

LAND USE

INTRODUCTION

A land use analysis is an important element of community planning. Once raw land is converted to a particular use, it is usually committed to that use for a very long time, if not indefinitely. It is extremely difficult to change the spatial pattern of development once it takes hold. Therefore, decisions about future land use should be made carefully, with a studied eye to the potential ramifications of those uses. A well-conceived land use plan encourages and allows for new growth and development while it protects and preserves the integrity of neighborhoods, businesses, transportation routes, and the environment.

This chapter describes the pattern of existing land uses in Jaffrey and analyzes the changes which have transpired in the land use pattern since 1997, the date of the last land use analysis for Jaffrey. Maps are used to identify the areas of town that have been developed, the kind and density of development that has occurred, and the relationship between different types of uses on the land. This information provides the baseline necessary to evaluate the appropriateness of future development and the availability of suitable land for such development. Virtually every development-related decision a community makes will have some impact upon the way the land is used. Other chapters of this Master Plan, which discuss housing, community facilities, transportation, utilities, and economic development, are all in some way related to land use.

Crafting a land use chapter will provide vital information to formulate a vision and identify a plan of how future land uses and development will transpire. The development of this land use chapter provides the impetus behind the formulation of land use regulations, which encompass zoning ordinances, subdivision and site plan review. The future land use plan describes the goals and objectives envisioned by the town; while the zoning, subdivision and site plan regulations are the means to implement these goals. For instance, if in the process of describing present land use patterns in Jaffrey, recommendations are made to encourage more commercial activity in a particular area, the zoning ordinance should be amended to permit that kind of activity in that location - if it does not already do so. Or, by the same token, the land use plan might recommend the zoning ordinance be made more restrictive in particular areas, for the purpose of protecting and preserving certain natural features in town.

Prior to delving into the quantitative data it is important to identify current land use patterns, trends, and issues. A major focus for communities has been to proactively plan for growth to insure thoughtful, logical development is identified and encouraged in such a way that there is no significant decline in municipal services on the Town of Jaffrey. Additionally, land use decisions should be weighed in light of their affect on the region to assure localized decisions to not impose negative externalities on neighboring towns.

Land use planning trends and regulations in New Hampshire have provided new tools and techniques for towns to incorporate. These contemporary planning techniques encompass fundamental land use planning principals intended to encourage more thoughtful, and calculated development. Several New Hampshire communities have endorsed these contemporary land use planning practices due in part to the increased growth and development pressures occurring on the landscape. It is important to identify and discuss some of the growth patterns which are contrary to these planning principals. These growth patterns often produce undesirable impacts such as increased traffic congestion, undesirable visual appearances, and encumbered pedestrian accessibility. These types of development can essentially be classified into three distinct forms: strip, sprawl and scattered. These land use forms are described below.

- Strip – A strip development pattern occurs along high volume roadways that span out from town centers and clusters. This development encompasses an array of residential housing and commercial development of a “stop and go” variety. Proximity to the highway is the major impetus behind this type of development. Municipalities typically zone this area for commercial uses and include prescriptive regulations to fit this pattern of development. Developers view these commercially zoned areas as economically viable locations to site commercial businesses. This type of development poses challenges for extending and maintaining public utilities due in part from the lack of centralized development and the outward extension of roadway development.
- Sprawl – A sprawl development pattern usually begins as strip development followed by horizontal and lateral development extending back from the roadway. Sprawl is also dominated by the roadway, which serves as the major force for this style of development. Sprawl expansion usually consists of residential subdivisions and commercial and industrial land uses. Visually, sprawl encompasses large front parking lots and minimal connectivity or linkages for pedestrian sidewalks and circulation. Additionally, building facades are visually disjointed and larger business signs are located within close proximity to roadway corridors. Some of the common problems that occur with sprawl are inefficient traffic circulation, lack of pedestrian connectivity and lackluster visual aesthetics.
- Scattered – Scattered development is development that has no discernable land use pattern. Typically, this development pattern results in a broad array of land uses dispersed across the landscape. Scattered development can lead to incompatibility amongst various land uses.

LAND USE CATEGORIES

The first step in the land use analysis is to classify the various land uses that exist in Jaffrey. A classification system describes these activities. The second step is an analysis of tax assessment data from Jaffrey using Geographic Information System (GIS) technology. Existing land uses are recorded on a map to illustrate an interpretation of the land use pattern.

In general, land is classified according to its physical characteristics and/or the present activity that occurs on it. The two major divisions in a land use classification system are "Developed" and "Undeveloped" uses. The following is a listing and description of the standard land uses categories used to prepare a land use plan:

- ◆ **Single Family Residential:** All land and/or structures used to provide housing for one household. These include site-built single family homes, manufactured homes (previously known as mobile homes), factory-built modular homes, and seasonal residences.
- ◆ **Duplex Residential:** All land and structures used to provide housing for a two (2) household unit. The two units in a duplex development share a common roof.
- ◆ **Multi-family Residential:** All land and or structures use to provide housing for three (3) or more dwelling units.
- ◆ **Institutional:** Establishments and facilities supported by and/or used exclusively by the public or non-profit organizations, such as fraternal, religious, charitable, educational and governmental facilities.

- ◆ ***Agricultural:*** Lands that are utilized for the cultivation of crops, the raising of livestock and poultry, and nurseries for horticultural purposes.
- ◆ ***Commercial:*** All lands and structures that supply goods and/or services to the general public. This includes such facilities as restaurants, motels, hotels, service stations, grocery stores, furniture and appliance sales, as well as establishments which are primarily oriented to providing a professional and/or personal service to the public, such as medical offices, banks and financial institutions, personal care establishments, etc.
- ◆ ***Mixed Uses:*** A development that combines two (2) or more different land uses on the same lot or contiguous lots in the same zone, such as retail uses and residential uses.
- ◆ ***Industrial:*** Land and/or facilities used for mining, construction, manufacturing, treatment, packaging, incidental storage, distribution, transportation, communication, electric, gas and sanitary services, and wholesale trade.
- ◆ ***Road network:*** All public and private rights-of-way that are designated for carrying vehicular traffic. This includes Class VI roads that are no longer maintained by the town and do not carry public traffic.
- ◆ ***Protected Lands:*** Included in this category are all federally-owned lands, all State parks and forests, land protected under New Hampshire's Land and Community Heritage Investment Program (LCHIP), land protected and/or owned by the town, sensitive land and wildlife habitats protected by the NH Audubon Society, land held by the Society for the Protection of NH Forests and the Monadnock Conservancy.
- ◆ ***Undeveloped:*** All lands that are not developed for any of the above uses, regardless of the reason - whether it be because the land is not usable due to environmental constraints, or there has been no demand to develop.

FACTORS THAT INFLUENCE LAND USE

Various factors influence growth and development in a town. Major physical and topographic features are primary factors that influence the initial as well as the subsequent development of land. Secondary factors usually consist of human-made features such as roads, railroads, utilities and major commercial, industrial or recreational facilities that attract and/or stimulate new or expanded development. Additionally, land use regulations can influence the types and locations of uses and development within a community. The following factors have played an important role in the development of Jaffrey:

Water

Jaffrey has 25 waterbodies dispersed throughout Town. Most of them are small, only measuring no more than a few acres in size. The largest body of water in Jaffrey is Thorndike Pond, which encompasses two hundred and twenty four (224) acres. Most of these waterbodies are hydraulically connected to streams and brooks which form the drainage pattern. The three watersheds located within Jaffrey are; the Ashuelot River, Millers River, and Contocook River watersheds.

Transportation Systems

Settlement in Jaffrey has been influenced by three primary roads; Routes 202, 124, and 137. Route 202 is classified by the state as a Class I road within the state highway system. Route 202 is a minor arterial which runs in a northerly/southerly direction through Jaffrey's downtown core. Routes 124 and 137 are classified as collector streets, which differ from arterial highways in that they are more likely to distribute traffic onto its ultimate destination than a major or minor arterial. Minor arterials differ from major arterials in they distribute traffic to smaller geographic areas, and place more emphasis on providing land access than the major arterials.

From a local standpoint, Route 202 serves to provide access for many local roads to and from Highway 101. Route 124 provides highway access to The City of Keene, which along with Route 202 to Rindge, serves as a regional hub for shopping and employment opportunities. Routes 202, 124 and 137 all traverse through Jaffrey's downtown.

Topography & Soils

Topography and soils also play a role in any town's development. Historically, people built houses and roads on land that was most easily accessed; and soil type and characteristics influence what kind of development will occur - farming, for example, and where that development will take place.

One of the most distinguishing natural features in Jaffrey is Mount Monadnock. The Mountain, which is located in the northwest corner of Jaffrey and spans within the confines of Troy, Dublin, and Marlboro. With an elevation of 3,165 feet, the mountain is surrounded by a heavily glaciated terrain consisting of exposed bedrock, large rock outcroppings, and steep slopes. In addition to the topographic constraints on development, Monadnock State Park consists of large land holdings by The Society for the Protection of New Hampshire Forests. This land will not be developed and is preserved in perpetuity. Rolling hills occupy the central and eastern portions of town, which can contain a slope gradient in excess of 15%. Drainage from these upland areas flow into the Contoocook River.

The soils of Jaffrey are characteristic of the Monadnock Region. Approximately 25% of the land area in Jaffrey has restrictive features such as wetness, steepness of slope, hardpan or floodplain conditions. Soils on steep slopes are usually thin with exposed bedrock or a shallow depth to bedrock. Floodplain soils tend to be fine and sandy with wetland conditions. Floodplain areas often have well-developed topsoil making them desirable for certain agricultural uses.

Wetland soils in Jaffrey are those that the soil survey categorizes as being poorly drained or very poorly drained (including muck and peat). Jaffrey has a scattered pattern of wetland soils, accounting for roughly 5% of the total land area, or 1,210 acres.

Public Utilities

Jaffrey Water Works operates the Town water system, which includes over 36 miles of piping and supplies approximately 1,500 water connections. The water service area also includes portions of the Town of Rindge. The average daily usage for the water system is 345,000 gallons pumped from two wells and stored and treated in two water storage tanks.

The Town of Jaffrey also operates a sewage treatment plant. The plant serves roughly 800 connections with an average daily flow of 490,000 gallons per day. These connections include an array of residential, commercial, industrial and institutional uses.

Land Use Regulations

Land use regulations can dictate to some extent the type and intensity of uses located on the land. In October 2005, a moratorium was passed prohibiting all several types of major subdivision proposals. This interim growth measure will last for the duration of one year. Prior to the expiration of the moratorium Jaffrey will investigate the possibility of incorporating permanent growth management measures.

CURRENT LAND USE PATTERNS AND TRENDS

An analysis of the present land use pattern in a town is one of the first steps in formulating a land use plan. Since the type and intensity of existing land uses have a strong influence on future development patterns, it is important to understand how land and other resources are used within a given area before recommendations can be developed relative to future land uses. As Jaffrey continues to grow and develop there will be new development challenges for locating suitable and economically feasible areas for development. Similar to first picking the lowest hanging fruit from the tree, the economic principle of increasing opportunity cost will play out as the least constrained areas become developed. As development occurs over time, the remaining land for development will be more encumbered by environmentally sensitive areas, or have inadequate road access or infrastructure. Additionally, land owners may see a greater incentive to subdivide their land as the market forces dictate future demand for suitable building lots.

The development of Jaffrey's land has gone through several changes as economic emphasis has shifted over time. The early agrarian society of the Town dominated the land use pattern of Jaffrey in its formative years. However, as the potential of the water power of the streams and rivers were realized and harnessed to service mill development throughout the Town, and the village center burgeoned. A town which had been a collection of farmsteads became a bustling community with an active and varied town center.

This is the image of Jaffrey which persists to this day, and one which the residents of town are so desirous of maintaining in the face of anticipated growth.

Many New Hampshire towns have developed in a similar manner to Jaffrey. Towns and cities were established when living patterns were less complex than they are today. Travel was difficult, and people lived within close proximity to their work, and to the services they required. The village center of Jaffrey is typical of this clustering of homes, businesses and services. The automobile and accompanying roadway infrastructure changed the traditional patterns of development, bringing both new desirable and undesirable (sprawl) types of development.

Jaffrey is comprised of a land area totaling 38.4 square miles or 24,576 acres. Only 1.8 square miles (1,152 acres) of this total area consists of surface water. Roughly 69 percent of the land in Jaffrey is presently developed for one of the uses described earlier in this chapter. A developed parcel of land implies that a use has been established on the property and at least a portion of the land is being occupied and taxed accordingly. It is important to note that a developed property does not necessarily imply the land has exhausted its development potential either through subdividing additional lots or intensifying uses on the land. For instance, a residential parcel may be considered "developed" even though the potential to subdivide additional parcels from the parent parcel is probable.

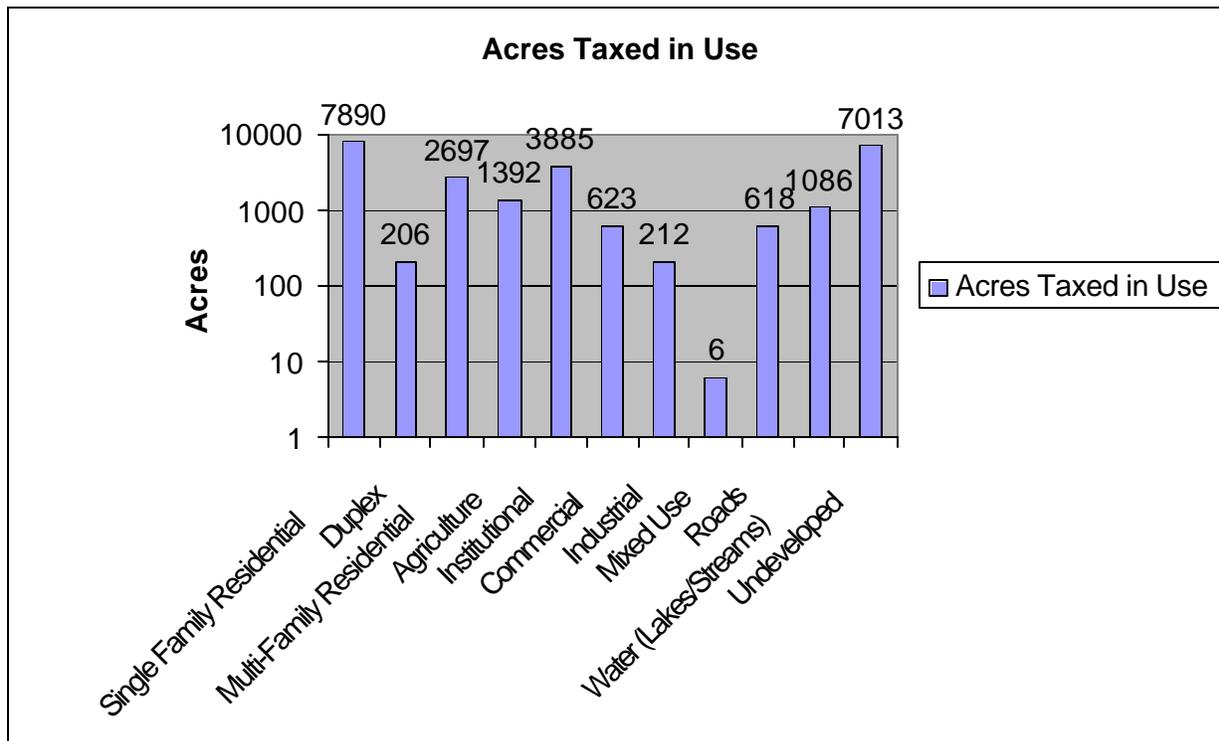
Attempting to calculate exact acreages for land uses - particularly residential usage, is difficult and time-consuming. Therefore, a commonly-used methodology is to simply assume two acres per each dwelling

unit or use other than public/semi-public and vacant land. For residential uses, this takes into account that multi-family units will typically occupy much less than an acre and most single family homes much more than an acre. It is common for more of a lot to be taken up by a non-residential use than is generally observed for residential uses. The analysis of Jaffrey’s existing land uses was performed in 2005 using Geographic Information System (GIS) technology with 2005 tax assessing data from the town. The 2005 tax assessing data from the Town of Jaffrey breaks land uses into the following categories:

- ◆ Single Family Residential
- ◆ Duplex Residential
- ◆ Multi Family Residential
- ◆ Agriculture
- ◆ Institutional
- ◆ Commercial
- ◆ Industrial
- ◆ Mixed Use
- ◆ Undeveloped

The land area taken up by roads and highways is calculated by assuming a 40-foot right-of-way, multiplied by the number of miles of road. The following Figure 1 identifies land used and the number of acres being taxed for each identified use.

FIGURE 1: JAFFREY LAND USES



2005 Tax Assessing Data from the Town of Jaffrey

Using tax assessment data can provide a rough sketch of how land is physically being occupied, however, it is important to understand that tax data provides only a partial view of how land is being used. Viewing the 2005 tax assessment data in relation to Jaffrey's zoning identifies how the land is being used within each zoning district. Zoning ordinances promulgate uses of the land which are permissible and prohibited within each district. Figure 2 identifies developed and undeveloped acreages within each zoning district.

FIGURE 2: DEVELOPED/UNDEVELOPED LAND BY ZONING DISTRICT

Zoning District	Developed (Acres)	Undeveloped (Acres)
Rural with Town Water	2,812	470
Rural without Town Water	12,020	6,258
Industrial	571	38
Historic	62	1
General Business District	141	23
Residential District A	283	51
Residential District A with Town Sewer	694	111
Residential District B	121	45
Residential District B with Town Sewer	212	16
TOTAL ACRES	16,916	7,013

2005 Tax Assessing Data from the Town of Jaffrey

Jaffrey's developed land identifies Rural without public water as the predominant zoning district. The Rural Zoning District contains a wide array of permissible land uses including; single family dwellings, duplexes, farms, and manufactured and mobile home parks. The General Business Zoning District allows a myriad of retail sales, professional offices, eating establishments and service related uses. The Industrial Zoning District allows manufacturing, warehousing, distribution and heavy equipment sales and service, in addition to other industrial related uses. Figure 3 identifies the number of industrial and commercially zoned parcels currently vacant and occupied.

FIGURE 3: COMMERCIAL/INDUSTRIAL ZONED PARCELS

Zoning District	Number of Developed Parcels/Acres	Number of Undeveloped Parcels/Acres	Total Parcels/Acres
Commercial & General Business District	207 Parcels	19 Parcels	226 Parcels
	141 Acres	23 Acres	164 Acres
Industrial District	55 Parcels	14 Parcels	69 Parcels
	571 Acres	38 Acres	609 Acres

2005 Tax Assessing Data from the Town of Jaffrey

The Commercial/General Business and Industrial Zoning Districts identified twenty three (23) and thirty eight (38) undeveloped acres respectively. It is important to look at the existing inventory of commercial and industrial lands to determine if adequate land is available to accommodate and bolster future commercial and industrial development. Additionally, it is important to consider the location of vacant commercial and industrial lands to garner an understanding of where future development will eventually be erected. Jaffrey's downtown contains a broad spectrum of commercial, multi-family and single family

land uses. A majority of parcels in the downtown vicinity are served by public water and sewer, which allows for higher density development. There is some industrial activity in downtown Jaffrey, although a majority of industrial uses are located on the periphery of the downtown core.

Jaffrey has a variety of public recreational opportunities. Hiking, field sports and boating are just a few of the recreational opportunities available in Jaffrey. Some of the existing opportunities and facilities include: Mount Monadnock, Contoocook Lake, American Legion Ballfield, Alderman Park, Humiston Park, Cheshire Park, Frost Pond, Shattuck Park, and Gilmore Pond.

While it is vital to assure Jaffrey has recreational areas and facilities to support the Town, preserving open space and scenic areas is also a laudable goal. The Current Use Taxation program was enacted in 1973 to promote the preservation of open land in the state by allowing qualifying land to be taxed at a reduced rate based on its current use value as opposed to a more extensive use. The minimum land area currently needed to qualify is ten (10) acres. The Current Use Taxation scheme exacts a ten percent penalty tax (10% of the sale price) if and when the property is later changed to a non-qualifying use.

In comparing conservation easements to current use taxation, easements are permanent, while current use may be reversed by change to a non-qualifying use and payment of the Use Change Tax. Thus, current use may satisfy the goals of a landowner who cannot afford to permanently abandon future development value, but desires current property tax relief. If it becomes financially necessary to subdivide, the current use change tax becomes an element of the development costs.

The Town of Jaffrey has a total land area of 24,576 acres, of which 263 properties totaling 7,050 acres are in current use, as of 2005.

The current use designation, authorized by RSA 70-A, provides the town other benefits as well: it encourages landowners to maintain traditional land-based occupations such as farming and forestry; promotes open space, preserving natural plant and animal communities, healthy surface and groundwater; and provides opportunities for skiers, hikers, sightseers, and hunters.

LIMITATIONS TO DEVELOPMENT

The data concerning the existing land use pattern reveals that roughly 69 percent of Jaffrey's total land area is currently developed, leaving roughly 7,000 acres undeveloped. Undeveloped land is defined as land which is devoid of land development or an established use. It is important to differentiate between undeveloped land which is currently idle and development land which has potential to yield additional lots, density or build out. Not all of the 7,000 acres of undeveloped land is suitable for future development. Limiting factors to development include steep slopes, certain soil types, wetlands, aquifers, floodplain areas, and other sensitive lands or features. In addition to these physical constraints, development is limited by the public's desire to protect the quality of life and property values of existing residents. This public will is ideally expressed in the town's land use regulations, and is the central purpose of this planning document.

Four maps have been created using Geographic Information System technology showing limitations to development in Troy: *Stratified Drift Aquifers*, *Steep Slopes*, *Wetlands & Hydric Soils*, and *Development Constraints*. These maps identify the seven constraints to development that are related to the ability of the soil to accommodate septic systems, road or building construction.

FIGURE 4: DEVELOPMENT CONSTRAINTS
Limits to Development

	Acres	% of Town Land Area
Total Land Area	24,576	100%
<u>Development Constraints</u>		
Slopes greater than 25%	1,529	6%
Poorly and very poorly drained soils (Hydric soils)	1,894	8%
Wetlands*	1,896	8%
Floodplain	4,427	18%
Shallow to bedrock soils (Less than 40 inches)	1,799	7%
Shallow to water table (Less than 1.5 feet)	6,628	27%
Water (Lakes/Streams)	1,152	5%
Conservation Lands	5,829	24%
* National Wetlands Inventory (NWI)		
Source: SWRPC Geographic Information System		

The development constraints listed above provide summary of the acres and percentages of land encumbered by various constraints. This summary is intended to illustrate the types and percentages of constraints found in Jaffrey. Prior to drawing any conclusions it is important to understand that a property may, and often does contain more than one development constraint. For example, it is not uncommon for the same lot to have a stream, floodplain and shallow water table.

In comparing limitations to development to the Existing Land Use Map, it can be seen that, while the development does follow almost every road in town, the areas shown as having the greatest constraints have not been developed. How much of this pattern is due to the natural constraints of the land or to other factors such as road access is not known.

In addition to topographical constraints, State Law allows municipalities to enact regulations which can limit and curtail growth and development. Under RSA 674:23 municipalities can adopt growth control measures to be used on an interim basis while municipalities devise permanent growth management mechanisms (i.e., phased development). Jaffrey and the surrounding Towns of Fitzwilliam, Rindge, and Dublin have all incorporated interim growth management schemes. Such schemes include a limit on the number of building permits or a prohibition on new subdivision development. A majority of Towns using interim growth measures have placed a moratorium on "major" residential subdivisions which is a division of one parcel of land into four or more lots.