

## Chapter XII EXISTING AND FUTURE LAND USE

*"Treat the Earth well: it was not given to you by your parents; it was loaned to you by your children." Ancient Indian Proverb*

*- Loudon 2001 Existing and Future Land Use Subcommittee*

### INTRODUCTION

Increased population growth, evolving housing needs, as well as changing social and economic trends discussed throughout the Master Plan have had a direct impact on the landscape of the community. Because land is a finite resource, thoughtful use of land is a critical issue for all communities. Loudon's utilization of its land has a direct impact on aesthetics, community character, transportation infrastructure, housing affordability, as well as the tax base.

The purpose of this chapter is to identify and explore land use trends in Loudon, discuss how regulations impact such trends, as well as offer recommendations as to what regulatory steps can be taken in the future to meet the growing housing and economic needs of the community. Past trends, local opinion regarding land use, the existing zoning framework, present land uses, and proposed uses for land in Loudon will be explored.

### OBJECTIVES OF THE CHAPTER

- To evaluate the past and present uses of the land in Loudon;
- To review community opinion and the existing regulations and ordinances on the use of the land in Loudon;
- To provide suggestions for the future utilization of land in the form of amendments to the regulations and ordinances;
- To promote the orderly growth of the Town by providing for public and other open space while encouraging reasonable development of land;
- To prevent scattered premature or undesirable subdivision and development of land as would involve danger or injury to health, safety, welfare, and prosperity of the community by the reason of the lack of water supply, satisfactory drainage, adequate transportation, or by other public services that would require excessive expenditure of public funds to provide such services;
- To protect and preserve the value of land, buildings and improvements of land throughout the municipality and to minimize the conflicts of uses between land and buildings;

- To provide adequate and safe traffic circulation and access management, including adequate entrances and exits, traffic flow, sight distances, curb cuts, turning lanes, and traffic signage and signalization;
- To ensure harmonious and aesthetically pleasing development of the Town in its environs;
- To encourage the use of open space development, which is currently known as cluster development in the Land Development Regulations, in order to preserve open space and retain the Town's rural character; and
- To promote the monitoring and enforcement of gravel pit reclamation of all gravel operations.

**COMMUNITY SURVEY RESULTS**

The community survey mailed to Loudon residents gave them an opportunity to voice their opinions on several issues related to land use in Loudon. Below are the questions and responses to the questions related to land use that were featured on the community survey:

The current minimum lot sizes in Loudon vary from 30,000sf to 5 acres depending on the Zoning District. Should minimum lot sizes be changed?

**Table XII-1**

Residential lot size	Total	Percentage
Stay with current 2 acre (3 for 2-family)	488	62.2%
3-acre	65	8.3%
5-acre	91	11.6%
Other	25	3.2%
No opinion	77	9.8%
No answer	38	4.8%
Grand Total	784	100.0%

**Table XII-2**

Agricultural lot size	Total	Percentage
Stay with current 5 acres	440	56.1%
6-acre	20	2.6%
10-acre	108	13.8%
Other	21	2.7%
No opinion	129	16.5%
No answer	66	8.4%
Grand Total	784	100.0%

**Table XII-3**

Commercial lot size	Total	Percentage
Stay with current 2 acres	488	62.2%
Other	78	9.9%
No opinion	143	18.2%
No answer	75	9.6%
Grand Total	784	100.0%

**Table XII-4**

Village lot size	Total	Percentage
Stay with current 30,000sf	419	53.4%
Decrease	17	2.2%
Increase	116	14.8%
No opinion	155	19.8%
No answer	77	9.8%
Grand Total	784	100.0%

**Table XII-5**

Industrial lot size	Total	Percentage
Stay with current 5 acres	495	63.1%
Other	57	7.3%
No opinion	125	15.9%
No answer	107	13.6%
Grand Total	784	100.0%

Most respondents (over 50% in each category) were content with the current lot size requirements in each zoning district.

Table XII-5

The current zoning regulations allow for commercial and industrial uses in the same area. Should the Town have an area, or areas, that are dedicated strictly for industrial uses?

Zoning for strictly industrial uses	Total	Percentage
Yes	310	39.5%
No	214	27.3%
No opinion	212	27.0%
No answer	48	6.1%
Grand Total	784	100.0%

Table XII-6

Currently, land in Loudon zoned for commercial uses is located along Route 106 from the Concord town line to the Canterbury town line. Do you think that the current Commercial Zone should be restructured along portions of Route 106?

Adequacy of 106 zoning	Total	Percentage
Yes	172	21.9%
No	354	45.2%
No opinion	216	27.6%
No answer	42	5.4%
Grand Total	784	100.0%

According to Table XII-5, nearly 40% of the community survey respondents advocated the dedication of certain areas in the Town to strictly industrial uses. As shown in Table XII-6, most community survey respondents feel as though the commercial zone need not be restructured along Route 106.

Table XII-7

Should Loudon encourage open space development (noted as "cluster subdivision" in the Zoning Ordinance) as a means of protecting open space?

Encourage cluster development	Total	Percentage
Yes	324	41.3%
No	254	32.4%
No opinion	162	20.7%
No answer	44	5.6%
Grand Total	784	100.0%

Table XII-8

Impact fees are fees paid by developers or new home builders, when a certificate of occupancy is granted, to help offset the fiscal impacts to the Town (through additional costs of schooling, fire & police protection, etc). Should an ordinance be developed for charging impact fees?

Charge impact fees	Total	Percentage
Yes	379	48.3%
No	227	29.0%
No opinion	135	17.2%
No answer	43	5.5%
Grand Total	784	100.0%

As shown in Table XII-7, over 40% of survey respondents felt as though cluster subdivisions should be encouraged in order to preserve open space. Table XII-8 shows that almost half of the survey respondents felt as though the Town should charge impact fees to offset the cost to the Town of housing development.

Table XII-9

The Village District encourages commercial, residential, and retail uses in one area.

The benefits are reduced reliance on cars, a neighborhood atmosphere, and convenience to services. Do you support the variety of uses allowed in the Village District?

Support Mixed Use in Village	Total	Percentage
Yes	576	73.5%
No	52	6.6%
No opinion	112	14.3%
No answer	44	5.6%
Grand Total	784	100.0%

A large majority (73.5%) of survey respondents support mixed land use in the village district in order to encourage a neighborhood atmosphere, convenient access to services, and reduced reliance on vehicles.

Performance standards are limits imposed upon a particular use or process that are often based on scientific measurements. An example is a noise ordinance that limits the decibel levels of certain activities in certain areas at certain times. Do you feel that performance standards should be developed for regulation of the following?

Table XII-10

Runoff performance standards	Total	Percentage
Yes	351	44.8%
No	162	20.7%
No opinion	204	26.0%
No answer	67	8.5%
Grand Total	784	100.0%

Table XII-11

Groundwater performance standards	Total	Percentage
Yes	463	59.1%
No	102	13.0%
No opinion	160	20.4%
No answer	59	7.5%
Grand Total	784	100.0%

As shown in Tables XII-10 and XII-11, most survey respondents felt that the Town should adopt performance standards relating to both runoff and groundwater.

### **HISTORICAL LAND USES**

Loudon adopted formal zoning districting in 1987 and established four (4) general development districts: Village, Rural Residential, Agriculture-Forestry Protection (AFP), and Commercial/Industrial (C/I). Prior to the establishment of these zoning districts, residential uses were permitted throughout the Town, and commercial and industrial uses were permitted by special exception. The establishment of the four zoning districts was intended to concentrate commercial and industrial development along the Route 106 corridor and reduce land use conflicts arising from mixed development in the rural areas. A Steep Slope Overlay District and Wetlands Overlay District were also adopted. In 2000, the Commercial/Recreational district was created at Town Meeting.

### **Zoning Districts**

The purpose of the Village (V) district is to regulate development in the village area to uses that are compatible with current residential, retail, and office uses, development densities, and structural types that are already present. The Village district, located on Old Route 106, occupies about 150 acres of the Town, or approximately 0.51% of the total land area. It is a mix of residential and commercial land uses, as well as the primary location of municipal and school facilities.

The Rural Residential (RR) district was established with the purpose of regulating development in a manner that will promote the preservation of the natural landscape and rural character. The rural residential district encourages primarily residential development at densities that do not exceed the capabilities of the land, capacity of community facilities and services, and the limitations of the road network.

The Agriculture/Forestry Preservation (AFP) district has the most limited uses and lowest development densities of all of the districts. Its purpose is to regulate development in order to preserve agricultural and forestry resources and other critical resources, and to limit growth so as not to overwhelm the capacities of the Town's community facilities.

The Commercial/Industrial (C/I) district was established in order to promote commercial and industrial growth in areas that have the best access to major transportation corridors and which best serve the interest of the community. The C/I district centers on Route 106, and the structure of this district has lent itself to strip development along the developable frontage of 106.

A new Commercial/Recreational (C/R) district was created at the March 2000 Town Meeting which encompasses the NH International Speedway to the east of Route 106 and surrounding lands.

The overlay districts of Steep Slopes (25% or greater) and Wetlands Conservation are a result of the 1985 Master Plan and serve to limit development in areas of environmental sensitivity.

In an effort to control growth while protecting resources in an economically viable manner, the Town has adopted a number of land use controls to facilitate the planning process.

Table XII-12  
Land Use Controls

Town Zoning Districts	Town-Adopted Provisions or Regulations
Village District	Cluster Subdivision Regulations
Rural Residential District	Manufactured Housing Parks and Subdivisions Regulations
Commercial/Industrial District	Off-Street Parking Regulations
Commercial/Recreational District	Sign Regulations
Agricultural/Forestry Preservation District	Home Occupation Regulations
Wetland Conservation District (overlay)	Campgrounds and Camping Park Regulations
Steep Slope District (overlay)	Multi-Family Dwelling Regulations
	Wireless Telecommunication Towers and Antennas Regulations
	Sexually Oriented Businesses Regulations
	Growth Management Ordinance

*Source: Town of Loudon Zoning Ordinance, March 1999*

The ***Existing Zoning Map*** portrays the five main zoning districts of Loudon.

### Land Use Regulations

The Zoning Ordinance is but one of the land use controls available in Loudon. A number of regulations have been adopted to complement the Zoning Ordinance, as indicated in Table XII-12. These land use controls, adopted by warrant article at Town Meeting, further work to guide the growth of the community in the manner desired by residents.

The Land Development Regulations are a compilation of both the Site Plan Review and Subdivision Regulations. Enacted in 1987, they were developed to implement the recommendations of the 1985 Master Plan. The Land Development Regulations are adopted by the Planning Board after a public hearing.

The Regulations provide guidance and structure to applications for site or subdivision development. They also include certain standards that must be met, including land development standards and required improvements. These Regulations should be amended with current methodologies and guidelines to reflect the changing land use in Loudon.

### Land Uses 1950-1992

The methodology for the measurement of land uses within Loudon has varied greatly over the past 50 years. A fairly reliable comparison can be made by the comprehensive modification of the land use categories in 1985 that allows most 1992 data to be examined within the same parameters. The 2000 data attempts to emulate the land uses based upon 1998 aerial photography interpretation.

Table XII-13  
Land Uses, 1979

1979 Land Use (per windshield Survey)	Acres
Agriculture	22,595
Residential	1,419
Speculation	774
Development	4,614
Business	294
Total	29,696

*Source: Town of Loudon Master Plan 1981*

In 1979, a windshield survey was undertaken in order to establish the land uses of the Town. Since this method was inconsistent with the aerial photography methods used for previous land use determinations, the Existing and Future Land Use Subcommittee felt that the Table XII-13 above should be depicted for historical data purposes but feels the following table most accurately depicts the comparisons between 1950 and 1992.

Nonetheless, producing a land use calculation is not an exact science and great care should be taken when attempting to directly compare data across different years, scales, and source materials. **Although they give an approximation for comparison, the different years should not be directly compared to one another despite the category similarity in Table XII-14:**

**Table XII-14**  
Comparison of Historical Land Use Changes 1950-1992

1950 (aerial photography)			1970 (aerial photography)			1985 (aerial photography)			1992 (estimated with 1985 aerials and tax maps)		
Cataloged Land Uses for 29,696 acres	Acres	Total % of Land Area*	Cataloged Land Uses for 29,696 acres	Acres	Total % of Land Area*	Cataloged Land Uses for 29,696 acres	Acres	Total % of Land Area*	Cataloged Land Uses for 29,696 acres	Acres	Total % of Land Area*
<b>DEVELOPED</b>	<b>44</b>	<b>0.2%</b>	<b>DEVELOPED</b>	<b>531</b>	<b>1.8%</b>	<b>DEVELOPED LAND</b>	<b>1,989</b>	<b>6.7%</b>	<b>DEVELOPED LAND</b>	<b>2,918</b>	<b>9.9%</b>
						<b>RESIDENTIAL</b>			<b>RESIDENTIAL</b>		
						Rural	1000	3.4	Rural	1605	5.5
						Village	150	0.5	Village	151	0.5
						Seasonal	31	0.1	Seasonal	21	0.1
						<b>COMMERCIAL</b>	45	0.2	<b>NON-RESIDENTIAL</b>		
						<b>INDUSTRIAL</b>			Commercial/Industrial	269	0.9
						Sand & Gravel Operation	58	0.2	Speedway	191	0.6
						<b>COMMUNITY FACILITIES</b>			<b>PUBLIC AND INSTIT. FACILITIES</b>		
						Public	24	0.1	Town	47	0.2
						Semi-Public	12	0.0	State	13	0.0
									Institutional	12	0.0
						<b>UTILITIES &amp; TRANSPORTATION</b>			<b>UTILITIES &amp; TRANSPORTATION</b>	681	2.3
						Roads/RR/Utility Lines	669	2.3			
<b>UNDEVELOPED</b>	<b>29,396</b>	<b>98.9%</b>	<b>UNDEVELOPED</b>	<b>28,909</b>	<b>97.3%</b>	<b>UNDEVELOPED LAND</b>	<b>27,451</b>	<b>93.3%</b>	<b>UNDEVELOPED LAND</b>	<b>23,233</b>	<b>78.9%</b>
<b>AGRICULTURE</b>	<b>4954</b>	<b>16.7</b>	<b>AGRICULTURE</b>	<b>4275</b>	<b>14.4</b>	<b>AGRICULTURAL LAND (ACTIVE)</b>	2473	8.6	<b>AGRICULTURAL LAND (ACTIVE)</b>	2473	8.4
<b>IDLE</b>	<b>870</b>	<b>2.9</b>	<b>IDLE</b>	<b>2248</b>	<b>7.6</b>	<b>INACTIVE AGRICULTURAL</b>	497	1.7	<b>INACTIVE AGRICULTURAL</b>	497	1.7
<b>FORESTED</b>	<b>23031</b>	<b>77.6</b>	<b>FORESTED</b>	<b>21935</b>	<b>73.9</b>	<b>FORESTED</b>	24481	83	<b>FORESTED</b>	23233	78.9
<b>OTHER (797)**</b>	<b>541</b>	<b>1.8</b>	<b>OTHER (707)**</b>	<b>451</b>	<b>1.5</b>						
<b>Total Land Area</b>	<b>29440</b>	<b>100%</b>	<b>Total Land Area</b>	<b>29440</b>	<b>100%</b>	<b>Total Land Area</b>	<b>29440</b>	<b>100%</b>	<b>Total Land Area</b>	<b>29440</b>	<b>100%</b>
<b>Water Area***</b>	<b>256</b>	<b>0.9%</b>	<b>Water Area***</b>	<b>256</b>	<b>0.9%</b>	<b>Water Area</b>	<b>256</b>	<b>0.9%</b>	<b>Water Area</b>	<b>256</b>	<b>0.9%</b>
<b>Total Town Acreage</b>	<b>29696</b>		<b>Total Town Acreage</b>	<b>29696</b>		<b>Total Town Acreage</b>	<b>29696</b>		<b>Total Town Acreage</b>	<b>29696</b>	

*Source: Town of Loudon Master Plans 1981, 1985, and 1992*

\*Total % of Land Area percentages are rounded to the nearest tenth for ease of examination and may not add up to precisely 100%

\*\*the OTHER land use is inferred to be in the UNDEVELOPED LAND category and originally included Water Area

\*\*\*Water Area taken from 1985 and 1992 Master Plan acreages



**EXISTING LAND USE**

Existing land uses for the 2001 Master Plan were determined using 2000 tax maps. A new methodology was developed by overlaying a base map upon the same scale tax map and identifying each individual lot in a category of Agricultural, Commercial, Conservation, Industrial, Public/Institutional, Recreational, or Residential. In the case of residential only, approximately two acres were used to identify a residential property because of the assumption that only two acres of any sized parcel would be used for residential purposes. This also establishes a baseline methodology to track future residential development in later Master Plans.

The Subcommittee felt it impractical to utilize all of the different categories of historically charted land uses. Because of the different methodologies used in identifying land uses and the different categories of uses from 1950 to present day, only a “soft” comparison should be made between those years to see how the Town has grown.

Table XII-15  
2001 Estimated Land Use

<b>2001 Land Uses (estimated with tax maps)</b>		
<b>Cataloged Land Uses for 29,696 acres</b>	<b>Acres</b>	<b>Total % of Land Area*</b>
<b>DEVELOPED LAND</b>	<b>5,562</b>	<b>18.9%</b>
RESIDENTIAL	2,484	8.4%
COMMERCIAL	1,178	4.0%
INDUSTRIAL	1,184	4.0%
EXCAVATION SITES	335	1.1%
PUBLIC LAND / INSTITUTIONAL FACILITIES	349	1.2%
PUBLIC RECREATIONAL FACILITIES	32	0.1%
<b>UNDEVELOPED LAND</b>	<b>23,878</b>	<b>81.1%</b>
AGRICULTURAL LAND	1,400	4.8%
CONSERVATION LAND	2,388	8.1%
FORESTED	20,090	68.2%
<b>Total Land Area</b>	<b>29,440</b>	<b>99.1%</b>
<b>Water Area</b>	<b>256</b>	<b>0.9%</b>
<b>Total Town Acreage</b>	<b>29,696</b>	

Source: Subcommittee interpretation of 2000 Tax Maps with 2-acre residential house lot methodology;

\*Total % of Land Area was calculated using a GIS System and rounding, so numbers may not add up to 100%

The predominant use of land in Loudon continues to be forested lands, accounting for just under 70% of the total land area in the 2001 land use survey. Adding conservation lands (areas protected from future development through public or private ownership) and agricultural lands brings the total of undeveloped lands to 23,878 acres or 81% of the Town's total land area. The former Land and Conservation Investment Program yielded a substantial acreage in the northeastern portion of Loudon that is now permanently protected from development. The Broken Ground area in the southwestern corner adjacent to Concord is not permanently protected by either the Town or the State of New Hampshire, but provides area for recreation and future opportunities.

Residential land uses constitute the greatest amount of developed land area at 2,484 acres or slightly more than 8% of the Town's total area. Residential uses can be found throughout the Town, often immediately adjacent to both local roads and state highways. The amount of land used for residential purposes seems small in comparison to the forested acres, yet much of the existing road frontages are now consumed by residential house lots.

Commercial and industrial uses, (accounting for 1,178 and 1,184 acres respectively), are generally located along the NH 106 corridor. From the New Hampshire International Speedway in northern Loudon to the Red Roof Inn and Concord/Loudon Line Storage in the southern portion of Town, the majority of uses along the corridor are non-residential. A subset of the Industrial category is excavation sites. As of 2001, approximately 49 acres were permitted excavation areas, while 335 acres appeared to have excavated according to 1998 aerial photography. It should be clarified that the vast majority of land uses categorized as industrial are, in reality, the actual parcels of those which have been permitted to excavate a portion of said parcels. Thus, all gravel pits (and the parcels on which they are located) have been categorized as industrial, and the Industrial land use category is not truly representative of traditional industrial uses.

The remaining categories, Public Land/Institutional facilities and Public Recreational facilities account for a little more than 1% of the Town's land area combined. These parcels include the Town Recreational Fields directly behind the Town Office Complex and the Staniels Road Ballfields.

Table XII-16  
Parking Permits Issued, 2001

Map	Lot	Approved Spaces
50	12	120
50	18	375
50	15 & 20	200
60	1	173
60	15	300
60	21	50
60	25	88
60	27	1000
60	29	100
60	32	89
60	34	377
60	35	100
60	36	100
60	40	70
60	41	200
60	42	60
60	61	44
60	20 & 49	130
60	23 & 24	62
60	40 & 30	82
Total Permits, 2001		3,720

*Source: Loudon Town Files through November 2001*

The majority of new parking permits for the year 2001 have been issued to the New Hampshire International Speedway between Route 106 and Mudgett Hill Road.

Table XII-17

Number of Major Subdivisions with New Lots, 1990 to 2001

	Number of Major Subdivisions (3+ New Lots)	Number of New Lots Created (excluding parent lot)
1990	2	7
1991	4	9
1992	0	7
1993	1	4
1994	3	17
1995	0	0
1996	1	6
1997	2	8
1998	3	14
1999	6	28
2000	2	21
2001 (through Nov)	4	27
Totals	27	148

*Source: Loudon Town Files*

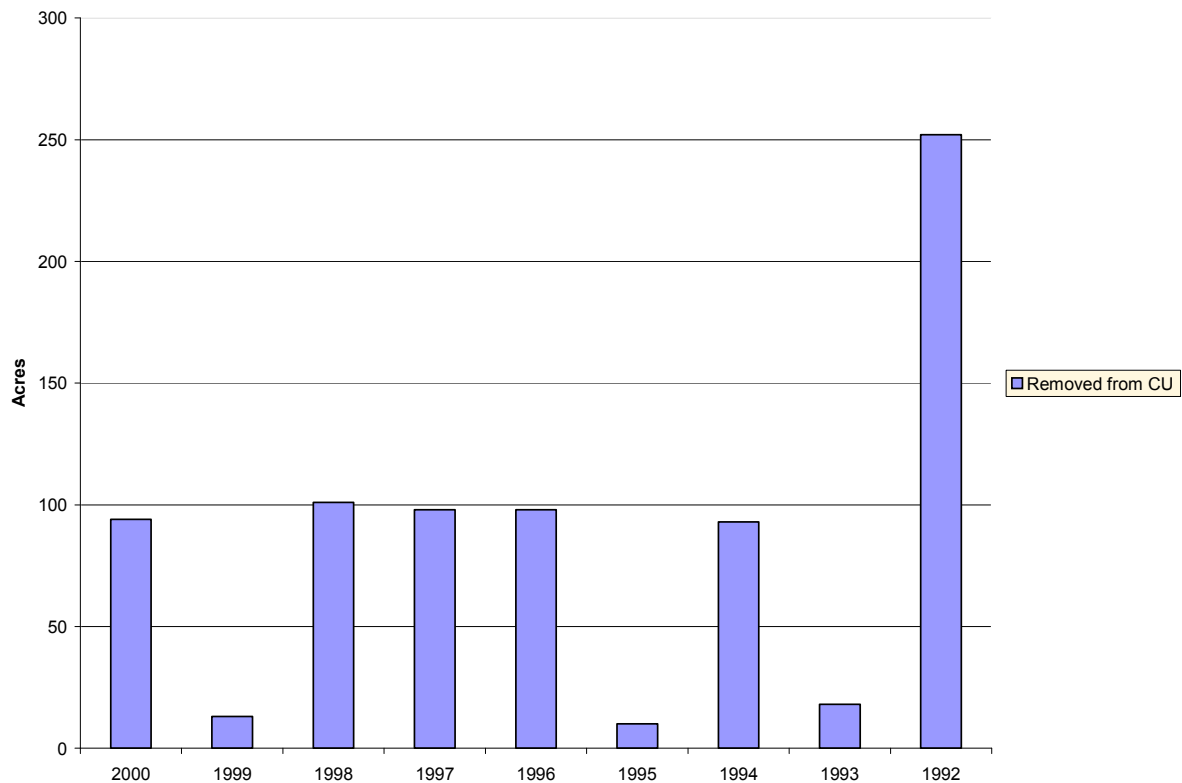
As evidenced in both the CHAPTER IV, POPULATION and CHAPTER VI, HOUSING, the Town has experienced a growth boom over the last ten years. The number of major subdivisions and the increase in house lots over the last three years has indicated that Loudon is an attractive place to live. Factors which influence these decisions include Loudon's relatively low tax rate, its convenience to services and employment, as well as the backwoods feel of remote sections of Town. The future uses of land in Loudon must be thoroughly examined in order to grow sustainably and to keep the small-town atmosphere its residents desire.

### Current Use

In 1973, the New Hampshire State Legislature enacted RSA 79-A:1 as a result of increased awareness by the State that preservation of open space was in the public interest and that the tax structure was often an obstacle to preservation. Financial burdens were being placed on individuals with large open space land holdings, since property taxation was based on the highest and best use of the land. Thus, the Legislature approved the Current Use tax assessment of property, which allows open land to be assessed at a lower tax rate than the other land uses with the stipulation that the land remain as open space. Any change that disqualifies the land from the Current Use assessment would result in a penalty equal to ten percent of the fair market value of the property. This legislation has been an important element in the preservation of open space and has made it possible for many individuals to retain their property as open space.

At present, Loudon does not support a land use change tax allocation to be directed to the Conservation Fund for additional land acquisition. In Figure XII-1, over 250 acres of land were removed from current use in 1992. With the exception of 1999, the removal of land from current use has remained relatively stable since 1996 with approximately 100 acres being removed on an annual basis.

Figure XII-1  
Acres Removed from Current Use, 1992-2000



Source: Loudon Town Files

Further information on the physical characteristics of the land in Loudon can be found in CHAPTER VII, CONSERVATION, PRESERVATION, AND OPEN SPACE.

**CURRENT LAND USE TRENDS**

Population trends have a direct link to land use trends, particularly in the single-family home (residential) type of land use. Since 1990, Loudon has experienced a higher proportional population increase than any of its abutting communities as shown in Table XII-18:

**Table XII-18**  
Current Population Growth Rate of Loudon and Abutting Communities

	% Increase, 1990-99
Canterbury	9.5%
Chichester	11.2%
Concord	6.4%
Gilmanton	6.3%
<b>Loudon</b>	<b>12.7%</b>
Pembroke	3.3%
Pittsfield	8.0%
Merrimack County	8.2%

*Source: NH Office of State Planning 1991-1999 Population Estimates of NH Cities and Towns  
\*1990 US Census STF1A (P1)*

An analysis of the building permits issued and subdivisions in Loudon between the period 1990 and 2000 in Table XII-19 show that single-family housing units greatly outweigh the permits issued for commercial or other types of development:

**Table XII-19**  
Building Permits and Subdivisions, 1990-2000

Building Permit Period of Analysis	1990-1998	1999 & 2000*	1990-2000
Total Number of New Dwelling Units	216	77	293
Most Developed Area of Community	not available	not avail	not avail
Zoning District with Most Development	RR	RR	RR
Dominant Type of Development	single family homes	single fam	single fam
Total Number of Single Family Units	189	77	266
Total Number of Manufactured Units	23	10	33
Total Number of Multifamily Units	4	0	4
Number of Commercial Structures	4	2	6
Number of Industrial Structures	0	0	0
Number of Institutional Structures	0	0	0
Total Estimated Number of Dwelling Units	1692	77	1769
Subdivision Period of Analysis	1990-1998	not avail	not avail
Total Number of Acres Subdivided	2363		
Total Number of New Lots Created	190		

*Source: CNHRPC Residential, Commercial, and Industrial Development Trends, 1990-1998 and  
\*Loudon Town Files*

As shown in Table XII-19 above, the dominant type of development in the Town of Loudon is single family homes. The Rural Residential zone, of all zoning districts, has had the most development. Between 1990 and 1998, 2,363 acres of the 29,696 were subdivided. Only four new commercial structures were built during the years 1990-2000.

Table XII-20  
Type of Structure as Total Percent of Development

	Canterbury	Chichester	Concord	<b>Loudon</b>	Pembroke	Pittsfield	CNHRPC Region
Single Family Units as % of Total Development	97%	78%	67%	<b>86%</b>	86%	60%	74%
Multi-family Units as % of Total Development	0%	1%	31%	<b>2%</b>	1%	8%	10%
Manufactured Units as % of Total Development	2%	11%	3%	<b>10%</b>	7%	20%	13%
Commercial Structures as % of Total Development	0%	9%	n/a	<b>2%</b>	5%	7%	2%
Industrial Structures as % of Total Development	1%	1%	n/a	<b>0%</b>	0%	5%	1%

*Source: CNHRPC Residential, Commercial, and Industrial Development Trends, 1990-1998*

In Loudon, as in its abutting communities as well as in the CNHRPC region, single family housing is the most common type of structure. Multi-family housing is the least common type of residential development in Loudon; Loudon has notably less multifamily housing than the average for the CNHRPC region. Manufactured housing makes up a tenth of Loudon's total development. As was noted in CHAPTER VI, HOUSING, Loudon has less than its theoretical fair share of affordable housing, as determined by CNHRPC's Affordable Housing Study. This is in part due to the fact that multi-family and manufactured units, which are common affordable housing options, comprise only 12 percent of the total development within Loudon.

Commercial and industrial structures make up two percent and zero percent, respectively, of the total development in Loudon; whereas in abutting towns, with the exception of Canterbury and Concord (figures not available), commercial and industrial structures combined make up a greater proportion of the development. However, Loudon's commercial percentage of total development is the same as the whole CNHRPC Region, but less than the industrial percentage of total development in the Region.

### Development Constraints

When planning developments, many natural features of the land must be taken into account, such as aquifers, surface water and wetlands, locations of floodplains, and presence of steep slopes and hydric soils. These constraints to development, as well as land permanently protected from development, are illustrated on the *Development Constraints Map*. As shown on the map, much of Loudon's land area has one or more development constraints. The area with the lowest concentration of development constraints is around Currier Road. Existing development and development constraints combine to leave very little land suitable for development.

Hydric soils are soils that are poorly or very poorly drained and are not suitable for development. As is shown by the *Development Constraints Map*, the locations of poorly drained and very poorly drained soils strongly correlate with the locations of wetlands as determined by the National Wetlands Inventory. There is also a very strong correlation between the location of hydric soils and watercourses. In many cases, the hydric soils drain into water bodies, streams, and intermittent streams.

The presence of a large stratified drift aquifer, a large proportion of hydric soils, many extensive wetlands, and surface waters in Loudon make the siting of developments, especially industrial operations, a sensitive environmental issue. Pollutants could be leaked in development areas, meaning that a location near the aquifer, hydric soils, wetlands or waterbodies could cause degradation of water quality and pollution of groundwater. Steep slopes are also a constraint to development because of loss of vegetation and the consequent erosion and sedimentation that occurs when slopes are cleared for development. Development constraints are further discussed in CHAPTER VII, CONSERVATION, PRESERVATION, AND OPEN SPACE.

#### **CONSTRUCTION MATERIALS**

RSA 674:2 paragraph VIII calls for Master Plans to contain a “Construction Materials” section, consistent with RSA 155-E. This section shall identify all known sources of sand and gravel deposits, the location, and the estimated extent of permitted excavations. In addition, the construction materials section must contain the reports filed with the Planning Board by the owners of the grandfathered excavation sites.

A GIS map has been produced showing the gravel deposits throughout Loudon. It is very important to determine where there are active excavation operations, the impact to the natural resources on those sites, and how the depleted sites should be reclaimed.

#### **Gravel Excavation**

The presence of a large stratified drift aquifer in Loudon has made excavation a lucrative business option. Many sand and gravel deposits exist along the aquifer, and consequently, Loudon has quite a few excavation operations. The location of the aquifer and excavation areas are indicated on the ***Construction Materials Map***. As shown on the map, the aquifer is located along the Soucook River, with many excavation operations located in and around the aquifer.

**Table XII-21**  
**Filed Intents to Excavate, April 1, 2000 to March 31, 2001**

Map #	Lot #	Location	Total Parcel Acreage	Permitted Acres to Excavate	Acres Excavated as of 4/1/00	Acres Reclaimed as of 4/1/00
1	4	Ricker Road	10.4	7.5	2	0
1	5	Ricker Road	83	83	--	--
1	6	Ricker Road	4.6	2.5	0.5	0
11	12	Chichester Road	50	10	10	1
20	1	Indian Point Road	31	31	--	--
20	2	Wales Bridge Road	30	30	1.5	--
20	10	South Village Road	19	19	1	--
20	13	South Village Road	9	9	0.34	--
21	16	Routes 106/129	13	1.15	1.15	--
29	7	Foster Road / Old Concord Road	87	87	5	--
40	13	Currier Road	367	367	3	0
40	15	Currier Road	15	2	2	0.5
40	16	Currier Road	90	90	3	0
40	17	Currier Road	103	103	7	0
40	18	Currier Road	7	7	7	0
50	6	Route 106	82	82	5	5
51	15	Lower Ridge Road	24.5	24.5	1	--
52	7	Lower Ridge Road	152	152	1	--
Total Acreage Permitted to Excavate, 2000-2001			<b>1107.65</b>			
Total Acres Previously Excavated on Lots as of 4/1/00			<b>50.49</b>			
Total Acres Reclaimed on Lots as of 4/1/00			<b>6.5</b>			

*Source: Town Files*

The statistics in the table above are quite alarming. In the year 2000-2001 there were over 1,000 acres permitted to be excavated; as of April 2000 only 6.5 acres had been reclaimed. Many of the major gravel deposits lie along the Soucook River and are being actively mined. To ensure the protection of this valuable resource, it is vitally important to determine guidelines.

Chapter 155-E of the New Hampshire Revised Statutes Annotated was enacted August 24, 1979. It has been revised considerably since then; however, the substance of the law remains the same: the municipality is responsible for regulation of excavation of earth materials to be used as construction aggregate.

The law states that permits are required for any excavation operation unless the operation was active in the two-year period before the law was enacted August 24, 1979, if it is used for highway construction, or if it is attached to a stationary manufacturing plant.



**Grandfathered Excavations**

Grandfathered operations (operations which produced material of sufficient weight or volume that is commercially useful in the two-year period before August 24, 1979) are subject to the operational and reclamation standards laid out in the law, and they also must apply for a permit if they wish to expand their operation. In order for a grandfathered operation to retain its status, it must have filed an Excavation Report with the Planning Board no later than August 4, 1991. Failure to do so results in the loss of grandfathered status, and a permit must be requested in order to continue work. The permit requires more stringent standards than the ones that must be complied with to run an excavation operation with a grandfathered status.

Excavation operations being used exclusively for state or local highway construction do not need a permit; however, the Planning Board must have on file an agreement between the pit owner and the state or local government. This type of excavation must not operate in violation of local zoning, unless an exemption has been granted.

A permit is not required for an excavation operation that on August 4, 1989 was contiguous to or on land contiguous to a stationary manufacturing plant that was in operation as of August 24, 1979 and used earth from the excavation site. No additional permits are required for excavation sites connected to stationary manufacturing plants for which permits had been issued by state or local government since August 24, 1979. These operations are subject to the standards set forth in the permits issued to them for their operation.

Table XII-22 documents those gravel pits which are so grandfathered:

**Table XII-22**  
Grandfathered Gravel Permits

Map Number	Lot Number	Location
40	7	Route 106 North
20	13	South Village Road
19	11	Hardy Road
19	13	Hardy Road
1	6	Ricker Road
21	16	Route 106 South
11	12	Chichester Road
51	3	Clough Hill Road
40	11	Route 106 North
40	13	Route 106 North
40	16	Route 106 North
40	17	Route 106 North
40	18	Route 106 North
41	5	Route 106 North
49	72	Route 106 North
50	1	Route 106 North
29	7	Foster Road
20	1	Indian Point Road
40	7	Dump Road
51	15	Lower Ridge Road
52	7	Lower Ridge Road
20	10	South Village Road
50	16	Rte 106 N / Clough Hill Rd
51	1	McKenzie Road
1	3	Ricker Road
1	5	Ricker Road
51	26	Clough Hill Road
50	19	Route 106 North
50	6	Route 106 North

*Source: Town Files*

### Other Permitting Provisions

Certain excavations are exempt from permits and also exempt from operational and reclamation standards. These operations are: those that are incidental to building, driveway, or parking lot construction, those incidental to agriculture, and those that produce dimension stone.

In order for an operation to be incidental, it must be subordinate and accessory to the principle use. This determination is based upon a variety of factors, such as the land area involved in the use, the extent of activity that takes place, or the length of time the incidental use would be carried out. In order for any incidental operation to take place, it must have the applicable state and local permits, such as a building permit or a site specific permit from DES prior to excavation. In addition, the Planning Board still has the ability to decide whether the level of intensity and potential for safety concerns is great enough to warrant strict compliance with the

standards of the law, regardless of whether or not they have issued a permit. Excavation incidental to agriculture refers to normal landscaping or minor topographic adjustment. The definition of what is minor and what is not is to be decided by the Planning Board. Excavations for the purpose of producing dimension stone are exempt if the excavation requires a mining permit under RSA 12-E. Granite that is crushed for aggregate is, however, subject to local regulation.

The law also contains provisions as to dealing with abandoned excavations. The statute states that any non-reclaimed excavations shall be deemed abandoned if they have not produced material of sufficient weight or volume that is commercially useful during any two year period before, on, or after August 4, 1989, if the site is still active but has not complied with incremental reclamation, the owner has not posted a bond, or if the owner has neither received a permit nor filed an excavation report with the Planning Board. The Planning Board can call for complete reclamation of any site it has determined to be abandoned, based on the criteria laid out in the statute. The Board has the option to waive the reclamation requirement if it has good cause, such as when materials are still available, but there is no current demand for them, or if the site has more than one type of material and therefore needs to have more than one active area. If a site is declared abandoned, the Planning Board has the right to demand that the owner either file a reclamation timetable and post a bond or complete the reclamation in an agreed-upon time period. This provision ensures that the Board has authority to see that sites are cleaned up.

#### **Summary of Excavation Regulations**

Operations exempt from permit requirements but subject to operational and reclamation standards:

- Grandfathered operations;
- Excavations used exclusively for highway construction; and
- Excavations connected with stationary manufacturing plants.

Operations exempt from permit requirements and not subject to operational and reclamation standards:

- Excavations incidental to building, driveway, or parking lot construction;
- Excavations incidental to agricultural or silvacultural activities; and
- Granite excavations for the purpose of producing dimension stone.

Excavation sites which by law must comply with operational and reclamation standards are subject to regulation by the Planning Board. Within 12 months of the expiration of the permit or the exhaustion of the excavation site, whichever occurs first, the owner of the excavated land must have completed reclamation of the areas affected by excavation.

In addition, for an excavation not requiring a permit and not subject to operational and reclamation standards, the Planning Board has the authority to decide what is a "sufficient weight and volume" in order to define what an abandoned excavation is, and also the Planning Board can develop criteria to define what is to be considered incidental to construction or agriculture and what is not. Moreover, should the Planning Board judge that an incidental operation is potentially unsafe, it can warrant strict compliance with the standards of RSA 155-E regardless of whether or not the owner has been issued a permit.

### **FUTURE LAND USE**

Responses to the community survey can be used to gauge how the community would receive certain types of potential land use changes. Most respondents indicated that they were currently content with the lot size requirements in all of the zoning districts. Moreover, many felt that there should be specific industrial zones. Most were satisfied with the way that the Route 106 commercial area is structured. Village zoning was popular with most respondents, who also felt that open space development (cluster subdivision) should be encouraged in order to preserve open space in the Town of Loudon. Also, many respondents felt that developers should be charged impact fees to help defray the costs of new developments to Town services.

### **The Future Land Use Map**

A Future Land Use Map is intended to guide future decisions regarding potential zoning and land use changes in order to preserve the assets of the Town and make consideration for elements such as businesses, homes, and industries already established. As illustrated by the *Existing Land Use Map*, much of Loudon's road frontages have been developed with single-family homes. A great deal of land is permanently conserved in the northeastern corner of Town and conserved to various degrees in the southwestern corner of Loudon. The Route 106 corridor, over the Soucook River aquifer, is strip-zoned commercial/industrial from the Concord to the Gilmanton borders. These observations are challenging to the creation of a visionary Future Land Use Map.

As such, the *Future Land Use Map* was based upon ideas from CHAPTER V, ECONOMICS, CHAPTER VII, CONSERVATION, PRESERVATION, AND OPEN SPACE, and this Chapter. The Subcommittee felt that building upon the foundations set in these chapters would be an appropriate starting point for thinking about how land in Loudon could be used in the future. Existing and potential conservation areas were identified for their inherently natural qualities and were identified as priority areas to protect from future development. Commercial nodal development around the busy intersections of roadways such as Route 106 and Shaker Road, Route 106 and the Clough Hill Road area, and Route 106 and Staniels Road focus on concentrating future commercial enterprises around existing businesses. In doing so, these commercial "centers" become destinations for travelers and shoppers, and vehicle trips between businesses are reduced. Lastly, the recommendation of an industrial area spanning from Tote Road to Gues Meadow Road encompasses the existing industrial businesses and allows for expansion and containment of such future industrial development in that area. The environmental sensitivity of the Soucook River, its aquifer, and tributaries would require numerous setbacks and regulations for viable and environmentally-sound planning in order for this particular vision to become a reality.

The *Future Land Use Map* did not address the Village District, the expansion of which was recently approved at Town Meeting, since it was determined to be sufficient for the current and future needs of Loudon residents. Rural residential and agricultural areas were also not specifically identified on the map as these uses are both located throughout the community. Loudon will likely experience increased residential growth, and therefore new roads will be necessary to accommodate a growing population. Appropriate changes to the Land Development Regulations and Zoning Ordinance should be implemented in order to guide development in a sustainable manner.

The *Future Land Use Map* is a good starting point for beginning to think about the land residents wish to leave for their children and should be modified on a regular basis as the Town continues to grow in unique ways. Beyond the designation of certain areas as specific zones on the Map, additional tools and suggestions within this section can be used to guide future land use decisions within Loudon. They take the form of examining current zoning districts, proposing changes to the Zoning Ordinance and Land Development Regulations, and illustrating how different land uses affect one another.

### **Performance Zoning**

In a future revision of the Zoning Ordinance, the Town could consider the implementation of performance zoning for commercial, industrial, and multi-family developments. Performance zoning establishes both the standards that must be met by development, as well as the process that measures the effect that the impact development would have on the community.

Performance standards establish definite measurements that determine whether the effects of a particular use will be within permissible levels. Performance standards commonly employed include standards related to noise, vibration, smoke, odor, runoff, illumination, signs, ground water, road impact (i.e. number of trips generated by a use), landscaping, multi-family and commercial building aesthetics, and school impact. Communities that have adopted performance standards for commercial and industrial development include the Towns of Bow and Bedford, New Hampshire.

### **Incentive Bonuses**

Often employed as part of a performance zoning ordinance, incentives encourage developers to build projects above and beyond baseline standards included in the Zoning Ordinance.

Incentive zoning is a voluntary exchange of development incentives for public benefits between a community and a developer. There are three basic categories of incentive bonuses: (1) intensity incentives, (2) use incentives, and (3) inclusionary incentives.

Intensity incentives allow developers a greater or more intensive use of the property. Such incentives usually allow developers to construct more units on a property, have greater amounts of impervious surface, or more square footage for commercial buildings. A typical example of an incentive usually included in this type of ordinance could be density bonus in exchange for setting aside open space in a development for public use, construction of trails, or construction of recreational facilities.

Land use incentives permit mixing of uses in a development or provide for unspecified uses. For example, a convenience store may be permitted in a housing development, or residential units may be allowed as part of a retail development. In exchange for such benefits, developers are usually required to provide the town with construction of public infrastructure, such as parks, boat ramps, swimming areas, recreational facilities, pedestrian infrastructure, public parking spaces, or open space.

**Village District Changes**

Recommendations for the Village District itself include changes to the Land Development Regulations for enacting appropriate design guidelines to promote a community spirit and to revitalize the “downtown” of Loudon. The vision is to create a Village Center with essential town services, a senior housing complex, a Post Office, centralized parking, recreational and social facilities, and businesses to form a historic neighborhood. With a direct correlation to CHAPTER V, ECONOMICS, amendments to the zoning to create a thriving Village Center could include a Recreational/Economic Overlay District. Meant to encourage passive-recreational opportunities along the Soucook River, appropriate businesses could be attracted to this centralized location.

**Commercial and Industrial Zoning Changes**

The Commercial/Industrial Zone currently follows a buffer along Route 106. Commercial and industrial opportunities further strengthen the tax base of the community and provide employment for the citizens. These businesses draw in patrons from outside Loudon’s town limits. Loudon currently has two commercial parks, which could provide opportunities for growth of the commercial and industrial tax base.

Commercial development first occurred in Loudon at principle intersections, creating identifiable commercial centers. From those points, development is slowly beginning to form linear patterns along Route 106. If this trend continues, Loudon’s commercial development will take on a sprawling, strip-mall character, which is a blight that seems to plague almost every heavily traveled main road and highway in the region. The effects of such development are that central business areas are sapped of their strength, giving way to serious traffic congestion and the reduced capacity of Route 106 to move traffic through safely and efficiently. Nodal development was highly encouraged in CHAPTER V, ECONOMICS, with new business locations designed to serve the expanding resident population as well as the tourists at the Concord/Loudon line, at the intersection of Routes 106 and 129, and at the Route 106/Shaker Road intersection. Enterprises should be locating in these three areas for commercial centers to be effective, safe, and to assist in maintaining the rural character of the community.

Discussed within CHAPTER V, ECONOMICS were ideas for multi-intensity commercial zoning. A General Business District could serve town residents by providing a wide range of goods and services. A Large Business District could allow enterprises such as office complexes, hotels, and light industries. A Limited Business District could provide a variety of residential and tourist-related commercial uses, such as medical and professional offices, shops and boutiques, farm stands, and restaurants. These types of commercial development fit in with the nodal development concept and potential locations as depicted on the *Future Land Use Map*, as well as in the Village District.

### Open Space Development Changes

An answer to the sprawling landform created under conventional cookie cutter subdivisions is a new approach to subdivision design for rural areas, as outlined in the book entitled *Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks*, by Randall Arendt (Island Press, 1996). The Figures below show graphics from Arendt's book depicting the typical scenario for the development of a parcel under the conservation development design process. In its most basic form, the conservation development process can be broken into six logical steps, which are not the typical steps taken for a conventional subdivision.

Under this approach, use existing minimum lot sizes as the basis for conventional residential density on the best soils, with reduced densities according to declining soil quality. The minimum lot sizes that are currently in place for residential uses should represent the maximum aggregate density on the best soils under the soils-based lot sizing approach. Lower quality soils would require lower density development. Primary conservation areas may include wetlands, steep slopes, aquifer recharge zones, and floodplains. Secondary conservation areas may include stone walls, viewsheds, prominent vegetation, prominent landforms, prime agricultural soils, historic sites and features, archeological sites, and communities and species identified in the Natural Heritage Inventory.

The six steps are as follows:

1. Create a "yield plan" for the site that assesses the number of viable building lots on the site under a conventional subdivision design. This plan establishes the density for the conservation development design. Although a yield plan is conceptual, it must be consistent with Town ordinances and regulations already in place.

Figure XII-2  
Step 1 of Open Space Development



Sources for Figures XII-2 through XII-8: *Conservation Design for Subdivisions: A Practical Guide to Creating Open Space Networks*, by Randall Arendt (Island Press, 1996).

Figure XII-3  
Step 2 of Open Space Development, Part 1

2. Prepare a conservation site analysis plan that identifies prominent open spaces and important natural features broken out into primary and secondary conservation areas. Primary conservation areas are those resources for which development should be excluded almost without exception.

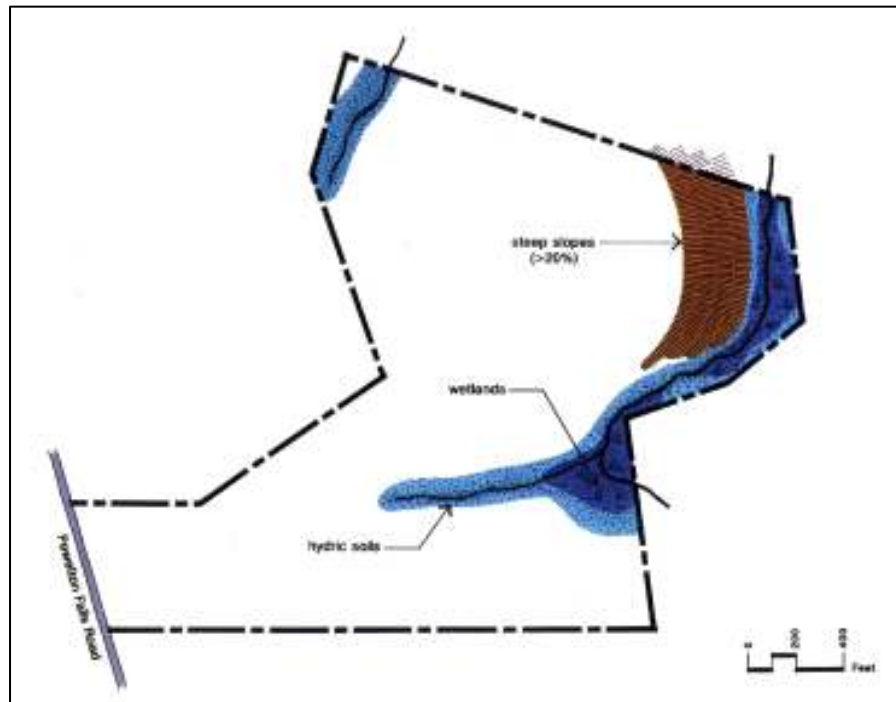


Figure XII-4  
Step 2 of Open Space Development, Part 2

Secondary conservation areas are those that should not be developed, if at all possible.





Figure XII-5  
Step 3 of Open Space Development

3. After evaluating the primary and secondary conservation areas, locate the portions of the site most suitable for development.



Figure XII-6  
Step 4 of Open Space Development

4. Locate dwelling unit sites using innovative arrangements to maximize views of open space and resources.

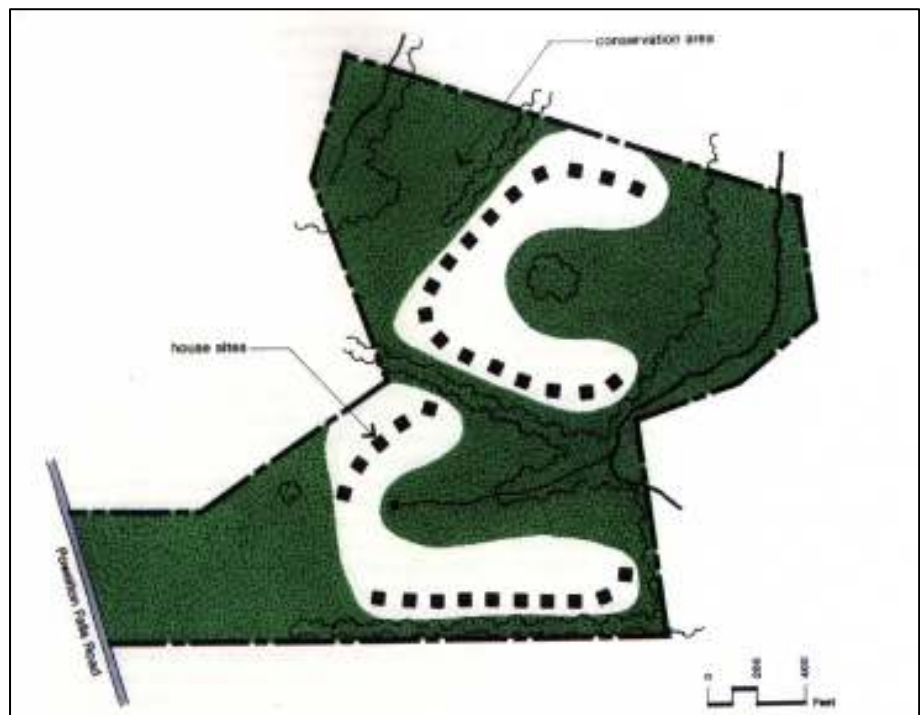


Figure XII-7  
Step 5 of Open Space Development

5. Locate and design the roadway and pedestrian travel ways. Maximize the protection of viewsheds and natural terrain in the design. Locate septic fields.

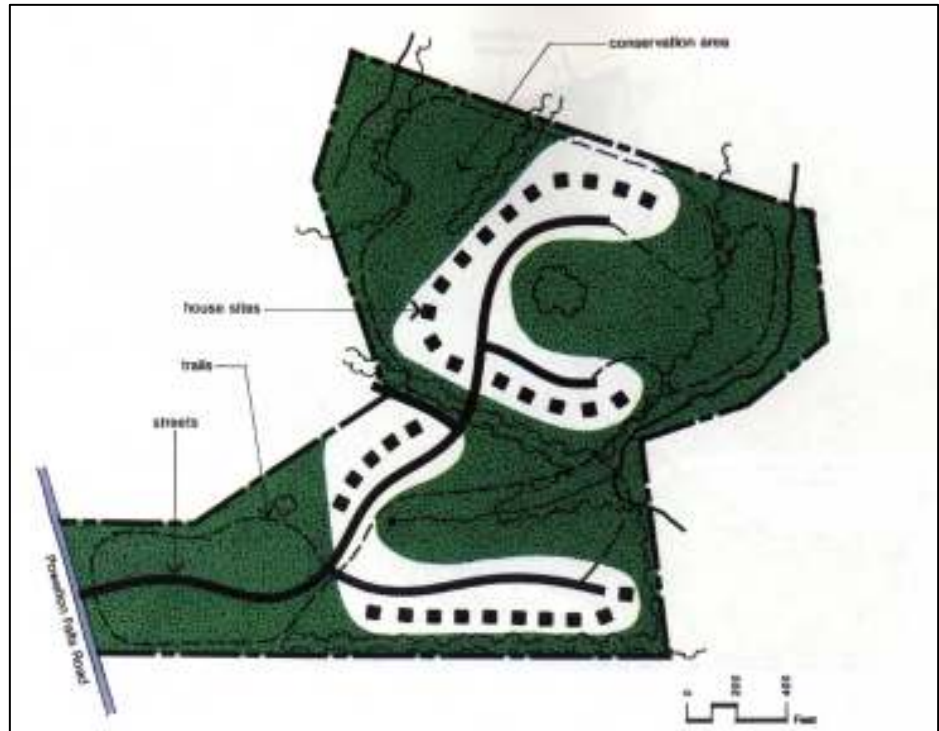


Figure XII-8  
Step 6 of Open Space Development

6. Delineate lot lines.



The following are the potential changes to the Town's Land Development Regulations for Open Space (Cluster) Development:

**Section 23.8: Special Requirements for Open Space Subdivisions**

The following standards shall apply to all open space subdivisions unless specifically waived by the Board:

1. Special Setbacks: In order to appropriately buffer smaller open space subdivision lots from abutting properties, there shall be a commonly-owned buffer of not less than 150 feet in width between the lots in an open space subdivision and all boundaries of abutting properties.
2. Lot Spacing: The lots in open space subdivisions shall be arranged in a closely-grouped manner acceptable to the Planning Board.
3. Lot Sizes and Frontages: Lot sizes and frontage requirements shall be permitted to be reduced to one-half (1/2) of the lot area as required by zoning, provided that adequate area for on-site sewage disposal and water service is provided, and septic approval can be secured from NH DES.
4. The laying out of reduced size/frontage lots along existing road frontages while preserving backland areas as "preserved areas" does not, per se, constitute an open space subdivision.
5. In open space subdivisions having reduced-sized lots that front on existing roads, the frontages of such lots shall be the same as those required by the applicable zoning use districts and the depth shall be at least equal to the frontage; or there shall be preserved as part of the common open space a percentage of the parcel's frontage that is equal to the percentage of preserved open space required by the Loudon Zoning Ordinance. Such preserved frontage shall be continuous, unless two or more existing roads are involved, in which case it may be allocated to continuous segments along each road.
6. Locations of Preserved Areas: Areas to be preserved in open space subdivisions must be integrally related to the subdivision plan as a whole.
7. Ownership of Common Areas: The following ownership options are provided:
  - a) Homeowners Association: Ownership of preserved areas shall be by a homeowners association or a membership corporation. All articles of incorporation, bylaws and deeds relative to such an association/corporation and the preserved area shall be submitted to the Planning Board for review and approval prior to final approval of the subdivision.
  - b) Other Ownership Mechanisms: When in the public interest, the Planning Board may approve other forms of ownership of preserved areas such as dedication to the Town Conservation Commission, ownership by tenancy in common of all lot owners in the subdivision or ownership by a trust.

8. Deed Restrictions: The area to be preserved shall be so defined on the subdivision plan and shall be made subject to a deed restriction which shall thereafter prohibit further subdivision of the preserved area or use of it for purposes other than originally designated.
9. Access: All preserved areas shall be accessible to the owners of lots in the subdivision by way of streets or easements. When in the public interest, the Planning Board may require public easements through the preserved area.

#### **Driveway Regulation Changes**

Long driveways have a tendency to cut unnecessarily through woodlands and frequently cross streams. With houses farther apart and a lesser sense of community, driveways can contribute to sprawl. Because of increased residential and other types of development in the community, the issue of safe and adequate access to homes has become an important one to address. Communities have the ability to regulate driveway access points under RSA 236, Sections 13-14. Currently, Loudon regulates driveway access points only by requiring a minimum distance of 100 feet from a street intersection under Section 602.2.B.4, and the State gives permits along Routes 106 and Route 129. In order to insure safe access to properties for fire fighting and public safety, as well as to develop safe intersections with local roadways, standards should be adopted by the Town, including having a 400' site distance.

1. For driveways with a grade in excess of 10%, a flat landing area of at least 20 feet in length approaching the street is required.
2. Driveways shall be graded in order to allow reasonable access by emergency vehicles. The minimum width of a driveway must be 12 feet at a road intersection.
3. In order to ensure emergency access, it is recommended that property owners construct driveways with grades less than 15% with inside curve radii of more than 22.5 feet.
4. In the case of dirt driveways exiting onto paved roadways, a paved apron as wide as the driveway and at least 10 feet in depth must be provided.
5. Driveways should be graded so as water does not flow onto the street. Commercial lots located above the street may require a grate across the driveway entrance in order to divert the water and prevent it from adversely affecting the road or right-of-way. Any driveway located over a culvert shall slope to drain into the culvert. All curbed driveways must have catch basins at the back of the sidewalk.
6. All culverts must be at least 15 inches in diameter and have 12 inches of cover.
7. The maximum width of a driveway shall not exceed 20 feet.
8. Driveways shall intersect with the street at a 90 degree angle whenever feasible. In no case shall the angle of intersection be less than 60 degrees.

9. Driveways shall be sited in order to maximize sight distance per best management practices and the discretion of the Highway Agent.
10. Driveways shall be no closer than 5 feet to property lines, except in the case of driveways shared between two abutting parcels.

#### **Future Land Use Along Route 106**

A study will soon be commencing for landscaping, architecture, and aesthetics along the Route 106 corridor and is intended to produce recommendations for the Planning Board to implement within their zoning and regulations. Current development along Route 106 shows that there are ample opportunities to improve upon these aspects when future developments are examined at the Planning Board level. The NH Department of Transportation (NH DOT) has already purchased rights-of-way along the Route 106 for future expansion and safety improvements. Utilizing the nodal development approach with cooperation of the NH DOT will limit commercial activity along the entire strip of Route 106, thus reducing vehicle trips, improving safety, and encouraging commerce. Landscaping, design, and follow-up of such conditions of approval in the interim should be included with any new commercial enterprise along Route 106.

#### **Signage Regulation Changes**

Signage can draw customers into businesses, but it can also be detrimental to any commercial area when it overwhelms either the viewer or the natural landscape. Sign materials should complement the building. Along the 106 corridor, increasing the size of the signs in order to make them easier for motorists to read should be considered. However, larger signs should be kept lower to the ground. The preferable type of illumination along the 106 corridor is shielded lights or lights directed onto the sign. Internally illuminated signs may also be appropriate providing they meet certain criteria.

#### **Aquifer Protection**

A large coarse-grained stratified drift aquifer exists along the Soucook River corridor in Loudon. This aquifer stretches from Rocky Pond at the junction of the Gilmanton/Loudon/Canterbury border and travels south along Route 106 until the Soucook forms from the confluence of small streams. From there, the aquifer travels south again. It underlies the Soucook River and runs between Concord and Pembroke. Transmissivity is a measure of how quickly water travels, measured in feet squared per day. In Loudon, there are large areas of aquifer transmissivity between 2,000 and 4,000 feet squared per day, surrounded by areas of lower transmissivity. These areas are largely clustered on the east side Route 106 and around the Soucook River corridor. The ***Water Resources Map*** of CHAPTER VII, CONSERVATION, PRESERVATION, AND OPEN SPACE shows the locations of the transmissivity of the aquifer and other water resources. Every effort should be undertaken to protect this tremendous resource and potential future public water supply.

**Agriculture in Loudon**

Loudon has just over 400 acres of Prime Farmland Soil as defined for Merrimack County, identified in CHAPTER VII, CONSERVATION, PRESERVATION, AND OPEN SPACE, which constitutes 1.3% of Loudon's total land area. The soils are of only four types, 46B, 104, 166B, and 458B, and are scattered in 26 various locations. The locations are shown on the *Prime Agricultural Soils Map*. Other areas are being used for agricultural purposes such as for haying, stockyards, and raising of corn crops or fruit orchards. Some are located on the prime agricultural soils, but the majority are located on soils without this particular significance.

Agriculture is a viable and traditional land use in Loudon. Its aesthetic value alone is precious to residents and preservation of existing farms and agricultural lands should be a priority for Loudon. An important piece of Loudon's past, the number of viable farms within Town has dwindled over the years. Most of the active farms are found along Ridge Road, and greenhouse businesses dot the Town. The preservation of existing farmland is essential to the character of Loudon. The Zoning Ordinance could be revised to actively promote agricultural uses by requiring larger buffer zones between agricultural and residential land uses, by allowing farm stands to sell produce purchased elsewhere, and by allowing non-traditional or retail-based farm businesses in the Agriculture/Forestry Preservation District. Encourage the sale of development rights and conservation easements of farmlands before they disappear to encroaching residential development.

**Buffers, Landscaping, and Screening Additions**

Loudon has an opportunity to utilize Route 106 for economic development while retaining the character the Town desires by employing techniques such as buffer and landscaping standards. The Planning Board will soon be undertaking such a landscaping study along Route 106 to determine where nodal development should occur and how to encourage tree-lined, shared access with minimal visual impact to neighboring land uses or to passing motorists. CHAPTER V, ECONOMICS supports this concept. Techniques such as screening parking lots from view or situating them behind the buildings are recognized as valuable tools and should be considered in Loudon when reviewing site plan review applications. In addition, appropriate plantings and landscaping should be required of the developer at both the subdivision and site plan review stage in order to mitigate the disruption of the natural landscape.

**Forest and Natural Resource Management**

A great deal of land is undeveloped within Loudon. Much of this land is forested, and treelines are found at the back of residential and agricultural properties. The Town itself has two official town forests and should continue the forest management plan for each and revise as necessary. Currently, the Conservation Commission receives timber revenue to use for land acquisition purposes. Large blocks of unfragmented land exist within Town and protect other resources such as wetlands and wildlife habitat areas. These forests and wildlands should be effectively managed to retain the diversity and ruralness of the Town. CHAPTER VII, CONSERVATION, PRESERVATION, AND OPEN SPACE has a number of natural resource management recommendations.

**Managed Corridor along the Soucook River**

The Soucook River is the Town's largest and most important surface water resource. The river flows through the Town for approximately 7.8 miles with much of the shoreline currently undeveloped. A managed Soucook River Corridor presents the Town with a great opportunity to protect the river and its tributaries and the uplands incorporated with it for multiple recreational uses and for its natural value. The corridor could provide public access to the Soucook, increase passive recreational use, provide a protective buffer to the River itself and generally increase the quality of life in the community.

The Town of Loudon should work to create a corridor stretching the entire length of the River in the Town and encourage the neighboring communities of Canterbury, Concord and Pembroke to do the same, thereby creating a regional corridor for passive, non-invasive recreational use.

**July 2001 Open Space Trail System Plan**

The plan inventoried Loudon's Class VI roads, conservation easements, public land, utility rights-of-way, former railroad rights-of-way, snowmobile trails and existing recreational trails, as well as certain private lands that may be beneficial to the network of conservation lands. This inventory is the foundation of the recommendations for areas to protect from development and to provide opportunities for trail linkages.

The Open Space Trail System Plan promotes conservation in the Town and provides an option for the expansion of recreational opportunities in the Town of Loudon and is meant to complement the findings of the Master Plan. Previous versions of the Loudon Master Plan, as well as this one, have emphasized protecting Loudon's natural resources and rural character. The establishment of this comprehensive Open Space Trail System puts continued emphasis on the Town's natural resources and promotes stewardship of the lands by Loudon residents, including the involvement of volunteers in trail creation and maintenance.

Recommendations of the Open Space Trail System Plan included establishing open space protection areas around Hunting Swamp, Holt's Pond and Currier Road, Rocky Pond and Shaw Road, Bumfagon Swamp and the Bachelder Town Forest, and Crooked and Bog Ponds, and establishing a 150-foot buffer around the Soucook River beginning at Currier Road, to the Concord City Line.

**SUMMARY**

The historical and current land uses in Loudon continue to shape the Town economically, socially, and the natural environment itself. Without a solid plan for the wise use of land in the future, the quickly-developing Town may find itself without the natural and historical resources it covets deeply. Action by Town officials, volunteers, and citizens is essential to help retain the rural character residents are proud of. This chapter suggests many such actions, and taken with the recommendations of the remaining chapters of the 2001 Master Plan, offer a way to balance growth with a quality of life that is desirable to all residents in Loudon.

**RECOMMENDATIONS****Objective**

*To evaluate the past and present uses of the land in Loudon.*

- ◆ Encourage the identical methodology for determining existing land uses for the next Master Plan.
- ◆ Link the assessor's database into a digital tax mapping system to facilitate the future land use determinations.
- ◆ Computerize the Town's tax maps and update on an annual basis by the first day of June.

**Objective**

*To review community opinion and the existing regulations and ordinances on the use of the land in Loudon.*

- ◆ Review and reorganize the Land Development Regulations to reflect Master Plan needs.
- ◆ Update the Zoning Ordinance as appropriate to reflect Master Plan needs.
- ◆ Educate and involve the community in planning through the writing of local newspaper articles, a town website, booths at Town events, etc.

**Objective**

*To provide suggestions for the future utilization of land in the form of amendments to the regulations and ordinances.*

- ◆ Revise signage regulations to complement the building and the landscape/roadway.
- ◆ Enact runoff performance standards to find a solution to large-scale impermeable surface impacts.
- ◆ Enact groundwater performance standards to mitigate the potential damaging of the aquifers.
- ◆ Enact measures to protect the Soucook River's aquifer under Route 106 and the Commercial/Industrial Zone.
- ◆ Modify the Zoning Ordinance to incorporate a 20-foot wide landscaped buffer into Route 106 setbacks to lessen the impact of commercial development on Loudon's rural landscape.
- ◆ Establish driveway regulations as proposed within this Chapter.



**Objective**

*To promote the orderly growth of the Town by providing for public and other open space while encouraging reasonable development of land.*

- ◆ Update the Subdivision Regulations to require developers to set aside open space land.
- ◆ Acquire additional open space for public use.
- ◆ Refer to the July 2001 Open Space Trail System Plan's recommendations to expand the areas currently protected around the Hunting Swamp, Broken Ground, LCIP lands, Bumfagon Swamp, the Hoit Road Marsh/Town Forest area, and areas listed in the Plan.

**Objective**

*To prevent scattered premature or undesirable subdivision and development of land as would involve danger or injury to health, safety, welfare, and prosperity of the community by the reason of the lack of water supply, satisfactory drainage, adequate transportation, or by other public services that would require excessive expenditure of public funds to provide such services.*

- ◆ Produce a Capital Improvements Program (CIP) following the adoption of the Master Plan.
- ◆ Review and revise the Growth Management Ordinance following the adoption of the CIP.
- ◆ Develop an Impact Fee Ordinance.

**Objective**

*To protect and preserve the value of land, buildings and improvements of land throughout the municipality and to minimize the conflicts of uses between land and buildings.*

- ◆ Investigate and implement noise performance standards if a need is found.
- ◆ Implement buffer standards to preserve the aesthetics of neighboring areas.
- ◆ Investigate and implement odor performance standards if a need is found.
- ◆ Monitor and enforce any and all required standards for compliance after any application is approved by the Planning Board.

**Objective**

*To provide safe traffic circulation and access management, including adequate entrances and exits, traffic flow, sight distances, curb cuts, turning lanes, and traffic signage and signalization.*

- ◆ Incorporate driveway access standards consistent with the current development trends of Loudon for emergency access and to avoid unnecessary fragmentation of open space.
- ◆ Improve coordination with the Town and NH DOT District 3 to address these issues.
- ◆ Revise the Land Development Regulations with respect to access management.

**Objective**

*To ensure harmonious and aesthetically pleasing development of the Town in its environs.*

- ◆ Encourage future signage along Route 106 to be of the indirect lighting, ground lighting, or external lighting type.
- ◆ Investigate setbacks to preserve the natural topography, wetlands, and preservation of natural features.
- ◆ Site parking for commercial development to not be located between the roadway and the principal building.
- ◆ Screen parking lots with shrubbery and trees along lot lines and set specifications as to recommended plant sizes and amounts of trees per square foot of pavement.
- ◆ Encourage the retention of healthy plant materials on construction sites.
- ◆ Control commercial lighting so as not to interfere with the rural character.
- ◆ Site buildings so as not to obstruct views from public spaces by taking advantage of the natural topography and the use of existing vegetation.

**Objective**

*To encourage the use of open space development, which is currently known as cluster development in the Land Development Regulations, in order to preserve open space and retain the Town's rural character.*

- ◆ Rename the Cluster Development Ordinance to Open Space Development Ordinance at Town Meeting.
- ◆ Revise the Town's Open Space Development Ordinance to reflect current open space development practices, such as is identified in this Chapter, to get the maximum benefit for the Town, the developer, new residents of the community, and the natural features.

**Objective**

*To promote the monitoring and enforcement of gravel pit reclamation of all gravel operations.*

- ◆ Enforce the requirement for gravel pit owners to reclaim land used in gravel operations.
- ◆ Establish wetland buffers adjacent to gravel operations.
- ◆ Establish a system for notifying pit owners of their operating and permitting status on an annual basis.
- ◆ Implement a phased excavation program for all permitted excavation areas.