shows that the total number of housing units in Bethlehem has grown by 399 units since 1980, or 44%.

**Table 6.2.2.A Bethlehem Housing Units**

| | 1980 | 1990 | 2000 | 1980-2000 % Change | 1990-2000 % Change |
|---|---|---|---|---|---|
| **Single Family** | 613 | 858 | 972 | 59 | 13.3 |
| **Multifamily** | 242 | 233 | 252 | 4 | 8.2 |
| **Mobile Homes/Other** | 53 | 87 | 83 | 57 | -4.6 |
| **Total** | 908 | 1221 | 1307 | 44 | 7.0 |

Source: US Census

In the last decade, from 1990 to 2000, total housing units have increased by 86 units or 7%. Although this figure shows that the rate of growth has risen sharply in the 80's and slowed dramatically throughout the 90's, these figures are in line with other data showing the national housing boom of the 1980's, and then the more moderate and cautious growth of the 1990s. In the last decade, the total unit increase of 7% is also closely in line with the population growth rate of 8%.

Table 6.2.2.B compares housing units by type in Bethlehem to Grafton County, and New Hampshire. Bethlehem has a higher percentage of single family units than the County or State as a whole. This is typically the case for rural communities of Bethlehem's size.

**Table 6.2.2.B Housing Units in 2000**

| Type | Bethlehem Units | %* | Grafton County Units | %* | NH Units | %* |
|---|---|---|---|---|---|---|
| Single family | 972 | 74 | 29,308 | 67 | 365,532 | 67 |
| Multifamily | 252 | 19 | 10,673 | 24 | 145,163 | 27 |
| Mobile | 70 | 5 | 3,661 | 8 | 35,544 | 6 |
| Other | 13 | 1 | 87 | 0 | 785 | 0 |
| **Total** | **1,307** | **99** | **43,729** | **99** | **547,024** | **100** |

* Percentages have been rounded to the nearest whole number, so they may not equal 100%

Source: 2000 US Census

### 6.2.3 Ownership Trends

According to the 2000 Census, there are 504 occupied housing units, and 279 vacant units in Bethlehem. Out of the 504 occupied housing units, nearly 87% of them, or 436 units are owner occupied, while 13%, or 68 units, are renter occupied. The figures for vacant units are broken down by both unoccupied units that are for sale or rent, and seasonal/recreational homes that are used only on occasion. Table 6.2.3 presents occupancy statistics. It is interesting to note that the Bethlehem has owner and renter vacancy rates that are higher than both the County and the State rates. This is very different from the housing shortages that are evidenced in the more densely populated sections of the State as the population figures continue to climb at higher rates than the supply of new housing units.

**Table 6.2.3 Housing Units by Tenure and Occupancy – 2000**

| | Bethlehem | % | Grafton County | % | NH | % |
|---|---|---|---|---|---|---|
| **Total Units** | 1307 | 100 | 43,729 | 100 | 547,024 | 100 |
| **Occupied** | 924 | 70.7 | 31,598 | 72.3 | 474,606 | 86.8 |
| **Vacant** | 383 | 29.3 | 12,131 | 27.7 | 72,418 | 13.2 |
| **Vacant Seasonal/Recreational or Occasional use** | 251 | 19.2 | 10,428 | 23.8 | 56,413 | 10.3 |
| | | | | | | |
| **Owner Occupied** | 646 | 69.9 | 21,677 | 68.6 | 330,700 | 69.7 |
| **Renter Occupied** | 278 | 30.1 | 9,921 | 31.4 | 143,906 | 30.3 |
| **Total Occupied** | 924 | 100 | 31,598 | 100 | 474,606 | 100 |
| | | | | | | |
| **Homeowner Vacancy Rate** | 5.8% | N/A | 2% | N/A | 1% | N/A |
| **Rental Vacancy Rate** | 8.3% | N/A | 3.7% | N/A | 3.5% | N/A |

It is important to note that Bethlehem and Grafton County as a whole have a higher seasonal vacancy rate than the State of New Hampshire. This is very typical of the North Country economy, with many communities in the region being a destination for seasonal activities. Bethlehem in particular is located in an ideal location for families wishing to purchase a seasonal home, due to the town's close proximity to Bretton Woods, Cannon Mountain, and other ski areas. The town also boasts access to summertime opportunities found in the White Mountain National Forest, and the region's well known golf courses.

### 6.2.4 Housing Characteristics

In Table 6.2.4 Bethlehem's housing units are broken down by age. This table emphasizes the housing boom of the 1980's, and then the economic slowdown that followed. The majority, or 66%, of Bethlehem's housing units were built prior to 1979. While new housing growth (33.9% since 1980) has slowed, this is not in line with trends in Grafton County (51.8% since 1980), and New Hampshire (52.4%). Once again, this represents the housing shortages experienced in the more populated areas of the State.

While the Bethlehem housing supply is older than Grafton County and New Hampshire as a whole, the housing units are generally in sound condition with many units having been rehabilitated. Only 2.2 percent of the housing units lack plumbing or kitchen facilities.

**Table 6.2.4 Bethlehem Housing Units - Year Built**

| Year | # Units | % |
|---|---|---|
| 1939 or older | 458 | 35 |
| 1940-1959 | 107 | 8.2 |
| 1960-1969 | 106 | 8.1 |
| 1970-1979 | 192 | 14.7 |
| 1980-1989 | 343 | 26.2 |
| 1990-1994 | 55 | 4.2 |
| 1995-1998 | 30 | 2.3 |
| 1999 to March 2000 | 16 | 1.2 |

Source: 2000 Census

### 6.2.5 Cost of Housing

The price of housing units in Bethlehem is best introduced by the following excerpt from a February 2003 report from the NH Housing Finance Authority called, The State of Housing in New Hampshire. (www.nhhfa.org)

*"It is a simple fact of economics that when demand for a product exceeds supply, prices will rise. Thus, even as most New Hampshire families experienced significant increases in their incomes during the late 1990's, housing costs increased at a much more rapid pace, creating a significant affordability gap. Purchase prices have been increasing steadily since 1993 (a 77% increase to October 2002). For the year prior to October 2002, New Hampshire's purchase prices for single family homes increased by 9.96% - 62% higher than the national average. The price increase is especially significant in the area of new construction.*

*In general, purchase prices have been rising at a level that makes home ownership a significant challenge for low and moderate income households. The ability of households at 80% and even 100% of median income to purchase a home has been declining steadily since 1995. For over 100,000 low-income households (those at 50% of median income or less - or $25,800 in 2001) the affordability challenge is even more significant as only 7.8% of the homes sold in 2001 would have been affordable to them."*

While not as desperate as southern portions of New Hampshire, this information rings true even in Bethlehem. For example, if we make the following assumptions- a family has an annual household income of $35,000, they apply for a 30-year mortgage at 5.5% interest (NHHFA first-time homebuyer rate), and they put a 3% down payment, the household could afford a mortgage of $120,203 and a total purchase cost of $123,921.

The average purchase price of an existing home in the North Country region in 2002 was $136,276, (NH Office of Energy and Planning) while the median household income for the year 2000 was $35,547. This means that the average family in Bethlehem can not afford an average home.

As the housing shortages increase and affordability decreases, many families are unable to afford adequate housing. Table 6.2.5 shows the value of homes in Bethlehem in 2000. Housing in Bethlehem is clearly more affordable than Grafton County, or the State of New Hampshire. However, with a median family income of approximately $35,000, most families still can not afford to purchase a home in Bethlehem.

**Table 6.2.5 Owner Occupied Housing Values**

| Value | Bethlehem | % | Grafton | % | State | % |
|---|---|---|---|---|---|---|
| Less than $50,000 | 53 | 12.5 | 723 | 5 | 5006 | 2 |
| $50,000-$99,000 | 234 | 55.1 | 5577 | 38 | 61539 | 24.7 |
| $100,000-$149,000 | 92 | 21.6 | 4325 | 29.8 | 86992 | 34.9 |
| $150,000-$199,000 | 24 | 5.6 | 1682 | 11.6 | 48253 | 19.4 |
| $200,000-$299,000 | 16 | 3.8 | 1282 | 8.8 | 32989 | 13.2 |
| $300,000-$499,000 | 3 | .7 | 759 | 5.2 | 11491 | 4.6 |
| $500,000-$999,000 | 3 | .7 | 156 | 1.1 | 2614 | 1 |
| 1,000,000 or more | 0 | 0 | 11 | .1 | 461 | .2 |

Renters in the late 1980's and 1990's faced the same skyrocketing costs as homeowners. Average rents paid in Grafton County average approximately $560 per month. In Bethlehem the average amount paid for rent is $518. These two figures are once again much less than the New Hampshire average of $646, once again illustrating the differences in the housing situations of the North Country as compared with other parts of the state.

### 6.2.6 Senior Housing

Eighteen percent of all housing in Bethlehem is occupied by residents over 65 years of age, and nearly one quarter (24.7%) of all housing units are occupied by residents over the age of 60. Bethlehem does not have an abundant supply of senior housing, and currently has no nursing homes. The closest nursing home is in Franconia, NH. Bethlehem does have 20 units of privately owned, subsidized elderly housing located on Agassiz Street. The rent is based upon 30% of the residents' income. As the population of Bethlehem ages, the need for adequate senior housing will grow as well, and this population could benefit from a greater selection of housing options that would allow them to remain in Bethlehem. This issue needs further attention by the community.

### 6.2.7 Manufactured Housing

Manufactured housing composes approximately five percent of Bethlehem's housing stock. About 70 mobile homes can be found throughout town, with approximately 29 located in the town's only mobile home park on Maple Street, just north of the village. In the mobile home park, residents own their mobile homes, but not their lots.

Many towns have excluded, or severely limited, mobile homes in their communities. In 1980, New Hampshire passed a law prohibiting towns from excluding mobile homes.

Towns were given two options: allow manufactured housing on individual lots, or allow manufactured home parks and subdivisions in residential districts. In 1986, Bethlehem amended their restrictive ordinance by adopting the 2nd alternative. No additional parks or subdivisions have been constructed since then.

### 6.2.8 Condominiums

Condominiums began appearing in New Hampshire in the 1970's. Although they are often thought of as a structure, the term actually applies only to ownership. Condominiums are usually attached housing units (although they can be individual units) located in a development that has jointly owned and maintained facilities and services. In the North Country they are most popular as second homes, particularly near ski areas and golf courses. They allow the owners to have their own unit without the headaches of maintenance and upkeep. They often provide access to shared recreational facilities, such as tennis courts and swimming pools.

Bethlehem currently has three condominium developments with completed units. The Fairways, near the town golf course, with 12 units constructed, Maplewood with 78 units constructed, and Bretton Woods with three units constructed of 15 approved. However, several hundred additional units including 80 more in the two existing developments, and about 300 in four other developments were planned and approved in the 1980's. When the real estate market collapsed the condominium market was the first to be affected.

While condominiums and other forms of second home developments can be beneficial to a community because they offer high property values with few needed services, (i.e. few school children), the collapse of the market has also shown the other possibilities which include: developments with uncompleted roads, utilities and recreational facilities, letters of credit that are inadequate, unpaid property taxes, and the rental or sale of units to year round residents who do require services. The importance of relevant and specific zoning and subdivision regulations to protect the community is now very clear in Bethlehem.

### 6.2.9 Town Regulations

Bethlehem's zoning ordinance regulates the type of housing units allowed within the community. Table 6.2.9 summarizes the zoning ordinance's housing requirements.

The zoning ordinance appears to meet all state minimum requirements for providing housing options for a variety of housing types, particularly manufactured homes. The ordinance is not very restrictive relative to condominium developments. The same was true of apartment buildings, but the Multi-Family Dwelling Unit Development Ordinance drafted by the planning board and approved by the voters in March 2004 is much more comprehensive.

Cluster housing, which provides flexibility in subdivision design provided overall density requirements are not exceeded, and the conversion of large old single family homes into

multifamily units are both permitted anywhere in Bethlehem by special exception, provided certain specific requirements are met.

**Table 6.2.9 Bethlehem Zoning Districts and Permitted Housing Types**

| Housing Type | District 1- Main Street | District 1 | District 2 |
|---|---|---|---|
| % of Town in District | | | |
| Single Family | P | P | P |
| Duplexes | P | P | P |
| Apartments | P | P | P |
| Condominiums (private w/s) | P | P | SE |
| Condominiums (w/ public w/s) | P | P | P |
| Manufactured Home Parks | NA | P | P |
| Manufactured Housing Subdivisions | NA | P | P |
| Manufactured Housing on Ind. Lots | NA | NA | NA |
| Multifamily Conversions | SE | SE | SE |
| Cluster Housing | P | P | P |

NA= Not Allowed SE= Special Exception P= Permitted

Before any construction can begin, a building permit is necessary. An occupancy permit is then required prior to moving in. According to the NH Office of Energy and Planning's 2002 Update of Current Estimates and Trends in New Hampshire's Housing Supply, there were 22 building permits issued in the year 2000, 20 permits issued in 2001, and 39 issued in 2002 for new construction. The town adopted BOCA Building Codes in 1987 for electrical, plumbing and construction standards, but repealed the code for single family residential structures in 1997.

In 2003, Bethlehem adopted an extensive code enforcement policy. In 2004, the position of building inspector was combined with a newly created code enforcement position. The building inspector component will remain the same, but the new code enforcement portion of this position will involve investigating complaints from citizens, potential zoning violations, and other aspects as identified by the select board. The officer's mandate is try to create compliance with the town ordinances rather than solely prosecute violators. The goal is to utilize the zoning ordinances to support the future vision of Bethlehem.

**Goal 20** Revise sections of the Town's Master Plan, as necessary, to address changes in growth and development locally or regionally, and to permit timely and effective changes to Town Ordinances and Regulations.

## 1.2 Objectives

An "Objective" is a statement of action which the town needs to take to achieve a Goal. The chapters that follow present the town as it exists today and the actions needed to effect changes to meet the needs of those who live, work, and play in Bethlehem, while at the same time preserving, as best we can, the community's natural environment and its historic character.

# Chapter 7
# Economy

# Chapter 7
# Economy

## 7.0 Introduction

Agriculture and lumbering were the early mainstays of the local subsistence economy, and development centered around the streams and rivers that provided needed waterpower for the mills. The beginning of the economic boom in Bethlehem, and the development of the present town center on the hill can be traced to the hotel era of the late 1800s and early 1900s which flourished due to the availability of railroad transportation. Visitors flocked to Bethlehem, attracted by the beautiful scenery, clean air, and recreational opportunities. Known for its exceptionally clean mountain air, Bethlehem attracted many individuals that were seeking relief from respiratory problems, and became the home of the National Hay Fever Relief Association.

The town became one of the leading resort communities in the White Mountains, and in the country at that time. The industrial revolution and mass production enabled an increasing number of people to take vacations due to the new concept of leisure time. Health became a prime concern to the middle class workers in cities where epidemics were rampant, and the benefits of cleanliness and fresh air were discovered. Thirty-four hotels in Bethlehem provided food and lodging for thousands of tourists, including the poet Robert Frost, and Presidents Hayes, Taft, Harding, Roosevelt and Grant. An average of three trains per day arrived at the town's three depots, providing affordable mass transportation to destinations previously only reached by stagecoach.

The invention of the automobile at the beginning of the 20th century marked the beginning of the end of the Grand Hotel Era. Instead of staying several weeks, or the entire summer, visitors stayed only a few days. In the 1940's and 1950's, after the ravages of the Great Depression, and in a booming post-war economy, the tourist industry was reborn with more visitors than in any other era of history. Roadside cabins came into use during this period, and many are still in use today on the western and eastern approaches to town. Like most resort communities, however, Bethlehem had to work hard to attract tourists because of the increased competition of tourist destinations around the country. The tourism and recreation industry has still been the dominant local

economic activity, but it is not comparable to the colorful days of the Grand Hotels Era, or the period of tourist cabins.

In this chapter, a variety of data will be presented which will describe both general and specific economic characteristics of Bethlehem, and its role and comparative position in the county and state economies. By examining data on current businesses, employment levels, occupations, and wages of residents, as well as looking at such factors under town control, such as land use regulations, and transportation, the strengths and weaknesses of the current economy can be identified.

## 7.1 Employment

In the year 2000, the percentage of Bethlehem's population in the labor force was 59.7 %, an increase over the 50.7 % labor force rate of 1990. The low point in employment in Bethlehem in recent decades was in 1980, when there was a decrease to 43.7 % of persons in the labor force from the 45.9 % employed population in 1970. These figures are reflected in Table 7.1.A

**Table 7.1.A Residents in the Labor Force 1970 - 2000**

| | 1970 | 1980 | 1990 | 2000 |
|---|---|---|---|---|
| **Total Population** | 1142 | 1784 | 2033 | 2199 |
| **# in Labor Force** | 525 | 781 | 1030 | 1302 |
| **% in Labor Force** | 45.9 | 43.7 | 50.7 | 59.2 |

**Source: US Census Bureau**

Bethlehem's continued population growth has also created greater stability as can be seen in the increase in employed persons. Table 7.1.B breaks down Bethlehem's employed persons by the type of industry in which they work. Due to reporting changes in the 2000 Census, certain categories of employment could not be directly compared to 1980 and 1990 figures.

**Table 7.1.B Distribution of Employment in Bethlehem by Industry 1980 - 2000**

| Category | 1980 | 1990 | % Change 1980 - 1990 | 2000 | % Change 1990 - 2000 |
|---|---|---|---|---|---|
| **Agriculture, forestry** | 22 | 24 | +9% | 17 | -29% |
| **Construction, mining** | 78 | 129 | +72% | 93 | -28% |
| **Manufacturing-durable goods** | 75 | 102 | +36% | | |
| **Manufacturing-nondurable goods** | 45 | 63 | +40% | 209 | +27% |
| **Transportation, communications** | 28 | 51 | +82% | n/a | n/a |
| **Wholesale trade*** | | | | 17 | |
| **Retail trade*** | 145 | 214 | +48% | 186 | -5% |
| **Finance, insurance, real estate** | 45 | 44 | -2% | 24 | -46% |
| **Business, repair services** | 17 | 30 | +77% | n/a | n/a |
| **Personal services, entertainment** | 81 | 52 | -36% | n/a | n/a |
| **Professional services** | 213 | 262 | +23% | 77 | -71% |
| **Public administration** | 32 | 34 | +6% | 56 | +65% |
| **Transportation, warehousing, utility**** | n/a | n/a | n/a | 35 | n/a |
| **Educational, health, social service**** | n/a | n/a | n/a | 268 | n/a |
| **Arts, entertainment, recreation, food**** | n/a | n/a | n/a | 200 | n/a |
| **Other services**** | n/a | n/a | n/a | 55 | n/a |

**Source: US Census Bureau**

* Categories combined in 1980, 1990.

** Due to a change in category classifications in the 2000 US Census, it is not possible to compare the 2000 US Census figures to previous figures.

As Table 7.1.B illustrates, the greatest increases in 2000 were seen in manufacturing, management and public administration while forestry/agriculture, construction/mining, wholesale/retail trade, and finance/insurance/real estate showed decreases. This compares to the leading increases from 1980 to 1990 in transportation/ communications, business/repair services, manufacturing, construction/mining, retail trade, and professional services. From 1980 to 1990, there were fewer declines in certain categories of employment, with only finance/insurance/real estate and personal services/entertainment showing decreases in the workforce. Again, it is difficult to draw broad conclusions from the data due to the changes in reporting categories. Table 7.1.C shows the distribution of Bethlehem's workforce by occupation for 1980 and 1990, and includes data on the Grafton County workforce in 1990 for comparison.

Here are a few facts about the town labor force:

- ✓ There are 603 females in the labor force, up fifty six percent from 1980.
- ✓ The average worker drives alone 20.3 minutes to work, compared to the N.H. average of 25.3 minutes. Littleton is a major employment center for Bethlehem residents.
- ✓ Nine percent of the work force is self employed, as compared to 12% in 1990 and 1980.

**Table 7.1.C Distribution of Employment by Occupation 1980 -1990**

| Occupation | 1980 % | 1990 % | Grafton County-1990 % |
|---|---|---|---|
| **Professional** | 10 | 11 | 16 |
| **Managers** | 19 | 18 | 11 |
| **Sales** | 9 | 11 | 15 |
| **Clerical** | 13 | 11 | 14 |
| **Craftsman, Technicians** | 18 | 19 | 11 |
| **Operatives** | 8 | 9 | 7 |
| **Laborers** | 6 | 7 | 7 |
| **Farmers, Forestry** | 2 | 2 | 3 |
| **Service Workers** | 15 | 12 | 16 |

Source: 1980, 1990 US Census

As Table 7.1.C illustrates, the total number of employed persons changed significantly from 1980 to 1990, while the distribution of those employed did not. No one occupation group dominates the local economy which is an indication of a well developed and balanced economy. When compared to Grafton County as a whole, Bethlehem workers include fewer professionals and fewer clerical workers, and more construction and craftsman/technician trades people. This reflects the rural northern, tourism oriented nature of Bethlehem's economy when compared to the Plymouth, or Lebanon areas in Grafton County.

Due to a change in Census Category classifications, it is not possible to compare 2000 distribution of employment by occupation to previous Census information. Table 7.1.D presents the distribution of the workforce in Bethlehem and Grafton County by occupation in 2000.

**Table 7.1.D Distribution of Employment by Occupation 2000**

| Occupation** | 2000 % | Grafton County-2000 % |
|---|---|---|
| **Management, professional, related** | 34.7 | 36.6 |
| **Service Occupations** | 14.6 | 16 |
| **Sales, office occupations** | 21.1 | 23.6 |
| **Farming, fishing, forestry** | 1.1 | 1 |
| **Construction, extraction, maintenance** | 11.7 | 9.4 |
| **Production, transportation, and material moving** | 16.7 | 13.4 |

Source: US Census 2000

Table 7.1.D reveals that a larger number of Bethlehem residents are employed in construction/extraction/maintenance, and production, transportation, and material moving occupations than Grafton County as a whole, while there are fewer employed in related professional, service, and sales occupations. The number of residents employed

in farming, fishing, and forestry is slightly above the County average. Although the census categories are different, the results between the 1980, 1990, and 2000 census generally reflect a continuing trend toward fewer professional, service, and sales occupations, and more construction, manufacturing, and trucking jobs.

Table 7.1.E provides a breakdown and comparison of the annual average labor force, employment, and unemployment rates for the Town of Bethlehem and Grafton County. Although the labor force and number of employed persons is continuously getting larger, the unemployment rate continues to be a little higher than the County average. This is believed to be due to the relatively high percentage of retired and disabled people living in Bethlehem, and the relatively limited job opportunities in the area. When compared to figures from 1989-1991, when the unemployment rate ranged from 3.5 to 7.8, it is evident that Bethlehem is experiencing an average, yet much improved employment climate than the recession of the previous decade.

**Table 7.1.E Employment Statistics**

| | 1998 Bethlehem | 1999 Bethlehem | 2000 Bethlehem | 2000 Grafton County |
|---|---|---|---|---|
| **Annual Average Labor Force** | 1283 | 1329 | 1376 | 19354 |
| **Employment** | 1228 | 1284 | 1324 | 18805 |
| **Unemployment** | 55 | 45 | 52 | 549 |
| **Unemployment Rate** | 4.3 | 3.4 | 3.8 | 2.8 |

Source: NH Department of Employment Security

## 7.2 Income

Income is an indication of economic conditions in the community. Table 7.2.A displays income comparisons for Bethlehem, Grafton County, and the State of New Hampshire for the year 2000. While Bethlehem residents have had a substantial increase in income in the past decade, the increase in income was still less than the average increases experienced in Grafton County, or the State as a whole. This table also shows Bethlehem's median household income for the year 2000 to be 39% lower than the state median, and 18% lower than the County median.

**Table 7.2.A Income Comparisons 1990 - 2000**

| | Median Household Income ($) | | Median Family Income ($) | | Per Capita Income ($) | | Persons Below Poverty Level % | |
|---|---|---|---|---|---|---|---|---|
| | **1990** | **2000** | **1990** | **2000** | **1990** | **2000** | **1990** | **2000** |
| **Bethlehem** | 29,048 | 35,547 | 33,529 | 48,333 | 12,863 | 20,155 | 6.8 | 11.4 |
| **Grafton County** | 30,065 | 41,962 | 35,489 | 50,424 | 19,957 | 22,227 | 9.6 | 8.6 |
| **State** | 36,329 | 49,467 | 41,628 | 57,575 | 20,728 | 23,844 | 6.4 | 6.5 |

Source: US Census Bureau 1990, 2000 and NH Office of State Planning

The percent of persons below the poverty level in Bethlehem is notably higher than Grafton County and New Hampshire, and has increased significantly from 1990 (up 68%). This is attributed in part to the growing number of low paying jobs, and increasing difficulty finding livable wage jobs. Commercial expansion in the area, notably in nearby Littleton, has been primarily service sector employment in retail chain stores. A 2001 study called "The Availability of Livable Wage Jobs in New Hampshire" by several local economic development organizations, found that the average salary needed to make a living in the North Country of New Hampshire was $8.04 an hour, or $17,000 a year, for a single person, and $10.69 an hour, or $22,235 annually, for two parents with two children with both parents working. The study also showed that only 33% of the jobs in the North Country labor market pay a living wage for a family of four with both parents working.

Another contributing factor is that over five percent of Bethlehem households do not have a vehicle. There is also no regular public transportation. With an average commuting time of over 20 minutes to the nearest viable employment sites, this constitutes a serious detriment to the rate and level of employment. Table 7.2.B presents the various types of income Bethlehem residents receive by household compared to the County and State. The majority of Bethlehem residents receive their income from wages or salaries. The comparison shows that the distribution of income types in Bethlehem is fairly similar to the distribution in Grafton County and New Hampshire.

**Table 7.2.B Comparison of Household Income Types in 2000**

| | **Bethlehem** | **Grafton County** | **New Hampshire** |
|---|---|---|---|
| **Total Households #** | 924 | 31,598 | 474,606 |
| **Wages/Salaries %** | 87.3 | 82.3 | 83.8 |
| **Social Security %** | 20.5 | 27.1 | 24.7 |
| **Supplemental Security %** | 4 | 2.8 | 3 |
| **Public Assistance %** | 3.1 | 2.9 | 3 |
| **Retirement %** | 12.7 | 16.3 | 16.4 |

Source: US Census 2000
*Totals add up to more than 100% because many households have more than one type of income.

## 7.3 Local Economy

### Organizations and Employers

Many different types of organizations make up the local economy in Bethlehem. The most active and visible organizations that plan for the future economic prosperity of the Town are the Bethlehem Chamber of Commerce, Bethlehem Redevelopment Association, North Country Council, and the local town boards. The town's existing employers play a large roll in the continued economic growth of the town. Table 7.3.1.A lists the major employers in Bethlehem.

**Table 7.3.1.A Major Employers**

| Name | Product/Service | Employees | Established |
|---|---|---|---|
| **Bethlehem Elementary** | Education | 43 | |
| **Profile Jr./Sr. High School** | Education | 80 | |
| **White Mountain School** | Private Education | 50 | |
| **Pinetree Power Inc.** | Electric Plant | 25 | 1988 |
| **North Country Environmental Services** | Waste Disposal | 8 | 1994 |

Source: NH Community Profiles 2000 Edition/Economic & Labor Market Information Bureau/NH Employment Security

**Industrial/Commercial**

It is important to note that Bethlehem is not an industrial town. There has been little industrial growth in Bethlehem in the last 25 years, and the addition of only a few industries such as Garnet Hill and Pinetree Power, Inc. Garnet Hill, which had a large mail order warehouse in town, has since moved its distribution center out of state. Bethlehem has not actively sought to bring industry into the town until very recently. When compared to the neighboring community of Littleton, which has industrial zones and a working industrial park, Bethlehem's industrial growth has been scattered throughout the town. Recently, a local economic development committee has been looking into the potential for development of an industrial park in Bethlehem along Brook Road.

The Tri-Town Industrial Park proposal suggests the construction of the facility be handled in two phases. The revenue from this proposed development would then be split equally between Bethlehem, Lisbon, and Littleton. The three communities signed an initial agreement that will now allow them to apply for grant funding from the Economic Development Administration. The land for the project is being donated by the current landowner. Necessary improvements related to the project include extension of sewer, water and electric service from Littleton; upgrading the Reddington Street/Union Street intersection in Littleton; replacing the Reddington Street Bridge in Littleton.; and upgrading Brook Road.

The entrepreneurial path is especially onerous for individuals with limited skills and education, this is especially true for many rural women. The Women's Rural Entrepreneurial Network (WREN) was founded in 1994 to provide entrepreneurial support and training to this target group to women so they can acquire new skills and achieve economic independence. This multifaceted organization employs information technology to provide access to markets, and resources for personal and business development, networking, and skill-building to produce greater economic sustainability for the region's rural women. Today, WREN boasts over 630 members, including 451

individuals who own their own enterprises. With its "self-service" technology center, interactive website, "online mini-mall", and retail shop selling handmade products, WREN has emerged as an economic development catalyst in the town and the region. WREN is also actively engaged in the revitalization of Bethlehem's Main Street, and working with others to create and support a new 'destination' identity for Bethlehem based on the concept of 'Bethlehem, Star of the White Mountains'.

**Retail**

There are over 100 businesses in Bethlehem. Many are small one or two employee operations. Contractors and builders outnumber any other business, followed by businesses that cater to the tourism industry including hotels, restaurants and recreation. Most of the retail business in town (antique shops, gas stations, stores, etc.) relies on tourism dollars. Commercial activity is centered along Main Street in the village, but extends along Route 302 from one end of town to the other in various locations.

**Tourism**

Bethlehem is a natural tourist center and offers a variety of outdoor recreational opportunities. Located in the heart of the White Mountains with spectacular views of Mt. Washington, it has attracted tourists for more than 100 years. It currently features two golf courses, the White Mountain National Forest, nearby downhill and cross country skiing, and access to snowmobile trails. Tourism is one of the most important industries in New Hampshire, and certainly in Bethlehem. Over 66 million people live within a day's drive of New Hampshire, and over 38 million visitor days are spent in the state each year. Accordingly to a study, Tourism in New Hampshire by Plymouth State College, surveys have found that more than 60% of the visitors to New Hampshire desire to visit the White Mountains. Summer and fall are the busiest seasons with 2/3rds of all visitors coming at that time. The average summer tourist is part of a family whose household income is about $50,000: they spend 3 nights (compared to 6 nights in 1979) and $46 per person per day. Winter visitors tend to make shorter visits, travel more without children, but spend more - $59 per person per day.

Bethlehem draws more tourists during the summer season. However, the past decade has seen greater activity in the winter months due to Bethlehem's location near three ski areas (Loon, Cannon, and Bretton Woods), and new seasonal home owners attracted to Bethlehem's natural beauty.

Tourism in Bethlehem has changed dramatically since the big hotels and railroads, over 100 years ago. Most of the large, empty hotels are now gone, or have been renovated into bed and breakfast establishments. Bethlehem now provides a wide variety of tourist accommodations from motels to bed and breakfasts. In 1998 there were an estimated 340 seasonal households in Bethlehem, and 16 commercial lodgings providing 258 rooms. There were also two campgrounds with a total of 95 campsites. There are six restaurants in Bethlehem, five in the village, and one to the east on U.S. Route 302. Besides the overnight travelers that are accommodated in Bethlehem, day trippers abound in

Bethlehem, particularly during the summer months. Bethlehem's Main Street, U.S. Route 302, draws tourists who are driving the "loop" which brings them from I-93 in Lincoln, over the Kancamagus to Conway, through Crawford Notch to Bethlehem and then down through Franconia Notch back to Lincoln. Additionally, U.S. Route 302 is a main route for Canadian travelers to reach North Conway, NH and Old Orchard Beach on the coast of Maine.

The amount of traffic on U.S. Route 302 during different months can be used as a general indicator of the tourist business passing through Bethlehem. Indications are that the amount of traffic during summer months has more than doubled in the last 10 years. Recent traffic data (July 2002) indicates that traffic passing through Bethlehem on U.S. Route 302 at the Arlington Hotel averaged 6,799 vehicles per weekday. Traffic data from May of 2000 on U.S. Route 302 west of Prospect Street averaged 5,802 vehicles per weekday. In comparison to figures used in the Bethlehem Master Plan of 1993, traffic volume has increased considerably through town. Traffic data for U.S. Route 302 in 1993, 2000, and 2002 is included in Table 7.3.1.B.

**Table 7.3.1.B Seasonal Average Daily Traffic Counts**

| | **U.S. Route 302 Bethlehem** |
|---|---|
| April 1993 | 1215 |
| August 1993 | 3207 |
| May 2000 | 5802 |
| July 2002 | 6799 |

Source: NHDOT

Bethlehem has one rather unique group of summer visitors. A large orthodox Jewish population from New York City summers in Bethlehem. Their traditional religious attire tends to stand out as they stroll Bethlehem's sidewalks. Although their numbers once approached 2000, they are now coming in fewer and fewer numbers each year. Currently, about 200 members of two different groups can be found in Bethlehem at any given time during the summer. Some have seasonal homes but many stay in one of approximately eight inns, cabins, or seasonal boarding houses. There are an estimated 119 units at local lodging facilities available exclusively to Hassidim. Families used to come for the entire season, but many now come for only two or three week visits.

The 1980's saw Bethlehem attract significant second home and tourism/recreation related business activity. Approximately 19% of the total housing units in Bethlehem are seasonal/recreational use only. As development levels in Conway, Lincoln, and Bretton Woods peaked, Bethlehem became an attractive alternative. Most economists agree that the second home development market will never return to the growth rate of the 1980's, yet there is evidence of a slow recovery.

**An 'Arts-Driven' Economy**

Arts and culture is the fastest growing sector of the New England economy and is an industry that surpasses other traditionally recognized leading industries in job growth, and rate of growth potential. Cultural tourism in New Hampshire alone brought in $460 million in income in 1998 from 2.5 million travelers, and provided 6,414 jobs. For the most part, this is a 'clean' industry that benefits both local people and visitors seeking cultural opportunities from festivals to products to skill acquisition to relaxation. It rarely requires huge infrastructure investments, and the creation of events and venues can often be built around volunteer and community efforts. Exposing children and teens to the arts as a possible career path may also help stem the out migration of youth who face few options in livelihood within the North Country.

Bethlehem's cultural inventory includes:

- The Colonial Theatre with live performance, local community theater and independent films
- The Gallery at Wren featuring individual and group shows by local artists
- Ovation - a store featuring predominately regionally, handmade items
- Cold Mountain Cafe - an informal 'gallery' of revolving shows of work by local artists
- White Mountain School's cultural series - wide range of speakers, dance, and music performances
- The Gazebo Concerts - a summer series featuring a range of popular music for a variety of age groups
- Resident artists and artisans - the town is fortunate to be home to a number of talented artists and artisans including potters, painters, wood and metal workers, musicians, and writers.
- The Rock's cultural heritage and ecology programs
- Donna Kileen's folk music series
- Periodic arts-based workshops offered through WREN
- Hassidic community traditions - while somewhat mysterious to those outside the tradition, Bethlehem is among only a handful of towns that have a Hassidic summer community
- Thematic street banners designed and created by individual local artists
- Marketing events that center on a 'Star' theme to echo the town's identity as the 'Star of the White Mountains'(summer 2003)

**The Bethlehem Redevelopment Association**

The Bethlehem Redevelopment Association (BRA), a non-profit corporation organized under the provisions of paragraph 501 (c) 3 of the Internal Revenue Codes, was incorporated in September of 1982 to provide for "the social welfare of Bethlehem by fostering growth of industry, residences and businesses in the Bethlehem area and to assist others in the pursuit of these objectives." Most recently, the BRA enrolled several members of "The Friends of the Colonial Theatre" as members and board members of the BRA.

The BRA purchased The Colonial Theatre, an historic landmark in Bethlehem. The theatre building, containing a movie theatre and stage for live performances as well as two retail storefronts, one with living quarters attached, has served as a major attraction of neighbors and area visitors during its summer operating season. The BRA has contracted with a professional architect to develop The Colonial as a year-round regional performing arts center. This renovated theatre would permit the presentation of films and live performances, not only in the summer months, but also in the fall, winter, and spring. Enhancements to the theatre will provide additional space for the instruction, rehearsal, and performance of dance, musical instruments, and other creative arts.

**Community Attitudes toward Economic Issues**

As part of the master planning process, a survey was mailed to all Bethlehem taxpayers in April 2001 to gather their opinions on Bethlehem's community climate. Of the 900 surveys mailed out, 454 returned for an approximate 50% response rate. Appendix 2 contains a summary or the survey results. Question 9 of the survey asked if the respondent had a concern about the Town now and/or in the future. The second highest number of responses under this question was high property taxes.

Question #11 in the survey asked residents to rate the types of business that they would and would not like to have in Bethlehem. The following tables show the results.

**Table 7.3.1.C Top Commercial Uses Residents and Property Owners Would Welcome**

| Business | Number of Votes | Percentage |
|---|---|---|
| Restaurants | 369 | 81% |
| Professional Offices | 358 | 79% |
| Farms | 350 | 77% |
| Retail Sales | 332 | 73% |
| Motels/Inns/B&B's | 329 | 72% |
| Cottage Industries/home occupations | 329 | 72% |

**Table 7.3.1.D Top Commercial Uses Bethlehem Residents and Property Owners Would Not Welcome**

| Business | Number of Votes | Percentage |
|---|---|---|
| Junkyard | 358 | 79% |
| Fast Food Franchise | 340 | 75% |
| Heavy Industry | 334 | 74% |
| Shopping Centers | 299 | 50% |
| Storage units | 279 | 61% |
| Gambling Casinos | 255 | 56% |

# Chapter 8
# Natural Resources

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# Natural Resources

## 8.0 Introduction

Among the most fundamental elements of a comprehensive plan for a community is a description of the town's natural resources. By examining these resources we are better able to understand current social and economic conditions, and the patterns of development.

It has become increasingly evident that some areas are better suited for a particular use than others. Too often in the past this fact has been ignored. The results of careless, unplanned growth and development can be seen every day in both rural and urban communities. Over half of Bethlehem lies within the White Mountain National Forest. This is a great natural resource for the town. If we are to protect the rest of our natural resources, and provide a high quality of life for the citizens in Bethlehem, we must develop a town plan based on the capabilities of the land.

This section provides an overview of Bethlehem's natural features. Included are descriptions of the town's general topography, climatic conditions, geologic features, soil characteristics, water resources, vegetation, wetlands, floodplains, and fish and wildlife resources. By using this information along with the natural features maps referenced in this section, town residents may develop a practical knowledge of Bethlehem's physical composition, and make better use of their land.

## 8.1 Climate

Bethlehem's climate, which is a product of the community's latitude (North $44^0$ 17'), elevation and position in the White Mountains, is marked by long, cold winters accompanied by heavy snowfalls, and short, cool summers. Variability of temperature and precipitation results from passing weather systems, which generally travel from west to east.

Generally, Bethlehem's climatic features include:

1. Quick weather changes;
2. A wide range of temperatures, both daily and annually;
3. Great differences between the same seasons in different years
4. A relatively equal distribution of precipitation throughout the year.

The average annual temperature in Bethlehem is about 42 degrees F, or 5 degrees lower than Manchester, NH. During January the average temperature is 16 degrees F., while temperatures in July average 66 degrees F[1]. Extremes range from a high of 95 degrees to a low of -34 degrees.

Precipitation ranges from a low of 2.30 inches in January to a high of 4.24 inches in August. The yearly average is approximately 38.1 inches. June through September is the wettest period, with December through March being the driest. Thunderstorms, which occur 15 to 30 days per year, account for a large percent of the summer rain total. Bethlehem's average annual snowfall is 96.7 inches, with December and February receiving the heaviest snowfalls. Snow has been recorded during all but four months of the year. Although the town receives a fairly even distribution of precipitation throughout the year, extreme variations have occurred. For the month of August the local weather station recorded a total precipitation of 0.71 inches in 1957 but 8.66 inches in 1962. Annual precipitation has varied from a low of 29.66 inches (1962) to a high of 47.52 inches (1969).

Locally, only about 50 percent of the days are sunny. This is a low amount for a recreational area. The average number of partially foggy days varies from 20 to 90 per year. The average growing season is 123 days, but killing frosts have been recorded as late as June 30 and as early as August 22. A growing season of only 83 days was recorded during 1918 in Bethlehem, while a season of 151 days was recorded there three years later.

Bethlehem is fortunate enough to have one of the few United States Weather Stations in Grafton County. Table 8.1 summarizes some of this climatic data for the town.

**Table 8.1 Bethlehem's Climate**

| | | |
|---|---|---|
| Lowest Recorded Temp: | | (-34) degrees |
| % of sunny days: | | <50% |
| Frost | | |
| Last Frost | 50% chance | 24-May |
| | 10% chance | 9-Jun |
| First Frost | 50% chance | 21-Sep |
| | 10% chance | 9-Sep |
| Average Growing Season | | 123 days |

## 8.2 Topography

Elevations in Bethlehem are shown on Map F. Table 8.2 lists some of the town's major topographic features. Bethlehem's highest elevations are found in the eastern half of the town (especially within the area occupied by the White Mountain National Forest). Ten mountains exceed 3,000 feet in height, while almost the entire section is over 2,000 feet high. Several 2,000 foot plus mountains occupy the southwest and north central portions of town. Bethlehem

[1] Temperatures would decrease from these averages as elevation increases. Also, north slopes would have lower average temperatures.

village sits on a high plateau (1,462 ft.) located in the west-central part of town, at the foot of one of these mountains. The Ammonoosuc River flows east to west across the northern part of Bethlehem, immediately north of the village, in a somewhat deeply entrenched valley. The river bottomland is basically a wide, gently sloping plain. Elevations in the valley range from approximately 900 feet to 1,200 feet.

**TABLE 8.2 Major Topographic Features**

| Feature Name | Elevation (ft-msl) | Location |
|---|---|---|
| | *In the White Mountains National Forest* | |
| Priest Hill | 1,976 | Southwest Corner |
| N. Sugarloaf Mountain | 2,260 | North |
| Middle Sugarloaf Mountain | 2,526 | North |
| Haystack Mountain | 2,713 | West-Central |
| Mt. Oscar | 2,748 | North |
| Mt. Rosebrook | 3,007 | North |
| S. Sugarloaf Mountain | 3,024 | North-Central |
| Mt. Stickney | 3,060 | North-Northeast |
| Mt. Echo | 3,084 | North-Northeast |
| Whitewall Mountain | 3,380 | Southeast |
| Mt. Tom | 4,047 | East |
| Mt. Hale | 4,054 | Central |
| Mt. Willey | 4,302 | East |
| Mt. Field | 4,326 | East |
| N. Twin Mountain | 4,761 | South-Central |
| | *Outside the White Mountain National Forest* | |
| Garnet Mountain | 2,135 | South |
| Beech Hill | 2,251 | Northeast |
| Mt. Agassiz | 2,378 | Central |
| Cleveland Mountain | 2,397 | Southeast |
| Lowest point in town | 878 | Where Baker Brook enters Littleton |

## 8.3 Slope

Slope is one significant aspect of landform, one which presents limitations for development. As slopes become steeper, the expense of building becomes greater. In addition, increased slope means there is a greater chance of erosion, structural problems, and water pollution problems. In general, slopes greater than 15 percent are considered too steep to provide adequate sites for roads, homes, septic systems, etc. Suitable uses for these steep areas are forest practices, wildlife, recreation, and low density grazing.

Slopes in Bethlehem range from 0 (level) to 70 degrees (almost vertical). As shown on Map G, a considerable portion of Bethlehem's non-federal land (27 %) has slopes of over 15 percent.

This is fairly rugged land. The community should considered a lower standard (10 – 12 %) as a development cutoff.

It is not surprising that the greatest amount of steep land is found in the mountains and that much of the flattest land is found in the river valley. In between, steepness varies according to local topographic features. A pattern emerges that is similar, though not identical, to the one shown by elevation; areas of highest elevation tend to be characterized by steep slopes.

## 8.4 Bedrock Geology

Formed hundreds of millions of years ago, Bethlehem's bedrock is composed mostly of igneous rocks such as granite and metamorphic rock such as schist. The metamorphic rock was formed under heat and pressure from many layers of mud, sand, and silt. The earth's internal forces later uplifted it. The igneous rock, which occupies most of the non-federal land in Bethlehem, forced its way upward, while in a molten state, into the metamorphic rocks. The youngest bedrock in town was formed during the Carboniferous Age, some two hundred million years ago. Being the least eroded of all the bedrock in the region, these rocks make up the rugged, scenic areas of the White Mountains.

## 8.5 Surficial Geology

Surficial deposits in Bethlehem are the result of glaciation. There have been several periods of glaciation, with the most recent period having ended ten to twelve thousand years ago. As the glaciers advanced, the bedrock was scraped and gouged, and this material was picked up and moved along. This glacial advance, or scraping, did not drastically alter the topography of the area; the profile of the mountains appears much as it did before the Ice Age. However, the glaciers did have a great impact on the appearance of the valleys. As the climate warmed and the ice melted, it deposited two major types of material, till and glacial outwash deposits.

Till is composed of a mixture of soil and rock fragments that were scoured loose by the moving ice, carried for a distance, and then deposited. It is generally highly compacted and contains many large angular stones and boulders. Till covers most of the mountainous and hilly areas of Bethlehem, ranging in depth from 0 (where bedrock is exposed) to about 40 feet.

Glacial melt waters caused outwash deposits. They are the stratified sand and gravel deposits which are found along the Ammonoosuc. Outwash deposits are important economically for mining purposes, but they also serve as major groundwater-recharge areas (see the section in this chapter on Water Resources.)

## 8.6 Gravel Excavations

The sand and gravel deposits in Bethlehem that resulted from glacial activity can be seen on Map H. Approximately 4 % of the non-federal land area consists of glacial outwash deposits. Most are located along the Ammonoosuc River with other areas along the Gale River and Baker Brook. About 220 acres consist of sand (the soil mapping unit 36) with over 600 acres designated as gravel (Soil mapping unit 22).

Sand and gravel have been mined in Bethlehem since the early days of settlement. Map H shows the locations of gravel excavation throughout Bethlehem. There are 18 sites identified ranging in size from under an acre to about 15 acres. The total area excavated is about 60 acres or about 7% of the total potential sand and gravel deposits. Most of the excavations in Bethlehem are old and inactive, and some have been converted to other uses such as the sanitary landfill on Trudeau Road, and residential use on Brook Road.

Since 1979, the State of New Hampshire has required those desiring to start or expand commercial pits to receive a permit from the town in which the excavation will be located. In Bethlehem only 4 applications for new excavations have been filed in that time.

Sand and gravel deposits are also potential stratified drift aquifers. Should Bethlehem be required to find underground water sources in the future to supply the municipal system, the protection of the deposits over mapped aquifers could become critical to the town.

## 8.7 Soils

Soils information is an intricate part of a natural resources inventory because it provides a wealth of data concerning the capability of land to support various land uses. Soil properties, which affect its capability, include depth, permeability, wetness, slope, susceptibility to erosion, flood hazard, stoniness, etc. Bethlehem should consider adopting Soil Based Lot Sizing regulations for areas outside the village, to ensure appropriately sized lots for well and septic systems.

**The Soil Survey**

The soils information for Bethlehem was collected by soil scientists from the United States Department of Agriculture, Natural Resource Conservation Service. As they walked over the land, they sampled the soil to depths of 40 inches, or more, and each soil was examined for characteristics such as color, texture, and structure. From this information, lines were drawn on aerial photographs outlining the boundaries of the different soils. Numbers were placed within each mapping unit to identify the type of soil found. Also measured was the slope, which is indicated by a letter. Map I utilizes the soils map as a component of calculating development capability. The original soil survey aerial photographs are on file at the Natural Resources Conservation Service Office in Woodsville.

The soils found in Bethlehem can be broken down into 7 basic categories or groups. Table 8.7 summarizes their extent.

**Table 8.7 Soil Conditions Groups**

Percent of Soil Type in Bethlehem

| Group | Percent In Bethlehem | # of Acres In Bethlehem |
|---|---|---|
| Wetland Soils | 6.40 | 3,724.7 |
| Seasonally Wet Soils | 12.14 | 7,068.2 |
| Floodplain Soils | 0.31 | 178.7 |
| Sandy and Gravelly Soils | 4.24 | 852 |
| Shallow to Bedrock Soils | 4.86 | 2,827.9 |
| Compact Till Soils | 8.25 | 4,804.3 |
| Deep Loose Till Soils | 11.28 | 6,564.5 |
| Other (water, made land, etc.) | 0.14 | 82.8 |
| WMNF | 50.97 | 29,667 |

**Group 1 - Wetland Soils**
These are poorly and very poorly drained soils that are wet. The water table is at or near the surface 7 to 12 months of the year. Fifteen percent of Bethlehem falls in this category. Wetlands are further discussed under Water Resources.

**Group 2 - Seasonally Wet Soils**
Included in this group are moderately well drained soils that have a water table 1 to 1½ feet below the ground that keeps the soil wet from late fall to late spring. Twenty four percent of Bethlehem's soils are in this group.

**Group 3 - Floodplain Soils**
These soils are subject to periodic flooding. Their formation has been the result of sediment deposited from past floodwaters. Less then 1 percent of Bethlehem has flood plain soils; most are in the Ammonoosuc River valley.

**Group 4 - Sand and Gravelly Soils**
These well drained to excessively well-drained soils formed in sand and gravel deposits cover 4 percent of the town.

**Group 5 - Shallow to Bedrock Soils**
This group of shallow to bedrock soils occupies 8 percent of the town and have formed on a thin layer of glacial till which is underlain by solid bedrock at about 2 feet, (the depth of bedrock fluctuates greatly between less than one foot to four or five feet). Exposed bedrock on steep slopes is common in some of these soils. These types of soils dominate the mountainous sections of Bethlehem.

**Group 6 – Compact Till Soils**
The soils in this group are well drained and have formed in compact glacial till. A hardpan layer is generally found about 2 to 3 feet below the ground surface. Water moves down-slope on these soils over the hardpan layer and comes to the surface as seep spots.

**Group 7 – Deep Loose Till Soils**
This group consists of well-drained sand or loamy soils that have formed in glacial till. The water table is commonly more than four feet below the ground and bedrock is more than 5 feet below the surface. The soils contain many angular stones of varying sizes. These soils cover 32 percent of Bethlehem.

## 8.8 Water Resources

The goal of the water resources part of this plan is to assure that local land use decisions are based on the most comprehensive and reliable scientific and technical information available. Because water touches virtually all aspects of master planning, it will be found in various chapters throughout the document.

Land use located within a watershed may be an important factor in water quality. Water resources management in a community up-stream may have a substantial impact on the water resources of a neighboring community down-stream. Therefore, it is very important for communities to work together in order to plan effectively for protection of water resources.
(See Map J, Appendix 1)

### 8.8.1 Surface Water

Surface water is precipitation that does not soak into the ground, but runs off into streams, ponds, lakes, and rivers. On the average, 1/3 of the annual precipitation is "runoff". Bethlehem has an abundance of surface water, which provides great recreational and economic benefits to the town. (See Map K, Appendix 1)

Watersheds are the catch basins for all precipitation falling from the sky. Rain or snow falling within the confines of a watershed's interconnected ridge crests, or high points, eventually becomes either surface or groundwater.

All of Bethlehem eventually drains into the Connecticut River except for a small portion of town located in the White Mountain National Forest at Zealand Falls, which drains into the Pemigewasset River Basin, and a brook above Crawford Notch State Park, which drains into the Saco River. Of the 95 percent that drains into the Connecticut River, 23 percent drains via the Gale River, 1 percent via the Johns River, and the remainder drains into the Ammonoosuc River. The Ammonoosuc River is the main river in Bethlehem, flowing from east to west. It originates on the western slope of Mt. Washington then flows west to Bethlehem Junction and on to its confluence with the Connecticut River in Woodsville. The total drainage area is 102 square miles with the drainage area of the river Bethlehem covering about 90 square miles.

Map K and Table 8.8.1 delineate and describe the 10 major sub-watersheds in Bethlehem. Watersheds 5, 6 and 7 drain south to the Gale River. While 1-4 and 8-10 drain directly into the Ammonoosuc River. Watersheds 1-5 are primarily located in the White Mountain National Forest. Most developed areas of Bethlehem are in watersheds 8 and 9.

Several watersheds serve as water supplies for surrounding communities. Watershed 3 is a source for the town of Carroll, watersheds 1 and 5 for the Bethlehem Village District, and watershed 5 for Littleton.

**Table 8.8.1 Major Sub-Watersheds**

| Percent of Town | Watershed | Name | Size Acres | Drainage | Water Quality Class | Stream Length |
|---|---|---|---|---|---|---|
| 14 | 1 | Zealand | 8,300 | Ammonoosuc | A | 60 mi. |
| 4 | 2 | Tuttle | 1,800 | Ammonoosuc | B | 31 mi. |
| 8 | 3 | Little | 1,800 | Ammonoosuc | A | 6.5 mi. |
| 4 | 4 | Haystack | 2,300 | Ammonoosuc | B | 3.4 mi. |
| 11 | 5 | Beaver/ Gale | 7,000 | Gale | A | 3.8 mi. |
| 3 | 6 | Wiseman | 1,800 | Gale | B | 2.4 mi. |
| 6 | 7 | Indian Creek | 3,500 | Gale | B | 3.3 mi. |
| 4 | 8 | Baker Bk. | 3,500 | Ammonoosuc | B | 2.4 mi. |
| 4 | 9 | Barrett | 3,500 | Ammonoosuc | B | 3.6 mi. |
| 5 | 10 | Black Bk. | 2,300 | Ammonoosuc | B | 2.7 mi. |

### 8.8.2 Lakes and Ponds

There are no substantial lakes or ponds in Bethlehem. Baker Pond, which is about 10 acres in size, is situated just north of U.S. Route 302 on Baker Brook. It is a dam-controlled pond, and is relatively shallow. It has a substantial build up of emergent wetland plants in the summer. No water quality or fisheries information is available for this pond. Table 8.8.2 lists other ponds in Bethlehem. Except for Baker, all are in the White Mountain National Forest.

**Table 8.8.2 Bethlehem Lakes and Ponds**

| Name | Size Acres | Stream Length |
|---|---|---|
| Willey Pond | 2,950 | 6.18 mi. |
| Zealand Pond | 2,480 | 3.09 |
| Unnamed Pond # 4 | 960 | 3.09 |
| Littleton Reservoir | 1,460 | 1.23 |
| Unnamed Pond # 2 | 1,260 | 1.23 |
| Unnamed Pond # 1 | 1,070 | 1.03 |

### 8.8.3 Impoundments

Map L and Table 8.8.3 show the location of impoundments, or dams, in Bethlehem. Twenty dams are registered with the NH Water Resources Division. Only one dam exists on the Ammonoosuc River.

Five dams are municipally owned, two by Littleton for their reservoirs, and two by Bethlehem. The Bethlehem Village District has one on the Zealand River for its reservoir. The other is the impoundment at the sewage treatment plant. Two of the dams listed are for detention ponds constructed by developers as part of their erosion and sediment plans.

**Table 8.8.3 Impoundments**

| STATE # | NAME OF DAM | WATERBODY | OWNER |
|---|---|---|---|
| 025.01 | Bethlehem Dam | Lower Ammonoosuc River | Bethlehem Hydro, Inc. |
| 025.02 | Wing Road Dam Tr. | Ammonoosuc River | Boston and Maine Corp. |
| 025.03 | Littleton Reservoir | N. Branch Gale River | Littleton Water and Light |
| 025.04 | Zealand River Dam | Zealand River | Bethlehem Village District |
| 025.05 | Little River Dam | Little River | Town of Carroll |
| 025.06 | Barrett Brook Dam | Tr. Barrett Brook | Strauss Family LP |
| 025.11 | S. Branch Gale River | S. Branch Gale River | Littleton Water and Light |
| 025.12 | Mink Farm Pond Dam Tr. | Indian Creek | Kurt Tedeschi |
| 025.13 | Garneau F.P. Dam | Natural swale | John & Lauri Pare, Jr. |
| 025.14 | Fire Pond Dam | Natural swale | Beechcrest Club, Inc. |
| 025.15 | Farm Pond Dam | Natural swale | Michael & Robin Carpenter |
| 025.16 | Farm Pond Dam | Natural swale | David & Karen Armento |
| 025.17 | Baker Brook Pond | Dam Baker Brook | Ms. Irene Lowney |
| 025.18 | Zealand Water Intake | Whitewall Brook | Appalachian Mountain Club |
| 025.19 | Bethlehem Sewage Lagoon | NA | Bethlehem Village District |

| STATE # | NAME OF DAM | WATERBODY | OWNER |
|---|---|---|---|
| 025.20 | Pinetree Power Fire Pond | Unnamed stream | Pinetree Power Development |
| 025.21 | Maplewood Detention | Runoff | Village at Maplewood Condo |
| 025.22 | Fairways Detention | Runoff | Fairways at BethlehemCondo |
| 025.24 | Hidden Brook Detention | Runoff | Bethlehem Valley Devl.Corp |

### 8.8.4 Wetlands

Wetlands, for the purpose of this master plan, are defined as poorly or very poorly drained soils. Poorly drained soils have a seasonally high water table that comes within one foot of the surface during part of the growing season. They are predominately wooded swamps in Bethlehem. Very poorly drained soils are wetter, and have water at or near the surface for several months of the year. Very poorly drained soils are what most people normally think of when they think of wetlands.

Map M delineates the wetlands in Bethlehem's non-federal land areas. Fifteen percent of the town is wetland, which is about average for northern New Hampshire. Approximately 1,257 acres are very poorly drained soils, and 1,685 acres are classified as poorly drained.

**Table 8.8.4 Wetlands in Bethlehem**

| Wetland Type | Acres (in Bethlehem excluding WMNF) | Percentage of Total Area for the Town (excluding WMNF) | Percentage of Total Area for all of Bethlehem |
|---|---|---|---|
| National Wetlands Inventory Data | 1152.7 | 1.98% | 4.14% |
| NRCS Soils Map – Very Poorly Drained Soils | 1041.4 | 1.79% | 3.75% |
| NRCS Soils Map – Poorly Drained Soils | 2500.5 | 4.30% | 9.00% |

### 8.8.5 Flood Plains

Floods occur in Bethlehem periodically depending on storm patterns, snow melt, and ice jams. In the last 100 years, 4 major floods have occurred on the Ammonoosuc River: 1927, 1936, 1938, and 1973. There is a U.S. Geological Survey gauging station located on the Ammonoosuc River at river mile 35 in Bethlehem Junction. Records for this 87.6 square mile area have been maintained since August 1939, with the maximum discharge, of 10,800 cubic feet per second, being recorded on October 24, 1959.

March 1936 was when the worst recorded flooding occurred along the Ammonoosuc River. This flood was caused by two major storms combined with snowmelt and ice jamming. Hurricane rainfall caused the floods of 1938 and 1973.

No extensive hydrologic or engineering analysis of the flood hazard areas in Bethlehem has been undertaken, and no actual flood elevations have been determined. However, in 1986 Flood Insurance Rate Maps (FIRM) were prepared by the U. S. Federal Emergency Management Agency. These maps identify those areas of Bethlehem that have a 1% chance of flooding in any given year. The owners of structures in the flood hazard areas are eligible for low cost flood insurance.

In Bethlehem, some development already exists within the flood hazard area, especially:

- in the northwest corner of town, south of NH Route 116
- at Bethlehem Hollow
- along River Road
- the Pierce Bridge area

Flood hazard areas present major problems for any land use which requires the building of permanent structures.

### 8.8.6 Shoreland Protection

In 1972, congress enacted the first comprehensive national clean water legislation in response to growing public concern for serious and widespread water pollution. The Clean Water Act is the primary federal law that protects our nation's waters, including lakes, rivers, aquifers, and coastal areas. The State of New Hampshire enacted the Comprehensive Shoreland Protection Act on July 1, 1994, designating the Department of Environmental Services as the enforcement agency. The Shoreland Protection Act sets minimum standards and requirements for the development, use, and subdivision of all land within 250 feet of public waters: ponds, lakes, rivers, and major streams. The protected shoreland is essential to maintain the quality of our rivers, lakes, ponds, and tidal waters. Some components of the Act include the following.

- The Shoreland Protection Act requires that a healthy well distributed stand of trees, shrubs, groundcover, and their undamaged root systems must be maintained within 150 feet of the waters edge. [RSA 483-B:9 V. (a)]
- Any construction within 250 feet of the water's edge must follow the current Best Management Practices for Stormwater and Erosion Control. [RSA 483-B:9 V. (c)]
- No fertilizer or pesticide/herbicide may be used within 25 feet of the waters edge. From 25 feet to 250 feet from the waters edge only low phosphate, slow release nitrogen fertilizer may be applied. [RSA 483-B:9 II. (d)]

The town should incorporate the State's Shoreland Protection Act into local zoning to further the effort of maintaining water quality throughout the town and the State because the Ammonnusuc River is a fourth order stream, and falls under the protection of this Act.

### 8.8.7 Existing Water Sources

At present, the Bethlehem Village District provides water to about 75% of the residents in town. Water flows by gravity from intakes on the Zealand River, and the Gale River to a slow sand filter facility that was constructed on a portion of the Strawberry Hill State Forest in 1993. From the filter facility, the water flows by gravity to a large concrete reservoir adjacent to the filter facility.

Since the filter facility was constructed, water quality has improved considerably. The filter removes sticks, leaves, debris, and turbidity (microscopic material) that at times entered the system in the past.

The town recently applied for a Community Development Block Grant (CDGB) on behalf of the District for a feasibility study to make further improvements to the water system. These improvements are anticipated to include replacement of old corroded cast iron water mains and the replacement of shallow water services. These improvements will further enhance water quality, improve domestic use and fire flow, and reduce the amount of wasted water necessary in winter to keep shallow mains and service lines from freezing.

A recent study (1990) shows the total average day inflow to the village at 745,000 gallons-per-day (gpd) with a maximum inflow of 811,00 gpd from both sources. Due to overflows at the Strawberry Hill Reservoir, leakage, and the need to prevent freezing, it is estimated that over 450,000 gpd are lost.

According to a study recently done by Provan and Lorber, future water demand by the year 2010 should be about 60 percent higher than existing demand. This demand could be met through using existing water sources more efficiently. However, the water quality of existing surface water sources continues to be poor. For example, Bethlehem Village District water users had to boil their water during much of the summer of 1990.

The Village District's surface water supplies, and facilities for delivering water are currently under fire from the NH Department of Environmental Services for the above mentioned problems. The State ordered a water study to be done to determine current and future water demands, and to look for groundwater sources to replace or augment existing surface water sources. The NHDES will most likely require Bethlehem to abandon existing water sources, and develop groundwater supplies in the future.

In addition to the Bethlehem Village District, there are five active public water systems in Bethlehem. Table 8.8.7 lists these other active water systems.

**Table 8.8.7 Drinking Water Systems**

| System Name | Location | Category |
|---|---|---|
| 1. AMC Zealand Falls Hut | Zealand Notch | Recreational Facility |
| 2. Bethlehem Christian Center & School | 1858 Maple Street | School |
| 3. Copper Canyon Outdoor Education Center | Gale River Road (off Rt. 142) | Youth Camp |
| 4. Profile High School | Rt. 18 | School |
| 5. The Highlands Inn | Off Rt. 302 | Inn |

**Groundwater Resources**

Water that is not exposed to the air is known as groundwater. The term "aquifer" describes water saturated earth materials from which a water supply can be obtained. There are three types of groundwater aquifers: Stratified drift; till; and bedrock. The basic difference is that stratified drift and till aquifers are composed of unconsolidated glacial deposits (loose earth materials), while bedrock aquifers are solid rock. In stratified drift aquifers, the materials are sorted sand and gravel. In till aquifers, the materials are a gravel, sand, silt and clay mixture. In bedrock aquifers, the rock is fractured.

Unconsolidated materials are porous. Highly porous materials have more and larger spaces between individual particles. These aquifer deposits are capable of storing, transmitting, and yielding larger volumes of water. Conversely, materials (like till) with fewer and smaller individual particles are not capable of storing, transmitting and yielding nearly as much groundwater.

Wells used by communities and private individuals draw groundwater from these aquifers. Water users like the Village District, or a commercial industrial operation, typically require large volumes of water. To supply this amount of water on a continual basis, the well must have a large yield capacity. Only certain aquifers with the right hydrogeological characteristics may yield this amount. On the other hand, the small-volume domestic well will usually suffice, and can be located almost anywhere. However, when considering an aquifer's ability to supply water, the combined effect of many, or very high concentrations of individual wells pumping from the same aquifer may ultimately equal a large groundwater withdrawal, and therefore be beyond the aquifer's yield capacity. In addition, two large volume wells may have localized negative impact on an aquifer unless well locations and pumping rates are regulated.

**Stratified Drift Aquifers**

As shown on Map J, "Availability of Groundwater", which is based on the "Availability of Groundwater in the Upper Connecticut River Basin, Northern New Hampshire," by John E. Cotton, two aquifer areas are located in Bethlehem. Potentially, the highest yielding aquifers in Bethlehem exist along U.S. Route 302 at the Carroll town line, and under both sides of Trudeau Road from U.S. Route 302 south to the north branch of the Gale River.

A study done by D.L. Makon in 1990 to locate potential areas for developing community groundwater supplies identified 7 potential aquifer areas that could yield 350 gallons per minute. They are shown on Map J. Site six near the junction of Trudeau Rd and U.S. Route 3 has the greatest potential. Much of this area is in the White Mountain National Forest. The NCES Landfill on Trudeau Road lies over part of the aquifer.

Protection of the land over the aquifer on Trudeau Road should be a priority. Should the town ever be required to find an underground water source for the municipal water supply, this area may provide the greatest potential.

**Bedrock and Till Aquifers**

No studies or mapping of bedrock or till aquifers have been completed in Bethlehem. However, wells in these areas are generally much lower yielding than in stratified material. Additionally, depth and yield of these wells can vary greatly. According to the New Hampshire Department of Environmental Services (NHDES) there are more than 223 wells in Bethlehem. Well data only goes back to 1984 when NHDES began requiring contractors to submit a report for each new well they created. The level of detail submitted for each of these wells varies, but a few items are obvious. Fifteen new wells were reported since the year 2000, seventy-seven new wells were reported in the 1990s, and one hundred thirty wells were reported from 1984 to 1990 alone. Yields range from .25 gallons per minute to 150 gallons per minute, and well depths range from 60 feet to over 900 feet. The yield from these bedrock wells is sufficient for residential and commercial uses, but is generally insufficient to support more high intensity water uses.

**Potential Groundwater Supplies**

The stratified drift aquifers represent the greatest potential groundwater source for the town of Bethlehem. These aquifers represent potential usable water sources for municipal purposes, and should be protected to insure their future quality and availability. Two large springs, the Great Spring on Lewis Hill Road and a large spring on Old Franconia Road (Gilmanton Hill Road), have been historic sources of drinking water in the Town. One or two residences currently draw their water from The Great Spring. Both springs are on private property. Consideration should be given to protecting these springs for potential future use as public water sources.

### 8.8.8 Water Quality

Water quality may be evaluated by many individual characteristics. Different quality characteristics can affect the use or value of a particular body of water. For example, some aquatic organisms can tolerate bacteria concentrations that exceed safe bathing levels. Conversely, a low dissolved oxygen concentration has little effect on the swimming potential, but can severely limit types and populations of fish. The New Hampshire Water Supply and Pollution Control Division classifies surface water in one of three categories. All of the streams in Bethlehem are legally classified either as Class A or B (see Table 8.8.1), which are favorable ratings. Those surface waters that are currently serving as town water supplies are classified as A, while all other surface waters are classified as B.

During recent water quality testing for the Ammonoosuc River, above the municipal sewage treatment plant and below, Class B water quality standards were met. This would indicate that the municipal treatment plant is operating according to design.

## 8.9 Non-point Pollution Sources

The NHDES, Water Supply and Pollution Control Division has identified potential non-point pollution sources throughout Bethlehem. These are shown on Map N and include:

- Salt storage area for the Town Highway Department
- A Potential erosion site
- Bethlehem Sewage treatment plant - unlined lagoons
- North Country Environmental Services Landfill
- Concentrations of septic systems.

Additionally, within Bethlehem there are several underground storage tanks having capacities of 1,100 gallons or greater according to the New Hampshire Department of Environmental Services (tanks under this size are not registered). Table 8.9 lists the locations and owners of these storage tanks.

These tanks plus the hundreds of smaller tanks located throughout Bethlehem represent a potential pollution threat. There are also three above ground tanks, and two sites that have been remediated.

**Table 8.9 Underground Storage Tanks**

| Site Number | Site Name and Address | Site Owner |
|---|---|---|
| 198604043 | Bethlehem Elementary School<br>Main Street – Bethlehem | |
| 199011012 | Bethlehem Irving Mainway<br>2164 Main Street – Rte 302 -<br>Bethlehem | Ralph & Barbara Holmes<br>Bethlehem |
| 200008017 | Last Chance Service Station<br>Route 3 – Bethlehem | Alexander Weeks<br>Twin Mountain |
| 199503008 | Mac Eddies Service Station<br>791 Main Street – Rte 302 –<br>Bethlehem | Stevensons Oil Co.<br>John Stevenson<br>Bethlehem |
| 1991050035 | N & B Enterprises<br>Main Street – Bethlehem | Norman McCullock<br>Bethlehem |
| 199807056 | Profile Jr./Sr. High School<br>691 Profile Road - Bethlehem | Profile Jr./Sr. High School<br>Paul Lehman – Bethlehem |
| 200109049 | The Rocks Estate<br>4 Christmas Lane - Bethlehem | SPNHF<br>Concord, NH |
| 198601005 | US Forest Service<br>Trudeau Road - Bethlehem | |
| 199508016 | White Mountain School<br>371 West Farm Road -<br>Bethlehem | The White Mountain School<br>371 West Farm Road –<br>Bethlehem |
| 199407018 | White Transmission<br>Main Street - Bethlehem | Fred Storella<br>Bethlehem |

Further information can be found at: www.des.state.nh.us/asp/onestop/ORCB

**North Country Environmental Services Landfill Facility**

The North Country Environmental Services, Inc. (NCES) lined landfill facility is located on a 105-acre parcel on Trudeau Road in Bethlehem. The NCES landfill is owned and operated by NCES, a subsidiary of Casella Waste Systems, Inc. of Rutland, Vermont.

Site landfilling operations began in 1977 by NCES's predecessor, where an area of 3.82 acres received solid waste in an unlined cell. Construction of the first double-lined cell (Stage I) began in 1987, and eventually covered approximately 18 acres. In 1996, pursuant to a State requirement, NCES remediated the solid waste from the original, unlined portion of the landfill, and placed it in the lined Stage I cells. In 1996 and again in 1998, the facility, pursuant to state permits regulating design and operation for environmental protection, expanded into a new double-lined area known as Stage II that totals approximately 7 acres of landfill area. Stage I and II are virtually at capacity and are not currently receiving waste. In 2000, construction was completed on Stage III that includes approximately 6.5 acres. Landfilling is currently taking place in Stage III. As of March 31, 2002 NCES has approximately 3.5 years of site life remaining.

NCES currently accepts approximately 88% of its waste from New Hampshire towns and businesses. The facility also includes a recycling/waste drop off station for the residents of Bethlehem.

The landfill produces two residual products: residual liquids (leachate) and residual gases (landfill gas). The double liner system collects the leachate produced and employs an active gas collection system that vacuums landfill gas from the waste mass and destructs the gas with a flame. The double liner system consists of:

- Low permeability soil layer
- Geosynthetic clay layer
- (2) 60-mil HDPE liners
- (2) Drainage geocomposite layers
- (2) Select drainage sand layers
- (2) Collection sumps

The double liner system acts to prevent soils, surface water, and ground water contamination by preventing the leachate (produced by fluids percolating through the solid waste mass) from entering the ground, surface water and groundwater beneath, and surrounding the landfill facility.

There are 30 groundwater monitoring wells around the facility. They are installed to facilitate groundwater sampling around the landfill. The wells are sampled three times per year, as required by a NHDES permit.

The active landfill gas collection system consists of:

- Gas extraction piping
- Gas control valves
- Gas extraction well heads
- Blowers and related equipment
- Candlestick flare

The blowers collect the gas, which creates a vacuum to draw the gas out of the landfill. The collected gases are then destroyed with a flame. This flame originates at either the leachate

evaporation system, or from a candlestick flare. Thus, the landfill gases produced by the landfill are prevented from polluting the air.

### 8.9.1 Point Sources

Public files maintained by the New Hampshire Department of Environmental Services were reviewed, and only one permit has been issued under the National Pollutant Discharge Elimination System (NPDES) for surface water discharge in Bethlehem. The Village District is permitted to release treated wastewater into the Ammonoosuc River from its sewage treatment plant. The location of the point source is shown on Map N .

## 8.10 Vegetation

Looking at the entire town, including the White Mountain National Forest, 86.7% of Bethlehem is forested. Climate and soil, which determine what types of vegetation will grow in an area, are the primary factors that contribute to this type of vegetated landscape. Typical tree species that grow in this northern location are red spruce, white pine, balsam fir, white birch, yellow birch, red maple, sugar maple, ash, beech, and poplar. Depending on specific site factors, such as soil and topography, these trees will grow in associations known as forest cover types.

Map O shows the area of softwood and hardwood growth in Bethlehem. Approximately 22.4% of the land is in softwoods, 42.6% hardwood stands, and 21.6% is a mixture of hardwood and softwood. As with trees, smaller vegetation is also site specific. The underbrush in the open forest consists chiefly of shadbush, striped maple, mountain maple, hornbeam, barberry, highbush and lowbush blueberry, ferns, and bracken. This underbrush thins in the coniferous forest at higher elevations. In places, especially where hardwoods and softwoods are intermingled, the forest floor is covered with groundpine, moss, wintergreen, and creeping snowberry.

Fields contain spirea, sumac, and aspen sprouts. Along the fencerows, around cleared areas, pin cherry, chokecherry, and dogwoods abound. Raspberries, blackberries, and dewberries are common in old clearings along hedge-rows, and in old trails. Creeping bent, red maple, elder, reeds, rushes, and sedges cover the low wet areas. The more common weeds in pastures are devil's paintbrush, wild carrot, buttercup, sorrel, wild mustard, wild strawberry, goldenrod, and sedges.

The great diversity of species makes it unfeasible to list all organisms that are found. Below is a list of rare, threatened, or endangered species found throughout Bethlehem. Most of these species have historical occurrences, which means that they have not been seen for over 20 years. Data here was gathered from the New Hampshire Natural Heritage Inventory in February 2002. Table 8.10 gives the common and scientific name for these communities, plants, and birds. Exact locations are not published to prevent destruction of plants and natural communities.

**Table 8.10 Known Rare and Endangered Species in Bethlehem**

| | Listed? | | Number of Locations reported in the last 20 years | |
|---|---|---|---|---|
| **Species Name** | **Federal** | **State** | **Town** | **State** |
| **NATURAL COMMUNITIES - TERRESTRIAL** | | | | |
| ** NNE Acidic Cliff Community | - | - | 1 | 6 |
| *** NNE Acidic Rocky Summit/Rock Outcrop Community | - | - | 2 | 23 |
| *** NNE Acidic Talus Forest/Woodland | - | - | 3 | 8 |
| ** NNE Lowland Spruce/Fir Forest | - | - | 1 | 5 |
| ** NNE Mesic Hardwood Forest on Acidic Bedrock or Till | - | - | 1 | 31 |
| **NATURAL COMMUNITIES - PALUSTRINE** | | | | |
| *** NNE Acidic Level Fen | - | - | 3 | 26 |
| ** NNE Acidic Seepage Swamp | - | - | 1 | 9 |
| ** NNE Basin Swamp - - 1 16 | - | - | 1 | 16 |
| **PLANTS** | | | | |
| Ciliated Aster (*Aster ciliolatus*) | - | T | Historical | 9 |
| Ciliated Willow-Herb (*Epilobium ciliatum*) | - | T | Historical | 24 |
| Goldie's Fern (*Dryopteris goldiana*) | - | T | Historical | 32 |
| Green Adder's Mouth (*Malaxis unifolia*) | - | T | Historically | 53 |
| Hidden Sedge (*Carex umbrellata*) | - | E | Historically | 12 |
| * Jack Pine (*Pinus banksiana*) | - | T | 2 | 3 |
| Lily-Leaved Twayblade (*Listera convallarioides*) | - | T | Historically | 19 |
| Loesel's Twayblade (Liparis loeselii) | - | T | Historically | 24 |
| *** Mountain Avens (*Geum peckii*) | - | T | 2 | 37 |
| Neglected Reed Bent-Grass (*Calamagrostis stricta var inexpansa*) | - | E | Historical | 7 |
| Pickering's Reed Bent-Grass (*Calamagrostis pickeringii*) | - | T | Historical | 21 |
| Purple Crowberry (Empetrum atropurpureum) | - | T | Historically | 34 |
| *** Silverling (Paronychia argyrocoma var albimontana) | - | T | 1 | 21 |
| | | | | |
| **VERTEBRATES - BIRDS** | | | | |

| | Listed? | | Number of Locations reported in the last 20 years | |
|---|---|---|---|---|
| **Species Name** | **Federal** | **State** | **Town** | **State** |
| ** Black-Backed Woodpecker (Picoides arcticus) | - | - | 1 | 6 |

Listed?E = Endangered T = Threatened
Flags **** = Highest importance
*** = Extremely high importance
** = Very high importance
* = High importance

These flags are based on a combination of (1) how rare the species or community is and (2) how large or healthy its examples are in this town. Please contact Natural Heritage Inventory at (603) 271-3623 to learn more about this or other ways of setting priorities.

## 8.11 Fish and Wildlife

According to the State Fish and Game Department, most of the 420 species of animals and birds found in the state can be seen within Bethlehem. The more common species, which are residents of Bethlehem, include moose, white-tailed deer, black bear, snowshoe hare, ruffed grouse, woodcock, coyote, beaver, muskrats, raccoons, otter, mink, fisher, and bobcat. Fishermen enjoy the natural and stocked supplies of brook trout, rainbow trout, and salmon in the Ammonoosuc River. Occasionally such endangered species as the bald eagle and the peregrine falcon, and threatened species such as osprey, northern harrier, and nighthawk are seen in Bethlehem.

Though no survey of wildlife in Bethlehem exists, a measure of wildlife viability within the entire town can be obtained from wildlife kill records. Tables 8.11.A and 8.11.B present both the deer and bear kills recorded by the N.H. Fish and Game Department for 2001 in Bethlehem, and the furbearing animal kill summary for 2001.

Recently in New Hampshire, the moose population has become substantial with the numbers in the state now estimated to be in the thousands. Moose have become a familiar sight along roadways in Bethlehem, particularly Routes 142, 3, and 302. "Moose watching" has become a pastime for residents and tourists alike. Additionally, the state has a limited Moose hunting season with 475 permits being given out in 2003 by lottery.

Snowshoe hare, ruffed grouse, and woodcock comprise the primary small game resources. Furbearers such as mink and otter are associated with riverine ecosystems while beaver and muskrat may be found in both pond and slow flowing stream environments. Fisher, raccoon, red fox, skunk, weasel, and an occasional gray fox and bobcat provide additional furbearing resources. Other common species include woodchuck, chipmunk, squirrel, and porcupine.

**Table 8.11.A Wildlife Kill Summary – Grafton and Coos County, 2001**

| Species | Grafton | Coos |
|---|---|---|
| Deer | 1126 | 890 |
| Bear | 195 | 134 |
| Moose | 224 | 130 |
| Beaver | 290 | 271 |
| Fisher | 89 | 73 |
| Muskrat | 112 | 969 |
| Raccoon | 82 | 99 |
| Mink | 40 | 32 |
| Opossum | 8 | 8 |
| Otter | 23 | 30 |
| Red Fox | 11 | 67 |
| Grey Fox | 10 | 0 |
| Skunk | 18 | 8 |
| Weasel | 0 | 4 |
| Wild Turkey | 621 | 77 |
| Bobcat | 2 | 0 |
| Coyote | 59 | 106 |

Source: N.H. Fish and Game Department

Black ducks and wood ducks are the two resident waterfowl species utilizing the available wetland habitat. Several species of water birds also use these areas. Although some migratory waterfowl use these isolated wetlands, the distance from the Connecticut River flyway, and their small size, precludes heavy usage.

Deeryards are areas where deer herd together during the long winter months for mutual food gathering and protection. Survival for the deer population in the North Country is dependent upon the amount of wintering deeryard habitat available. Presently, there are at least 11 potential deeryards, accounting for over 1000 acres, in Bethlehem as seen on Map P. Unfortunately, human encroachment on these areas has intensified.

The New Hampshire Fish and Game Department also maintains a list of Endangered or Threatened Animal Species in New Hampshire, which is shown in Table 8.11.B. No information is available relative to their occurrence in Bethlehem, but their habitats, when identified, should be protected.

**Table 8.11.B Endangered and Threatened Wildlife in New Hampshire**

**ENDANGERED**

| Common Name | Scientific Name |
|---|---|
| **MAMMALS** | |
| Canada lynx | ***Lynx canadensis*** |
| Small-footed bat | *Myotis leibii* |
| **BIRDS** | |
| Pied-billed grebe | *Podilymbus podiceps* |
| Bald eagle* | *Haliaeetus leucocephalus* |
| Northern harrier | *Circus cyaneus* |
| Golden eagle | *Aquila chrysaetos* |
| Peregrin flacon | *Falco peregrinus* |
| Piping plover* | *Charadrius melodus* |
| Upland sandpiper | *Bartramia longicauda* |
| Roseate tern* | *Sterna dougallii* |
| Common tern | *Sterna hirundo* |
| least tern | *Sterna antillarum* |
| purple martin | *Progne subis* |
| sedge wren | *Cistothorus platensis* |
| **FISH** | |
| Sunapee trout | *Salvelinus alpinus* |
| Shortnose sturgeon* | *Acipenser brevirostrum* |
| **REPTILES** | |
| Timber rattlesnake | *Crotalus horridus* |
| **AMPHIBIANS** | |
| Marbled salamander | *Ambystoma opacum* |
| **INVERTEBRATES** | |
| Dwarf wedge mussel | *Alasmidonta heterodon* |
| Brook floater | *Alasmidonta varicose* |
| Frosted elfin butterfly | *Incisalia irus* |
| Karner blue butterfly* | *Lycaeides Melissa samuelis* |
| Persius dusky wing skipper | *Erynnis persius persius* |
| Ringed bog hauter dragonfly | *Williamsonia lintneri* |

**THREATENED**

| **Common Name** | **Scientific Name** |
|---|---|
| **MAMMALS** | |
| Pine marten | ***Martes Americana*** |
| **BIRDS** | |
| Common loon | *Gavia immer* |
| Osprey | *Pandion haliaetus* |
| Cooper's hawk | *Accipiter cooperii* |
| Arctic tern | *Sterna paradisaea* |
| Common nighthawk | *Chordeiles minor* |
| Three-toed woodpecker | *Picoides tridactylus* |
| Grasshopper sparrow | *Ammodramus savannarum* |
| **REPTILES** | |
| Eastern hognose snake | *Heterdon platyhinos* |
| **INVERTEBRATES** | |
| Pine pinion moth | *Lithophane lepida lepida* |
| Pine barrens Zanclognatha moth | *Zanclognatha Martha* |
| Cobblestone tiger beetle | *Cicindela marginipennis* |

*This list became effective 11-27-01

## 8.12 Scenic Resources

Bethlehem's location on a high plateau in the heart of the White Mountains provides residents and tourists alike with unique scenic resources. In recent years, growth throughout the state and region has made people appreciate the natural scenery Northern New Hampshire has to offer. In 2004 voters approved giving 5% of the Use Change Tax to the conservation fund. This money, together with the appropriate zoning regulations, will be used to protect ridgelines from development.

Map Q shows some of the more important natural and scenic areas in Bethlehem, including:

1. The ridgelines of Mt. Agassiz and Cleveland Mountain.
2. The top of Lewis Hill.
3. The ridgeline of Garnet Hill.
4. The grounds of the White Mt. School.
5. The Rocks Estate.
6. The Municipal golf course.

7. The Maplewood golf course.
8. The Gale River
9. The White Mt. National Forest
10. The entire corridor of the Ammonoosuc River from Carroll to Littleton.
11. Beech Hill
12. Scenic views while riding down U.S. Route 302, the southern end of NH Route 142, and from many fields, hilltops, and front porches. Each season provides spectacular views of mountains, streams, and New England countryside.

## 8.13 Conservation Land

Over 53% of Bethlehem, the entire eastern half of the town, is within the White Mountain National Forest. In addition, some of the remaining land is in conservation easements. An easement is a property right that can be bought or sold. It allows a property owner to put limitations on his/her property when an easement is sold, or for another person to set limitation upon the property owner when as easement is purchased. There are also ongoing efforts by a few landowners in the town to conserve and connect smaller parcels into larger, contiguous areas of land for conservation. Refer to Map B for current conservation land throughout the town. A list of conservation lands in Bethlehem follows:

- White Mountain National Forest
- Cushman Hill State Forest
- Strawberry Hill State Forest
- New England Forestry Foundation land
- Society for the Protection of NH Forest – The Rocks Estate
- Society for the Protection of NH Forest – Bretzfelder Memorial Park
- Town of Bethlehem – Town Forest

Conservation Easements:

- White Mountain School
- Henry Valliant

While high property taxes are a concern to residents, no clear direction for how to reduce property taxes was evident from the survey. This is a subject that deserves attention by the Selectboard, Planning Board, the Bethlehem Redevelopment Association and the Chamber of Commerce as well as by interested business people and citizens.

One influencing factor in business development is the town government. Sixty-four percent of the residents that completed the community attitude survey reported that they feel that the present system of town government will serve their needs for the next ten years, and those that responded that they were not happy with the current form of government (36%), were in favor of a town manager form of government.

Another factor regulating business growth in the community is the existing ordinances. Out of the 454 respondents, only 43% stated that they are familiar with the local zoning regulations, yet 61% of those residents feel that they are adequate.

The following is a summary of respondent's opinions on questions relative to the town's economy:

- ✓ The most desirable population growth for Bethlehem is 1-2% per year.
- ✓ 67% of the respondents are in favor of adopting a building code.
- ✓ Lack of business/employment opportunity ranks 5th out of 12 in the list of concerns about the town's future.
- ✓ 68% do NOT favor the introduction of gambling facilities.
- ✓ 57% of respondents are not familiar with the town zoning ordinances.

# Chapter 9
# Recreation

# Chapter 9
# Recreation

## 9.0 Introduction

Bethlehem is generally referred to as being located in the North Country, but when it comes to recreation it is more relevant to make reference to the fact that it is located in the heart of the White Mountains. The White Mountain National Forest is one of the most visited areas in the nation providing a wide variety of recreational activities in addition to tourist attractions.

Bethlehem, and many of the surrounding towns, depend upon visitors coming to the region, and therefore a great deal of the planned recreational activities in the past have been designed to attract and entertain tourists in particular. However, over the past decade, Bethlehem has made great strides in planning and implementing recreational programs for the residents as well as for its visitors. The programs have flourished providing recreational outlets for both young and old, indoor and outdoor, active and leisure, year round.

Recreational needs fall into various categories, such as competitive school programs, visitor activities and attractions, community sports programs, or just plain fun and interesting things to do. Taken individually, each is important, but taken as a whole they become essential to keeping Bethlehem vibrant and attractive.

## 9.1 Existing Recreation Facilities

### 9.1.1 The Bethlehem Country Club

The town's largest recreational facility, which includes approximately 140 acres of land, is the 18 hole championship golf course, clubhouse, pro shop, and restaurant. The club is overseen by a town committee, and employs a full time golf professional and pro shop manager to manage its operation.

Future needs at the Country Club include expansion of the clubhouse facilities, upgrading of the course, and the possible expansion to year round use of the clubhouse and course for such activities as cross country skiing, snowmobiling, tubing, or as a community center for leisure activities.

### 9.1.2 Town Swimming Pool and Playground

The pool was built in 1939, and is historically linked to Bethlehem as being the primary summer activity in the community. The pool has been open to the public, offers affordable memberships to the community, employs full time, trained lifeguards, and offers swimming lessons. In addition to the pool, there is a shower and changing house, a snack shack, and a playground.

The swimming pool has had many repairs over the years, and replacing it may have become a necessity. The pool will not be open in 2004 due to its poor condition. If the pool is replaced, relocating this facility to a more appropriate location for this type of activity should be explored.

### 9.1.3 Tennis Courts

There are two hard surface tennis courts located off Main Street that are used by the school tennis teams, the summer recreation program, and are also available to the public. This facility should be expanded to include four courts. This would better meet the requirements of school team competition. Additional parking would also improve access to this facility.

### 9.1.4 Baseball Fields

There are two baseball fields located at the end of Elm Street along with a snack shack. The fields include dugouts, and have been appropriately fenced. The summer recreation program, the Little League, and the public utilize the fields. The baseball programs are organized and implemented by volunteers.

### 9.1.5 Skating Rink and Skate Park

A public skating rink is located off Main Street in the center of town. The rink doubles as a Skate Park in the spring, summer and fall. Volunteers maintain this facility year-round.

### 9.1.6 Basketball Courts

There are two outdoor, full sized basketball courts located off Main Street in the center of town. The summer recreation program utilizes the courts, area school teams use this facility for summer leagues, and the general public also uses this facility.

### 9.1.7 School Facilities

Both the High School and Elementary Schools have indoor and outdoor recreational facilities which are utilized year round for soccer, field hockey, baseball, softball, volleyball and basketball. The facilities are utilized by community groups when not being used by the school.

Additional gym facilities are needed to meet the growing demand for the use of the High School gym. This is especially important during the winter sports season, and would provide more capacity for intramural sports.

### 9.1.8 Snowmobile Trails

Recently, the popularity of snowmobiling has grown at a remarkable rate. The State of New Hampshire has established a network of trails connecting communities, and financially supplements the efforts of local snowmobile clubs to groom and maintain these trails. With easy access to the White Mountain National Forest, considered some of the best riding in the state, Bethlehem has seen greater numbers of riders in the past few years. Bethlehem has a wonderful setting to offer such enthusiasts. In some locations these groomed trails are also ideal for cross country skiing, snowshoeing, and dog sledding.

### 9.1.9 Hiking Trails

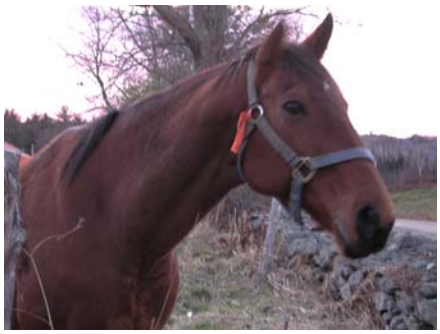
Hiking trails have existed in Bethlehem since the early 1900's, and are regularly maintained by the Appalachian Mountain Club (AMC). Some of the notable mountain peaks they provide access to are Mt. Hale (4077 feet in elevation), North Twin (4769 feet in elevation), Mt. Tom (4040 feet in elevation), Mt. Field (4300 feet in elevation), and Mt. Willey (4261 feet in elevation). The AMC also maintains a year round hut for hikers at Zealand Falls. The Appalachian Trail passes by the hut as it traverses that portion of Bethlehem. Other notable trails are the Heritage Trail, and the Beaver Brook Trail System which also doubles as a network of cross country ski trails during the winter season.

## 9.2 Regional Facilities

Bethlehem's recreational facilities and programs are supplemented by many area and regional facilities, which provide visitors and residents with the opportunity for fishing, boating, swimming, hiking, biking, horseback riding, picnicking, camping, winter sports, and water sports.

Within Bethlehem these facilities include the Rock's Estate, Bretzefelder Park, and the Strawberry Hill State Forest. Regionally, Franconia Notch State Park, Forest Lake State Park, Cannon Mountain, Bretton Woods Resort, the White Mountain National Forest, and the Ammonoosuc, Saco, Pemigewasset and Connecticut Rivers provide recreation opportunities.

## 9.3 Summary



Recreational needs are generally determined by what the community would like to provide for itself, and what additional opportunities would satisfy the needs of visitors. Current efforts should address how best to maintain, update, expand or replace existing facilities to meet the changing demands of population and trends. Understanding the additional benefits that some of these facilities provide is also important. Many of the existing and future trail facilities can also provide some transportation benefit by accommodating other modes of

travel and removing some of the automobile trips from the roadway. Protection of land areas for some recreational uses may also benefit wildlife, water quality, and other conservation efforts. The most obvious connection, and possibly the most important, is to the general health and wellness of the community. The health of Bethlehem's residents contributes to the great quality of life the community has to offer.

# Chapter 10
# Cultural & Historic Resources

# Chapter 10
# Cultural and Historic Resources

## 10.0 Introduction


Bethlehem was founded in 1774 as Lloyd Hills, a name retained until 1799 when it was incorporated as the Town of Bethlehem. Until the 1860s the town mirrored similar small towns in northern New England depending on the use of abundant natural resources for it's economic base. Abundant waterpower was available to convert forest and agricultural resources into products for local consumption, and for sale outside the community. Early development took place along the rivers and roads built to serve farms and mills, and to link Bethlehem to the major cities.

The late 1860s saw the beginning of an era of hotels and summer cottages, when Bethlehem became a summer vacation destination. People of means who wanted to get out of the cities during the summer, whether due to pollution, allergies, or heat, found Bethlehem to be an ideal location. The coming of the railroads made travel to the town a day's journey from many eastern metropolitan areas. The era of hotels and summer cottages lasted until the coming of increased automobile ownership in the early 1920s. The fifty year period of the cottage and hotel era was a prosperous time for the town and substantial growth occurred. New parts of the community were developed, this was especially true along U.S. Route 302, but in other areas as well. A significant change for the town was brought about during this time with the passage of the Weeks Act in 1911. This act provided for the formation of national forests east of the Mississippi River, and resulted in the creation of the White Mountain National Forest. The town would eventually see over half of its land area included in the White Mountain National Forest. This has influenced the town's development over the past 90 years, and the effect on the town continues today.

Following the depression of the 1930s, when growth and development languished, a short resurgence in vacationing at the hotels occurred during World War II, but soon faded after the war. The 1950s and 1960s saw increasing interest in Bethlehem as a vacation destination, but this time via automobiles which in turn promoted the construction of cottages, motels and recreational home developments. Rather than hotels offering round-the-clock activities, people were spending their nights in town and traveling to ski areas, taking day hikes in the White Mountain National Forest, or going to other outdoor recreation destinations.

By the late 1960s visitors who liked the area began looking to buy their own piece of land in the community. To satisfy this demand, some Bethlehem landowners began subdividing large parcels into small lots. Out-of-town developers began acquiring large parcels, and likewise subdivided them into smaller lots to market for campsites or second homes.
The 1980's saw most of the remaining hotels disappear. Agricultural uses were largely abandoned and fields began to revert to forest, or were subdivided into house lots. The 1990's brought some new uses to some of the historic structures in the village, and an increased interest in the historic and cultural features in Bethlehem.

## 10.1 The Bethlehem Heritage Society (BHS)

The Bethlehem Heritage Society (BHS) was established on July 18, 1997, and became incorporated in 2001. The museum opened in June of 1998. It is located in the former Ranlet Café building that was moved to its present location (across from the Post Office on Main Street) in 1895.

The mission of The Bethlehem Heritage Society, Inc. is to preserve, protect, and promote the rich history of the Town of Bethlehem; to establish a museum wherein the artifacts of the town's history may be displayed for education of the general public; to further promote and disseminate historical information that this entity may acquire through special public events, lectures, and discussions; to draw attention to and mark historic sites and trails; to promote the public's interest and appreciation for the Town of Bethlehem; and to generate pride in our past, confidence in our present, and hope for our future.

Past and present projects of The Bethlehem Heritage Society include collecting and preserving historical artifacts; raising funds for a future addition to the museum; elementary school and community educational programs; established a landscaped garden which contains two Memorial Bridges; Annual Memory Tree lighting ceremony; ongoing Memorial Brick Walk project; and the presentation of the BHS Cane (to the oldest town resident), established in 1999.

The public library continues to house historic artifacts, primarily paperwork, and copies of the White Mountain Echo newspaper.

### 10.1.1 Historic Resource Survey

There are several advantages to undertaking an historic resources survey. The BHS is in the beginning stages of this process, which will include:

- *Identifying, inventorying, and documenting historic buildings, structures, sites, roads, and cemeteries.*
  -Create, maintain, and update an inventory of historic building, structures, sites, roads, and cemeteries.
  -Focus surveys on historic and scenic roads, bridges, streetscapes, and landscapes.
  -Education efforts based on the collected information.

- *Promoting appropriate utilization of historic properties*.
  -Promote original and/or present use of historic properties in their original location whenever feasible, and encourage sympathetic adaptive reuse when the original or present use is no longer feasible.
  -Review and revise zoning ordinances so they encourage the preservation of historic properties, and make them compatible with preservation goals where feasible.
  -Encourage local officials to consider preservation goals in interpreting regulations and building codes.
  -Work with landowners, public, and private agencies to encourage the preservation, acquisition, and maintenance of endangered historic properties.

- *Protecting and Enhancing Historic Properties.*
  -List by importance the historic properties, sites, buildings, structures, and cemeteries in Bethlehem. Focus attention on the historic significance, and recommend appropriate local action.
  -Revise local ordinances as needed to enable the designation of individual historic properties.
  -Review and develop new design standards as needed for historic preservation.
  -Accept donations of property, grants of easements, and other forms of less than fee-simple ownership of historic properties.
  -Nominate additional sites to the State and National registers. Investigate other types of designation, or legislation, that might be available for historic roads and bridges to protect the mature landscape and historic streetscape elements.

- *Promote Appreciation of Historic Properties*
  -Make available to local officials, and the general public, the inventory of historic sites in Bethlehem, including all designations surveys, photographs and maps. Prepare and disseminate brochures and/or guides to historic sites in Bethlehem.
  -Work with homeowners and the business community to develop a plan for a comprehensive signage system to inform the public of historically significant sites throughout the community.

### 10.1.2 National Register of Historic Places

The National Register of Historic Places is the official list of the Nation's historic and cultural resources worthy of preservation. Established by the National Historic Preservation Act of 1966, and administered by the National Park Service with the Department of the Interior, the Register lists properties of local, state and/or national significance in the areas of American history, architecture, archeology, engineering, and culture. Resources may be nominated individually, in groups, as districts, as a multiple resource area, or by category as a thematic group.

In New Hampshire, anyone may submit a nomination application. National Register forms, maps, and photographs are submitted to the New Hampshire Historic Preservation office to be reviewed by the State Review Board. Following state approval, the application is sent to Washington, D.C. for final review, approval, and listing.

National register listing can be an important tool for identifying and planning the future of significant resources. Listing can act as a catalyst to change public perception and improve an area's image, but cannot in itself prevent major detrimental alterations or even demolition. However, it remains an important psychological first step towards historic awareness, respect, and protection.

Three properties in Bethlehem have been listed in the National Register:

***Burt-Cheney Farm (listed 1982)***
The Burt Cheney House, located between U.S. Route 302 and I –93, is an outstanding example of the Cape Cod house. One of the few remaining central chimney Capes in the area, this is relatively well preserved. It is also significant because it typified the pioneer's approach to building a farm in the wilderness. The related structures on the property, particularly the large stonewall in front, make a significant contribution to its appearance as a farmstead, a function which it served continuously until the construction of I-93 in the late 1960s.

***The Rocks Estate (listed in 1984)***
Of the numerous grand private estates that appeared in New Hampshire during the late nineteenth century, The Rocks Estate, built by John J. Glessner, is one of the best preserved examples of this building form.

The Rocks is owned by the Society for the Protection of New Hampshire Forests. The Rocks continues to fulfill its original purpose of protecting forests and open space. It still retains much of its early character as a working farm and the private garden spot of its original owners.

***Felsengarten (listed in 1973)***
Felsengarten is a 14.8-acre parcel of rough wooded land on a mountain slope, on which construction of an eight-room house began in 1886 by Theodore Thomas. Theodore Thomas was the conductor of the Chicago Symphony. The architectural aspect is reminiscent of Dutch Colonial form with extensive landscaping and flower gardens. The historical significance of the site is derived from the admiration of horticultural circles, and its former residents and their world-renowned guests.

## 10.2 Local Regulations

There is no specific reference to historic sites or buildings in the various town ordinances, regulations, and codes. Through the subdivision review process, the planning board currently has no regulations requiring the preservation of historical, architectural, or archaeological sites within a proposed subdivision. Preservation and sensitive treatment of buildings, or sites, is presently only pursued by interested landowners.

The town Planning and Zoning boards should work with other local and regional entities, and interested citizens, to ensure historic preservation is carried out in Bethlehem. The role of those boards is limited within the realm of historic preservation. However, there are existing

organizations, both local and regional, that have the expertise and the resources to be active participants. One such local group is the Bethlehem Heritage Society. Many of the historic preservation efforts and activities may be encouraged with some technical assistance from this group of dedicated individuals. This may involve updating the local regulations so that they are sensitive to historic and cultural resources, and could include direct technical assistance to property owners.

## 10.3 Historic Preservation Tools

***Historic Building Rehabilitation Tax Incentives***

The Economic Recovery Act of 1981 provides attractive incentives in the form of federal investment tax credits for the substantial rehabilitation of income-producing older buildings. The act was enacted to support preservation by eliminating tax incentives that encourage the demolition of historic structures. Credits are deducted from taxes owed, not income earned, with depreciation over an eighteen year cost recovery period. Currently, the tax incentives take three forms:

| **Income Tax Savings** | **Building use** | **Eligible Properties** |
|---|---|---|
| 15% | commercial & industrial | 30 – 39 years old |
| 20% | commercial & industrial | 40 years or older |
| 25% | commercial, industrial & income residential | certified historic structures 50 years or older |

***Downtown Revitalization***

Bethlehem's historic structures possess the potential for economic benefit. Many of the buildings retain significant features including elaborate brickwork, decorative glass, metalwork, intact parapets, and other decorative details absent from buildings built today. Across the country, the quaint Main Street image has become a proven formula for attracting tourists, seasonal residents, and shoppers.

Building rehabilitation, or renovation, does not necessarily mean major change or expense, nor should it be confused with restoration, in which the appearance of a building is returned to the condition in which it existed at a point in the past. Old photos can be very helpful in assessing a building's potential, uncovering changes it has seen through time, and making decisions about future changes to undertake.

A well-executed renovation project will frequently act as a catalyst for similar work along the street, enhancing the overall image of the downtown. It should be remembered that structures

which are remodeled in a manner not compatible with their surroundings, and departing from the character of the downtown, can cause serious visual disruption to the entire streetscape.

### *Revolving Loan Funds*

Revolving funds are self-replenishing loan programs. The money in the pool is mostly composed of donations, and is used to restore buildings. The funds revolve once the loan has been paid back. With a revolving fund, a non-profit organization can either acquire a deteriorating building, restore it, and then sell it, or make low interest loans available to those who need to restore their historic buildings.

The first building restored by a revolving fund should be a relatively high visibility structure, so that donors can see their money at work. The building should be endangered, well worth saving, and have good resale potential before it should be considered eligible for a revolving loan. Beside donations, an organization administering a revolving fund can solicit sources of revenue from private foundations, and government subsidies such as Community Development Block Grants.

### *Scenic Road Designation*

New Hampshire state law RSA 231:157-158 enables a municipality to designate local roads as Scenic. Upon petition of ten persons who either are voters of the town, or who abut the proposed designated road, the town government can designate a scenic road.

A scenic road designation protects trees and stonewalls situated on the public right-of-way. After designation of a scenic road "any repair, maintenance, reconstruction or paving work done with respect thereto shall not involve or include the cutting or removal of tree, or the tearing down or destruction of stone walls, or portions thereof, except with the prior written consent of planning board or official municipal body…" (NH RSA 231:158)

Designation of a road as "scenic" will not affect the town's eligibility to receive state aid for road construction. Nor will it affect the right of abutting landowners. Bethlehem currently has two designated scenic roads - Swazey Lane and Old Franconia Road (Gilmanton Hill Road).

Scenic Road designation enables a community to preserve the rural environs along the roadway, and the setting around adjacent historic structures. A scenic road designation also stimulates pride and respect for the existing landscape. It is an especially important tool for Bethlehem's rural areas where architectural heritage is reflected in the inseparable bond between architecture and landscape.

### *Easements*

New Hampshire law RSA 447:45-47 covers the subject of easements. An easement is a property right that can be bought or sold. It allows a property owner to put some degree of limitation on his/her property when an easement is sold, or for another person to set limitation upon the

property owner when an easement is purchased. Easements can be of two types: conservation or preservation.

A preservation easement is an agreement between a historic property owner and a government agency or preservation organization, which give the latter the right to review any proposed changes to the structure. In return for giving an easement, a property owner is eligible under the Tax Treatment and Extension Act of 1980 to make a deduction from his/her taxes. If the easement is considered a lifetime gift, then the property owner could receive a deduction for up to 50% of his/her adjusted gross income. Cost of such programs may be significantly lower than buying properties outright to protect these valuable resources, particularly when easements can be acquired by donation. Conservation easements are discussed in the Natural Resources Chapter of this plan.

Two major types of preservation easements have been employed in the past:

- Donation of an exterior façade easement by a property owner. This could include air rights, exterior maintenance, alterations, etc.
- The second type is for the interior of an historic structure. This type of easement is rarely used, and is difficult to acquire and enforce. An interior easement can restrict all or part of the interior.

***Discretionary Preservation Easements***

A new state law, RSA 79-D, creates a mechanism to encourage the preservation of historic New Hampshire barns and other agricultural buildings by authorizing municipalities to grant property tax relief to barn owners who (a) can demonstrate the public benefit of preserving their barns or other historic farm buildings, and (b) agree to maintain their structures throughout a minimum 10-year preservation easement.

The new law is based on the widespread recognition that many of the state's old barns and other farm outbuildings are important local scenic landmarks and help tell the story of New Hampshire's agricultural heritage. Yet many of these historic structures are being demolished or not repaired because of the adverse impact of property taxes. RSA 79-D encourages barn owners to maintain and repair their buildings by granting them specific tax relief and assuring them that assessments will not be increased as a result of new repair work.

More information on barn preservation and the value of New Hampshire's historical agricultural resources is also available from the New Hampshire Preservation Alliance at (603)224-2281, admin@nhpreservation.org, or www.nhpreservation.org/html/home.htm, and from the NH Division of Historical Resources, (603)271-3483, preservation@nhdhr.state.nh.us, or www.state.nh.us/nhdhr/barn.

# Chapter 11
# Regional Concerns

# Chapter 11
# Regional Concerns

## 11.0 Introduction

While the master plan focuses mostly on issues within the community, or within the control of the Town in some respect, some thought should be given to the larger region that Bethlehem is located within. Throughout the White Mountain Region and beyond, regional concerns such as the environment, population and housing growth, transportation issues, and tourism affect Bethlehem. Outside influences have an impact on the community, and in turn Bethlehem has an impact on others.

## 11.1 Bethlehem's Role in the Region

Located in both the White Mountain Region of New Hampshire and the Greater Littleton Region there are a number of outside influences that affect Bethlehem, but which the community has little control over. For many of these issues, Bethlehem can similarly affect other communities with its own actions. Participation in regional discussions will ensure that Bethlehem has a better "say" in what happens in the region over time.

With its watersheds draining to the Ammonoosuc and Gale Rivers, Bethlehem has a responsibility to others "downstream" not to pollute these significant sources of drinking water, recreation, and wildlife habitat. Proactively dealing with land use changes within the community, and notifying other communities of potential regional impacts under NH RSA 36:56, will benefit the community and the region.

Bethlehem has already taken a leadership role in dealing with the impact of light pollution on the North Country night sky. The Bethlehem Outdoor Lighting Regulation will help the community reduce its impact on the dark night sky, and may inspire others in the region to do the same. The regulation has already inspired other communities in the state to adopt similar regulations.

With a major portion of the community's land area within the White Mountain National Forest, Bethlehem has also worked to encourage additional conservation efforts elsewhere in town. These efforts contribute to natural resource protection, preservation of the working landscape, recreation opportunities, and the scenic resources that residents and visitors to the region value. Future efforts to prevent ridgeline development and pursue conservation in Bethlehem and neighboring communities will further protect the character of the region.

Several major state routes and an Interstate pass through Bethlehem creating a road network that serves the needs of residents, visitors, and businesses year round. Some of this traffic is generated by destinations within Bethlehem, and the remainder is generated by locations in the

region or beyond. The community's location on the White Mountain Trail, a national scenic byway, and its rich history as a tourism destination serve as a draw for cultural and recreational activities. This translates into large numbers of visitors that contribute to the regional economy and impact the region's infrastructure annually.

## 11.2 Regional Groups and Organizations

Participation in regional dialogues will ensure that Bethlehem's voice is heard. This can best be accomplished by participating in regional groups and organizations. The following regional entities are key to the implementation of the master plan and Bethlehem's vision:

***North Country Council (NCC)***

NCC assists 51 northern New Hampshire communities with Regional Planning, Economic Development, Grantwriting, Community Planning, Natural Resources, Transportation, and Solid Waste management issues. Located at the Rocks in Bethlehem, NCC has been promoting regional dialogue in northern New Hampshire since 1973.

***Transportation Advisory Committee (TAC)***

NCC staffs and coordinates a TAC composed of representatives from the 51 northern New Hampshire towns. The TAC works to prioritize future transportation improvements to be made by the NH Department of Transportation.

***Affordable Housing Education and Development (AHEAD)***

AHEAD, incorporated in 1991, became the region's first non-profit community development organization dedicated to providing housing and economic opportunities to families of limited means in Northern NH. As a community-based developer, AHEAD works closely with local towns and organizations to solve community housing problems.

***School Administrative Unit (SAU) 35 and Profile High School***

Bethlehem is included in SAU 35 which covers a number of towns and schools. Bethlehem has its own elementary school, but shares a high school with the towns of Franconia, Sugar Hill and Easton. Profile High School is located on NH Route 18 in Bethlehem and Bethlehem has the largest number of students in the school. Bethlehem Elementary School has a school board composed of Bethlehem residents. The Profile Board has members drawn from the four towns.

***White Mountain Regional Airport Commission***

For a number of years Bethlehem was an active participant in the White Mountain Regional Airport (WMRA) Commission. Located in the Town of Whitefield, the WMRA has provided general aviation services in the North Country for more than 50 years. It is the largest airport

facility in the area with its 3600-foot runway. The runway is scheduled to be lengthened to 4200 feet in 2006 which will permit it to accommodate larger aircraft. Capital improvements at the airport are typically funded at a level of 90% by the Federal Aviation Administration and 5% by the State. The communities served by the facility pick up the remaining 5%. At various times the Federal Aviation Administration has subsidized commercial passenger service to and from the airport. The last scheduled passenger service was for a one-year period in the mid-eighties. The close proximity of the Mount Washington Hotel in Bretton Woods and the Mountain View Grand Hotel in Whitefield and with the continued growth in tourism throughout the area, demand for charter air service, if not scheduled service, will increase. As a tourist destination, Bethlehem may find it of benefit to become a more active participant on the Commission.

***Tri-Town Industrial Collaboration***

Since mid-2001, representatives of the towns of Bethlehem, Littleton and Lisbon, have been working in cooperation with the Littleton Industrial Development Corporation to identify sites in the three towns for joint development of future industrial/commercial facilities. Using a grant from the Economic Development Administration (EDA), US Department of Commerce, the group commissioned engineering and economic feasibility studies of several sites in Lisbon and Bethlehem that have potential to be developed in a manner that would attract new companies into the area. The group has recently focused its efforts on a 140 acre parcel on Brook Road in Bethlehem's Zoning District 4 (light industrial and commercial use) and anticipate applying for site development funding from the EDA late in 2004.

# Chapter 12
# Implementation

# Chapter 12
# Implementation

## 12.0 Introduction

In the 2002 New Hampshire legislative session the statutes relative to master plans, 674:2-3, were rewritten to reflect the need for closer coordination among municipal master plan elements, and for coordination of local, regional, and state projects and processes. Bethlehem's 2004 Master Plan update contains both of the mandatory sections, the community vision and the land use section, and all of the recommended sections including this Implementation Chapter.

In terms of the recommended implementation section, the Town of Bethlehem felt it was important to create detailed actions that will put the new master plan into action. According to RSA 674:2, III, the Master Plan may include the following sections:

> "..(m) An implementation section, which is a long range action program of specific actions, time frames, allocation of responsibility for actions, description of land development regulations to be adopted, and procedures which the municipality may use to monitor and measure the effectiveness of each section of the plan."

This Chapter will enable the Bethlehem Planning Board and Board of Selectmen to oversee the completion of the 19 implementation actions of this master plan. Each of these actions was assigned a timeline and a responsible party to assist with future evaluation of the progress on these tasks. This chapter is dynamic and should be reviewed and modified after 12 months to measure the progress made on the implementation actions.

The chapter topics serve as the framework for this section. The goals identified and prioritized in the Vision Chapter of this plan are then listed under the appropriate topic, and are followed by the implementation actions.

## 12.1 Land Use

**Goal 3** Require private developers to fund off-site improvements if the development will have a major impact on Town services, infrastructure, and/or schools.

**Goal 4** Pursue policies and capital improvement expenditures that facilitate growth in designated areas, thereby protecting and conserving open space while providing public facilities and services efficiently and cost effectively.

**Goal 8** Adopt and implement innovative land use ordinances and regulations that discourage strip development by designating areas appropriately located and zoned for a variety of types and intensities of new development.

**Goal 16** Revise and update Town Ordinances and Regulations so that more people, residences and businesses can be accommodated in areas best suited for greater density of development.

**Goal 17** Eliminate or bring into conformity activities that are in violation of Town Ordinances and Regulations.

**Goal 20** Revise sections of the Town's Master Plan to address changes in growth and development locally or regionally to permit timely and effective changes to Town Ordinances and Regulations

| ***Implementation Action*** | ***Time Period*** |
|---|---|
| 1. Refine the future land use plan.<br><br>Implementation Responsibility: Planning Board<br><br>Support Agencies: Select Board, Conservation Commission, Zoning Board of Adjustment | 1-2 years |
| 2. Draft and submit to the voters zoning ordinances and regulations that will implement the vision and future land use plan.<br><br>Implementation Responsibility: Planning Board<br><br>Support Agencies: Select Board, Conservation Commission, Zoning Board of Adjustment | 1-2 years |
| 3. Create an Executive Summary of the Master Plan in a poster or booklet format.<br><br>Implementation Responsibility: Planning | 1-2 years |
| 4. Adopt Best Management Practices (BMPs) for hillside and ridgeline development as part of the Planning Board's project review process.<br><br>Implementation Responsibility: Planning Board<br><br>Support Agencies: Conservation Commission, Select Board, and Zoning Board of Adjustment | 1-2 years |
| 5. Ridgeline / Steep Slope Overlay Regulation<br><br>Implementation Responsibility: Planning Board<br><br>Support Agencies: Conservation Commission | 1-2 years |

| | |
|---|---|
| 6. Analyze the effectiveness of innovative land use ordinances and regulations; draft and adopt new ordinances that will accommodate growth, while preserving open space and wildlife habitat.<br><br>Implementation Responsibility: Planning Board | 2-3 years |
| 7. Draft and adopt overlay zones for significant natural resources<br><br>Implementation Responsibility: Planning Board<br><br>Support Agencies: Conservation Commission, Select Board | 2-3 years |
| 8. Review the status of all implementation actions and revise needed work and/or time periods; propose new implementations actions when appropriate.<br><br>Implementation Responsibility: Planning Board | Annually |
| 9. Review the Master Plan and revise update, or draft replacement section(s) as required.<br><br>Implementation Responsibility: Planning Board | Annually |

## 12.2 Transportation

**Goal 1** Provide a safe, functional and well-maintained transportation system which implements the land use plan to include roads, parking, sidewalks and non-motorized opportunities.

| ***Implementation Action*** | ***Time Period*** |
|---|---|
| 1. Create an official transportation plan including streets, sidewalks, paths, parking, and other existing facilities.<br><br>Implementation Responsibility: Planning Board<br><br>Support Agencies: Highway Department, North Country Council | 1-2 years |
| 2. Develop new street design standards that reflect a hierarchy of streets.<br><br>Implementation Responsibility: Planning Board<br><br>Support Agencies: Select Board, Highway Department | 1-2 years |

## 12.3 Community Facilities

**Goal 2** Prepare, with full citizen participation, a long range plan for relocating, building or renovating Town facilities to include target dates and funding sources.

**Goal 18** Consider and adopt, if appropriate, new forms of organization and governance best suited to guiding and administering the Town in the 21st century.

| *Implementation Action* | *Time Period* |
|---|---|
| 1. Re-charter or invigorate the Town Facilities Committee with tasking to review options for renovating, building and/or relocating Town facilities and services to include funding sources and methods. Immediate emphasis to be on the Town Building, including fire and police facilities.<br><br>Implementation Responsibility: Select Board<br><br>Support Agency: All Town Boards, Commissions, and Activities. | 1-3 years |

## 12.4 Utilities and Public Services

**Goal 5** Develop and keep current a plan for acquisition and operation of a Town transfer station, trash disposal options and funding alternatives in preparation for the eventual closure of the Trudeau Road landfill.

**Goal 13** Recognize new technologies such as personal wireless service facilities which may affect the Town's view sheds, existing utility infrastructure or development in specific areas; adopt ordinances or regulations which will minimize adverse impact on the Town; control via ordinance or regulation exterior lighting to maintain the night sky free from light and glare.

| *Implementation Action* | *Time Period* |
|---|---|
| 1. Re-activate the Citizen Advisory Group on Municipal Solid Waste to plan for and to have in place a town transfer station in sufficient time to serve the needs of the Town when the Trudeau Road landfill is closed.<br><br>Implementation Responsibility: Select Board<br><br>Support Agencies: Planning Board, Conservation Commission, North Country Council | 2-3 years |

## 12.5 Population & Housing

**Goal 15** Maintain consistent and predictable tax rates by balancing population growth and economic development with long-range needs for capital improvements and education expenses.

| *Implementation Action* | *Time Period* |
|---|---|
| 1. Continue to promote a diverse housing stock, including high quality second homes, by hiring a planner to assist the Planning Board and Zoning Board of Adjustment.<br><br>Implementation Responsibility: Select Board<br><br>Support Agencies: Planning Board, Zoning Board of Adjustment | 1-2 years |

## 12.6 Economy

**Goal 7** Encourage economic development that emphasizes tourism and recreation but with increased emphasis on commercial growth in specific areas.

**Goal 15** Maintain consistent and predictable tax rates by balancing population growth and economic development with long-range needs for capital improvements and education expenses.

| *Implementation Action* | *Time Period* |
|---|---|
| 1. Support public and private partnerships to expand the community's "arts-friendly" image.<br><br>Implementation Responsibility: Select Board<br><br>Support Agency: Planning Board, Chamber of Commerce, Bethlehem Redevelopment Association, WREN | 1-2 years |
| 2. Explore ways to reduce property taxes and maintain year-to-year consistency in tax levels; broaden the tax base by encouraging and supporting existing and new professional, commercial and light industrial initiatives.<br><br>Implementation Responsibility: Select Board<br><br>Supporting Agencies: Planning Board, Zoning Board of Adjustment, Bethlehem Redevelopment Association, Chamber of Commerce, North Country Council | 1-5 years |

## 12.7 Natural Resources

**Goal 6** Draft, approve and have ready a plan to ensure the Town has a lead role in monitoring a closed Trudeau Road landfill.

**Goal 9** Maintain the rural character of the Town and the natural ecosystems of the region by promoting land use practices that maintain open space in large, contiguous parcels.

**Goal 10** Protect the Ammonoosuc River corridor from development that degrades water quality and the asthetics of this ecosystem; adopt a shoreland protection ordinance and work with other towns and the Department of Environmental Services to protect the entire Ammonoosuc Watershed.

**Goal 11** Identify and keep current inventories of natural and scenic resources, wetlands, flood plains, groundwater, and important habitat areas.

| ***Implementation Action*** | ***Time Period*** |
|---|---|
| 1. Complete a detailed Natural Resource Inventory.<br><br>Implementation Responsibility: Conservation Commission<br><br>Support Agency: Select Board, Planning Board | 1-2 years |
| 2. Create an open space plan, based on the Natural Resource Inventory, that identifies priority parcels and corridors the community should work to protect.<br><br>Implementation Responsibility: Conservation Commission<br><br>Support Agency: Select Board, Planning Board | 3-5 years |
| 3. Draft and adopt a local shoreland protection ordinance.<br><br>Implementation Responsibility: Planning Board<br><br>Support Agency: Conservation Commission, Select Board | 3-5 years |
| 4. Meet with other communities in the Ammonoosuc Watershed to discuss land use and conservation issues.<br><br>Implementation Responsibility: Conservation Commission<br><br>Support Agency: Select Board, Planning Board | 1-2 years |

## 12.8 Recreation

**Goal 12** Provide a coordinated and comprehensive system of public and private recreational facilities, programs and open space that will meet the active and passive recreational needs of all citizens and visitors and enhance community design, identity and vitality.

| *Implementation Action* | *Time Period* |
|---|---|
| 1. Continue the evaluation of the existing facilities and the potential for new facilities to meet the needs of residents and visitors.<br><br>Implementation Responsibility: Select Board<br><br>Support Agency: Recreation Department, Facilities Committee | 1-2 years |

## 12.9 Cultural & Historic Resources

**Goal 14**. Preserve the Town's historic, cultural, scenic and architectural heritage.

| *Implementation Action* | *Time Period* |
|---|---|
| 1. Develop design guidelines for District 1, Main Street, and for other areas of the town where historic structures are being used for residences or businesses.<br><br>Implementation Responsibility: Planning Board<br><br>Support Agencies: Heritage Society, Zoning Board of Adjustment | 1-2 years |
| 2. Develop an Historic Preservation Plan for Bethlehem that promotes the preservation of local architectural identity by encourage the maintenance of original structures.<br><br>Implementation Responsibility: Heritage Society<br><br>Support Agencies: Planning Board | 3-5 years |

## 12.10 Regional Concerns

**Goal 19** Take the lead or actively participate with other towns and regional organizations in the area to address new initiatives or existing problems facing the region on issues such as, but not limited to, education, transportation, housing, economic development and the environment.

| *Implementation Action* | *Time Period* |
|---|---|
| 1. Ensure that residents represent Bethlehem on regional boards and committees. | 1-2 years |

| | |
|---|---|
| Implementation Responsibility: Select Board | |

***Design Guidelines***

Another tool for preserving the historic character of the community involves the use of voluntary or mandatory design guidelines for new construction. The intent of such a program or regulation is to promote architectural designs that complement the existing structures in the district. Creating guidelines that offer visual examples of the key architectural elements that define Bethlehem would be an important step.

## 10.4 Historical Preservation Plan

A portion of the 19th and 20th century is still visible today in Bethlehem, with many buildings and sites remaining reasonably intact, but threatened by modernization. These must be preserved if we are to retain the character of Bethlehem. Working with the property owner, in a cooperative spirit, to retain the best elements of the past while encouraging future updates is the most effective, long-term way to preserve our environment. A proactive educational program is necessary for this to be successful.

A Bethlehem Historic Preservation Plan should promote the preservation of local architectural identity by encourage the maintenance of original structures, property owners to save key landscaping details, and investigating potential historic and/or prehistoric resources on project sites. This plan should also promote the preservation of the central business district in Bethlehem. This may include encouraging adaptive re-use of existing structures to ensure their maintenance, and a commitment to a vibrant village area.

The plan should specifically identify historically significant structures, land areas, and roadways where feasible, and create partnerships and bridges to local organizations with the technical expertise to help retain these important resources. Site plan applications for adaptive reuse of existing structures should be encouraged, but consideration should be given to landscape, parking, signage, lighting, facade material, and the use of the structure to ensure that the plan is harmonious with the character of Bethlehem. Consideration should also be given to the compatibility with other structures in the neighborhood.

## 10.5 Summary

Bethlehem has an opportunity to preserve its heritage and character, if the community moves to protect the resources that remain. Education of the public on the significance and benefits of historic preservation is a key activity that must be carried out in an engaging and non-threatening manner. Public understanding of the value of historic preservation will ensure that the recommendations are carried out successfully.

> "Today is the history that our children and grandchildren will look back on."