CHAPTER VI
ECONOMIC DEVELOPMENT

A. INTRODUCTION

The Litchfield economy is intertwined with that of the Nashua Region and New Hampshire. The regional economy is complex, advanced and dynamic, providing a high standard and quality of living for most residents. Over the last 25 years, the region demonstrated significant annual growth, posting large cumulative gains in population, employment and productivity. Physical development within the commercial and industrial sectors in the region is equally noticeable.

Although Litchfield experienced tremendous growth in population and housing over the last 50 years, change in the non-residential sectors within Litchfield has been low to moderate. Litchfield's commercial development consists primarily of small businesses in the basic sectors: services, agriculture, natural resource extraction and construction, along a few other very small businesses that are not easily classified. One change, which has occurred, is that some farming operations have been transformed into residential development, causing some decline within that sector.

This analysis examines the structure of the Litchfield and regional economy, focusing on its different components, as well as the changes occurring. An exception is that population; personal income and housing are discussed in the Population and Housing chapter. Reviewed herein are: employment; the structure, groupings, and trends in commerce; and the physical and market characteristics of commercial development in Litchfield and the larger region. A goal in presenting and analyzing this economic information is to help identify key resources and constraints that influence the selection of a sustainable economic program in Litchfield.

As discussed in Population and Housing, living standards in New Hampshire are high and Litchfield embodies the NRPC region with above average incomes compared with the state. There appear to be many moderate-income households in Litchfield. Census 2000 data shows that approximately 87 percent of households earned more than $35,000 in 1999, which is 12 percent higher than the NRPC region average and 20 percent higher than the overall State average. Nationally, New Hampshire had the seventh highest per capita income at $33,127[1]. On the other hand, the Nashua region has low poverty rates compared with the State and the State consistently demonstrates that low poverty rates compared with the national average. New Hampshire's percentage of persons in poverty is 6.1 percent, as compared to 12.5 percent for the nation.[2]

B. EMPLOYMENT & ECONOMIC BASE OF THE NASHUA REGION & NEW HAMPSHIRE

The NRPC region economy is high-tech and service-sector based with relatively large numbers of persons employed in manufacturing. A recently robust economy has resulted in high rates of regional labor force participation, exemplified by low unemployment and steady or increasing wage rates.

Over the last 20 years the region demonstrated job growth across all industries, particularly in the service sector and trade; however, the 1980s recession resulted in job losses, particularly in manufacturing. These declines in regional manufacturing employment were less extensive than what occurred at the State and national level.

---

[1] *2001 New Hampshire Economic Review,* **(Manchester, NH: Public Service of New Hampshire Economic and Community Development Department, October, 2001) Pg.9.**
[2] *2001 New Hampshire Economic Review,* **(Manchester, NH: Public Service of New Hampshire Economic and Community Development Department, October, 2001) Pg.6**

1. Distribution of the Workforce and Economic Productivity by Sector

A traditional method of tracking employment and productivity is according to industrial classifications, grouped according to Standard Industry Classification (SIC) codes defined by the U.S. Department of Labor. One main source of employment and earnings information categorized by SIC for places is the NH Division of Employment Security, hereafter NHES, payroll tax statistics.

Table VI-1 breaks down the job distribution by economic sub-sector for the Nashua Primary Metropolitan Statistical Area, PMSA, and the state for the 557,980 private industry and government jobs in 1997. Since SIC codes are being replaced by the North American Industrial Classification System, or NAICS, the corresponding NAICS codes are presented along with SIC codes. The ten economic sectors represent the most common way of classifying the main types of economic activity based on payroll activity and aggregate business activity characteristics.

Ninety-one percent of the 89,822 jobs tracked in payroll reporting within the Nashua PMSA jobs were in private industries. The largest part of employment in the Nashua PMSA in 1997 was in manufacturing sectors, at 31 percent. This compares with the largest grouping of State employment, 28 percent, occurring within the service sector. In the region, manufacturing employment accounted for nearly 27,000 jobs, or 30.1 percent, retail trade accounted for just over 19,500 jobs, or 23 percent, and Services accounted for 17,500, or 20 percent of all Nashua PMSA jobs. Together these three sectors account for nearly 3/4s of all regional employment.

Table VI-1: Industry Employment In New Hampshire & The Nashua Region

Grouped By Main SIC Sectors – 1997

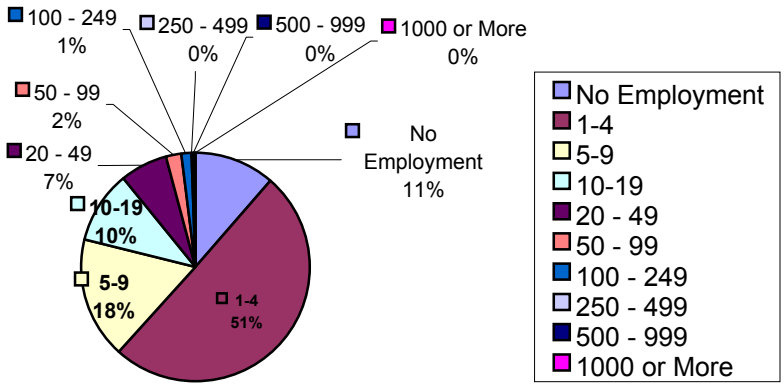
Sector	SIC Range (Two Digit)	NAICS Conversion (Sector)	NRPC Region	Percent (%)	NH	Percent (%)
Agriculture, forestry, fisheries & mining	01-14	11, 21	667	0.8%	4,923	0.9%
Construction	15-17	23	2,741	3.2%	20,221	3.7%
Manufacturing – nondurable goods	10-22	31-33	20,788	24.1%	32,743	6.1%
Manufacturing -- durable goods	23-39	31-33	6,200	7.2%	71,539	13.2%
Transportation, Commun. & Public Utilities	40-49	48-49, 22	2,159	2.5%	19,127	3.5%
Wholesale trade	50-51	42	3,726	4.3%	26,695	4.9%
Retail trade	52-59	44-45	18,166	21.1%	116,258	21.5%
Finance, insurance, and real estate	60-67	52-53	3,300	3.8%	27,961	5.2%
Services	70-89	54-56; 61-62; 71-72;	20,919	24.3%	150,405	27.8%
Public administration	99	92	7,469	8.7%	71,281	13.2%
Total	**-**	**-**	**86,135**	**100.0%**	**541,153**	**100.0%**

Source: NH Employment Security, NHES, June 1999.

For comparison, six years earlier in 1991 there were 81,500 jobs in the Nashua PMSA when manufacturing employment accounted for 29,000 jobs (or 36 percent), trade accounted for 19,500 jobs (24 percent), and services accounted for 17,500 jobs (21 percent). Together these three sectors accounted for 80% of all employment. In the period 1991 to 1996, there was five percent job growth despite residual effects of the early economic slowdown and the loss of 2,000 jobs in manufacturing.

Figure VI-1

Distribution of Firm Sizes in New Hampshire
Based on NHES Payroll Tax Reporting, 1997



Source: NHDES, 2000.

The NRPC region accounts for more than one fourth of all manufacturing jobs statewide. The NRPC region manufacturing base represents more than one third of all industrial and commercial machinery and manufacturing jobs and half of statewide employment in instrument manufacturing. The largest part of all manufacturing jobs was in the durable goods sector, which produce goods with a useful life of three years or more. While there has been consistent decline in manufacturing within the last 25 years, it is noteworthy that there is a robust manufacturing economy in the NRPC region, particularly in durable and high technology goods.

Figure VI-1 shows the distribution of different size firms in the State of New Hampshire in 1997. Ninety eight percent of firms have less than 50 employees. By far and away most firms, 77 percent, are very small businesses. Figures on firm size are not available for the region; however, it is reasonable to assume that many regional jobs are associated with very small businesses since national statistics reflect this trend.

2. Largest Employers in the Region

Table VI-2 shows the 15 largest employers in the Region in 1998, excluding local governments and schools. The nearly 18,000 employees comprise a workforce employed in a variety of sectors concentrated around manufacturing of electronics such as computer parts and precision instruments. Together these 15 employers represent 1/5th of the total area employed workforce for the NRPC region.

Table VI-2: Largest Employers In The Nashua Region, 1998:

Private Organizations, Non-Profit Institutions & Federal Government

Firm Name	Location(s)	Number of Employees
LOCKHEED-MARTIN*	Nashua, Merrimack. & Hudson	5,395
COMPAQ CORPORATION*	Nashua	3,000
FIDELITY INVESTMENTS	Merrimack	1,500
TERADYNE CONNECTION SYSTEMS	Nashua	1,200
NASHUA CORP.	Nashua	830
HITCHINER MANUFACTURING CO.	Milford	800
KOLLSMAN	Merrimack	610
ST JOSEPH HOSPITAL	Nashua	970
SOUTHERN NH REG. MED CENTER	Nashua	500
FAA CENTER - US DEPT TRANS	Nashua	500
UNITRODE CORPORATION	Merrimack	500
ANHEUSER-BUSCH INC	Merrimack	485
CALIFORNIA PELLET MILL CO	Nashua	480
CABLETRON SYSTEMS*	Merrimack	[400] 0
ELECTRO MECHANISMS INC	Hudson	380
TOTAL		**17,150**

Source: NRPC Transportation Division, based on NRPC database, updated 1998.

Note: Lockheed-Martin is now BAE Systems; Compaq Corp. is now Hewlett Packard and Cabletron has closed its Merrimack facility.

A 1991 Mt. Auburn Associates study notes that much of the regional job growth in the early 1980s was attributed to two firms: 1) Sanders (now Lockheed-Martin), and 2) Digital Equipment Corp. (now Compaq Corporation). The study noted that the two firms do not have strong ties to the region, such as headquarters based in greater Nashua that may influence the permanence of jobs in the event of industry change or economic recession. A decade later these firms continue as the largest employers, although both were involved in mergers with multinational corporations. Lockheed-Martin is now BAE Systems and Compaq is now Hewlett Packard.

It appears that a large portion of the jobs in the region remain with a small set of firms. The economic status of large employers is of concern because of potential links between these firms and other area businesses. The hiring and fiscal practices of large firms may have a noticeable impact on the regional economy, such as the labor force. Similarly, clusters of other businesses may arise in activities that complement or are related to the industries in which these very large firms concentrate, while other businesses may be sustained by providing goods and services to employees.

C. INDICATORS OF ECONOMIC GROWTH AND CHANGE

1. Private Industry Development

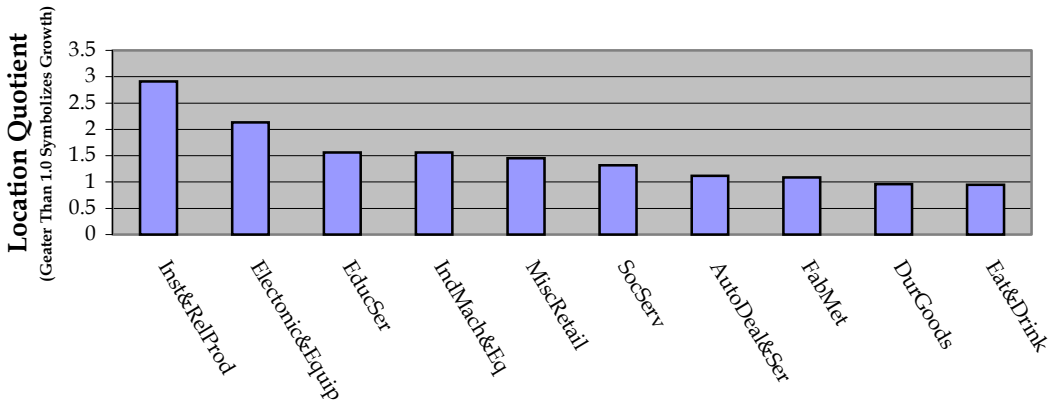
As noted earlier, economic growth and change is a hallmark of the region. Durable goods manufacturing, telecommunications, software, healthcare and computer technologies are typically referred to as growth industries in New Hampshire. Continued growth in these industries is expected because of the growth and spread of new high technologies.

2. Location Quotient Analysis

Location quotients are a quantitative tool used to identify the competitive advantages of geographic regions. Figure VI-2 shows the leading industries in New Hampshire in 1995 as listed in the 1998 State Development Plan prepared for the Governor by OSP and the Whittemore School of Business and Economics, University of New Hampshire. Larger numbers represent sub-sectors with very high levels of employment concentration unique to New Hampshire when compared with employment in the U.S. overall. Location quotients value above one indicate industry concentration in the state above the national average and suggests that the state has a competitive advantage (relative to other states) in that industry. Instruments, related products, and the manufacturing of electronic equipment have the two highest location quotients. In 1996, these two sub-sectors had $218 and $130 million of exports respectively, only surpassed by industrial machinery exports at $502 million.

Figure VI-2

NH Leading Industries in 1995



Source: OSP, et al; 1995.

One sector not present in the location quotients graphic is financial services, although certain sub-sectors are relatively advanced in Massachusetts. The State Development Plan notes that the strength of this sector in adjoining Massachusetts may indicate the potential to cultivate this type of industry in the future within New Hampshire.

3. Other Economic Indicators

High technology firms represented four of the top five fastest growing New Hampshire-based private companies ranked according to gross sales revenues by Business NH Magazine in 1998. By comparison, the largest private firms in the State consist of medical centers, auto dealers, manufacturers, realtors and construction concerns. Fifty-nine of the 100 largest private firms are in what the magazine classifies as the Merrimack River Valley (a broad area stretching from Manchester and including much of the NRPC planning region. This confirms the growth and change over to high technology in southern New Hampshire. Similarly, in the 1998 State Development Plan ranking of leading industries based on factors including the number of establishments, the average annual pay, and employment, showed that Hillsborough County had ten leading industries, three ahead of the second highest, Strafford County.

Further evidence of economic development in the NRPC region is the large number of firms expanding and locating around Litchfield. The 1998 New Hampshire Economic Review by Public Service of New Hampshire listed 27 new firms locating in New Hampshire and 29 firms undertaking major expansions in 1997. Combined the expansions represented over 5,000 jobs.

Twenty-three occurred in municipalities adjacent to Litchfield or in the City of Nashua:

- Fidelity Investment expansion in Merrimack (650) jobs;
- Insight Technology in Londonderry (100 jobs);
- Lockheed divisions in Hudson and Nashua (150 jobs); and
- Delta Education in Hudson (170 jobs).

4. Occupations, Labor Force & Wages

The current state and regional labor environment is one of high demand for all workers, particularly skilled workers, very low unemployment and stable, but increasing wages. Table VI-3 shows the average annual wage for employees in the State and Nashua Area Labor Market for the basic economic sectors in 1998. The average weekly wage of all employees was $699 in the combined category of private industries and government, four dollars less than the average wage in private industry alone. On a per annum basis this equates to $36,296. The region's highest wages were in Manufacturing industries with an average of $934 for Durable and Non-durable sectors combined. Another notably high average wage was in Wholesale Trade sector at $973. The lowest average was Retail Trade sector at $360.

Table VI-3: Industry Weekly Wages In New Hampshire And The Nashua Region Grouped By Main SIC Sectors – 1998

Two Digit SIC Sector	NH	Nashua Region
Agriculture, forestry, fisheries (01-09)	$405.16	$433.56
& mining (10-14)	$696.77	$960.72
Construction (15-17)	$674.35	$734.55
Manufacturing -- nondurable goods (part of 20-39)	$694.96	$807.38
Manufacturing -- durable goods (part of 20-39)	$814.73	$932.95
Transportation, Communication. & Public Utilities (40-49)	$712.62	$587.73
Wholesale trade (50-51)	$905.67	$972.74
Retail trade (52-59)	$337.33	$359.65
Finance, Insurance, and Real Estate (60-67)	$814.17	$888.16
Services (70-89).	$554.17	$625.32
Public administration (99).	$568.98	$651.90
Average	**$595.10**	**$698.06**

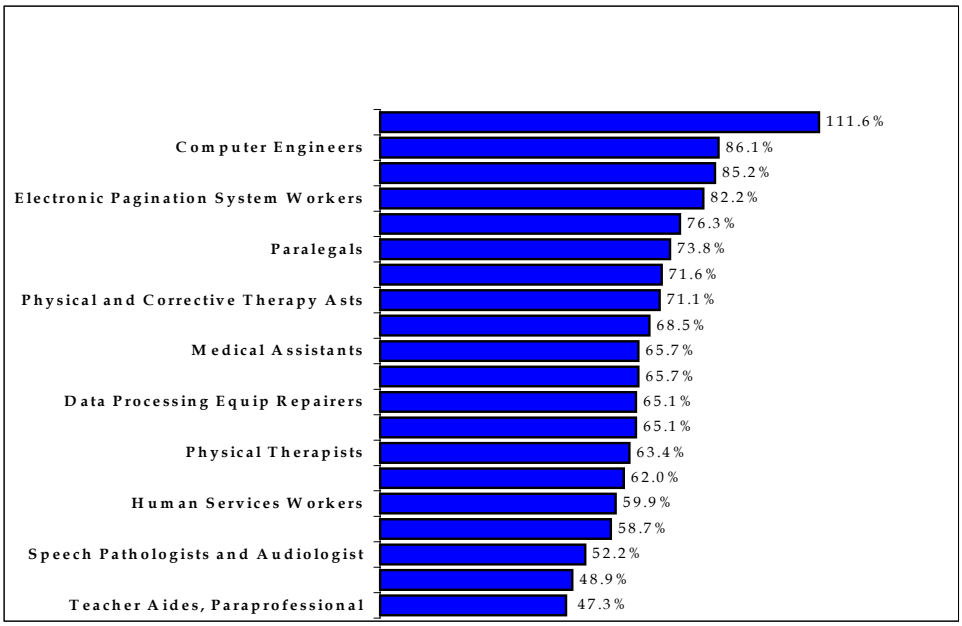
Source: 1998 Profile of New Hampshire and Its Labor Market Areas, NHES, 2000, as accessed at http://www.nhes.state.nh.us/elmi/pdfzip/lma98.pdf

One reason for the attention to the manufacturing sector of regional employment is the high average weekly and hourly wages. The 1997 New Hampshire Economic Review by Public Service of New Hampshire listed the average manufacturing wages in Nashua of $14.79 per hour as $2.00 per hour higher than comparable wages at the State or National level.

5. Occupational Growth

Figure VI-3 shows occupations projected to grow in the New Hampshire based on the 1998 NHES document New Hampshire Employment Projections By Industry and Occupation: Base Year 1996 To Projected Year 2006. New Hampshire employment is expected to grow slightly faster than United States employment. Occupational growth appears grouped around business and health care trades (home health aides, dental assistants and respiratory therapists), particularly within information and computer sciences (such as computer engineers, systems analysts, and database administrators) and other service sector jobs. Computer sciences tend to carry much higher salaries as the wages for computer sciences are commonly more than $20 per hour ($41,600 per annum).

Figure VI-3: Fastest Growing Occupations New Hampshire, 1996 to 2006



Source: NH Employment Security, 1998.

6. Unemployment

Table VI-4 shows Litchfield and regional unemployment. Litchfield unemployment generally runs less than the State and U.S. Regional unemployment is at the lowest rate in 25 years and labor force participation rates are high. Worker shortages may actually be influencing slower growth since production is influenced by labor supply. Due to high demands for workers by area employers, many people not previously participating in the work force appear to have reentered the market.

Table VI-4: Labor Market Summary; Litchfield, Nashua PMSA, State of New Hampshire, New England & U.S.

Year	Litchfield Labor Force	Number Unemployed	Nashua PMSA Labor Force	Number Unemployed	Unemployment Rates				
					Litchfield	Nashua PMSA	NH	NE	US
1989[1]	3,067	67	98,980	3,690	2.2	3.7	3.4	N/A	N/A
1990[1]	3,393	113	101,380	6,180	3.3	6.1	5.6	5.7	5.5
1991	3,356	172	100,730	7,360	5.1	7.3	7.2	8.0	6.7
1992	3,446	196	97,260	6,940	5.7	7.1	7.5	8.0	7.4
1993	3,598	193	97,510	6,580	5.4	6.7	6.6	6.8	6.8
1994	3,645	159	95,390	5,090	4.4	5.3	4.6	5.9	6.1
1995	3,610	140	96,380	4,310	3.9	4.5	4.0	5.4	5.6
1996	3,660	140	95,300	4,020	3.9	4.2	4.2	4.8	5.4
1997	3,860	100	101,760	2,820	2.7	2.8	3.0	4.2	5.2
1998	3,910	100	102,080	2,830	2.6	2.8	2.9	3.5	4.5
1999	4,020	110	104,870	3,050	2.8	2.9	2.7	3.3	4.2
2000[2]	4,150	150	107,400	3,220	3.6	3.0	2.8	2.8	4.2

Source: Local Area Unemployment Statistics, NH Department of Employment Security.

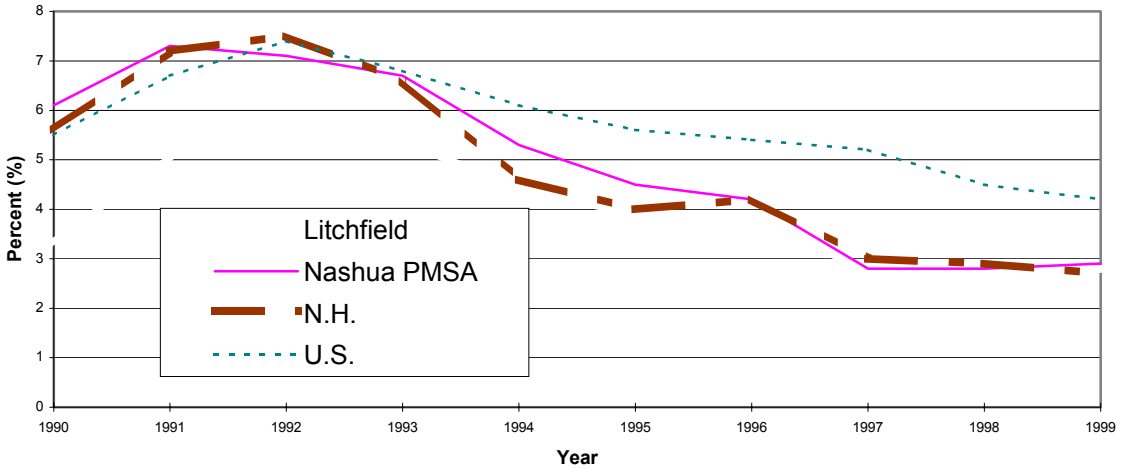
Notes:

1) Composition of the Nashua PMSA changed during the 1990 US Census; therefore, comparison is not possible between statistics prior to 1990 and subsequent periods.

2) The 2000 figures are for June rather than a seasonally adjusted end of the year average; this discrepancy should limit comparisons with the earlier periods.

Figure VI-4

Unemployment Trends 1990 - 1999: Litchfield, Nashua PMSA, NH & US



The graph of these unemployment statistics in Figure VI-4 shows that currently there are very low levels of unemployment claims. This probably means that people laid-off in the last two years most likely had quick success finding new jobs.

7. Litchfield Employment and Economic Base

By any measure, be it total employment wages or estimated number of local private firms and employing organizations, Litchfield's economic base constitutes a small part of the regional economy. In 1998, 602 employees were listed by organizations making payroll tax contributions to the Social Security wage pool maintained by NH Employment Security. The set includes 65 private firms with Litchfield addresses employing 404 persons. There were also 198 government employees. Compared with the State and region, Litchfield has a higher percentage of jobs in the public sector. Not included are agricultural workers on small farms, commission paid realtors and church employees.

In addition to the 602 jobs identified through payroll tax reporting, there are home based business and sole proprietorships, such as self-employed persons. According to a Summer 2000 list maintained by the Planning Board, approximately 18 home-based businesses have obtained Planning Board approval. It is also estimated that there are 25 firms or sole proprietorships, many located in residential dwellings, that employ upwards of 75 people, but which do not require Planning Board approval to operate. Finally, there are part-time seasonal workers employed at local farms.

Combining different data sources and windshield survey information, there are roughly 125 to 150 different entities that employ persons or conduct a business enterprise with a visible physical presence in Litchfield. Based on this information, a rough estimate of the Litchfield employment base is 750 to 900 persons. With 800 people employed within Litchfield boundaries, it is further estimated that one-sixth to one seventh of residents who participate in the regional workforce are employed right in Town.

8. Business Base

Businesses in Litchfield are primarily very small; averaging ten employees or less based on the Employment Security figures. A 1997 American Business Directory search of private employers reporting Litchfield addresses shows that of 94 businesses, 87 percent had sales less than $1 million dollars. Table VI-5 shows the top 10 largest employers in Litchfield.

Table VI-5: Largest Employers -- Litchfield, NH, 2000

Establishment	Line of Business
LITCHFIELD SCHOOL DISTRICT	Public School -- 150 to 200 Employees
KLARMANN RULINGS, INC.	Reticles/Optics Manufacturers --20 to 49 Employees
NEW ENGLAND SMALL TUBE CORP.	Tubing/Metal Wholesale -- 20 to 49 Employees
PASSACONAWAY COUNTRY CLUB	Public Golf Course -- 20 to 49 Employees
CROFTER'S PUB	Restaurant -- 20 to 49 Employees
TOWN OF LITCHFIELD	Local Public Administration -- 20 to 49 Employees
KON-SULT INC.	Calibration Devices Manufacturing -- 10 to 19 Employees
Dlb Paving Co.	Paving Contractors -- 10to19 Employees
Romano's	Restaurant -- 10 to 19 Employees
WILSON FARMS OF NH, INC.	Agriculture/Farm -- 10 to19 Employees

Source: American Business Directory, 1998. Revised by NRPC 2000.

D. PROPERTY TAXES

The main component of municipal revenues in New Hampshire is property taxes. In Litchfield, the economic base is primarily residential -- 92 percent of the gross assessment in 1999 was in the residential sector. A 1988 study by the Litchfield Industrial-Commercial Development Committee similarly showed that in the 1980's real property base expansions were primarily in the residential sector. At that point, 80 percent of the property base was low-density single family homes. Furthermore, in the 1980s Litchfield had one of the lowest taxable valuations in the region. Since 1988 these trends continued, with the residential sector coming to represent 90 percent of the tax base in 1999, although as Table VI-6 shows, Litchfield is now in the middle of the range of total tax valuations in the region. While the residential/non-residential split has remained more uneven than adjacent communities, the Population and Housing chapter and the 1999 Nashua Region Housing Needs Assessment by NRPC each provide evidence that the value of housing on a per unit basis increased in Litchfield since the 1980s. It also appears that housing prices increased at a higher rate than the region as a whole for a corresponding period.

Table VI-6: 1999 Municipal Tax Valuations In The NRPC Region

NRPC Municipality	Total Equalized Taxable Valuation	Percent	Rank
Litchfield	$343,713,767	3.0%	8
Amherst	$839,068,431	7.3%	4
Brookline	$240,968,481	2.1%	9
Hollis	$647,752,147	5.6%	7
Hudson	$1,331,393,328	11.5%	3
Lyndeborough	$85,354,000	0.7%	12
Merrimack	$1,621,545,137	14.0%	2
Milford	$670,871,972	5.8%	5
Mont Vernon	$111,282,492	1.0%	11
Nashua	$4,840,386,158	41.8%	1
Pelham	$652,883,263	5.6%	6
Wilton	$189,385,089	1.6%	10
Total	**$11,574,604,265**	**100.0%**	**-**

Source: NH Dept. of Revenue Administration, 2000.

Real property values and tax rates can be used to examine how development influences public finance. Over most of the last five years tax rates have demonstrated small increases in Litchfield. The figures are not indexed to inflation, and it is likely that a part of these tax increases are attributable to inflation.

Table VI-7 shows the tax rates in the communities adjacent to Litchfield. The full-value tax rate in Litchfield is comparable with the overall county average. Compared with bordering municipalities, Litchfield fits in the middle of the range. Hudson and Merrimack have lower tax rates, perhaps attributable to large property assessments in the non-residential sector and moderately high values for residential properties.

Table VI-7: 1999 Area Equalized 'Full-Value' Property Tax Rates

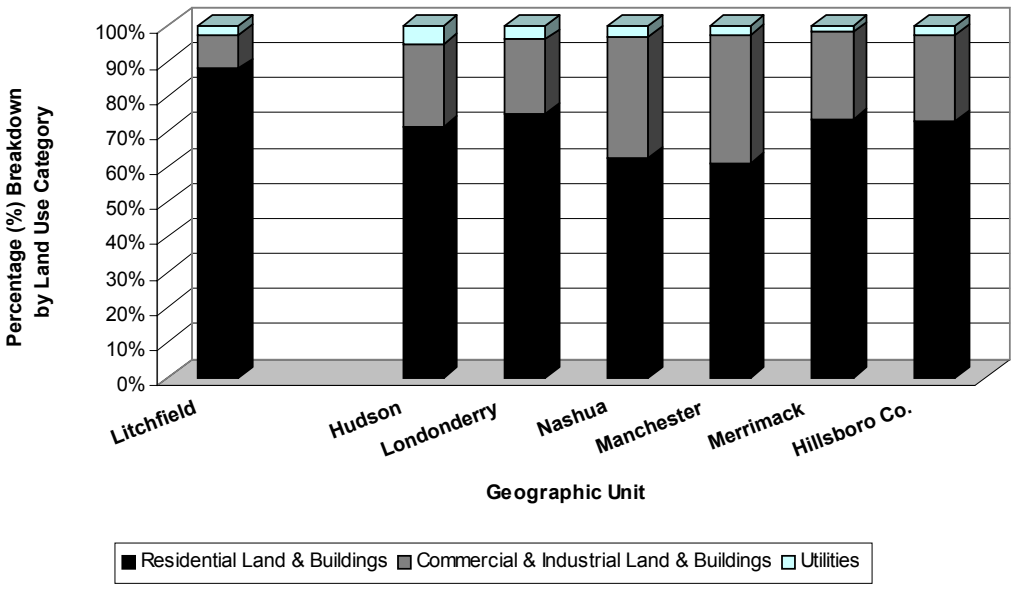
Place	Local Tax Rate (in Dollars)	Full-Value Tax Rate (in Dollars)
Litchfield	$20.60	$21.75
Hudson	$21.18	$18.40
Londonderry	$26.27	$23.26
Manchester	$30.49	$25.98
Merrimack	$24.58	$18.46
Nashua	$25.90	$21.09
Hillsborough County	**$25.05**	**$21.75**

Source: 1999 Equalization Survey NHDRA 2000.

Figure VI-5 shows tax assessments from residential (land and buildings), versus commercial (land and building), and utilities in cities and towns adjacent to Litchfield for 1997. In Litchfield in 1997 a large part, 90%, of tax revenues emanated from residential uses. This is 13 percent higher than Londonderry and 12 percent higher than Merrimack, municipalities with the next highest residential tax burdens.

Figure VI-5

Gross Property Assessments Breakdown by Land Use Categories, 1997
Litchfield, Adjacent Communities & Hillsborough County



Source: NHDRA 1998

Notes:

1) Information is not equalized by NH DRA.

2) Residential Land and Buildings does not contain manufactured housing.

3) Current use data is not included in any category.

1. Commercial Geography of Litchfield & The Nashua Region

Greenhouses at Rodonis Farm, just north of where the *Circumferential Highway will join Route 3A*

The geographic centers of Litchfield commerce are NH Routes 3A and Route 102. Route 3A business consists of agriculture, such as nurseries, farm stands, and self-pick berries; recreation and amusements; restaurants; manufacturing and convenience businesses. Route 102 consists of service, professional and convenience businesses with some light industrial uses.

Descriptions of the commercial real estate markets in the Nashua region are available in the Greater Nashua Regional Chamber of Commerce, GNRCC, annual reviews. The 1994 review characterized real estate markets in southern New Hampshire as volatile with booms and busts. A consequence of the late 70s and early 80s boom economy was over-investment in real estate. According to a Mt. Auburn Associates 1993 study, the 90s recession was actually influenced by extensive real estate speculation and overbuilding. Since then there has been a consistent economic expansion at the regional and national level.

One remnant of industrial development in the central cities of the region is a large supply of mill-type industrial space. Population growth over the last 25 years has also stimulated residential and non-residential real estate development. Litchfield does not have mill space, although there is potential for increased levels of development within local land markets since vacant land may be subject to investment and real estate speculation.

Today, regional commercial real estate markets are strong and a large part of the total real estate valuation for the State is in southern New Hampshire. According to the GNRCC, the estimated 1996 commercial real estate sales values for the Nashua region totaled $281 million compared with $279 million residential. The 1997 Chamber review notes that sales volumes in the region are higher than would be expected for its 15 percent share of State population. The dollar volume of transactions also increased disproportionate to population. One area demonstrating the highest commercial real estate values is in south Nashua adjacent to Route 3 and the Massachusetts border. Low and moderate interest rates are another factor contributing to strong markets. In 1998 the Federal Reserve of Boston noted that a slight economic slow down from mid-1997 to mid-1998 in New Hampshire may be attributable to a tight commercial real estate supply accompanied by high demand for such space.

By most accounts, regional commercial real estate markets are now quite active. Commercial occupancy rates are 90 to 95% depending on the type. According to the 1998 Chamber review, office/warehouse space is leasing at $4.25 per foot and Class A office space is leasing at $12.00 to $16.50 per square foot. Average commercial property costs appear to have increased into the range of $65,000 to $100,000 plus per acre. Assertions that the regional real estate market is entering an unsustainable boom are countered with the point that real estate finance and investment patterns are fundamentally different than a decade earlier, with less risk taking by lending institutions, and fewer real estate development concerns investing in speculative building. Even with real estate price inflation, localities such as Nashua provide cheap alternatives to higher priced markets. In 1996, Class A office space was half of that along Route 128.

2. Litchfield Commercial/Industrial Real Estate Market

The largest organic farm in New Hampshire is in Litchfield.

The extent of commercial real estate development in Litchfield is not extensive, although urbanization is expected to continue. Confirmation that non-residential development is low is verified by the fact that 7.2 percent of 1999 community property land and building valuation, excluding properties in current use, consisted of commercial and industrial land and building or utilities. Of this $27.4 million valuation, 56 percent represents commercial land, which confirms that non-residential building development is not extensive. There are also many active farms in the Route 3A corridor that are in current use along with accessory uses such as pick-your-own farms, farm stands and nurseries.

In the last decade, new commercial developments include a golf course on Route 3A and a small office building on Route 102. Additionally, recent approvals by the Planning Board in the northern commercial districts include another golf course, mini-storage facility and a office/warehouse. As evidenced by development of the existing golf course, the conversion of farmland into commercial uses has been a slow but consistent trend. It is important to consider the impact of this type of change of use on the municipal fiscal condition and the appearance of the community. A fiscal impact analysis follows this section and there is also discussion below on the physical and visual impacts of nonresidential development and the ways to manage new development so that it does not convey adverse impacts to the community.

In 1996, the 168 local sales of all property types, valued at nearly $18 million, represented approximately three percent of NRPC region sales according to data from the Greater Nashua Chamber of Commerce. With a seemingly low average price of $107,000 per sale, an assumption is that the nonresidential transactions involved low-grade commercial space or conveyances of vacant land. A windshield survey of the main commercial corridors in August 2000 identified one non-residential parcel for sale in the 3A corridor.

There appears to be little, if any, Class A office space and very small amounts of low class office/retail space in Litchfield. Therefore, developed sites could be expected to command lower rents than other areas. Excluding farm buildings, most commercial uses in Litchfield consist of structures constructed or retrofitted within the last 25 years. Usually the office and retail properties have small building footprints, typically less than 5,000 square feet. Examples of recent commercial redevelopment are retrofitted retail and professional offices along 102 and upgrades to retail/service establishments on 3A, including the expansion of a small amusement park and an adjacent restaurant. There is commercial redevelopment potential within commercial zoning districts; such as along Routes 102 and 3A because there are many existing residential uses that predate the commercial districts.

According to the Greater Nashua Chamber of Commerce in 1997, office space is commanding somewhat higher prices, $1-4 per square foot, in suburban locations. However, the lack of significant commercial development may influence Litchfield's divergence from this trend. Evidence of somewhat strong local demand for commercial real estate comes from a case in north Litchfield. A warehouse site became vacant when a bakery moved out of town, but it was quickly re-occupied by another non-residential use.

3. Future Development Potential

It is difficult to forecast future commercial real estate development potential in Litchfield with accuracy; however, it appears that regional transportation system improvements and expansion of the Manchester Airport will affect the non-residential development potential in the future. The community has some noteworthy amenities, but it lacks many types of infrastructure that commercial development often demands. As described in detail below, expansion of the airport is continuing with runway extensions, development of a limited access airport connector highway is proposed to commence around 2004, and environmental impact statements are being revised for the delayed development of the Nashua-Hudson Circumferential Highway. Since non-residential zoning districts are close to the north and south borders of the Town near where these changes are proposed, there probably will be a spill-over effect that results in an increased pace of development on non-residential lands. It would benefit the community to have an economic plan in place to help guide and manage this increased level of development to ensure that community character is maintained and other potential adverse impacts are appropriately mitigated.

An assumption derived by the Economic Development Working Group, EDWG, a subcommittee of the Planning Board, is that future non-residential development will be approximately 25,000 Ft^2 per year over the next 20 years. This figure is lower than the rate of commercial development predicted in 1992 by NRPC in an impact fee study, but it appears realistic based on the fact the there is limited existing commercial development and there is limited existing infrastructure available to service new development.

The New Hampshire Route 102 corridor is the most developed area in Town. Conversely, large areas in the Commercial/Industrial Service Districts and the Transitional Districts are absent of significant commercial development. Since nearly half of active agricultural lands in the 3A corridor are zoned for non-residential development, there is potential for conversion of farmland to other non-residential uses. While the majority of the available DLA is in southern Litchfield, another significant area of undeveloped commercial land is east of Route 3A by Colby Road in the Northern Transitional and Commercial/Industrial Service Zoning Districts. There is a major earth excavation operation in the vicinity and this area had the highest concentration of non-residential land use permit applications in the 1998 to 2000 period. The other area likely to receive commercial development is southern Litchfield, around the planned alignment of Albuquerque Avenue and the Circumferential Highway.

It is the consensus of the EDWG project participants that if there is an attempt to direct future commercial development in the next five years, it should focus on northern Litchfield where increased land development activity is already underway. There is also an initiative underway by the Selectmen to complete Albuquerque Avenue in the north. In addition, the Manchester airport expansion is underway just a few miles to the north, while construction of the Circumferential Highway in the south part of Town has experienced numerous delays.

4. Infrastructure Development Initiatives

One major factor that will present wider access to all areas of Town is new highway development in the north and south ends. Coupled with the robust regional real estate markets described above, highway development should enhance commercial and residential real estate potential.

5. The Manchester Airport and the Airport Access Road

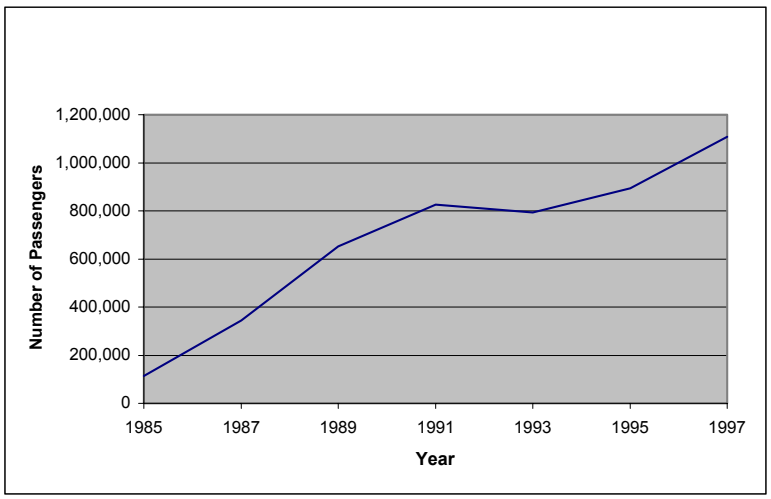
A major regional public facility close to the northern border of Litchfield is the Manchester Airport. The airport is one of the largest general aviation (cargo and non-transit) facilities in New England. Manchester Airport Authority data presented in Figure VI-6 shows that there have been consistent annual increases in the number of passengers that pass through the airport. There have also been large increases in the volume of cargo passing through the facility.

The Manchester Airport is the center of a high-technology industry concentration. The airport is in the process of receiving a major expansion.

Just over two miles from the northern commercial zoning districts, the Manchester Airport is a major regional resource.

The infrastructure at the airport will be enhanced with development of the Airport Access Road limited access highway. According to a 1997 New Hampshire Department of Transportation environmental impact report, the highway will promote economic growth. There exists a unique concentration of business and industry around the airport and the highway will also open up a large area south of the airport to industrial development. According to Southern New Hampshire Planning Commission transportation planning staff, it is the estimated that construction will start for the road expansion is 2001 with tentative completion in 2005.

Figure VI-6: Total Passengers at the Manchester, NH Airport 1985 to 1997



The airport expansion and the highway will present a potential impact and an economic opportunity for Litchfield. Currently, there is significant traffic congestion in the area around the airport. Development of the access road is expected to positively influence the market for industrial properties directly south of the Airport. While Litchfield lies beyond the industrial area that is expected to be directly impacted south of the airport, aviation facility development and the highway expansion appear

to provide significant increased commercial market potential in Litchfield. The Northern Commercial, Commercial/Industrial Service and Transitional zoning districts are within three to six miles of the airport. The existing development around the airport and the increased market potential establish growth pressure for the northern parts of Litchfield.

There may be substantial change in the built-form and the visual appearance of the area near the airport as a result of new development. For example, there is valuable wildlife habitat in north Litchfield along the Merrimack River. The river provides a remarkable ecological, scenic and recreational asset. With a lag time before development, this may provide an opportunity to institute appropriate growth controls to manage the visual appearance of the corridor between the airport and the commercial zones in Litchfield.

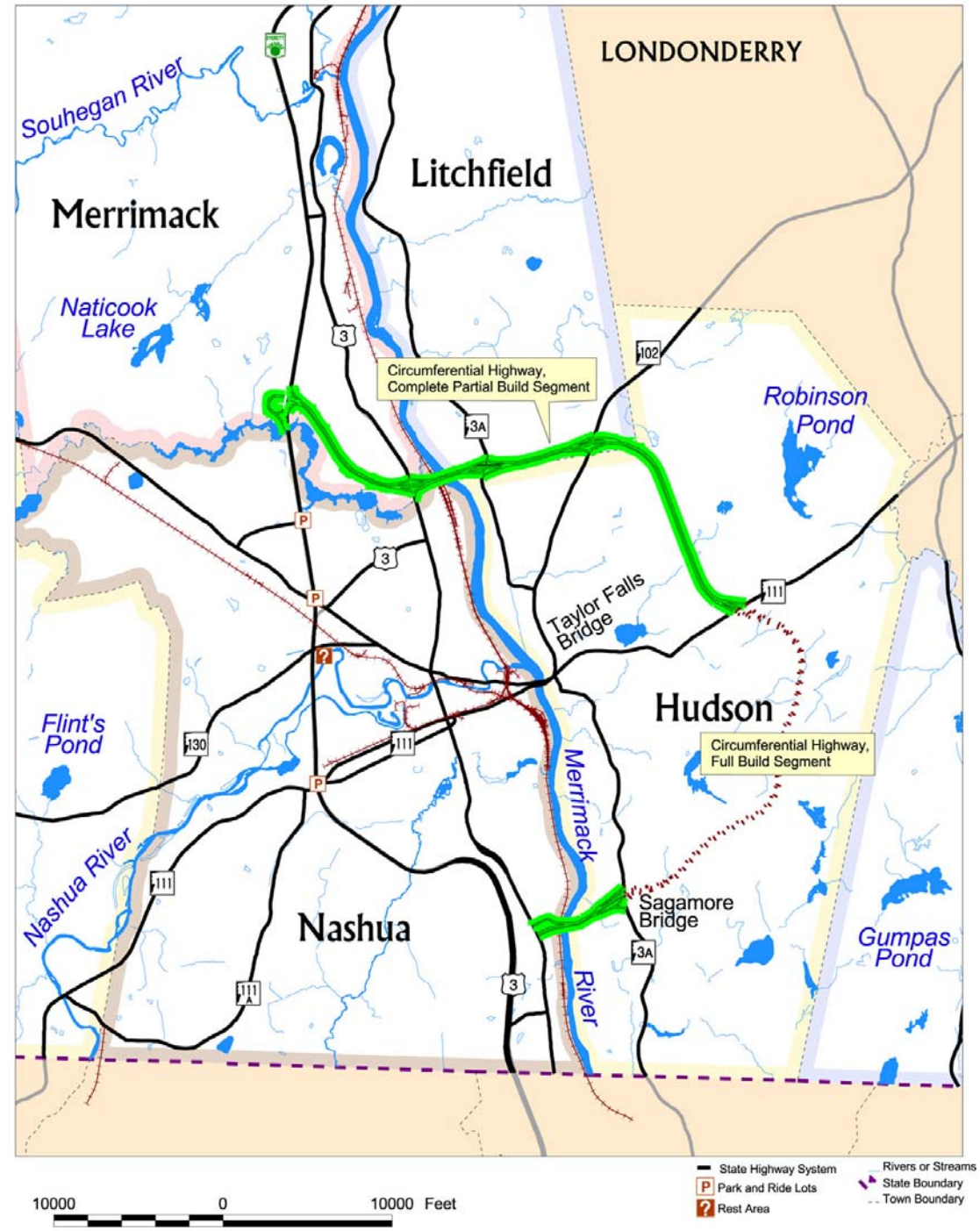
6. The Circumferential Highway

The Nashua-Hudson Circumferential Highway infrastructure project is scheduled in the State Ten-Year Transportation Improvement Program, however, its scheduled start date has been pushed back repeatedly. Current scheduling anticipates breaking ground in the latter part of this decade, around 2009. The project will provide a bridge over the Merrimack River and will connect Litchfield to Merrimack. Parts of Litchfield that will be most directly impacted are the Route 102 corridor, the southern part of 3A, and the Commercial/Industrial Service zoned land immediately to the west of the planned interchange and the Albuquerque Avenue extension.

The Route 102 corridor is relatively congested with a mix of low-density residential and commercial uses. Its physical layout, such as many curb cuts, contributes to congestion. The Circumferential Highway should upgrade the commercial potential of this area. To foster economic opportunities in this area, access management principles should be applied to new development within the corridor to promote the preservation of existing road capacity.

A ramp to the limited access highway connecting with Route 3A and southern Albuquerque Avenue should also enhance the regional access and commercial viability of this part of Town. One major issue to consider for this area is what impacts may occur if farms go out of business and prime agricultural soils are converted to other uses. There has already been a number of contacts between interested developer and farmers in the southern and central portions of the route 3A corridor. No major sales have occurred to date.

Map VI-1: Circumferential Highway Partial Bulid



E. FISCAL IMPACT ANALYSIS OF FUTURE COMMERCIAL DEVELOPMENT

Build-out analysis and fiscal impact analysis are tools used to forecast the future impacts of development. In the Land Use chapter, buildout analysis was performed for all zoning districts to highlight natural constraints to development, and compare these features with existing land uses and zoning policies to show how these factors combine to promote certain development potential. As discussed in the Land Use section, 2,100 acres, or 21 percent of all lands, are contained within the Commercial/Industrial Service; Commercial; and Transitional zoning districts. That section reviews permitted and special exception uses allowed in these commercial zones and it provides discussion of commercial buildout potential. Including active agricultural lands, some 989 acres, or 47 percent of the land area zoned non-residential is constrained due to existing development. Approximately 600 acres are classified as prime agricultural soils. These areas are not constrained from development per se, but preservation of the best agricultural areas in an open state suitable for farming is an economic development and land use goal. Litchfield buildout analysis places the non-residential development potential, presented as developable land area, or DLA, at 789.8 acres, or 35.4 percent of the community-wide DLA, including agricultural lands.

Fiscal impact analysis quantifies the potential public sector expenditures and revenues if all possible new construction occurs according to the tax and development policies in effect today. Obtaining insight into the potential municipal fiscal conditions aids understanding of how to influence the development of a sustainable local economy.

The main component of municipal revenues in New Hampshire is property taxes. In Litchfield, the economic base is primarily residential -- 92 percent of the gross assessment in 1999 was in the residential sector. The main question that fiscal impact analysis can help address is whether tax revenues generated from new commercial development would adequately cover the services that such uses consume. A problem identified in the 1997 Litchfield Buildout Analysis by NRPC is that residential development creates more demand for public services than is generated in tax revenues. Analysis here examines non-residential development, which consumes services other than schools, particularly safety and public works.

It is common for communities attempting to manage public finances to stimulate commercial development, even though understanding of the relationship between the impacts of land development and property taxes is incomplete. In promoting development, it is not always certain that there will be a property tax benefit. Land use policy does not directly translate into land development and the relationship between land development, property taxation, and fiscal and economic equilibrium is uncertain. By examining local land use characteristics, property tax and municipal spending relationships in Litchfield it should be possible to formulate a better understanding of the potential affects of commercial development.

In the 1980's, rapid residential development was disrupting the public sector's efforts to keep-up with the cost of providing services. Since 1988, the residential sector has come to represent 90 percent of the tax base, while Litchfield climbed to the middle of the range of total tax valuations in the region. The 1997 Buildout Analysis showed that despite higher residential property values, the potential for deficit spending remained. Revenue shortfalls were predicted especially if high rates of single family residential construction continued and the homes constructed have large numbers of pupils per household. The study also showed that preserving farmland from residential development is likely to have a beneficial influence on municipal fiscal conditions.

Currently there is no municipal sewer service within Litchfield; however, the EDWG discussed the potential for sewer connections to surrounding communities, or the potential to develop community wastewater treatment systems. Therefore, commercial sector fiscal impact analysis is conducted two scenarios:

- No sewer infrastructure provided to commercial zones; and
- Sewer infrastructure providing service to commercial zones.

1. Buildout Without Sewers

The commercial development density in the future is estimated as 5,000 ft^2 of buildings per acre. The basis for this assumption is that new commercial development will have a minimum lot size of one acre under current zoning, with a maximum impervious site coverage of 65 percent that can represent buildings, structures, parking, driveways roads and other improvements excluding landscaping. A one-acre parcel could reasonably accommodate up to 6,666 ft^2 of building mass plus parking and a septic system, but a 5,000 ft^2 of buildings per acre density figure was selected because moderate soil constraints, such as wetlands, are common throughout Litchfield, which probably could cause lower densities of development.

What is a feasible rate of new commercial development for Litchfield? The EDWG consensus that 10,000 to 25,000 square feet of new commercial building could occur annually, assumes that the existing state of infrastructure remains the same. Developed on parcels of one acre, with a density of 5,000 ft^2 of building per acre, 10-25,000 ft^2 of new development per year translates into 2.0 to 5.0 acres of new commercial development annually. With a DLA of approximately 789 acres, excluding agricultural lands, and 25,000 ft^2 of development per year, it could take over 150 years to reach buildout. The community would reach residential buildout long before it reached commercial buildout.

2. Buildout With Sewers

If municipal sewer service were provided, higher building densities would be possible. With sewers, the future building density could be 10,000 ft^2 per acre. The DLA would not change, but there would be potential for more building development. Providing municipal sewer service would probably also increase the rate of commercial development since the availability of sewers influences business' siting decisions. The fiscal advantages of well laid out sewers are higher property values per unit of land and potential for more efficient layout and use infrastructure.

Two alternative fiscal impact analyses are provided below, to examine the public service costs and revenues generated from future commercial development. The first case is an extension of current conditions, without sewers. In the second case, sewer infrastructure is provided to all commercial zones.

F. 1ST FISCAL IMPACT ANALYSIS ALTERNATIVE – NO SEWERS

As described by Burchell and Listokin in The Fiscal Impact Handbook, 1978, the Proportional Valuation Method is an average costing approach used to project the direct fiscal impacts of commercial development on municipal operating costs and revenues.

The proportional valuation method assigns municipal costs attributable to the share of real property value that new commercial uses would add to the Litchfield real property tax base. Generally, the method estimates the fiscal consequences of development based on current municipal spending patterns and property tax assessments with the application of correction factors to ensure that relationships are not over or understated.

The method involves four main steps.

1. Defining the total cost of providing public service to all existing commercial uses;
2. Using ratios to estimate the cost to service one new commercial facility;
3. Multiplying the cost to service one unit by the DLA;
4. Comparing the projected tax revenues versus the projected cost to provide public services to determine if there is fiscal equilibrium, a revenue surplus or a revenue shortfall.

1. Characteristics of Recent New Commercial Development

Table VI-8 shows the value of nonresidential development in Litchfield from 1991 to 1997. In seven years, there were six new commercial developments. The 1997 data point is poor quality because it includes the cost of a school addition. Using the other data, the average new commercial development in Litchfield is valued at $275,000 per unit. For comparison, 28 non-residential properties examined in the 1990 impact fee study by Cannon Associates had roughly the same price. A survey of every fifth home sale performed in the Regional Housing Needs Assessment for the Nashua Region by the NRPC in June 1999 indicates that the 1998 mean residential unit sales price in Litchfield was $146,000.

Table VI-8: New Commercial Units Development -- 1991 To 1997[1]

Year	1991	1992	1993	1994	1995	1996	1997	Total	Average
# of New Commercial Units[1]	1	2	0	0	1	1	2	7	1
Estimated Valuation ($000's)	$300	$225	-	-	$350	$500	$2,300[2]	$3,675	$275

Source: Annual Reports of the Town of Litchfield, NH. 1991-1997.
Notes: 1) A school building addition costing approximately $1.4 Million was included in the new commercial category in 1997; therefor, the figure for 1997 was not used in compiling the average value of new commercial construction.

2. Factors Used to Calculate Public Service Costs and Revenues for the Commercial Sector

Table VI-9 presents the following public sector cost and revenue figures, many of which were obtained from the Town Annual Report for 1997:

- Total property tax commitment in Litchfield in 1997 (Step 1);
- Total real property value for all parcels (Step 2);
- Total number of tax parcels (Step 3);
- Total property value of all commercial parcels (Step 4); and
- Total number of commercial parcels (Step 5).

The data in Table VI-9 is used to define property value relationships for the residential versus the commercial sectors in steps six through eleven. The data in the table are used to derive the cost to deliver public services to existing commercial uses. This fiscal impact analysis was originally performed in 1999 for EDWG deliberations. The property assessment data and budget figures in the next table were not updated with the most recent annual statistics available because it is not assumed that the relationships examined, and the resulting findings, would change proportionally or in a significant way.

The table shows that for all existing properties, commercial values are low compared with the average for existing residential properties. This is because much of the commercial property value is represented by the value of the land itself rather than buildings. The density of development on existing

parcels also appears low and when there are commercial buildings, they often appear of low to moderate value. For example, many commercial sites have high proportions of accessory type buildings such as garages and workshops, which do not have high property assessments. This is the opposite of many communities where retail uses, offices, or industrial properties exhibit high property tax assessments on a square foot basis.

Table VI-9: Factors For Estimating Fiscal Impacts Of New Commerical Development

Proportional Value Allocation Method, Litchfield, NH – 1997

FIA Steps	Factor and Ratios	1997
Step 1	Net municipal property tax commitments[1]	$9,010,436
Step 2	Total local real property value[1]	$349,879,803
Step 3	Total number of land parcels in Litchfield[2]	2,135
Step 4	Total commercial real property value[3]	$34,402,096
Step 5	Total number of commercial parcels[4]	262
Step 6	Average real property value per parcel for all parcels (Step 2 divided by Step 3)	$163,878
Step 7	Average commercial real property value per parcel (Step 4 divided by Step 5)	$131,306
Step 8	Total existing commercial property value in a ratio compared to total local real property value (Step 2 divided by Step 4)	0.098
Step 9	Estimated Real Property Value of a Newly Developed Commercial Parcel (The average derived in Table x above)	$275,000
Step 10	Value of Average Commercial Property to Average Property (Step 7 divided by Step 6) This is the figure used on the upper cost curve in The Fiscal Impact Handbook Figure to determine Refinement Coefficient #1	0.80
Step 11	Refinement Coefficient #1 Derived by reading Figure A-1 up from the x-axis at 0.80, to the upper cost curve, and then across to the y-axis.	0.85
Step 12	Ratio of real property value of one new commercial parcel versus all commercial parcels real property value. (Step 9 divided by Step 4).	0.008
Step 13	Real property value of one new facility compared to the average nonresidential property real property value. (Step 9 divided by Step 7)	2.09
Step 14	Refinement Coefficient #2 Derived using Step 12 value up and the lower cost curve in the Fiscal Impact Handbook.	0.84

Source: Steps 1, 3, 4, and 9 is 1997 Annual Town Reports.

Source: Steps 2 is Town of Litchfield Board of Selectmen Office (February 1999).

Source: Step 5 is NRPC GIS a count of Land Use Parcel Maps (1996).

Notes:

The tax value of $686,574 of current use value is subtracted from the total 1997 property value of $350,566,377 and the assessment is adjusted downward from $9,028,177.

The Total number of parcels in Litchfield includes 129 residential uses classified as exempt and properties in the 'current use' classification'

Current use values are excluded from commercial total.

1) Properties in the 'Current use' category are included within the parcel counts for commercial zones. Although the exact number of parcels that apply could not be determined for this study, it is assumed that the number is small.

Public service cost relationships in communities are dynamic. Businesses consume different types and levels of public services according to different municipal factors. Influences upon the cost curves and relative efficiencies of public service offerings in different municipalities include the mix of capital equipment, operating costs and the land use mix. Refinement coefficients represent the synthesis of findings from case studies of other communities compiled by Burchell and Listokin. Applying the

coefficients (Steps 10 and 11) provide for more accurate estimates of the likely scenario in Litchfield regarding the cost to provide public services to non-residential properties. For the Litchfield cases, the coefficients provide adjustments to ensure that the cost to provide public service to a new business are not overstated.

Non-residential properties in Litchfield consist of business properties, utilities, some farmland and undeveloped land. Excluding the Current Use values from the total commercial property value, the $34,402,096 of total commercial real property value in 1997 represents 9.8 percent of the $349,879,803 total real property value in Litchfield.

In 1997, the part of the total $9,010,436 municipal property tax revenues attributed to providing existing commercial business with public services is estimated as $187,642. This represents 2.1 percent of all local expenditures derived from property tax revenues. Derivation of this figure is shown in Table VI-10. The $187,642 of total current municipal property tax expenditures attributable to servicing businesses is derived by figuring that 9.8 percent of the total $350 million local property value emanates from the non-residential sector -- this is to say that businesses represent about 10 percent of land uses based on property value. Most local tax revenues are allocated to pay for providing education, but businesses do not consume school services. Therefore, using a conservative estimate, it can be assumed that three-quarters of all local tax revenues go to providing school services, so a liberal figure of 25 percent is assigned to represent the proportion of local tax revenues allocated to provide public services other than schools. Multiplying the proportion of tax revenues coming from non-residential sectors (9.8 percent) by this figure (25% of local tax revenue finance programs other than schools) and then multiplying the result by a refinement coefficient (0.85) derives the cost to provide public service to all existing businesses (Table VI-10). The result, divided by the 262 existing commercial parcels, provides a rough approximation of the cost to provide each site with local public services, such as fire and police protection, road service, library service, recreation and general government. This means that each individual business parcel is estimated to consume approximately $716 worth of public services on an annual basis.

Table VI-10: Annual Cost Of Providing Local Public Services For All Existing Businesses

Total Current Municipal Expenditures Attributable to Existing Businesses	=	Total Municipal Expenditures in 1998	Proportion = Commercial Properties Value to Total Local Real Property Value	Proportion = conservative figure that adjusts the equation to account for the part of all local tax revenue that is attributable to providing public services to businesses.	Refinement Coefficient #1 (Burchell & Listokin)
		(Step 1 above)	(Step 8 above)		(Step 11 above)
$187,642	=	{($9,010,436 x	0.098) x	0.25} x	0.85

The next calculation defines the cost to provide public service to each new commercial unit of one-acre size with $275,000 value. Generally, it is assumed that the average future business development in the community will have more building and a higher property value than the average existing business parcel.

Table VI-11: Additional Cost to Provide Public Service to Each New Commercial Businesses

Estimated Municipal Costs to Supply Public Service to One Future Business Facility	=	Estimated Cost of Providing Public Service to All Current Businesses	Proportional Value of One New Commercial Development to the Total Value of all Existing Commercial Development	Refinement Coefficient #2 (Burchell & Listokin)
		(Table VI-10 above)	(Step 12: $275,000 versus $34,402,096)	(Step 14)
$1,260.95	=	($187,642 x	0.008) x	0.84

With an estimated buildout potential for 789 new commercial units based on the non-residential DLA, the estimated total cost to provide public service to all new commercial units at buildout would be 789 times $1,260.95 which is $994,890. On the other hand, the local property tax collected on one new development worth $275,000, with a local property tax rate of $20.60 in 1999, would be $5,665. If there were 789 new commercial developments worth $275,000 at buildout, the total real property value of this new development would be $216,975,000. The net property tax on 789 new units of development valued at $216,975,000 and taxed at $20.60 per $1,000 would be $4,469,685.

Subtracting the $994,890 cost, to provide public services to all anticipated new additional commercial uses at buildout from a property tax assessment of $4,469,685 would provide a significant surplus equating to $3,474,795. This represents a revenue surplus of $4,404.05 per facility per year. A tax revenue surplus of $3,474,795 per year would represent a significant source of surplus revenue for the Town of Litchfield.

The analysis above examined property tax revenues and expenditures likely for all new commercial development at buildout. In fact, the revenue side of the equation may be conservative since Litchfield assesses impact fees against new development. Impact fees provide significant one-time revenues to offset municipal spending as a result of new development that causes the community to increase infrastructure capacity to supply public services. The revenue forecast is also conservative because many businesses pay mandatory annual licensing and registration fees.

3. Potential for Commercial Development without Sewers

It is difficult to define what level of commercial development may occur without sewers. The economic development experts who met with the Litchfield EDWG indicated that the availability of public sewers is an important site selection criterion used by firms seeking locations to expand operations. One set of businesses that may seek to locate in Litchfield in the future are those that will benefit from a location close to the airport.

An interview with the Milton, Vermont Town Planner in July 1999 provides information on the feasibility of developing industrial parks without sewers. Milton has three unsewered industrial parks. The largest, the Catamount Industrial Park, has 16 of 23 parcels developed. Lot sizes range from two to nine acres, with most parcels under five acres. Two smaller industrial parks have incubator style buildings where firms lease compartments within buildings. The building densities in these two cases are up to 10,000 ft^2 per acre. In the Catamount Park, there are some much larger buildings, although the

densities are lower because the buildings are situated on large lots. The cases confirm instances where higher densities of development were achieved without sewers.

There are many small to medium scale uses, including many types of businesses, that do not necessarily depend on sewers to operate. One fairly large land use siting in Litchfield in 1999 is a combined church and elementary school with a 350 person occupancy. The facility provides sanitary sewage treatment utilizing an individual septic system. Similarly, the new Campbell High School with a 550 person capacity provides sewage treatment through a large-scale on-site septic system. These cases confirm that it is feasible to site large-scale septic systems for medium to large size individual businesses that do not use excessive amount of water and that employ up to 400 persons. It may also be feasible to develop community wastewater treatment systems; also known as on-site, shared, or cluster treatment systems, that service groupings of small and medium scale businesses that collectively use such systems. When large septic systems are sited in Litchfield that serve 300 or more people, a rough estimate of the footprint required for such systems is one to two acres.

Types of businesses that could use septic systems or on-site/cluster wastewater treatment systems are:

- Warehouse facilities that use small volumes of water;
- Offices;
- High-tech businesses that do not use water, such as electronics assembly or electronics test firms; or
- Many other types of retail and commercial uses.

Businesses least likely to locate in Litchfield if sewage treatment is not available are large operations that process or dispose of large volumes of water or that have effluent that is difficult to treat. The advantage of traditional sewer systems to these businesses is that they provide equalization of wastestreams and specialized treatment that septic systems usually do not provide. Businesses that use large volumes of water for industrial processes may depend on publicly owned treatment works for disposal in situations where an individual septic system could not adequately handle surges in water volumes. Litchfield has large stratified drift aquifers that form a significant part of the regional water supply. Without sewers, businesses that seek to use water for industrial processing may not be able to locate in Town.

A limiting factor for many on-site community treatment systems is that these are often designed to handle benign wastestreams and low to moderate flows. Businesses that discharge contaminants, such as soaps or other industrial by-products probably could not use community septic systems. Businesses that discharge very large volumes of water, such as food processing or plastics manufacturing, also would not be able to utilize community treatment systems. Advances in water treatment technology are enabling the cost-effective application of innovative technology in community wastewater treatment systems that were not feasible compared with sewers only a short time ago.

Onsite/decentralized wastewater systems include individual onsite septic systems, grouped (cluster) systems, and alternative wastewater technologies such as trickling filters, low-pressure pipe systems, and evapotranspiration systems. These technologies provide a cost-effective, viable and long-term alternative to large centralized sewer systems, which may be costly to construct and finance all at once. Decentralized systems are particularly beneficial in low-density communities, such as on the urban outskirts, where there is a significant economic burden to develop a large-scale system due to great distances between users and a limited supply of users who could finance a system. The design and construction of decentralized systems is often more flexible than for central systems. Decentralized system could be developed in incremental pieces, or in limited geographic areas, thereby presenting more

financing and investment options over time. The State of New Hampshire has lagged behind other states in permitting such disposal systems. Changes in state rules may be necessary to implement these types of systems in Litchfield.

G. FISCAL IMPACT ANALYSIS ALTERNATIVE – IMPLEMENTING SEWERS

Many factors could alter the build-out and fiscal impact scenarios. The main economic development policy that the EDWG identified as requiring further examination is the potential to introduce public sewers into Litchfield's commercial areas. An option that project participants advocate exploring is the potential to collaborate with an adjacent municipality to form a regional sewer compact. One proposal under discussion is a connection with the Merrimack wastewater treatment facility during construction of the Circumferential Highway Bridge. An advantage of working with an existing sewer facility is that it may be cost-effective to tap into existing capacity, or incrementally enlarge an existing sewage facility, rather than construct a new system from scratch.

Provision of fixed-line sewer infrastructure will alter the rate and density of development in areas receiving service. Constructing a sewer system to serve non-residential users would establish a different public service cost-revenue situation for the commercial sector. Fiscal impact analysis can evaluate the alternative revenue and expenditure scenarios under the changed conditions influenced by sewer development. A second set of fiscal impact calculations are performed to analyze the impact of implementing sewers which stimulates an increase in commercial development to 10,000 ft^2 per acre and increases the value of each new commercial unit to $550,000.

1. Cost of Infrastructure

Public service construction costs depend on the design of the facility, its scale, and how it is financed and built. Impact fees could finance the proportion of facilities that are developed for use by future commercial development. If impact fees and betterments are not able to cover all of the costs to construct the treatment facilities, then property taxes would be a source of revenue used to repay loans obtained to finance the cost of construction.

Shirley, Massachusetts, a town along the rapidly developing Interstate 495 belt, is implementing sewer infrastructure. The Shirley case is a source of descriptive information useful for modeling the potential to institute public wastewater treatment in Litchfield. The main area examined to provide wastewater management in Shirley was a village sub-area of residential, commercial, and mixed-use properties encompassing 1,200 acres. The cost to provide sewer service to the 1,200-acre area is approximately $11.2 Million. This cost includes engineering, installing pipe to transport the sewage to an existing treatment plant in an adjacent community, installing pumping stations and part of the cost to upgrade and expand the existing treatment facility.

What is the potential fiscal impact of developing a similar system in Litchfield? Using figures from Shirley as a baseline, one could assume that the portion of the cost to implement a similar 1,200 acre service area wastewater treatment system financed through property taxes will be $11,200,000 Million over 15 years. A portion of funds to pay for the infrastructure development could be paid through impact fees from future development or betterments assessed on existing parcels, but a loan would have to be secured, with the assumption the fees collection would enable the Town to repay the loan. The Town would take on debt to finance the $11,200,000 loan principal. Assuming that the interest rate charge is 7.2 percent, the total cost for a 15 year loan would be $18,352,485 with an annual loan payoff of $1,223,499.

The next three tables show the public expenditures and revenues assuming that the sewer infrastructure serves only the commercial zoning districts and an additional $1,223,499 is collected along

with the current $9,010,436 net municipal property tax commitment. Some figures in the table change. Assuming that the density of development with sewers would increase from 5,000 ft² to 10,000 ft² per acre, the average new commercial facility would be 2.0 times greater than the estimated average cost of $275,000, or $550,000. Ratios that are calculated using this property value change, as does the second refinement coefficient.

Table VI-12: Factors For Estimating Fiscal Impacts Of New Commerical Development Case Study Including Annual Cost To Develop Wastewater Treatment Proportional Value Allocation Method - Litchfield, NH – 1997

FIA Steps	Factor and Ratios	1997
Step 1	Net municipal property tax commitments[1]	$10,233,935
Step 2	Total local real property value[1]	$349,879,803
Step 3	Total number of land parcels in Litchfield[2]	2,135
Step 4	Total commercial real property value[3]	$34,402,096
Step 5	Total number of commercial parcels[4]	262
Step 6	Average real property value per parcel for all parcels (Step 2 divided by Step 3)	$163,878
Step 7	Average commercial real property value per parcel (Step 4 divided by Step 5)	$131,306
Step 8	Total existing commercial property value in a ratio compared to total local real property value. (Step 2 divided by Step 4)	0.098
Step 9	Estimated Real Property Value of a New Commercial Parcel (Study assumption)	$550,000
Step 10	Value of Average Commercial Property to Average Property (Step 7 divided by Step 6) This is the figure used on the upper cost curve to determine Refinement Coefficient #1	0.80
Step 11	Refinement Coefficient #1	0.85
Step 12	Ratio of real property value of one new commercial parcel versus all commercial parcels real property value. (Step 9 divided by Step 4).	0.02
Step 13	Real property value of one new facility compared to the average nonresidential property real property value. (Step 9 divided by Step 6)	4.2
Step 14	Refinement Coefficient #2 Derived using Step 12 value up and the lower cost curve in the Fiscal Impact Handbook	0.60

Source: Steps 3, 4, and 9 is 1997 Annual Town Reports.

Source: Steps 2 is Town of Litchfield Board of Selectmen Office (February 1999).

Source: Step 5 is NRPC GIS a count of Land Use Parcel Maps (1996).

Notes: Step 1 is Table VI-9, #1 plus a $1,223,494 estimate of the tax burden associated with the annual financing for a new wastewater treatment facility.

Table VI-13: Annual Cost of Providing Local Public Services for All Existing Businesses Under an Alternative Scenario Where Public Sewers are Developed

Total Current Municipal Expenditures Attributable to Existing Businesses	=	Total Municipal Tax Expenditures in 1998	Proportion = Commercial Properties Value to Total Local Real Property Value	Proportion = conservative figure that adjusts the equation to account for the part of all local tax revenue that is attributable to providing public services to businesses.	Refinement Coefficient #1 (Burchell & Listokin)
		(Step 1 above)	(Step 8 above)		(Step 11 above)
$213,122	=	{($10,233,935 X	0.098) X	0.25} x	0.85

Employing the same methods as were used in the proportional value calculations performed earlier in the case without sewers, under the alternative scenario where sewer infrastructure development for commercial areas is financed through property taxes, the cost to provide public services to existing businesses would be $213,122. The extra cost is based on the addition of $1,223,499 annually to municipal expenditures to account for the cost to finance sewer system development.

Table VI-14: Additional Cost to Provide Public Service to One Additional 10,000 Ft² Commercial Businesses at Buildout Under Alternative Scenario Where Public Sewers are Developed

Estimated Municipal Costs to Supply Public Service to One Future Business Facility	=	Estimated Cost of Public Service to Current Businesses	Proportional Value of One New Commercial Development Versus to Total Value of all Existing Commercial Development	Refinement Coefficient #2 (Burchell & Listokin)
		(Table VI-13 above)	(Step 12: $550,000 versus $34,402,096)	(Step 14)
$2,557.46	=	{($213,122 X	0.02) X	0.60}

The estimated cost to provide public services with development of sewers would be $2,557.46 for each additional business at buildout. At this rate, the total cost to provide public service to all of the 789 additional new businesses anticipated is $2,017,836. The tax revenue from each new commercial development worth $550,000 at a 1999 local tax rate of $20.60 would be $11,330. With 789 new commercial developments worth $550,000, the total local tax revenue from all of these additional commercial units at buildout would be $8,939,370.

The net surplus tax revenues from this alternative scenario where sewers are constructed would be $6,921,534, or $8,772 per facility. The revenue surplus under the case where sewers are provided is double the surplus predicted under the first case. Under this scenario where taxes are used to finance the construction of new sewer infrastructure, businesses would continue to pay their own way through property taxes.

This analysis shows that higher per unit property values provide more revenues than development with lower property values. Instituting wastewater treatment alternatives in Litchfield could enable a higher density of development because soils constraints would become less influential on whether or not a parcel is potentially developable. It may be possible to achieve higher densities of

development without instituting some form of centralized wastewater management; however, it is clear that real estate markets and businesses in the process of selecting new sites typically do not respond favorably to this scenario.

Should Litchfield seek to further explore the design and installation of centralized sewers or decentralized/on-site wastewater treatment systems for commercial areas, the federal Environmental Protection Agency (EPA) State Revolving Fund (SRF) could possibly serve as a source of financing for facilities development. The SRF can provide financing for traditional sewer systems or onsite/decentralized wastewater management systems that protect or enhance water quality. Set up under the Clean Water Act, the program provides low or no-interest loans for important water quality projects. In New Hampshire, the SRF is operated by the NH Department of Environmental Services (DES). To explore this option, local economic development officials should contact the New Hampshire SRF representative to determine the priorities and policies established in the state-level SRF. These types of funds could be used for design as well as for establishing a centralized management entity for public wastewater treatment systems.

It is recommended that the Town perform a more detailed case-study fiscal impact analysis and benefit-cost analysis to obtain more accurate and precise information on the potential direct costs and benefits of investing in sewers or another alternative wastewater treatment technology. This probably is a requirement to qualify for SRF funding. It is also recommended that such research be performed in conjunction with more detailed environmental impact analysis and technical engineering feasibility analysis on the potential to layout and adopt specific technologies.

2. Potential for Tax Increment Financing (TIF) District

One policy alternative to evaluate in the event that sewers are constructed in Litchfield is the development of a Tax Increment Finance (TIF) district. TIF is a development finance tool that enables municipalities to pay for new infrastructure development through the assessment of a special 'incremental' tax that is added to the base tax rate in a specific area designated to receive new infrastructure development. The additional (or incremental) special taxes that are collected are used specifically to pay for new infrastructure constructed within the TIF district.

One benefit of adopting TIFs is that undertaking a major capital project does not adversely impact the provision of other essential public services. Rather than divert tax revenues from essential services to finance the development of new infrastructure, the TIF district users alone finance the development of new infrastructure. TIF implementation is being explored widely around the State, with a focus as to whether this type of policy is permissible under current state law. The key to adopting a TIF is studying the real estate market in detail and carefully defining potential district boundaries. A problem is that a major anchor tenant may need to be lined up ahead of time to help finance the TIF and help ensure that adoption and implementation is feasible.

H. DISCUSSION OF THE NON-RESIDENTIAL FISCAL IMPACT ANALYSIS

Although buildout analysis provides a theoretical view of future conditions, the results are quite telling. The 1997 residential buildout study predicted that new development could result in more demand for public services than would be financed through residential property tax collections. The 1996 cost to provide education, prior to voter approval of an $11,686,000 bond to construct the High School, was $3,049 per household and future school expenses were calculated to range up to $4,453 per residence, depending on the number of children per household. There was an estimated potential for 1,550 to 1,806 new residences at buildout. Using these last four figures, the added costs for the community to provide schools at buildout could range from $4,725,950 to $8,042,118 annually. Depending on the number of pupils per residence, the deficit from new residential development could reach $2,719,836 per year.

Since 1997, a statewide property tax was enacted in response to judicial requirements for educational reform and local impact fees were updated. Under the state property tax program Litchfield is currently a receiver community, meaning that some State revenue may be expected to help offset projected revenue deficits, although the future of the State property tax is uncertain and there is potential for reform of this program.

In 2000, the community updated the impact fee schedule in order to generate higher collections in-line with the increasing public service demand attributable to new development. The problem prior to the update was that impact fees were lagging the actual cost of providing public service to new development. The shift to higher proportional impact fees is expected to generate significantly more revenues than was the case under the earlier schedule. Still, rigorous and ambitious local public facility standards were established in the 2000 impact fee update, and significant new capital needs were articulated in the 2000 Capital Improvement Plan (CIP), principally due to the educational and recreational needs attributed to new residential development. According to these two studies, there is a significant need for increased capital expenditure over the next 20 years. New non-residential development could provide a significant source of tax revenue to help offset the tremendous cost associated with developing these new capital facilities.

The fiscal impact data derived for the commercial sector at buildout shows that under current conditions, commercial businesses provide a revenue source to offset residential sector deficits. At commercial buildout without sewers, the predicted public revenue surplus of $3,474,795 would be a significant source of funds to help offset deficits that could occur in the residential sector.

Noteworthy is that under both fiscal impact analyses, a scenario without sewer and one with sewer infrastructure provided through taxation, there is adequate potential for commercial development to help offset the forecast public sector deficits. Although calculations are not presented herein, even if some prime agricultural lands are conserved from non-residential development, there would still be significant revenue surpluses, which means that it does appear possible to promote commercial development and attempt to preserve the farmlands in the Route 3A corridor.

With full implementation of sewers in all undeveloped areas within commercial zones, the public sector revenue surplus would be $6,921,534. This latter figure would nearly cover the largest deficit that is predicted to occur in the residential sector. The information also shows that assuming current patterns hold, future commercial development would cover the cost of the public services that these uses consume.

Commercial development appears to provide a significant source of supplemental tax revenue for the community. Most beneficial for the community in fiscal terms would be high quality commercial development with high property values. High quality development would probably also represent building character that would not detract from the community appearance and character. Understanding

of the impacts of land development on municipal finance is incomplete; therefore, while it is important to try to forecast future municipal budget situations, it is also important to consider the wide range of quality of life influences that future commercial development may impact.

Based on historical development patterns, it would take much longer to realize commercial buildout than the full-residential buildout. In fact, it may be the case that the projected buildout is not realistic without sewers. It is reasonable to assume that future development will be more rapid and different than was experienced over the last decade due to planned regional highway improvements and the close location of the Manchester Airport to Litchfield northern borders. It will be difficult to predict the full range of fiscal impact of new development, but according to current revenue collection and spending patterns, it is generally appears that new future commercial development will pay its own way.

I. CONCLUSION & ECONOMIC DEVELOPMENT STRATEGY

There has been consistent commercial economic development in the region, although development in Litchfield has been slower than the region overall. The construction of two new highways close to Litchfield will raise the local market potential. In addition, residential growth in the region is expected to continue. Finally, the Manchester Airport is a unique infrastructure resource located close to Litchfield that should influence the development of markets in the future.

A review of economic trends shows a high-order regional economy with generally good standards of living if judged by levels of crime, median per capita and family income. Litchfield is tied-into the larger regional economy around Nashua and Manchester. The NRPC region and the area adjacent to Litchfield have a substantial part of New Hampshire employment and development, particularly in high-technology business sectors. Plans to expand the regional interstate highway should increase the links between Litchfield and surrounding areas.

In its 1999 proceedings, the EDWG formulated an overall strategy to promote commercial development in Litchfield within the regional economic delivery system. The strategy contained two parts: 1) a five-year program that would represent a broad, overall economic development agenda; and 2) a detailed action strategy that the community could pursue over one year. The program provides direction and a reference through which to monitor progress instituting economic development within at the community. Careful attention was provided to detail objectives, the relationships between the different economic development stakeholders, the formal structures adopted, and selection of leadership. These factors are key to developing an effective and responsive local economic planning system.

The economic development mission in Litchfield is to achieve the orderly and beneficial economic development of Litchfield.

The main goals of an economic development program in Litchfield are to:

- Provide a planned and coordinated approach to economic development that benefits all area residents;
- Broaden and increase the job and tax base; and
- Preserve rural-agricultural community character.

Adopting formal arrangements for economic development between businesses, community, and elected and appointed governmental leaders will help to generate the political and monetary resources necessary to shape economic policy. Based on an examination of the assets, opportunities, and constraints to economic development in Litchfield, four main categories were selected to provide an

organizing context. The four main overlapping components of the Litchfield economic development strategy are:

1. **Organization** -- refers to the institutional structures used to coordinate and stimulate economic development. Economic planning activities are conducted by a variety of institutions and stakeholders at the local, regional, state and federal level. Assuming that the community supports economic development, such an initiative requires leadership and execution, with strong management to keep the effort consistently focused on goals and priorities. A systematic approach to economic development will help identify ongoing improvements. Programming should be instituted with the intent to establish a viable, on-going organization that benefits all future and current residents.

   - **Organizational Objective**: Establish a local economic development entity that will provide strong and sustained leadership and consultation on Litchfield community economic development.

2. **Promotion --** Economic development requires clear communication with a variety of audiences. The community must be aware of the need for economic development and the policies selected to achieve it. Stakeholders must be informed about specific initiatives. For example, businesses require awareness of special policies or targeted opportunities in Litchfield. The marketing and promotional element represents the formal approach to publicizing the economic development program and conducting public relations. Communication is important to synthesizing options into workable policies that are feasible to implement. While it may seem cumbersome to continually publicize programs, the community can help identify practical solutions to unique problems. The community is also a constituency that must be informed of current activities; otherwise, adequate public support may not be generated over the long-run.

   - **Promotional Objective**: Develop a public relations and marketing function to educate the public and promote Litchfield for business.

3. **Economic Restructuring -** This element involves defining and implementing specific policies to achieve intended economic effects within the public and private sector. The process of nurturing the local economy and managing growth is complex and requires that policies fit the needs of all parties involved. Programming should be effective and efficient so that resources are not wasted and careful analysis must occur to evaluate alternatives. This represents the attempt to influence markets for the public good and the benefit of private sector actors willing to share in the risk. By analyzing the economy and monitoring the economic environment, the risks should become more manageable.

   - **Economic Restructuring Objective**: Cultivate the local capacity to provide high-quality economic planning and decision-making. Strive to optimize community benefits and private sector opportunities.

4. **Litchfield Involvement In and Relationship to the Regional Economic Planning Process -** Recognizing that economic systems extend beyond local borders, there is a need to actively forge links with economic development stakeholders outside Litchfield. Economic initiatives in New Hampshire typically occur within the regional delivery system. Collaborating with outside organizations ensures that the methods selected are feasible to implement, not redundant, and will not adversely affect other communities. Strengthening the competitive position of the region, promoting indigenous growth, and improving the physical environment of the whole region will benefit Litchfield. Forging regional level economic cooperation acknowledges that the ability of one community to act without cooperation from

the larger region is limited. There are complex relationships between economic development, infrastructure, state and regional trends, and land use planning. The regional approach acknowledges that laissez-faire approaches to economic development are outdated. By working with stakeholders around the state, it is possible to tie into the already established regional economic response system.

- **Local Involvement in a Regional Process Objective:** Develop strong ties with regional economic development officials and the numerous economic development initiatives underway at the state and regional level.

Future economic development objectives are listed below while the Plan Implementation/Action Strategy chapter presents a detailed economic development strategy sequence along with identification of the stakeholders and resources that may be able to help realize particular aims and objectives. A major focus of the Litchfield Planning Board is promoting the overall development of the community economy; therefore, many different objectives have been highlighted to comprehensively cultivate and influence the local economy so that it is sustainable and enhances community character and the well-being of current and future residents.

- A formal economic development system is needed to address issues and opportunities as they arise. A recommendation is to hire an economic development specialist, at least part-time, to serve as the key contact on matters of economic development.
- Investigate and apply for outside funds to assist local development, such as to underwrite cooperative marketing/publicity campaigns or assist wastewater treatment system development.
- Communicate with local businesses, including home-based businesses, to understand their needs and define economic initiatives to promote their development and expansion.
- Advocate for infrastructure priorities at the local and regional level.
- Develop concise promotional brochures – such as a one-page color handout to attract firms that may have an interest in locating in Litchfield.
- Attempt to attract one or more new businesses to Litchfield -- 15 to 25,000 square feet of building per year.
- Promote agriculture as viable and important to community character and the local economy and explore opportunities for farmers from outside the area to rent or purchase prime agricultural lands for continued use as farm operations.
- Adopt a marketing strategy for economic development and tie into regional economic marketing efforts.
- Promote open space development as an option to conventional non-residential development patterns.
- Use community character guidelines to improve the lay out of commercial development.
- Promote and maintain the development of a healthy business climate.
- Inventory parcels in the commercial districts and identify potential development opportunities. The database should contain information that can be integrated into computerized mapping programs. Examples of characteristics to define are: ownership status and parcel attributes such as acreage, zoning, uses, site features, soils, types of structures, site infrastructure, utilities availability, etc.

- Designate and promote Litchfield economic growth centers by highway interchanges and in developing areas, such as: east of Colby Road, where Albuquerque Avenue will join Route 3A (high priority); southeast of Route 3A, near the intersections of Albuquerque Avenue and the Circumferential Highway access ramps; the Route 102 corridor; and a new town center designed around the municipal building by Albuquerque Avenue, possibly linked down to the historic town center near the Merrimack River on 3A.
- Promote an overhaul of the transportation impact fees.
- Explore the use of special zoning and fiscal policies to stimulate selected business development and examine the influence of existing land use laws on economic development, with attention on how to improve or implement innovative zoning such as: performance standards, community character guidelines, site planning, environmental controls, the sign ordinance and enforcement.
- Monitor detailed engineering, fiscal and environmental analysis of alternative wastewater treatment system impacts, potential designs and funding opportunities. For example, examine the potential to join an inter-municipal public sewer system compact (such as by extending a line over the Circumferential Highway Bridge to Merrimack). Also analyze the potential for community/cluster septic systems.
- Examine the potential to sponsor or help establish a planned business park in Litchfield. The site could incorporate high quality design, including open space planing and higher density development. The community should be prepared to support private developers with grant applications and other resources that could help achieve this objective.
- Help cultivate home-based businesses and move them into commercial zones as these businesses expand.
- Attract and cultivate the following types of businesses:
    - Warehouses
    - Light industry, such as assembly and light manufacturing,
    - Offices and office parks,
    - Agriculture and specialized agriculture,
    - Specialized commercial development (tied to the community character such as antique shops, dining, recreation, agriculture, or tourism)
    - Institutional uses, such as hospitals, campuses, assisted living facilities or other elderly housing.
- Promote affordable housing to ensure that economic restructuring will benefit all community residents.