Land Use 4

1. Introduction

This chapter presents an examination of land use characteristics in Barrington. The use of land within the community is significant from two main perspectives in relationship to preparation of this master plan. The development of land to accommodate growth has an impact on the town's natural and cultural resources which includes wetlands, forest areas, water sources, wildlife habitat, and historical structures located in the community. The protection of these resources is critical with regard to maintaining the quality of life for residents within Barrington. Development of residential, commercial, industrial and other types of land uses also has an impact on the town with regard to responsibilities for providing municipal services. These services include, for example, road construction and maintenance, the ability to respond with emergency services such as fire and police, the provision of suitably located and adequately sized school facilities, and the availability of recreation facilities.

Given these considerations this chapter presents an analysis of land use patterns in conjunction with various natural resource characteristics and municipal services that may affect the potential for future development in Barrington. The first portion of the chapter provides a summary of existing land use conditions from a town-wide perspective. This is followed by a section which provides a more focused examination of land use characteristics within smaller geographic areas of the town that have been delineated for the purpose of this master plan analysis.

It must be emphasized that as a strategic planning document this master plan relies on inventory information compiled in the town's two most recent master plans which include the *Master Plan Technical Update* from 2002 and the *1995 Master Plan.* These two master plans, as well as other reports prepared by the town that are cited in this strategic plan, provide a foundation for this strategic plan and are considered to be incorporated in this plan by reference. The purpose of this strategic master plan is not to duplicate the previous inventory and analysis of the other planning documents, but to refine this information so that it can be used to help establish policies and an implementation strategy that directs growth in such a way that is most appropriate for the community.

2. Summary of Major Findings

- Residential development accounts for the vast majority of developed land area in the town. As of 2002, approximately 6,300 acres of land, or 88.5% of the total developed acreage (7,073 acres) in Barrington. The average density for housing units on a town-wide basis is one unit per nine acres.

- Residential development is scattered throughout the extent of the town, but it is also clustered at various locations at considerably higher housing densities than the average for the entire town.

- The town's existing zoning and land use regulation are not directing residential development into areas of the community that are most suitable for growth based on natural resources or the ability of the community to provide municipal services.

- A very small amount of the town is developed for commercial and industrial uses. As of 2002, approximately 200 acres of land, which is less than 1% of the total developed land, was identified as these types of uses. There is a relatively small supply of commercially zoned land that is well suited for this type of development. In addition, residential uses are permitted in the commercial zone which diminishes development potential for an already small supply of land.

- Municipal and school facilities have a good centralized location near the geographic center of the town. However, the continuation of growth in outlying areas of the community may eventually begin to place a physical and financial strain on the town's ability to adequately service all of these areas.

- Undeveloped land accounts for the vast majority of the town's total acreage. Approximately 22,800 acres, or 76% of the town's land area, were undeveloped as of 2002. Of the total undeveloped acreage it was estimated that approximately 10,000 acres (44%) are part of larger parcels with a single home or other structure that may still have the potential to be further subdivided. The remaining 11,800 acres has no existing structures. Approximately 5,370 acres of the 11,800 undeveloped acres are contained in 61 land parcels. This indicates that a relatively large percentage of the undeveloped land is controlled by a small number of landowners.

- Conservation land is now one the single largest uses of land in Barrington. Approximately 2,260 acres of land are categorized as conservation land/open space which represents 7.6% of the town's total land area. However, with the exception of the former Tamposi land (which represents about 1,400 of the total acres), these conservation parcels are fragmented making them less viable as wildlife habitat.

- There are no neighborhood commercial centers in Barrington. As a result Barrington residents must travel to the Route 125 corridor or further for household shopping needs.

3. Land Use Analysis Methodology

The land use information presented in this section has been compiled from a variety of local, state, and federal data sources. This information is presented both in a statistical format as tabular data, as well as in map form. The preferred approach to depicting and analyzing land use information is by linking the town assessment records database to a computerized parcel map by means of a Geographic Information System (GIS). This method not only allows land use information to be displayed visually for each parcel, but also offers an opportunity for analyzing the spatial characteristics of that information as well. However, the town does not presently have a computerized parcel map although it is in the process of having one prepared.

An alternative approach was employed for conducting this analysis that did involve a Geographic Information System (GIS). However, without direct access to the town's assessment records database the analysis was somewhat more generalized in nature. The basis for the land use information illustrated on the maps in this chapter was the GIS land use map prepared by the Strafford Regional Planning Commission (SRPC) for the *2002 Master Plan Technical Update.* This map was originally created by the SRPC in1993 based on aerial photography and updated to 2002 based on discussions conducted by planning commission staff with town staff as to where additional development had occurred over the last decade. While this approach provides a reasonable representation of land uses, it tends to understate the amount of developed land since it does not take into account the total area of the parcel that is developed. In other words, for a house located on a five acre parcel only half of that area may be designated as developed using the means described above.

In order to address this issue a parcel map "overlay" was created using a scanned version of the town's composite tax map. This overlay, which is illustrated on the Existing Land Use Map (Map 4-1), allowed for the "developed areas" on the map to be extended to the full extent of the parcel boundaries. Although this scanned parcel map does not "fit" perfectly over other layers on the map, due to expected distortion, it does provide a reasonable representation of the existing parcelization in the town and the relationship to current development patterns. Using the parcel map overlay, in conjunction with 1998 aerial photographs, the land use map from the *Technical Update* was revised to more accurately reflect developed areas within the town. This information was also spot checked with the town's assessment records to provide more detail within the land use categories on the map than was depicted in the previous master plan. This information was also reviewed with town staff in order to identify major developments that had occurred between 1998 and 2002. Based on this methodology the Land Use Map presented in this chapter is considered to provide a relatively accurate representation of existing land use within the town. It is to be expected however, that some structures may have been overlooked due to the resolution of the photography used and the fact that some will be obscured by tree cover. However, these omissions are not believed to be substantial and will not significantly affect the overall patterns and trends discussed in this chapter.

4. Existing Land Use - Town-wide

Existing land use patterns in Barrington are illustrated on Map 4-1 entitled *Existing Land Use.* The map also delineates nine (9) *Land Use Areas (LUA)* into which the town has been divided for the purpose of examining land use at a more localized level. As depicted on the map, land uses have been separated into 11 categories: residential; commercial and industrial; municipal and school; other developed; agriculture; recreation; gravel pits; undeveloped land; and surface waters. Also illustrated are land areas that are protected from development by conservation easement as well as other "open space" areas. These conservation areas are a subcategory of the Undeveloped category. The acreage estimates for each of these land use categories, which were derived based on the GIS data, are summarized in Table 4-1.

A. Residential Development

A review of the map reveals several general observations regarding overall development patterns within the community. First is that residential housing is the dominant land use within the categories that denote developed land, totaling approximately 6,300 acres, or 88.5% of the total developed acreage (7,073 acres) and 21% of the town's total land area. This is to be expected since the vast majority of the town's land

Table 4-1
Land Use Acres, Total Housing Units and Road Mileage - 2002
Town of Barrington

Land Use	1	2	3	4	5	6	7	8	9	Total	% Total
	Acres by Land Use Area - 2002										
Residential	613	1,019	381	475	1,030	756	301	991	697	6,262	21.0%
Commercial/Industrial	0	59	25	1	3	73	6	0	49	217	0.7%
Municipal/School	0	20	0	0	18	68	36	0	0	142	0.5%
Municipal/School (Undeveloped)	0	86	0	0	33	150	0	0	129	399	1.3%
Recreation	0	14	13	54	0	2	0	19	0	102	0.3%
Other Developed	11	52	26	0	3	36	0	0	94	223	0.7%
Gravel Excavation	9	7	47	15	0	50	0	0	0	128	0.4%
Agriculture	140	194	113	149	81	99	0	13	69	856	2.9%
Undeveloped	3,094	2,643	1,578	2,842	1,820	2,051	2,993	1,342	3,122	21,484	72.1%
Subtotal Land	**3,867**	**4,094**	**2,183**	**3,536**	**2,988**	**3,286**	**3,335**	**2,365**	**4,160**	**29,812**	**100.0%**
Water	462	40	15	106	7	38	39	614	5	1,325	
Total Land & Water	**4,328**	**4,134**	**2,198**	**3,642**	**2,995**	**3,323**	**3,374**	**2,979**	**4,164**	**31,137**	
Total Developed	633	1,171	492	545	1,054	985	342	1,010	840	7,073	23.7%
Total Undeveloped	3,233	2,923	1,691	2,991	1,934	2,300	2,993	1,354	3,320	22,739	76.3%
Total	**3,867**	**4,094**	**2,183**	**3,536**	**2,988**	**3,286**	**3,335**	**2,365**	**4,160**	**29,812**	**100.0%**
% Undeveloped	83.6%	71.4%	77.5%	84.6%	64.7%	70.0%	89.7%	57.3%	79.8%	76.3%	76.3%
	Acres of Conservation Land/Open Space										
Total	101	100	26	152	0	25	51	191	1,613	2,259	
% Total Land Area	**2.6%**	**2.4%**	**1.2%**	**4.3%**	**0.0%**	**0.8%**	**1.5%**	**8.1%**	**38.8%**	**7.6%**	
	Housing Units										
1990	272	362	137	286	258	315	68	471	471	2,640	
2002	405	416	162	307	422	394	105	593	505	3,309	
Change 90-02	133	54	25	21	164	79	37	122	34	669	
% Change for LUA	48.9%	14.9%	18.2%	7.3%	63.6%	25.1%	54.4%	25.9%	7.2%	25.3%	
% Change for Town Total	19.9%	8.1%	3.7%	3.1%	24.5%	11.8%	5.5%	18.2%	5.1%	100.0%	
	Interior Road Miles (1)										
Town & State Maintained (Classes I,II,V)	7	12	6	9	9	0	5	10	19	77	
Private Roads	10	4	2	7	4	3	2	14	3	49	
Total	**17**	**16**	**8**	**16**	**13**	**3**	**7**	**24**	**22**	**126**	

(1) Note: Represents the estimated mileage of roads within the LUA that do not form the exterior boundaries of the area
Source: US Census Bureau, NH GRANIT, and RKG Associates, Inc.

area is zoned for residential uses. Current regulations require all dwelling units to have a minimum lot size of 80,000 square feet (1.8 acres) and 200 feet of road frontage. From a town-wide perspective residential density as of 2002 was approximately one housing unit per nine acres of land.

Residential development is both scattered throughout the extent of the town but is also heavily concentrated in certain areas. Notable concentrations are evident around several of the town's lakes including Swain's Lake and Mendum's Pond in the southern LUA 8 and in LUA 1, around Ayer's Pond and Round Pond in the north. Although the lake areas have traditionally been the location of seasonal

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housing development they are increasingly becoming the focus of year-round housing as well. Away from the lake areas other significant development has occurred in the northern portion of LUA 2 off of Greenhill Road and Scruton Pond Road (along the Isinglass River) and in the centrally located LUA 5 off of Smoke Road, Locks Hill Road and Route 202.

The number of housing units constructed in each Land Use Area over the last decade underlies the findings noted above. Table 4-1 illustrates the change in total housing units between 1990 and 2002. This information was compiled by using the U.S. Census Block Data, the smallest geographic level at which the Census Bureau collects decennial census data, for 1990 and 2000. The Block Areas, which are smaller than the LUAs, were "aggregated up" to the totals within each LUA and then town assessment records were reviewed to determine where additional housing units had been constructed between 2000 and 2002. As these housing statistics indicate, LUAs 1, 5, 8 saw the greatest increases in total housing units over the last 12 years with 133, 164 and 122 units added, respectively. **These three Land Use Areas accounted for approximately 63% of all housing growth during this time period.**

Finding: Residential development accounts for the vast majority of developed land area in the town. As of 2002, approximately 6,300 acres of land, or 88.5% of the total developed acreage in Barrington which was 7,073 acres. The average density for housing units on a town-wide basis is one unit per nine acres.

B. Non-Residential Development

Land developed for non-residential uses purposes such as commercial, industrial, municipal/school, recreation and "other" types of land uses account for a very small amount of the town's total developed area. As illustrated in Table 4-1 these land uses total 811 acres, which represents 11.5% of the total 7,073 developed acres, and 2.7% of the town's total land area.

Based on the town's zoning ordinance, commercial and light industrial development is currently permitted on parcels that have frontage along the State highway corridors of Route 4, Route 125, Route 9, Route 126, Route 202 and Route 202A. This zoning district does not preclude the development of residential uses along these corridors. Development of this type is primarily concentrated along the Route 125 corridor with a few scattered parcels on the Route 4 and Route 9 corridors. Although some commercial expansion has occurred over the last decade it has been minimal. Presently, approximately 217 acres of land are developed for commercial and industrial uses. The potential to successfully attract commercial development is based on a number of factors including good highway access, the availability of municipal water and sewer systems, and an adequate supply of suitably zoned land. The town's best opportunities for significant commercial development, under the existing zoning regulations, are most likely along the Route 125 and Route 4 corridors. The physical design of the other commercially zoned highways are not conducive or practical for commercial development of any sizeable scale. The limited success of attracting commercial uses to the Route 125 and Route 4 corridors is at least partially attributable to competition from other sites in the region that are more desirable due to the availability of features mentioned above, as well as other factors.

Finding: A very small amount of the town is developed for commercial and industrial uses. As of 2002, approximately 200 acres of land, which is less than 1% of the total developed land, was identified as these types of uses. There is a relatively small supply of commercially zoned land that is well suited for this type of development. In addition, residential uses are permitted in the commercial zone which diminishes development potential for an already small supply of land.

However, the limited amount of undeveloped parcels along these corridors, due partially to the fact that residential uses are permitted in this zoning district, serves as a barrier to significant expansion of commercial growth. Although the town does have a separate industrial zoning district, most of this land has been acquired for conservation purposes and is no longer available for development. However, the town owns a 125 acre parcel (the Goodstein property) located in LUA 9 along the Route 125 corridor in the vicinity of that industrial zone that does offer an opportunity for attracting a significant user to this site. This parcel is illustrated on Map 4-1 in the Municipal Undeveloped land use category.

Municipal and school related land uses are primarily concentrated near the center of town, along the Route 9 corridor, in Land Use Areas 5 and 6. As illustrated on Map 4-1, these include the town offices, police and fire safety complex, library, and the elementary and middle schools. The proposed site of the new middle school is also located in LUA 6 but further east on Route 9 from other existing facilities. The public works department, solid waste transfer station, and town recreation fields are located slightly more to the north east on Smoke Street. Although these facilities have a good central location in the community from a geographic standpoint, their location does raise the issue of providing services to outlying portions of town as more development occurs in those areas in the future. Access for emergency vehicles and school bus transportation will need to be considered with regard to future land use patterns and the provision of these and other towns services.

Recreation oriented land uses identified on the Existing Land Use Map occupy approximately 100 acres. However, some of the town's recreational areas are included in other land use categories, such as schools and conservation land, and therefore are not reflected in this total. The town's active recreation facilities are largely clustered near the Route 9 and Smoke Street corridors. Other private facilities, such as the University of New Hampshire's Mendum's Pond recreation area and the Nippo Lake Golf Course, are dispersed throughout the town. The large amount of undeveloped land and large water bodies that exist in the community offer ample opportunity for passive recreation activities. However, there are few dedicated playgrounds or parks available in the more densely developed neighborhoods that have begun to form at various locations within the town.

The remaining categories of developed land include Other Developed and Gravel Pits, which combined contain approximately 350 acres. Much of the land included in the Other Developed category involves the two powerline utility corridors that run through the town, but it also includes uses such as churches, the post office, landfill, and other structures that are not commercial in nature. With regard to gravel pits there are currently 10 permitted sites in the town that have a total of 168 acres approved for excavation, according to the *2002 Technical Update*. Approximately 128 acres of existing excavation were identified with the GIS. Some of this acreage, however, is located on sites that are no longer active and therefore, are not representative of the amount of excavation that has occurred on approved sites. Gravel extraction operations are permitted throughout the town based on performance standards specified in the zoning ordinance.

C. Undeveloped Land

Land areas identified as Undeveloped on the Land Use Map accounts for the vast majority of the town's total acreage. As illustrated in Table 4-1, approximately 22,800 acres, or 76% of the town's land area is undeveloped and primarily forested. Another 856 acres were identified as agricultural areas which are considered to be a subcategory of undeveloped land. This agricultural acreage was identified from aerial

photographs based on fields that were visible or areas that appeared to have been used for agricultural purposes, but are now idle and not in active use. It is likely that this agricultural acreage figure overstates the amount of land that is actively used for growing crops and includes a number of parcels that are maintained as fields only for open space purposes.

Table 4-1 illustrates how the total undeveloped acreage is distributed within each of the 9 LUAs. Interestingly, most areas are still between 70% and 90% undeveloped. The exceptions to this are LUAs 5 and 8 which are approximately 65% and 57% undeveloped, respectively. Although the majority of LUAs are still largely undeveloped the configuration of that open space within each LUA varies. Some are highly fragmented, such as LUAs 2 and 6, while LUAs 1, 4, and 7 have larger, unfragmented blocks of undeveloped land. These unfragmented blocks offer greater opportunity for preserving wildlife habitat, protecting watersheds, and offering recreational opportunities that cannot be provided by smaller areas of open space. However, smaller tracts of undeveloped land can be equally important within developing portions of the community for providing recreation and "visible" open space with convenient access to residential neighborhoods.

As stated above, 22,800 acres of land were identified as undeveloped based on the GIS analysis. However, a significant portion of that acreage is contained in parcels that already have a single family house on them. By comparing the GIS acreage calculations with information from the town's assessment database it is estimated that as much as 10,000 acres, or 44% of the town's undeveloped acreage, is contained in parcels that have an existing house or other structure on them. Although this land may have the potential to be further subdivided the fact that a home or other structure already exists may lessen the likelihood of its development or extend the time frame within in which development may occur.

Finding: Undeveloped land accounts for the vast majority of the town's total acreage. Approximately 22,800 acres, or 76% of the town's land area was undeveloped as of 2002.

However, of the total undeveloped acreage it is estimated that as much as 10,000 acres (44%) are part of larger parcels with an existing single home or other structure that may still have the potential to be further subdivided. The remaining 11,800 acres has no existing structures.

Approximately 5,370 acres of the 11,800 acres is contained in 61 land parcels. This indicates that a relatively large percentage of the undeveloped land is controlled by a small number of landowners.

Undeveloped land identified in the town's assessment records was further examined to determine ownership patterns with regard to *absentee ownership* of land. As used here the term absentee owner refers to land that is identified as being owned by someone with a mailing address other than Barrington. These ownership patterns can offer some idea of the speculative nature of the land development market in the town. Approximately 11,900 acres of land are identified as undeveloped (with no structure of any kind) in the assessment database. As illustrated in Table 4-2, approximately 4,300 acres (37%) of that total is owned by Barrington residents. In comparison, approximately 5,200 acres (44%) are owned by people who reside in other New Hampshire towns and 2,360 acres (20%) are owned by out-of-state residents.

Two other significant findings are revealed by the data in Table 4-2. The first is that almost half of the total undeveloped acreage (5,370 acres) is contained in just 61 parcels, which represents approximately 6% of the total number of undeveloped parcels. This indicates that a relatively few number of owners control a significant percentage of the town's remaining undeveloped land. In contrast, 878 parcels

containing less than 20 acres represents a total of almost 3,200 acres. These smaller parcels may be the more likely properties to support growth in the town's housing market over the next decade since they require a smaller investment in land costs than a larger parcel and are typically less complicated to move through the development approval process.

Table 4-2
Ownership of Undeveloped Land Parcels
Town of Barrington

Address of Owner	Total Parcels			Parcels <20 Acres			Parcels 20-50 Acres			Parcels >50 Acres		
	Parcels	Acres	% Total	Parcels	Acres	% Total	Parcels	Acres	% Total	Parcels	Acres	% Total
Barrington	381	4,330	36.5%	329	1,346	42.2%	31	1,003	30.4%	21	1,974	36.8%
Other NH Town	417	5,179	43.6%	337	1,455	45.6%	55	1,762	53.4%	25	1,967	36.6%
Out-of-State	244	2,356	19.9%	212	390	12.2%	17	537	16.3%	15	1,429	26.6%
Total	**1,042**	**11,865**	**100.0%**	**878**	**3,191**	**100.0%**	**103**	**3,302**	**100.0%**	**61**	**5,370**	**100.0%**

Source: Town of Barrington assessment records - 8/02

Conservation land, which is also a subcategory within Undeveloped land, is now one of the single largest uses of land in Barrington, accounting for an estimated 7.6% of the town's total land area. The largest parcel identified for this use contains approximately 1,400 acres of land, referred to as the Tamposi property, which is located in LUA 9. Of the town's total 2,260 acres of conservation land and other open space, approximately 62% is contained in the Tamposi tract. The remaining conservation land and open space is dispersed throughout all of the remaining LUAs except LUA 5 which contains no protected open space. It should be noted that conservation lands located in LUAs 1 and 3 have been acquired by the City's of Rochester and Portsmouth for the protection of their water supplies in those areas. Although these properties are relatively secure from development as long as the water supplies are viable, they are not necessarily permanently protected from development by deed restriction.

D. Roadways

It is clear that the town's historical road network has played a significant role in supporting the current patterns of residential development. As available road frontage along the town's primary and secondary roadways (including Routes 9, 202, and 126 as well as Beauty Hill, Locks Hill, and Hall Roads) has been reduced by residential development, construction of new subdivision roads into former "back land" areas has begun to occur. Much of this subdivision activity in back land areas is represented by the development patterns discussed in the preceding paragraphs. Although undeveloped frontage still exists along the historical roadway network, the supply continues to dwindle and what is remaining may not be readily available for development due to land ownership decisions. Table 4-1 includes a summary of the estimated mileage of *interior roads*, that is, roads that do not form the exterior boundaries of the 9 LUAs. These estimates exclude unmaintained Class VI roadways, but do include private roadways. The data shows that LUAs with higher housing growth, such as areas 1, 5, and 8, also have higher mileage of interior roads. In what appears to be a contradiction of this observation is the fact that LUAs 2, 4, and 9 also have higher road mileage but experienced relatively lower housing growth over the past decade. The reason for this in areas 2 and 9 can be observed on Map 4-1 which shows that almost all available road frontage within these areas has been developed. This is not the case in LUA 4 which still has interior road frontage available which may attract future development.

The GIS method used to estimate acres of developed land for the various land use categories does not lend itself to measuring the acres of land devoted to roadways because there is no computerized parcel map that delineates road rights-of-way. However, a reasonable estimate can be provided by multiplying the total mileage of roads by a standard width right-of-way which was 50 feet which indicates that approximately 800 acres of land are devoted to roads in Barrington.

E. Water Bodies

Barrington has an abundance of surface waters contained in its numerous lakes, ponds, and rivers as illustrated on Map 4-1. The total area of these features, as determined by the GIS analysis, is 1,325 acres, or approximately 4% of the total area of the town. The town's largest lakes, which include Ayer's Lake, Round Pond, Nippo Lake, Swain's Lake, and Mendum's Pond, are concentrated in Land Use Areas 1, 4, and 8. Their locations are significant in that they have been a major factor in shaping the town's residential land use patterns, a finding that is discussed in more detail in the following section. A detailed description of the characteristics and condition of all water resources is contained in the 2002 *Technical Update* prepared by the regional planning commission. However, it is important to emphasize that water resources are of regional importance in that their watersheds (or surface drainage areas) cross municipal boundaries and therefore, can be impacted by activities in other communities.

5. Evaluation of Land Use Areas (LUA)

A. Introduction and Methodology

Although it is important to have an understanding of overall land use trends from a town-wide perspective, information presented in the preceding sections of this chapter illustrates that various areas within the community have distinct characteristics and have developed differently as a result. Therefore, to facilitate a more detailed analysis as part of this Strategic Master Plan the town has been divided into 9 Land Use Areas (LUA). A primary determinant for delineating the boundaries of these LUAs was the town's road network since roadways play a major role in influencing development patterns in Barrington. As discussed in a previous section, consideration was also given to aligning LUA boundaries with U.S. Census Block areas which allowed census data to be integrated into the land use analysis. Finally, the existence of unique natural features within the town, such as its lakes, ponds and wetlands were also factored into the delineation of the LUAs. This section first examines development potential of undeveloped land based on natural constraints. This is followed by the identification of *issues* and *opportunities* that have been observed within each LUA based on information gleaned from this analysis as well as previous planning efforts initiated by the town.

Although there are a number of natural features that can affect the development potential of land, the two primary ones found in Barrington are wetlands and steep slopes. These constraints were selected since wetlands can affect the potential for on-site disposal of wastewater in septic systems, as well as the construction of structures and roads. Steep slopes also affect septic system installation and can have an adverse effect on water quality and adjoining properties, due to erosion and runoff, if not developed properly.

To identify potential wetland areas, Very Poorly Drained (Hydric A) and Poorly Drained (Hydric B) soils have been used although on-site investigation would be necessary to determine which of these areas constitute "true" wetlands, as defined in the town's development regulations. The delineation of these soil

classifications are based on the USDA Soil Conservation Service's Soil Survey for Strafford County that is maintained in the New Hampshire GRANIT's geographic information system (GIS) database. In addition, wetlands that have been identified as Prime Wetlands, based on the 1990 *Prime Wetlands Report* prepared for the town, are also noted. Prime Wetlands are considered to be particularly important because of their size as well as their value as plant and wildlife habitat, the function of their hydrologic characteristics, and their educational and aesthetic values.

The identification of steep slope areas in Barrington is based on the map developed for the 2002 *Master Plan Technical Update*[1], which delineates two categories of steeper slopes that range from 12% to 25% grades, and grades in excess of 25%. Although slopes of this magnitude may not be prohibitive, from a development potential perspective, they do warrant special consideration with regard to site specific evaluation of development proposals and may, in some cases, merit a reduction in the density of development.

Two other land use features have also been included in this analysis of the individual LUAs. One is the large sand and gravel aquifer that follows along the length of the Route 125 corridor and also extends to the west in the vicinity of the Isinglass River. This geologic feature, which was mapped by the US Geological Survey in 1990, represents the potential to extract greater quantities of groundwater that could support small community water systems. Development over this aquifer is presently regulated by the town's zoning ordinance with regard to the amount of impervious surface that can be created and the location of potentially hazardous materials that could pose a concern for water quality.

The second land use feature is related to the conservation and recreation potential of undeveloped land in each LUA. In 2001, the Barrington Natural Heritage Committee, in conjunction with the Barrington Conservation Commission, prepared a report entitled *An Inventory of Natural Resources for the Town of Barrington.* This report attempted to identify and evaluate the town's important natural resources based on 21 criteria within the five major categories of natural resources, recreation potential, historical significance, location, and other special considerations. Based on these criteria, 38 important areas were identified along with a description of why they were selected. This inventory is considered to be a good basis for refining, establishing priorities and preparing a strategy for implementation within the context of this master plan. Both the aquifer and the potential conservation land areas are illustrated on Map 4-3 along with Prime Wetlands.

Finally, the wetland soils and steep slope areas were combined with the GIS land use mapping information to illustrate the location of these constraints in relationship to the remaining undeveloped land in each LUA. This analysis is illustrated on the Development Constraints Map (Map 4-2), with acreage information summarized in Table 4-3. It should be noted that properties in Barrington previously noted to be Conservation/Open Space areas were subtracted from the total undeveloped land in each LUA to determine the *potentially developable land area* remaining in each of these areas. This information would typically be used to perform a build out analysis in order to identify how many additional dwelling units could potentially be constructed based on the town's current zoning regulations. However, in Barrington's

[1]Slope map created by the Strafford Regional Planning Commission based on USGS 10 meter Digital Elevation Models (DEM). Boundaries for steep slopes should be considered to be approximations based on the data and methodology used to create this map.

INSERT MAP 4-2

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case, there is so much undeveloped land remaining that calculating the full build out figure would generate an excessively large number that would be irrelevant for the planning horizon of this master plan. As an alternative, housing projections developed in the Population and Housing Chapter of this plan were applied to historical growth rates over the last decade in order to provide some sense of the housing development that may occur over the next 10 years in each LUA. These projections were compared against the remaining undeveloped land in each LUA in order to evaluate the feasibility for potentially constructing the total estimated units. There is no guarantee that the historical allocation of housing units in each LUA will continue over the next decade since there are many factors that influence land development patterns other than just the availability of undeveloped land. However, it does provide an indication of where market forces have been directing growth and offers a reasonable framework for evaluating future land use development alternatives within the context of this strategic master plan.

Table 4-3
Potentially Developable Land and Actual and Projected Housing Units
Town of Barrington

	Acres by Land Use Area									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**Total**
Total Undeveloped & Potentially Developable(1)	**3,130**	**2,827**	**1,664**	**2,839**	**1,939**	**2,273**	**2,979**	**1,177**	**1,743**	**20,571**
With Slope Constraints	388	400	136	1,216	494	352	999	247	116	4,348
With Wetland Soils Constraints	372	536	562	517	353	787	413	72	311	3,923
No Slope or Soil Constraints	2,370	1,891	966	1,106	1,092	1,134	1,567	858	1,316	12,300
	% of Total Undeveloped Acres									
With Slope Constraints	12.4%	14.1%	8.2%	42.8%	25.5%	15.5%	33.5%	21.0%	6.7%	21.1%
With Wetland Soils Constraints	11.9%	19.0%	33.8%	18.2%	18.2%	34.6%	13.9%	6.1%	17.8%	19.1%
No Slope or Soil Constraints	75.7%	66.9%	58.1%	39.0%	56.3%	49.9%	52.6%	72.9%	75.5%	59.8%
	Housing Units									
1990	272	362	137	286	258	315	68	471	471	2,640
2002	405	416	162	307	422	394	105	593	505	3,309
Change 90-02	133	54	25	21	164	79	37	122	34	669
% Change by Land Use Area	48.9%	14.9%	18.2%	7.3%	63.6%	25.1%	54.4%	25.9%	7.2%	25.3%
% Change for Town Total	19.9%	8.1%	3.7%	3.1%	24.5%	11.8%	5.5%	18.2%	5.1%	100.0%
% of Total Housing in 2002	12.2%	12.6%	4.9%	9.3%	12.8%	11.9%	3.2%	17.9%	15.3%	100.0%
Density 2002 (acres per unit)	9.5	9.8	13.5	11.5	7.1	8.3	31.8	4.0	8.2	9.0
	Projected Housing Units - 2010									
Low Estimate	74	30	14	12	92	44	21	68	19	374
High Estimate	113	46	21	18	139	67	31	104	29	568

(1) Undeveloped acreage totals will not match totals in other tables because these figures have been recalculated with the inclusion of agricultural areas and other undeveloped land owned by the town and the exclusion of conservation/open space parcels.
(2) Note: Represents the estimated mileage of roads within the LUA that do not form the exterior boundaries of the area
Source: US Census Bureau, Barrington municipal assessment records, and RKG Associates, Inc.

B. Characteristics of the Nine (9) Land Use Areas

This section presents a series of tables that characterize the land use features found in each of the 9 Land Use Areas. Each LAU table contains an *Overview* section which provides a very detailed description of the amount of development, number of housing units, housing density, potentially developable land area, and potential projected housing growth over the next decade. This information is somewhat repetitive in that these statistics are contained in tables presented previously in this chapter. However, it is revealing to present this information in a comprehensive narrative form in order to highlight how these LUAs have changed over time and illustrate how their land use patterns have matured differently within the town.

Each LUA also presents a series of *Issues* and *Opportunities* that may play a role in how the area develops in the future and how that could affect the community as a whole. These issues and opportunities were used to assist in developing specific recommended actions that should be considered as the town evaluates alternative future land use scenarios.

Land Use Area 1

Overview

- LUA 1 contains approximately 4,300 acres of which includes 460 acres of surface water (the second largest amount of all 9 LUAs).
- Four of the town's major water bodies are located in this LUA including Ayer's Lake, Long Pond, Round Pond, and the Rochester Reservoir. The latter two are water supplies for the City of Rochester.
- As of 2002, this LUA contained 405 housing units with almost 30% (119) designated as seasonal/vacant units. Housing density as of 2002 was approximately one unit per 9.5 acres.
- The majority of newer subdivision activity has occurred in the northernmost portion of the LUA branching off from the Pond Hill Road corridor.
- There is approximately 3,100 acres of potentially developable land remaining in this LUA. Approximately 25% of the land area is constrained by wetland soils and steep slopes.
- Projections suggest that 74 to 113 housing units could potentially be constructed here by 2010.

Issues

- Housing development in this LUA is occurring at some of the most distant geographic locations in Barrington with regard to the provision of municipal services
- The lake frontage of Long Pond is almost completely devoted to residential development on lots that are undersized based on current zoning requirements
- There are approximately 10 miles of private roads serving lakefront housing
- No permanently protected open space exists although the City of Rochester owns land adjacent to the city's water supplies which should help to restrict development activities.
- There are approximately 200 acres of Prime Wetlands.

Opportunities

- Large, unfragmented blocks of undeveloped land still remain in this LUA.
- Substantial lake frontage remains undeveloped along Ayer's Lake and this frontage is contiguous with the unfragmented blocks. Some historic resources are associated with these areas.
- Significant lengths of the Isinglass River's frontage are still undeveloped.
- Open space is visually accessible from Route 202.

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Land Use Area 2

Overview

- LUA 2 contains approximately 4,100 acres which includes 40 acres of surface water.
- The area is bisected by the Isinglass River corridor and a powerline corridor traverses across the eastern half of the LUA.
- There were 416 total housing units as of 2002, but only 54 units were constructed over the last 12 years. Housing density in 2002 was approximately one unit per 9.8 acres.
- A considerable amount of the housing growth in this area has occurred on subdivision roads extended into "back land" areas.
- Over 25% (59 acres) of the town's commercially developed land area is located in this area.
- The town's public works garage, transfer station, recreation fields, and closed landfill/septage lagoons are located in this LUA.
- There are approximately 2,800 acres of potentially developable land and 67% (1,900 acres) is free from wetland and slope constraints.
- Population projections suggest that 30 to 46 additional housing units could be constructed here by the end of this decade.
- Approximately 2.4% (100 acres) of this LUA is preserved as conservation land.

Issues

- The majority of existing road frontage has been developed for residential uses which may spur the construction of new roads to support future growth in this area.
- There are several Class VI (unmaintained) roads that may experience development pressure in the future.
- The town's main sand and gravel groundwater aquifer underlies a significant portion of this LUA.
- There is a relatively high degree of fragmentation of undeveloped land.
- There are 176 acres of Prime Wetlands located in this LUA most of which are associated with a tributary of the Isinglass River.

Opportunities

- There is a significant amount of land abutting the Isinglass River that is still undeveloped.
- Existing conservation land parcels area contiguous and include some frontage along the Isinglass River.
- Conservation land abuts undeveloped land owned by the town.
- There is a significant amount of undeveloped land abutting the Route 125 corridor which has potential for commercial development. Some of this acreage may be constrained by the existence of wetlands and the groundwater aquifer and some residential development has already encroached on these areas.

Land Use Area 3

Overview

- LUA 3 contains approximately 2,200 acres which includes 15 acres of surface water.
- The Isinglass River winds through a portion of the LUA and the City of Portsmouth owns a small amount of land adjoining its Bellamy Reservoir water supply area.
- A portion of the Turnkey Landfill in Rochester extends into this area and one of the town's largest gravel extraction operations is located in the northeast corner.
- There were 162 housing units in this LUA as of 2002 and only 25 units were constructed here over the last 12 years – the second lowest total of all 9 LUAs. Housing density is one unit per 13.5 acres which is also the second lowest density in town.
- A small amount of commercial development has occurred along the Route 125 and Route 9 corridors
- There is approximately 1,670 acres of potentially developable land although almost one-third of that total (562 acres) may be constrained by wetland soils.
- Projections suggest that 14 to 21 housing could be constructed here by 2010 if historical growth rates continue through that time period.

Issues	Opportunities
• There is a significant length of Class VI roadway which has some existing residential development. • The town's main sand and gravel groundwater aquifer underlies the entire extent of this LUA.	• There is a significant amount of undeveloped land abutting the Route 125 and Route 9 corridors which has potential for commercial development. Some of this commercially zoned area has experienced encroachment from residential development.

Land Use Area 4

Overview

- LUA 4 contains approximately 3,600 acres in total including 106 acres of surface water area, most of which is contained in Nippo Lake, although a portion of the Isinglass River also cuts across the northern corner.
- Two of the town's designated scenic roads, Canaan Back Road and Old Canaan Road, are located in the southern portion of this LUA.
- As of 2002 there were 307 housing units located in this LUA, 59 of which were classified as seasonal or vacant. Only 21 units, the lowest of all 9 LUAs, have been constructed here over the last 12 years. Existing housing density in 2002 was one unit per 11.5 acres – the third lowest of all the LUAs.
- Approximately 2,800 acres of potentially developable land remain in this LUA. However, over 60% of that land (1,700 acres) is constrained by slopes and wetland soils. Approximately 380 acres are designated as Prime Wetlands.
- Projections for 2010 suggest that an additional 12 to 18 housing could be constructed here based on historical growth trends.

Issues	Opportunities
• A notable amount of development has occurred in the southern section of this LUA, along Canaan Road and North River Pond, which is one of the most distant locations from municipal services in Barrington. • This LUA contains the largest percentage of land constrained by wetlands and steep slopes. • Much of the lake frontage in this LUA has been developed for residential purposes. • Undeveloped land surrounding Nippo Lake has a significant amount of steeper slopes which will warrant more careful planning for development in these areas. • Notable lengths of Class VI and private roads are found in this LUA.	• Substantial blocks of unfragemented land still remain in this LUA. • Approximately 150 acres of conservation land has already been set aside and this property abuts some of the remaining unfragmented blocks. • Two of the town's highest points of elevation, Mt. Misery (520 feet) and Nippo Hill (580 feet) are located in this LUA.

Land Use Area 5

Overview

- LUA 5 contains approximately 3,000 acres in total with only 7 acres of surface water.
- A number of municipal and school services are located here including the town offices/middle school annex, library, middle school, and recreation department/gymnasium.
- There were 422 housing units in this LUA as of 2002, of which 164 were added over the last 12 years. This represents a 63% rate of increase which was the largest of all the LUAs during that time period. The housing density as of 2002 was one unit per 7.1 acres making it the second most dense LUA in the town.
- There is approximately 1,900 acres of potentially developable land remaining but almost half of that land is affected by slope and wetland constraints.
- Projections suggest that an additional 92 to 139 housing units could be constructed by 2010 based on historical growth rates.

Issues	Opportunities
• Substantial residential subdivision activity has occurred in this LUA resulting in road construction into "back land" areas. • There is no conservation land or dedicated open space • A significant percentage of the remaining undeveloped land is limited by slope and wetland constraints. • Undeveloped land has been fragmented into smaller blocks that are less viable for habitat but still offers opportunity for neighborhood-sized open space areas.	• Existing and future residential development in this area is in close proximity to municipal services. • Higher density of development might be suitable for the creation of some neighborhood playgrounds or parks. • Potential property for conservation consideration includes an actively managed peach orchard. • The town owns approximately 33 acres of undeveloped land in this LUA.

Land Use Area 6

Overview

- LUA 6 contains approximately 3,300 acres which includes 38 acres of surface water.
- The area is bisected by the Route 125 corridor which creates two distinctive areas with varying land use characteristics.
- This LUA represents the most diverse mix of land uses in the town combining residential, commercial, municipal, and institutional uses in relatively close proximity to each other. Land for a proposed middle school is located on the east side of Route 125 adjacent to Route 9.
- The portion of this LUA to the west of Route 125 is bisected by a powerline right-of-way
- As of 2002, there were 394 housing units in this LUA with 79 of those units having been constructed over the last 12 years. The housing density as of 2002 was one unit per 8.3 acres which is slightly higher than the town-wide density of 9 acres per unit.
- Approximately 2,300 acres of potentially developable land remain in this LUA however, half of that acreage is subject to wetland soils and slope constraints.
- There are almost 450 acres of Prime Wetlands located along the Madbury town line.

Issues	Opportunities
• The entire eastern half of this LUA overlies the town's aquifer protection area. • Continued increases in traffic volumes along the Route 125 corridor will present significant considerations with regard to the potential for local land use development.	• The diverse mix of land uses in this LUA offers possibilities for a town center type of development.

Land Use Area 7

Overview

- LUA 7 contains approximately 3,400 acres which includes 39 acres of surface water.
- There is almost no interior road development in this area with the exception of one Class VI road (Longmarsh Road) and several other Class VI and private roads near the perimeter of the area.
- Total housing units as of 2002 was 105 making it the least developed of all 9 LUAs. Between 1990 and 2002 an additional 37 units were constructed. Housing density was also the lowest for all portions of the community with one unit per 31.8 acres in comparison to one unit per 9 acres town-wide.
- Approximately 3,000 acres of this LUA is potentially developable although almost 48% of that area is constrained by the occurrence of steeper slopes and wetland soils, which includes 200 acres of Prime Wetland areas.
- Projections suggest that only 21 to 31 additional housing units may be constructed in this area by 2010, based on historical growth rates.

Issues	Opportunities
• The existence of Longmarsh Road may eventually attract residential development into one of the town's largest remaining unfragmented blocks of undeveloped land.	• The town owns three parcels of land in this LUA, including the town forest, which provide a foundation for future land conservation potential in this area. • The limited amount of existing residential development in this area offers an opportunity to implement zoning alternatives without impacting a large number of existing homes.

Land Use Area 8

Overview

- LUA 8 contains approximately 3,000 acres which includes 614 acres of surface water area, the largest amount found in all 9 LUAs.
- Two of the town's largest lakes are located in this LUA, Swain's Lake and Mendum's Pond..
- As of 2002, there were 593 housing units in this LUA, of which 158 were seasonal/vacant. Between 1990 and 2002, 122 units were added which was the third largest amount of all areas in the town. The housing density in this area was one unit per 4 acres of land, also the highest density in the town.
- There is approximately 1,200 acres of potentially developable land remaining in this LUA and only 28% of that acreage may be subject to wetland soils and slope constraints. This is the lowest amount of developable land found in all 9 LUAs.
- Housing projections suggest that an additional 68 to 104 units may be built in this area by 2010 based on historical growth rates.

Issues	Opportunities
• Almost all of the frontage of the lakes in this area have been developed for residential uses. Many of these homes are located on undersized lots that would not be permitted under current zoning. • Substantial interior road development has left very little of this LUAs land area unfragmented by development. • Swain's Lake is used as a community water supply for some homes in the area because their wells were contaminated by hazardous waste site (the site has been remediated and is being monitored).	• Approximately 190 acres of conservation land exists in this LUA. • The University of New Hampshire (UNH) manages approximately 175 acres adjacent to Mendum's Pond as a recreation facility although much of this land area is undeveloped. • A small amount of lake frontage still remains undeveloped. • The high density of residential development in this area may be suitable for the creation of a neighborhood playground or park.

Land Use Area 9

Overview

- LUA 9 contains approximately 4,200 acres which includes only 5 acres of surface water.
- The area has land that fronts on Route 125 and Route 9, the town's two primary commercial corridors. Only 50 acres have been developed for commercial uses along these corridors.
- Overhead powerlines traverse through this LUA along two separate rights-of-way.
- As of 2002, there were 505 housing units in this LUA but only 34 had been constructed over the last 12 years. This area contains the largest amount of the town's multi-family housing as well as its largest mobile home park. Housing density in this area was one unit per 8.2 acres, slightly more dense than the town-wide average of 9 acres per unit.
- There are approximately 1,600 acres of conservation land in this LUA which accounts for almost 40% of its total land area.

Issues	Opportunities
• Residential development has encroached onto the Route 125 and Route 4 corridors. • Vehicular access to the Route 4 corridor can only be obtained by going through neighboring towns. • The large tract of protected conservation land may make adjoining parcels of land more attractive for residential development.	• This LUA contains the town's largest block of unfragmented land which includes linkages between adjoining conservation land. • The town owns almost 130 acres of undeveloped land adjoining the Route 125 corridor which has potential for commercial or industrial development.

6. Conclusions and Implications

This chapter presents a comprehensive and detailed picture of land use conditions that presently exist in Barrington and illustrate how the use of land has changed over time. The analysis merged land use information with natural resource features, as well as statistical data in order to provide a basis for evaluating future land use alternatives and how changes in land use might impact the town. The level of detail presented in this chapter may seem extreme in comparison to previous land use analyses prepared by the town. However, the rate of growth the town is experiencing presents some complex questions regarding land use decisions in Barrington. These growth trends will necessitate the consideration of different policy and regulatory strategies that rely upon a solid analytical basis as prescribed under New Hampshire's enabling statutes regarding the preparation of master plans.

This analysis has resulted in a number of significant findings and conclusions that the town must seriously weigh with regard to the potential for future development in the community. One important conclusion is that certain parts of the town are displaying development patterns that have begun to set them apart from other areas. Even though the town's zoning regulations specify the same minimum lot size throughout the town, a variety of factors, such as proximity to waterfront, natural constraints, road access, and land ownership decisions, have resulted in higher densities of development being concentrated in a number of locations within the community. By dividing the town into nine (9) different Land Use Areas for this analysis those distinctions were made quite clear. As population and housing growth in the region continues over the next decade and beyond, it is likely that other portions of the town will begin to exhibit similar characteristics. Therefore, the town must determine if future developed and natural landscapes will continue to evolve in a homogeneous manner under existing zoning, or if certain parts of the community should be treated differently with regard to housing density, types of land uses permitted, and other factors.

A continuation of current residential development patterns over the next few decades would likely leave more areas of the town with a suburban versus a rural feel. These suburbanized neighborhoods will require a more focused land planning strategy to insure that adequate open space is provided, that road networks are sufficient to support traffic, and appropriate municipal facilities and utilities are in place. A certain amount of this type of growth may be appropriate for the town in a general sense, but it does not offer significant diversity of housing nor is it necessarily sensitive to natural features, such as wetlands, topography, scenic areas, and historical characteristics of the town's landscape. The real question is how much of this type of growth is appropriate for Barrington and where are the most suitable locations for it to occur with regard to preserving the landscape and providing cost effective municipal services?

Barrington faces an equally challenging set of circumstances, albeit the opposite extreme from the residential scenario described above, with regard to commercial and industrial growth. Due to the evolution of its land use patterns, roadway network, and existing natural constraints, the town has been able to attract only a small amount of commercial uses along the Route 125 and Route 4 corridors. Although land areas along other roadways are zoned for commercial development, these are the only two areas (Routes 125 and 9) that are likely to support any significant concentration of non-residential development. Furthermore, encroachment by residential uses along these roadways has considerably reduced the available supply of suitably zoned land to a relatively small number of parcels. Unless a concerted effort is made to retain the remaining undeveloped land, or identify other potential locations, it will be very difficult for the town to expand the non-residential portion of its tax base to any great degree. Even if all of the remaining undeveloped land along these two highway corridors were developed for commercial purposes, it is likely to have only a modest impact on offsetting the costs of providing municipal services within the community. Therefore, the town may need to consider taking a more targeted approach to attracting commercial and industrial development that provides the types of uses most beneficial for the community at specific locations.

Finally, the town has made substantial gains in preserving portions of the community from development through the purchase of land and the acquisition of conservation easements. Although purchasing land or development rights may be the most expeditious method for retaining land as open space, it may not be financially feasible for the town to purchase all areas in the community deemed worthy of protection. Therefore, the town will need to develop a strategy for land preservation that relies on multiple techniques and creative approaches to achieving an acceptable level of land conservation. This strategy might include the continued purchase of critical parcels, a change in land use regulations in certain areas of town, and flexible land development techniques that balance growth and conservation needs.