Newton Village Study

City-Wide Summary Report

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NEWTON VILLAGE STUDY

Prepared for the City of Newton, Massachusetts
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TABLE OF CONTENTS

CITY-WIDE SUMMARY REPORT

2.2.0 INTRODUCTION AND SUMMARY OF FINDINGS

INTRODUCTION

The Newton Village Study is a two year effort to examine and prepare a comprehensive plan for the future of the City's fifteen village centers. The study was begun in response to the growing community awareness and concern of the land development pressures that are being experienced throughout the City, particularly in the village commercial centers.

The study was designed to have four phases, each phase building on the next so that effective input of all citizens of Newton can be obtained.

I. A kickoff phase, in which the study was announced and its design publically presented in meetings before the Board of Aldermen, the Economic Development Commission, and a land use forum conducted by the Newton Conservators and the League of Women Voters. In cooperation with the Economic Development Commission, a full scale citizen participation process was also designed in this phase.

II. A survey phase, to examine and discuss the development issues and problems from a city-wide as well as village perspective. The problems of traffic, parking, urban design, zoning and the economy are examined and presented in survey reports for each village center.

III. An alternative plans phase, to examine and discuss a number of alternatives for the future of the village centers, and the impacts of the alternative futures on the City's quality of life.

IV. A final plan phase, to prepare consensus plans and the necessary zoning amendments and other public actions necessary to achieve it.

An essential part of each phase is a full-scale public participation process consisting of city-wide and village meetings.

This report is one product of Phase II. It summarizes the initial surveys of each center from the perspective of the City as a whole. Individual survey reports of each center have also been completed or are in process. This summary and center survey reports will be discussed at city-wide and village meetings in accordance with the schedule shown on the following page.

The report is organized as follows: Section 1 summarizes all findings, Sections 2 through 8 summarize findings with regard

to economic market, urban design, land use, traffic, parking and zoning issues. A summary is provided at the beginning of each section for ease of reading and understanding the whole.

OVERALL SUMMARY OF FINDINGS

- All sectors of Newton's economy are expanding and assuming more regional importance.

- Since 1977, Newton's retail sales, service industries and manufacturing sector has grown at a rate considerably greater than the regional average.

- In 1985, absorption rate for new office space in Newton was double the annual regional average.

- Many of Newton's village centers grew accordingly, but development pressure was greatest in those centers close by the regional highway network. These centers, Chestnut Hill, Newton Corner, Newtonville, and West Newton, increased their city-wide and/or regional importance and orientation.

- Seven of the village centers retain their neighborhood service orientation, but some of these centers are changing.

- Several centers dominate the local economy: Chestnut Hill contains 30% of all retail space; 32% of all office space is in Newton Corner, Nonantum contains 42% of the industry located in these centers.

- Land use density in the centers is still not high, ranging from low density to higher density suburban. Newton Corner office development has raised the overall average, but compared to most larger cities in the region, Newton's density is low.

- Despite development pressure, many of the village centers, particularly the core convenience areas, retain a quality, "village" atmosphere. Historically and architecturally significant buildings abound.

- Many of the village commercial areas project an image that is not extirely consistent with the gracious residential areas common throughout the city. The growth of suburban-style shopping centers and office/parking compkexes is inconsistent with the traditional village atmosphere and orientation.

- Many centers lack physical evidence of the City as a public entity. There are few public open spaces, squares, statues, fountains, or civic buildings.

- There are attractive residential neighborhoods close in to

most centers, and they help maintain the village atmosphere. Many of these neighborhoods suffer the intrusion of noise, poor quality development, traffic and parking.

- Traffic demand has increased, but causes vary because of the varying widths and capacities of the streets traversing the centers; traffic has increased on those residential streets now used to bypass heavier traffic caused by new development.

- Newton is lacking in the number of north-south routes. Consequently, certain residential streets have developed as major routes (Grove, Chestnut, Walnut, Centre, Parker, Woodward, Langley, Waverley).

- Traffic management needs further emphasis: A number of intersections should be signallized; other intersections do not operate efficiently, so that traffic problems result from improperly timed signals rather than lack of capacity to handle the traffic.

- The parking problem is not simply insufficient supply. Most centers, particularly those with large private parking lots, have a surplus of spaces. However, all of Newton Centre and the "core" area of most centers experience problems.

- Extensive "meter feeding" and lack of enforcement of posted spaces has effectively reduced the supply of spaces in most centers. Long-term parkers occupy spaces that would normally be available to short-term convenience customers.

- The "parking credit" in the zoning ordinance is the direct cause of the parking deficit in at least one center, Newton Corner. Where substantial new development is, or will take place, parking deficits will increase as the parking credit is applied.

A CITY-WIDE TYPOLOGY/THE ROLE OF THE CENTERS

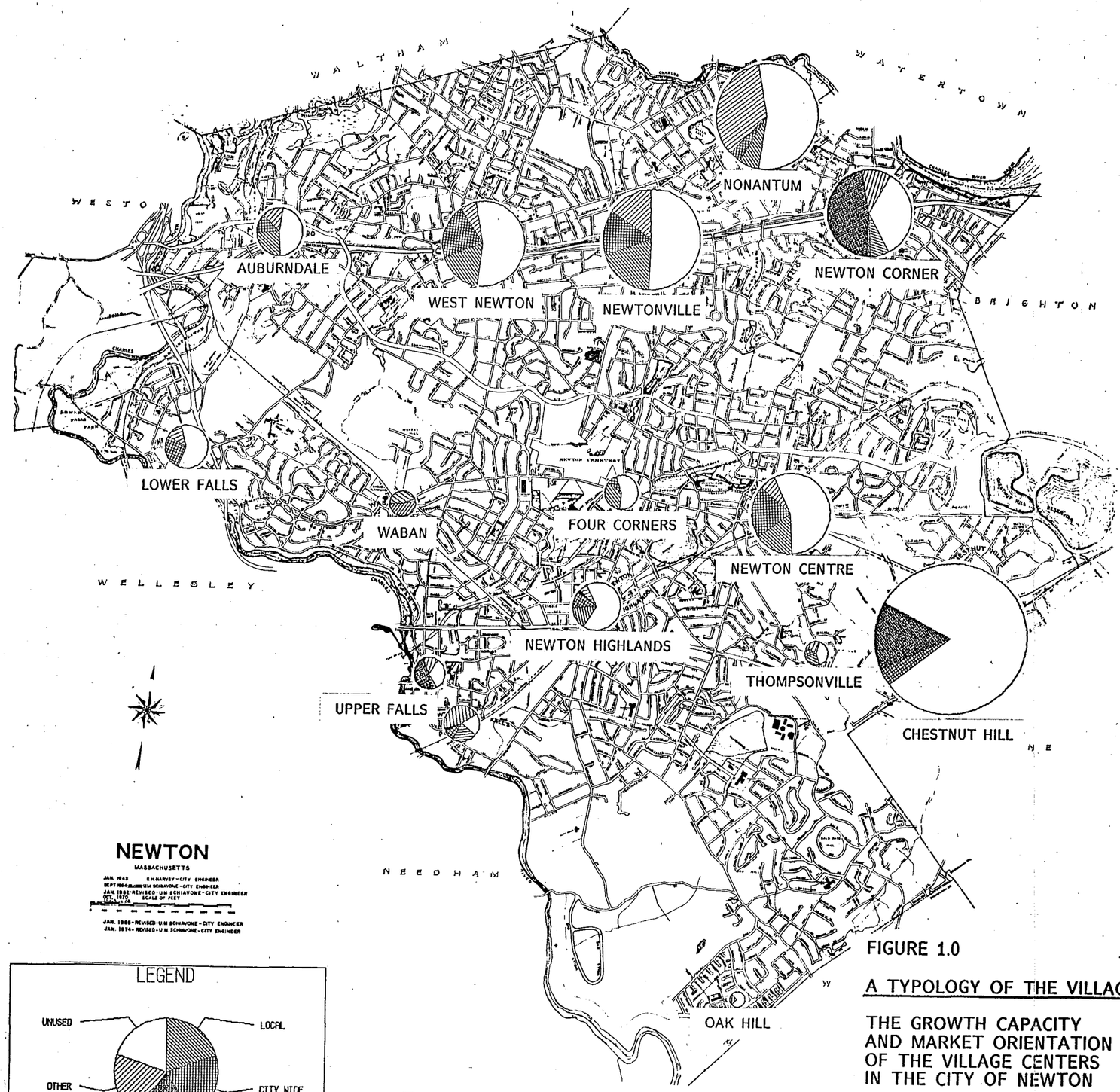
The fifteen village centers of Newton each play roles in the City's way of life and economy. These roles differ, depending upon the size, location, and orientation of each center. The future role of each center in city life is also dependent upon the way it may grow and expand in the future.

Figure 1.0 graphically portrays the above information. The pie charts indicate the relative size of each center, its growth capacity under present zoning (unused portion), and the orientation of each center with regard to neighborhood, city-wide or regional markets.

As expected, the centers of most prominence are also those that have a wider market orientation and a greater existing size and capacity to grow. In the sections that follow, particuarly 2.2.1 and 2.2.8, this information is discussed in detail.

In general, the size of the centers reflects their location on the regional highway network and their proximity to Boston, the region's core. Newton Centre, Nonantum and Lower Falls are exceptions. Newton Center has been traditionally one of Newton's important centers. Nonantum is an older urban area with a traditional industrial base. Lower Falls owes its budding prominence because of its direct access to Route 128, but it is limited in land area.

North Newton is clearly the focus of activity in the City with regard to the economic role of the village centers. The Mass Turnpike is the predominant catalyst of this activity and will continue to be in the future.



NEWTON

MASSACHUSETTS

JAN. 1943 E.H.HARVEY - CITY ENGINEER
SEPT 1964 - REVISED - U.M. SCHIAVONE - CITY ENGINEER
JAN. 1968 - REVISED - U.M. SCHIAVONE - CITY ENGINEER
OCT. 1970
SCALE OF FEET
JAN. 1968 - REVISED - U.M. SCHIAVONE - CITY ENGINEER
JAN. 1974 - REVISED - U.M. SCHIAVONE - CITY ENGINEER

LEGEND

FIGURE 1.0

A TYPOLOGY OF THE VILLAGE CENTERS

THE GROWTH CAPACITY
AND MARKET ORIENTATION
OF THE VILLAGE CENTERS
IN THE CITY OF NEWTON

NEWTON VILLAGE STUDY

DATE_____

PREPARED FOR THE CITY OF NEWTON, MASSACHUSETTS
THEODORE D. MANN, MAYOR
BARRY C. CANNER, DIRECTOR OF PLANNING AND DEVELOPMENT

Preliminary Recommendations

NOTE: IF THE CITY ENGINEER THE CITY OF NEWTON DOES NOT GUARANTEE THE ACCURACY OF ANY INFORMATION CONTAINED ON THE BASE MAP OF THIS PLAN. THE CITY WILL NEITHER ACCEPT NOR APPROVE ANY SITE PLANS, DESIGN PLANS, LAYOUT ETC. DERIVED SOLELY FROM THIS INFORMATION.

CITY-WIDE SUMMARY REPORT 2.2.1 ECONOMIC MARKET

NEWTON'S ECONOMIC MARKET

Newton's economic activities are an integral part of the metropolitan Boston market area. The composition of Newton's economic base underscores its important position within the Boston regional market as well as defines its own internal market capacity.

This survey describes these city-wide and regional markets in terms of the major economic activities of retail sales, service industries, manufacturing and office space development. It identifies the city-wide and regional market trends for each of these major economic activities, describes Newton's role in the regional market area and the city's broad economic potential, and describes the role (s) that the village centers play in Newton's economy.

SUMMARY OF FINDINGS

- All sectors of Newton's economy are expanding and are assuming more regional importance.

- Newton is an expanding retail sales market growing at a rate significantly greater than the regional average. From 1977 to 1982, the City increased its share of the regional market from 3.5% to 4.1%. Given that Newton is in the top 10% of incomes in the region, this type of retail performance can be expected and is not necessarily the indication of regional market penetration. However, the amount of sales in the apparel and furniture sectors in Newton indicate that Newton serves a regional market for these goods.

- Apparel and furniture sales in Newton have a total volume and percent of regional share that indicates that the City serves a regional market area for these goods; the level of sales in other retail categories indicates no more than a city-wide market area.

- Food stores, drug stores, automotive dealers in Newton are consolidating into larger store units similar to the regional trend.

- Service industries represent the largest segment of the city's employment base and, in terms of numbers of establishments and employees, expanded at a faster rate than the regional average.

- Office space construction has responded to regional demand and the growth of Newton's service industries but has expanded faster than the regional average. In 1985

the Newton office space absorption rate was nearly double the regional average.

- Manufacturing in Newton grew dramatically, fed by the growth in electronics manufacturing. While a small element in the Newton economy, the 45% increase in manufacturing employment will mean continued use of existing manufacturing facilities, and the potential need for expansion capability.

- Newton has been a significant beneficiary of the economic growth in the Metropolitan area. As a result, its traditionally city oriented economic base is now assuming more importance regionally. As a consequence, pressure for new and/or higher density commercial/industrial developments can be expected, including redevelopment of older and obsolete commercial facilities.

- Newton's village centers differ widely in the range of goods and services they provide, and the role(s) they play in the City's economy.

- Auburndale, Waban, Pettee Square, Oak Hill, Newton Highlands (Lincoln and Chestnut Streets), Four Corners and Thompsonville function primarily as <u>neighborhood centers.</u> That is, most of their retail, business and offices serve the local village market.

- Newton Highlands (Boylston Street), Newtonville, Nonantum, West Newton, Lower Falls, Newton Centre and Upper Falls/Chestnut Elliot, function primarily as <u>community-wide centers</u>. That is, they have a wider range of goods and services available, and most of the businesses serve a wider market or the city as a whole.

- Chestnut Hill and Newton Corner function primarily as <u>city-wide/regional centers.</u> They provide a broad range of goods and services, or have office complexes geared to the regional market economy. These centers attract business shoppers and employees from throughout the Boston region.

THE REGIONAL RETAIL MARKET

Table 1.1 summarizes the regional market in which Newton competes. As indicated, the total number of retail establishments in the Boston SMSA essentially stayed the same during the period indicated, i.e. an increase of only 15

or 0.1%. Sales grew 4.6%, a rate of approximately 1% per year. Total retail sales in the regional market area grew 1.2% per year, reflecting the sluggish retail sales performance in the nation during the same period. However, the data indicates that significant changes have occurred in the composition of the regional retail market.

The general merchandise sector and food stores, automotive dealers, gasoline service stations and drug stores experienced decreases in the total number of establishments ranging from 2.1% to 18.9%.

For the automotive dealers, gasoline service stations and drug stores, the reduction in the total number of establishments has reflected a consolidation of these business types into larger units since total sales have increased by 12%, 26%, and 6.7% respectively. In many instances, the relatively large and visible commercial sites abandoned by gasoline service stations and automotive dealerships have created opportunities within the older commercial areas for redevelopment.

For general merchandise and food stores the decline in the number of establishments was accompanied by a decline in sales, 15.7% and 8.9% respectively.

Apparel and accessory stores, furniture, home furnishings and eating/drinking places had sales increases of three to four times the total average increase in regional retail sales, and represent the strongest segment of the regional retail market.

TABLE 1.1 Retail Trends in the Boston SMSA: 1977-1982

Business Group	Number of Establishments 1977	1982	CHANGE #	%	Sales ($1,000)* 1977	1982	CHANGE #	%
Bld. Mat., Hardware, Gdn. Sup.	618	623	5	0.8	512,811	555,987	43,176	8.4
Gen Merchandise	341	299	-42	-12.3	1,977,962	1,668,233	-309,729	-15.7
Food Stores	2,063	2,020	-43	-2.1	3,060,415	2,787,470	-272,945	-8.9
Auto Dealers	743	660	-83	-11.2	2,098,636	2,350,922	252,286	12.0
Gasoline S.S.	1,550	1,343	-207	-13.4	876,520	1,110,877	234,357	26.7
Apparel, acc.	1,426	1,613	187	13.1	911,243	1,049,074	137,831	15.1
Furniture, Home furnishings & equipment	1,057	1,074	17	1.6	556,492	660,277	103,785	18.6
Eating/drinking places	3,982	4,084	102	2.6	1,495,028	1,696,468	201,440	13.5
Drug stores	795	645	-150	-18.9	464,862	496,055	31,193	6.7
Misc. Retail(1)	3,460	3,689	229	6.6	2,142,745	2,367,398	224,653	10.5
TOTAL	16,035	16,050	15	0.1	14,096,714	14,742,761	646,047	4.6

Footnotes:
* All dollars adjusted for inflation.
(1)"Miscellaneous Retail" includes establishments not elsewhere classified, such as sporting goods, books and stationary stores, florists and jewelers.

Source:
U.S. Census of Retail Trade, Bureau of the Census Washington D.C.(1977, 1982)

NEWTON'S RETAIL MARKET

Newton has had, and continues to have, a significant number of definable retail commercial areas, and a significant amount of retail activity. Historically Newton's village centers have been locally oriented retail shopping areas, but some have been more city-wide or regional, such as Newton Center, Newtonville or Newton Corner. With the opening of the Chestnut Hill Mall in the 1970's, Newton added one clearly regional retail shopping area.

Table 1.2 indicates that retail sales trends in Newton have been strong. The total number of establishments increased 7.6% and total sales increased 20.8%, more than four times the regional average of 4.6%. Newton represented one of the strongest retail markets within the region for the study

period. However, not all retail categories expanded. Newton showed a decrease in general merchandise establishments of 38.5%, automotive dealers of 20%, and drug stores of 9.5%,and sales in those sectors reflect this decline. Also, Newton registered a 21.7% decline in miscellaneous retail establishments. However, combined retail categories showed significant increases in the number of establishments and major increases in sales volume. Building materials, hardware and garden supplies had a 39.9% sales increase; automotive sales which declined regionally increased by only 1.2%; apparel increased by 47.1%; eating and drinking sales increased by 20.1%; and furniture and home furnishings sales increased a resounding 286.5% on an already significant base, making Newton a major furniture sales center in the region.

TABLE 1.2 Retail Trends in Newton: 1977-1982*

	Number of Establishments				Sales ($1,000)**			
			CHANGE				CHANGE	
Business Group	1977	1982	#	%	1977	1982	#	%
Bld. Mat., Hard-ware, Gdn. Sup.	21	21	0	0.0	15,219	21,296	6,077	39.9
Gen Merchandise	13	8	-5	-38.5	NA	NA	NA	NA
Food Stores	58	78	20	34.5	104,920	92,561	-12,359	-11.8
Auto Dealers	15	12	-3	-20.0	76,361	77,292	931	1.2
Gasoline S.S.	42	45	3	7.1	27,330	35,877	8,547	31.3
Apparel, acc.	70	89	19	27.1	48,251	70,988	22,737	47.1
Furniture, Home furnishings & equipment	40	43	3	7.5	18,547	71,685	53,138	286.5
Eating/drinking places	77	118	41	53.2	48,513	58,241	9,728	20.1
Drug stores	21	19	-2	-9.5	NA	17,987	NA	NA
Misc. Retail(1)	166	130	-36	-21.7	74,706	NA	NA	NA
TOTAL	523	563	40	7.6	496,034***	598,975***	0	20.8

Footnotes:
* The 1977 U.S. Census of Retail Trade does not report all data in the same way as the 1982 Census. 1977 figures have therefore been adjusted to make data in this chart comparable.
** All dollars adjusted for inflation
***Totals reflect all categories.
(1)"Miscellaneous Retail" includes establishments not elsewhere classified, such as sporting goods, books and stationary stores, florists and jewelers.

Source: U.S.Census of Retail Trade, 1977, 1982

NEWTON AND THE REGION

Table 1.3 compares Newton's retail performance for the period with that of the region and shows that Newton's share of the number of establishments and total sales increased. Newton is a growing retail market, and that for some retail items it is assuming regional significance.

Newton represents 2.9% of the regional population, and is a relatively affluent community within the top 10% of family incomes in the region. Thus, Table 3 indicates that in most retail categories Newton's share of regional sales is somewhat higher than it's share of the regional population. Most activities in Newton have a sales volume consistent with its internal market potential. However,in recent years, apparel and furniture sales have emerged as regional attractions and have apparently made Newton an important center for these items.

TABLE 1.3 Retail Trends in Newton as a Percent of Boston SMSA: 1977 and 1982

	Number of Newton Establishments as a % of Boston SMSA Estab.		Newton Sales as a % of Boston SMSA Sales*	
	1977	1982	1977	1982
Building Materials, Hardware, garden supply	3.4	3.4	3.0	3.8
General Merchandise	3.8	2.7	NA	NA
Food Stores	2.8	3.9	3.4	3.3
Automotice dealers	2.0	1.8	3.6	3.3
Gasoline Service Stations	2.7	3.6	3.1	3.2
Apparel, accessory stores	4.9	5.5	5.3	6.8
Furniture, home furnishings, and equipment stores	3.8	4.0	3.3	10.9
Eating/Drinking places	1.9	2.9	3.2	3.4
Drug Stores	2.6	2.9	NA	3.6
Miscellaneous retail (1)	4.8	3.5	3.5	NA
Total	3.2	3.5	3.5	4.1

Footnotes:
* All dollars adjusted for inflation
(1) "Miscellaneous retail" includes retail establishments not elsewhere classified, such as sporting goods, book and stationary stores, florist and jewelers.

Source:
U.S. Census of Retail Trade, Bureau of Census, Washington, D.C. (1977 and 1982)

THE MARKET FOR SERVICE INDUSTRIES AND OFFICE SPACE

Service industries have also played a major role in Newton's economy and the economy of the metropolitan area. Newton has consistently been in the top 20% of communities in terms of service industry employment.

Much has been written about the national trend towards service industries, and the Boston Metropolitan Area is no exception. Table 1.4 shows that from 1977 to 1982, service industry establishments grew by 43.9% and the number of service employees by 48.5%, representing the fastest growing sector of the regional economy. Newton's service industries exceeded the regional growth rate by registering a 55.3% increase in the number of establishments and a 53.7% increase in employment (see Table 1.5).

TABLE 1.4 Boston SMSA: Percent Change in Service Industries between 1977 and 1982

	% Change in # of Establishments	% Change in # of Employees
Hotel and lodging	14.2%	29.3%
Personal services	3.0%	3.1%
Business services	29.1%	33.8%
Auto. repair	11.7%	15.4%
Misc. repair	-5.2%	15.4%
Amusement, Recreation	3.5%	6.1%
Health	NA	NA
Legal	7.0%	28.2%
Selected Educational services	NA	NA
Eng., Arch., & Surveyors	28.5%	61.5%
Acct. and Bookkeeping	NA	NA
Soc. Services and other	NA	N
Total	43.9%	48.5%

NA = Data not available

Source: 1977 and 1982 U.S. Census or Service Industries

TABLE 1.5 Newton: Percent Change in Service Industries Between 1977 and 1982

	% Change in # of Establishments	% Change in # of Employees
Hotel and lodging	16.7%	10.6%
Personal services	2.1%	26.4%
Business services	27.8%	42.7%
Auto. repair	10.8%	50.0%
Misc. repair	-10.0%	-22.3%
Amusement, Recreation	2.8%	NA
Health	98.7%	NA
Legal	22.8%	14.0%
Selected Educational services	NA	NA
Eng., Arch., & Surveyors	42.9%	48.7%
Acct. and Bookkeeping	NA	NA
Soc. Services and other	NA	NA
Total	55.3%	53.7%

NA = Data not available

Source: 1977 and 1982 U.S. Census or Service Industries

Table 1.6 illustrates Newton's recent performance in the service sector relative to the region as a whole In general, Newton has a greater percentage of Health Services businesses than the Boston SMSA,as a whole, and fewer auto and legal services. Newton has a greater percentage of hotel, auto and health service employees than the Boston SMSA and smaller percentage of legal, engineering and architectural professionals.

The office space development surge in the Boston SMSA is in response to the growth of the service industry. Newton is exceeding the regional growth rate in first class office space.

TABLE 1.6 Comparison of Newton and Boston SMSA Service Industries: 1977 and 1982

	No. of Establishments as a percent of Total Establishments in Service Industries				Employees as a percent of total Service Employment			
	1977		1982		1977		1982	
	NEWTON	SMSA	NEWTON	SMSA	NEWTON	SMSA	NEWTON	SMSA
Hotels and lodging	1.3	1.7	0.7	1.1	18.4	7.9	9.5	5.7
Personal services	24.7	22.8	11.3	13.2	12.1	11.6	7.6	6.1
Business services	35.9	27.8	22.2	22.0	47.3	48.6	38.2	37.8
Auto. services	6.5	13.1	3.2	8.3	2.2	6.5	21.2	3.9
Misc. repair	5.2	6.1	2.1	3.3	2.6	2.8	0.9	1.7
Amusement, recreat.	9.1	6.9	4.2	4.0	NA	6.8	3.4	3.8
Health	1.0	NA	34.7	26.6	NA	0.4	24.6	18.6
Legal	8.8	14.7	5.1	9.9	2.4	6.1	1.3	4.4
Selected educational services	NA	NA	1.4	0.9	NA	NA	0.5	0.7
Eng., Arch. & Surveyors	7.3	5.9	5.7	4.7	6.3	9.3	4.7	12.4
Acct.and bookkeeping	NA	NA	5.8	3.5	NA	NA	2.8	2.5
Soc. Ser. and other	NA	NA	3.5	2.3	NA	NA	4.2	2.2

NA = Data not available

Source: 1977 and 1982 U.S. Census of Service Industries

Table 1.7 illustrates the growth of first class office space in the Newton 128/Mass Pike and Boston area office space markets. Newton's rate of office space expansion has been keeping pace with the demands of the regional economy and the growth of its internal service industry. Office growth in 1985 indicates that the regional market has further intensified to a 3.5-year rate of absorption from a 4-year rate. However,in 1985, Newton"s office absorption intensified to a 1.8 year rate, indicating the strength and desirability of Newton as a regional office location, as well as the need to serve its own expanding service industry base.

TABLE 1.7 Comparison of First Class Office Space Absorption

	Newton	128/Mass Pike	
Boston Area			
Occupied space 3rd QTR. '85	1,086,800	6,050,316	48,939,382
Occupied space 3rd QTR. '80		650,500	3,974,983
			26,889,582
Total space absorbed in 5-yr period	436,300	2,075,333	22,049,800
Ave. annual absorption rate	87,260	415,067	4,409,960
Space absorbed in 1985*	234,100	479,342	4,505,695
To be absorbed in 1985-1988 (4 yrs)	349,040	1,660,268	17,639,840
Using ave. ann. absorption rate	4 yrs	4 yrs	4 yrs
Using 1985 figures	1.5 yrs	3.5 yrs	3.9 yrs

Footnote: * This figure includes new and "under construction" buildings which are under lease.

Source: "Office Market Survey", Spaulding and Slye, The Boston Area Report, July, 1985 and July, 1980.

MANUFACTURING

Table 1.8 indicates that Newton is experiencing significant growth in the manufacturing sector, and appears to be moving toward larger establishments. This growth has been fed by the expansion of the electronics industry.

TABLE 1.8 Changes in Manufacturing between 1977 and 1982

	NEWTON	SMSA
TOTAL MANUFACTURING		
No. of Establishments	-6.6%	
Total establishments with 20 or more employees	25.0%	7.4%
Total Employment	45.9%	6.4%
ELECTRONICS MANUFACTURING		
No. Of Establishments	9.6%	0.7%
Total Establishments with 20 or more employees	44.4%	7.1%
Total Employment	50.0%	10.8%
ELECTRONICS AS % OF TOTAL MFG	14.7%	
ELECTRONICS EMPLOYMENT AS % OF TOTAL MFG EMPLOYMENT	27.8%	15.8%

Due to the expansion of electronics manufacturing, the Boston SMSA has experienced an increase in total manufacturing employment and an increase in the number of manufacturing establishments. Newton not only has been part of this increase but has been a leader in manufacturing expansion. Table 1.8 shows that in manufacturing employment, Newton's rate of expansion was seven times faster than the regional average. In electronics manufacturing employment, Newton exceeded the regional average by a factor of five.

The 1982 U. S. Census of Manufacture and the 1984 Massachusetts Department of Employment Security Wage and Income Reports indicate that Newton employs 2.1% of the regional manufacturing workforce, and 3.5% of the regional electronics manufacturing workforce and that manufacturing represents 11% of the total Newton workforce. Newton's expansion in the manufacturing sector was dramatic in terms of percentage increase, but this was accomplished on a relatively small base since manufacturing comprises a relatively small percentage of the total Newton workforce (11% as compared to 24% statewide average).

MARKET ORIENTATION OF NEWTON'S VILLAGE CENTERS

Most of Newton's retail business and service economy is located in the City's 15 village centers. While there are substantial activities elsewhere (e.g. Needham Street),these centers function in varying degrees as the centers of the City's economy. Newton's commercial pattern is unusual for a city of its size. Most medium size cities are characterized by a substantial "downtown" where retail and business services and governmental activities tend to be concentrated, and perhaps a number of smaller neighborhood convenience centers or strips. In Newton, there is no one center that can be called the City's "downtown", although Newton Centre comes closest.

An important aspect of the village study is to determine the present role of each village center in the City's economy and to forge a consensus on what roles each should play in the future.

Therefore, the "market orientation" of the businesses in each center was examined and categorized into three orientations: Neighborhood, community/city-wide, and city-wide/regional. These characterizations were made on the basis of the type of business and what is considered by market researchers to be its normal market area. For example, a small variety store or delicatessen normally serves a relatively small market and is considered a neighborhood convenience business. An automobile dealer, large plumbing supply outlet or discount store normally serves a wider community or city-wide market. Large shopping malls or office complexes and employment centers tend to attract shoppers, and business from throughout the metropolitan area. Although the Chestnut Hill Mall and

shopping center may contain small shops, the area as a whole is a regional attraction.

There is a mix of businesses in all village centers, but some have a much wider range of goods and services than others. Most village centers also contain businesses whose market orientations vary, so that with the exception of Waban and Oak Hill, there are no centers which can be considered purely neighborhood, community-wide or regional in nature. However, it is possible and appropriate to estimate the amount of business floor area in each village center oriented in each of these ways.

Table 1.9 and the pie charts on Figure 1.1 show the orientation of each of the village centers. As expected, with few exceptions, the smaller the center the more locally oriented it is. Those exceptions are Lower Falls and Chestnut/Elliot in Upper Falls. Although presently small, both of these centers have businesses (offices, antique, etc.) whose orientations are clearly to a wider market.

The Lower Falls area is tied to the fortunes of the Route 128 business base, while Upper Falls attracts a region-wide antique audience. Chestnut Hill is clearly a regional center, yet has businesses that can be characterized as more locally oriented. Recent development in Newton Corner has shifted the emphasis of this Center away from its previous neighborhood base, but remnants remain.

The remaining centers all provide a substantial neighborhood service function and a major portion of businesses in these centers are oriented to the surrounding local market. However, this can be further qualified: There are a number of businesses which are normally classified as neighborhood, but which might have a wider audience because of their popularity. The several delicatessens and restaurants in Newton Centre could well be considered "community-wide" businesses, so that Newton Centre could be considered even more as a "community-wide" center than this data suggest.

Nonantum, Newtonville and West Newton are also centers with a substantial community-wide function. Auto dealerships, manufacturing product outlets and specialty products are dominent businesses in these centers. However, they are not regional attractions in the same sense as the Chestnut Hill Mall or the budding office complex at Newton Corner.

Oak Hill and Waban are purely neighborhood in orientation. The other centers classified as primarily neighborhood in focus also contain businesses or uses that are not strictly local. Four Corners has a professional office building and large drug store which draw from a wider market. Auburndale and Newton Highlands have business areas within their study boundaries that have little to do with the neighborhood function of their more traditional centers. Pettee Square has

been affected by its proximity to Needham Street and the existence of an older mill complex now used for research and development and offices. Thompsonville has recent office development oriented to Boylston Street and Chestnut Hill.

With the exception of Newton Centre, all centers with community-wide and regional function are accessible to the region-wide highway network, and their development has affected or has begun to reflect this accessibility. To this extent, Newton Centre is the City's "own downtown", and its appeal and the variety of its stores reflect this.

Table 1.9 Market Orientation of Business Activity in the Village centers

Center	Percent of Business Floor Area Orientation		
	Neighborhood	Community/City-Wide	Regional
Oak Hill	100	--	--
Waban	100	--	--
Four Corners	76	24	--
Auburndale	67	33	--
Thompsonville	67	33	--
Pettee Square	64	28	8
Newton Highlands	64	30	6
Nonantum	60	40	--
Newtonville	58	42	--
West Newton	37	63	--
Newton Centre	43	57	--
Newton Corner	13	3	84
Chestnut/Elliot	7	4	89
Lower Falls	0	100	--
Chestnut Hill	0	20	80

CITY-WIDE SUMMARY REPORT
2.2.2 URBAN DESIGN

INTRODUCTION

This report summarizes the findings of the urban design survey of all village centers. An urban design team visited each village center to examine the visual qualities of each center, note special or unique characteristics, determine whether any city-wide or common visual element or character exists and to study the edges of, or boundaries between, commercial and residential uses. A report was prepared for each center which included graphic representations of their findings. Issues such as facade design, signage, historic qualities, scale, settings, buffering and views are among the items considered in the design inventory and reports.

FINDINGS

During the course of the study it became clear that the village centers lack sufficient common elements to project a recognizable "Newton" image. In fact, the centers tend to belie Newton's image as the "garden city".

While six major roads connect thirteen of the centers, there is no sense of linkage. There is nothing to suggest that these streets are the city's main streets or "front doors". While each center is unique in shape, types of buildings and community orientation, there are few elements in each center to suggest that they are part of Newton's fabric or image. While some centers have great charm (Waban, Newton Highlands' Lincoln Street), or project a civic presence (Newton Centre), most could be located anywhere in the Boston area or the northeastern United States.

On a more positive note, the centers are generally clean and well maintained. Many retain a village atmosphere, with close-in residences providing a 24 hour population. The centers are very much part of the fabric of the city, with many streets leading to and from each center. Except for Chestnut Hill, they are not vast enclaves of commerce.

The following positive and negative elements reoccur in most centers:

Positive Reoccurrences:

- In almost all the centers there are examples of quality commercial and institutional architecture from all design periods.

- The Newton Public Library system helps provide some civic focus in some of the centers.

- There are attractive close-in residential neighborhoods

that provide a quality setting and residential "village" atmosphere for the commercial centers.

- There appears to be a commitment to design improvements, i.e., Pettee Square, Newton Highlands in terms of streetscape and Auburndale, Newton Centre, Newtonville and the Highlands in terms of facade improvements. These improvements provide cohesion and a sense of place.

- There are historic structures in every center that add grace, charm and a sense of tradition.

Negative Reoccurrences:

- Many of the village commercial areas project an image that is not entirely consistent with the gracious residential areas common throughout the City.

- Above ground wires and utility poles detract from buildings as well as overall settings.

- While there are excellent examples of facade design and signage, in general the village centers have poor facade design and inconsistent or poorly scaled signage.

- Many centers lack physical evidence of the City as a public entity.There are few public open spaces, parks, squares, statues, fountains, monuments or civic buildings.

- The centers have, over time, been strongly oriented to automobile access, to the detriment of the pedestrian environment. Open, disorganized off-street parking is common and unsightly; most off-street lots provide no buffering.

- The entrances into the village centers are either poorly defined or visually negative.

- The edges between commercial and residential uses are usually harsh and/or abrupt. There is very little attempt to ameliorate the impacts of commercial development abutting residential areas.

- The Massachusetts Turnpike, Route 16 and Route 9 create a significant amount of noise and detract from the overall quality of adjoining development.

CITY-WIDE SUMMARY REPORT
2.2.3 LAND USE

INTRODUCTION

Information on existing land uses in the village centers was obtained from the Newton Assessors. The information was aggregated into the categories shown in Tables 3.1 and 3.2 and figure 3.1. The table shows for each the amount of land area in acres for each use, the amount of commercial, office and industrial floor area in square feet, the number of dwelling units located within the village study boundaries, and the Floor Area Ratio (FAR) of the non-residential buildings. (The concept of FAR is illustrated in Section 2.2.8.)

SUMMARY OF FINDINGS

- The village centers are office areas as well as retail centers; five of the centers have more office space than retail space, led by Newton Corner which has become the predominant office complex in Newton.

- The centers vary considerably in business makeup, ranging from primarily industrial areas (Nonantum) to retail complexes (Chestnut Hill).

- Development densities aslso vary considerably; retail densities range from typically suburban (.1 to .5 FAR) in seven smaller centers to more urban (.6 to over 1.0) in eight centers. Office densities are somewhat higher, the overall average density swelled by recent urban office development in Newton Corner.

- Industrial uses are limited to six of the 15 centers, with Nonantum and Newtonville accommodating the bulk of the industrial floor area; a large proportion of this "industrial" space is research and developmenty and in most instances is indistinguishable from purely office space.

- Several centers dominate the local scene: 30 percent of all commercial space is located in Chestnut Hill; 32 percent of all office space is located in Newton Corner; West Newton, Newton Centre and Newton Corner contain over 59% of the office space; over 42% of the industrial space is located in Nonantum; Newtonville and Nonantum contain 66% of the industrial floor area.

- Most of the industrial space is located in the center of north Newton, accessible to the Mass. Turnpike; close to 70% of the office space is located close to the regional highway network (Routes 9, 128, Mass. Pike).

TABLE 3.1

EXISTING LAND USE CHARACTERISTICS
TOTAL ALL CENTERS

CATEGORY	LAND AREA IN ACRES	FLOOR AREA IN SQ. FT.	FAR	DWELLING UNITS
Residential:				
Single Family	204.5	--	--	1,086
2 and 3 Family	174.3	--	--	1,965
Apartments/Condos	63.0	--	--	1,842
Commercial	109.9	3,071,353	.659	--
Office	54.2	2,166,288	.920	--
Industrial/Manufacturing	56.4	1,679,000	.627	--
Mixed Use - mostly Commercial	14.6	580,166	.839	--
Mixed Use - mostly Residential	8.6	248,967	.660	--
Transportation/Parking	NA	--	--	--
Institutional	NA	--	--	--
Open Space/Recreation	NA	--	--	--
Vacant Land	56.8	--	--	--
TOTAL		7,745,774	(.729)	4893

TABLE 3.2

EXISTING LAND USE

TOTAL ALL CENTERS

CENTER	FLOOR AREA IN SQUARE FEET COMMERCIAL	(FAR)	OFFICE	(FAR)	INDUSTRIAL	(FAR)	DWELLING UNITS
Chestnut Hill	946.1	(.6)	135.1	(.4)	-----	----	1111
Nonantum	188.9	(.7)	81.0	(1.7)	715.7	(.7)	724
Newtonville	439.2	(.8)	145.9	(1.4)	386.9	(1.7)	849
Newton Corner	215.5	(1.3)	701.1	(1.7)	-----	----	396
West Newton	250.9	(.7)	340.4	(1.1)	141.2	(.5)	330
Newton Centre	425.4	(1.1)	241.8	(1.0)	----	----	206
Auburndale	98.8	(.3)	144.1	(.8)	139.8	(.5)	211
Pettee Square	14.6	(.6)	88.4	(.9)	209.9	(1.1)	154
Newton Highlands	204.9	(.5)	52.1	(.7)	----	----	313
Lower Falls	17.6	(.1)	138.6	(.5)	85.3	(1.0)	100
Four Corners	109.8	(.4)	59.6	(.4)	----	----	42
Chestnut/Elliot	120.9	(.4)	7.9	(.4)	----	----	231
Thompsonville	39.7	(.2)	27.4	(1.8)	----	----	124
Waban	50.1	(.8)	2.6	(.3)	----	----	54
Oak Hill	5.9	(.1)	----	----	----	----	48
TOTAL	3128.3	(.7)	2166.0	(.9)	1678.8	(.6)	4893

AVERAGE DWELLING UNIT DENSITY = 11 UNITS PER ACRE

CITY-WIDE SUMMARY REPORT

2.2.4 Traffic

Introduction

This document comprises Survey Reports on existing traffic conditions in the Newton Villages, performed as the second ("planning context") phase of the ongoing Newton Villages Study. The objective of the Survey Reports was to create a "Base Case" traffic scenario representing existing conditions for each of the Centers, against which alternative future traffic scenarios can be compared in later phases of the study.

Since the principal traffic impact of additional development in any Village Center will be the generation of added volumes, the Survey Report phase focused on obtaining up-to-date estimates of traffic volumes on key streets. To accomplish this, traffic counts collected within the City during previous studies, by the City of Newton Public Works Department and/or by consultants engaged by the City or by private developers, were assembled, updated to 1985 average volumes, and mapped. The sources consulted are listed below.

Weekday morning and evening peak hour volumes at critical intersections, where available, were selected to represent existing traffic conditions. This was because:

> --weekday peak-hour intersection counts were the data form most generally available from previous studies in centers; they therefore represented a reasonable means of standardizing traffic information for all centers.
>
> --at most locations, the weekday peak hours represent the times of maximum traffic demand at critical intersections; so that analysis of operations at these times allows judgments to be made of performance under stressed conditions.

It should be noted, however, that in centers currently occupied largely by retail stores, traffic volumes associated with peak Saturday shopping hours may approach or exceed commuter peak hours.

Previous traffic counts were updated using an assumed 3 percent average annual growth factor to "grow" volumes to 1985 levels. In addition, monthly conversion factors, based on observed monthly variations in traffic volumes at 6 Mass. DPW permanent counting stations within the City of Boston and its western suburbs, were applied to convert counts to average daily volumes.

Then, a traffic counting program was undertaken to fill in gaps in available data in each of the Villages. Manual turning movement counts were

performed during October-November 1985 at selected locations by the consultants and the Newton Public Works Department. A set of the resulting counts has been forwarded to the Newton Traffic Engineer.

Both new and previous traffic counts were assembled for each center and balanced; the resulting Existing AM and PM traffic networks are included in the Survey Report for each center.

Operations at each key intersection were then analyzed using procedures based on Transportation Research Board Circular 212 and the 1965 Highway Capacity Manual. Unsignallized intersections were analyzed using the Critical Movement procedures from Circular 212, while the analysis of signallized intersections used procedures based on the old HCM. Both procedures produce letter-valuations of intersection operations, on a scale ranging from "A" (smooth operations, little or no delay) to "E" (possible vehicle conflicts, probable long delays to some or all movements).

For signallized intersections, the intersection as a whole yields a single Level-of-Service (LOS) value, which is greatly influenced by the assumed signal phasing/timing pattern. At most Newton Village locations, signallized intersections were analyzed assuming an optimal signal timing/phasing plan, instead of the plan in actual operation. The reason for this was that existing signal timing plans at some Newton locations are in need of updating, given current traffic demands: sufficient street capacity may exist to serve these demands, but current signal timing does not allow full advantage to be taken of this capacity.

Since the objective of the overall study is to compare intersection operations given future volumes, with existing volumes, assuming that intersection capacity is fully utilized, it was deemed appropriate to examine existing volumes under improved signal timing conditions, which would be assumed also to exist with future development. This approach corresponds to the "planning" approach to traffic operations analysis, compared with the more fine-tuned "engineering" approach which is appropriate when one is actually involved in intersection/signal design.

For unsignallized intersections, each of 3 opposed movements is examined separately, with the assumption that through traffic always has priority, and that turns, especially left turns, will be free-moving or constrained depending on how much reserve capacity is available for them once through movements are accommodated.

Findings

The results of the analyses for each center are presented in the appropriate Survey Reports. Each Report includes a description of existing conditions at major roadway/intersection locations for that Center, plus diagrams illustrating: (a) the existing traffic network, based on assembled counts; (b) Levels of Service at key intersections; and, for Centers where a number of 24-hour traffic counts were available, (c) Average Daily Traffic volumes on counted streets.

Overall, the following observations regarding traffic in Newton can be made

from these reports:

a. Centers where commercial/retail activity is most intense, or where through connections are provided to Route 9 or the Mass. Turnpike, tend to have heavy peak-hour total traffic volumes fully occupying the multiple approach lanes available at most intersections. These centers include Newtonville, Newton Corner, Newton Centre, and West Newton.

b. Other centers, including Nonantum, Newton Highlands, and Newton Upper Falls, handle lesser volumes, but are more limited by available road capacity at a single intersection or on one or more street approaches. They may experience some peak-hour congestion because of constrained capacity at pinch-points.

c. A third category of centers at present experience low-to-moderate traffic volumes, with no present danger of exceeding capacity at intersections. Chief among these is Oak Hill. Waban and Four Corners are also included in this group; although left turns onto Beacon Street at Waban Center (unsignallized) do experience some delay at present, and this location may at some future time require additional control.

d. A number of presently unsignallized intersections already are candidates for signallization, or are likely to become such candidates within the foreseeable future, based on existing volumes. These include Washington Street at Crafts Street in Newtonville, and the Route 9 ramps on Centre Street in Newton Highlands.

e. At other intersections, the existing signal systems do not appear to operate efficiently at present; and the LOS calculations don't accurately represent existing congestion and vehicle conflicts. These intersections include particularly Beacon Street/Langley Road in Newton Center; the Centre Street approach to Centre Avenue south of the Turnpike in Newton Corner; and the several signallized intersections in West Newton.

f. Newton is a city served by a number of major east-west roadways designed to carry through traffic and to serve commercial uses; but it is lacking in similar north-south roadways. Rather, several residential streets have over time developed as the major through routes connecting the north and south sections of the city. With the exception of Route 16, these streets--Grove, Chestnut, Walnut, Centre, Parker--are still primarily one travel lane in each direction, with infrequent signals. Other streets are used as bypasses of these primary routes: such streets certainly include Woodward Street, Langley Road, Waverley Avenue, and other primarily residential streets. These and similar streets are likely to bear the brunt of development-related traffic increases.

In addition, traffic demand generated by new development, particularly in those centers close to the Washington Street/Mass. Turnpike, and Route 9, corridors, will use local streets such as Newtonville Avenue and Homer Street to bypass the major east-west roads as well.

SOURCES OF PREVIOUS TRAFFIC COUNTS
ASSEMBLED FOR PRESENT STUDY

AUBURNDALE	Storch Associates, Commonwealth Avenue Traffic Study, February 1982.
CHESTNUT HILL	Vanasse/Hangen Assoc., Traffic Impact and Access Study, The Farm at Chestnut Hill, Prepared for City and Stanmar, Inc., October 1983.
	Metropolitan Area Planning Council, Florence/Heath Street Traffic Study, 1984.
NEWTONVILLE	Sasaki Associates, Urban Systems Project, Newtonville Square (Working Paper No. 1, April 1981.
LOWER FALLS	Vanasse/Hangen Assoc., Traffic Impact and Access Study, Route 16/128 SE Quadrant Development, Produced for Northland, Inc., March 1982.
	Edwards & Kelcey, Inc., traffic counts conducted as part of signal redesign project, for Mass. Department of Public Works, 1985.
NEWTON CORNER	Vanasse/Hangen Assoc., Traffic Impact and Access Study, Newton Corner Development, Produced for Drucker, Inc., December 1980.
WEST NEWTON	Vanasse/Hangen Assoc., Functional Design Report, Safety Improvement Project, West Newton Square, Prepared for City of Newton, January 1982.

CITY WIDE SUMMARY REPORT 2.2.5 PARKING

INTRODUCTION

This report presents the results of the following parking studies and analyses performed for the village center study areas:

- A Parking Inventory
- A Parking Supply/Demand Analysis
- A Parking Use Survey

The parking inventories were prepared from field survey and from information provided by the Newton Departments of Public Works and Planning and Development. The inventories identify all available public and private, on- an off-street, posted and metered, parking spaces in the study areas.

The parking supply/demand analyses were performed using computerized land use data provided by the Newton Assessors, and the above parking data. These analyses provide measures of the difference between an assumed business parking demand and actual supply.

The parking surveys were conducted on Fridays and Saturdays in November, 1985. Surveys of the larger and busier centers consisted of documenting the turnover of all on- and off-street metered spaces and most posted spaces within the study areas. One-half hour survey intervals were observed on Fridays between the hours of 8 a.m. and 2:30 p.m. Newton Centre was surveyed from 8 a.m. to 5:30 p.m. A number of neighboring residential streets in these centers were also surveyed.

For the smaller centers, observations of parking characteristics were conducted on Fridays and Saturdays between the peak hours of 11:30 a.m. and 2 p.m. The study areas were observed for parking density in the "core" commercial areas and the extent of business-related parking in residential areas.

The purpose of these surveys was to: 1) measure the turnover rate of all spaces, 2) examine problems which might reduce effective parking supply, and 3) to the extent possible, measure the extent of intrusion of business-related parking in abutting residential neighborhoods.

SUMMARY OF FINDINGS

Table 5.1 summarizes the findings of these surveys and analyses. These findings are presented below. As will be shown, the "parking problem" is complex and not always a simple matter of lack of spaces. There are many other factors affecting supply and the perceived availability of parking.

Supply vs Demand

1. There is a large surplus of spaces in those lower density village centers that tend to be dominated by large private parking lots.

2. There is a large deficit of spaces in these older urban centers where private parking lots are more limited. In these centers, public parking lots have helped reduce but not eliminate the overall deficit.

3. The "core" areas of most centers experience a deficit of spaces, since these core areas are generally dense and contain more convenience-oriented businesses. In many cases, the deficit is more "perceived" than real: Motorists jockey for spaces in front of stores, while a short distance away, there are empty spaces in a public lot.

4. As expected, Newton Centre has a very large deficit of spaces, particularly in the vicinity of the MBTA station.

5. Newton Corner also has a large deficit which appears to be the direct result of application of the parking credit presently in the zoning ordinance.

6. Nonantum has a severe deficit in its core area of convenience stores. However, there is a large number of surplus posted spaces on side streets near the core.

Parking Use Characteristics

1. In most centers, the use and turnover of spaces was high during the peak hours in the core convenience areas. That is, the areas were either completely full (100% use) or perceived to be full (85% use). Several centers, particularly Newton Centre and Newton Highlands-Lincoln Street, were full throughout most of the day. Turnover rates were typically high for convenience centers, where shopping trips are generally short.

2. "Meter-feeding" and lack of enforcement of posted spaces tend to reduce the turnover and hence supply of spaces. This exacerbates the deficit in the busier centers. In most centers, the time limits for parking appeared to be observed, since much of the parking was short term. However, in Newton

Centre, Newton Highlands, Nonantum and Auburndale (public lot) meter feeding and/or all day parking removed a significant number of spaces from the short-term supply. These spaces, which would normally be available to shoppers, were most likely filled by store owners, employees, or, in some cases, MBTA commuters. Enforcement of parking regulations appears to concentrate on meter violations, so that posted time limits of metered and non-metered spaces are not enforced to any extent.

Neighborhood Intrusion

1. Intrusion of business-related parking into abutting neighborhoods occurs primarily in the busier, more urban centers, such as Newton Centre, Newton Highlands, Nonantum and the Austin Street area in Newtonville. This intrusion appears to be caused primariy, but not exclusively, by long-term parkers. (Business owners, employees and commuters). Lack of enforcement of posted time limits exacerbates this problem by encouraging use of these spaces by long-term parkers. At the same time, aggressive enforcement of posted time limits in the residential areas would force long-term parkers to "meter feed" spaces in the commercial areas, thus reducing the supply for shoppers.

TABLE 5.1: SUMMARY OF PARKING CHARACTERISTICS IN THE VILLAGE CENTERS

	Surplus	Deficit	Use	Turnover	Intrusions
Auburndale	---	18	H	H	NO
Chestnut Hill	600	--	H	H	NO
Four Corners	100	--	M	*	NO
Lower Falls	95	--	M	*	NO
Newton Centre	---	579	M	M-H	SIG.
Newton Corner	---	532	H	*	SOME
Newton Highlands (Lincoln)	---	55	H	H	YES
Newton Highlands (Boylston)	125	--	M	M	NO
Newtonville (north)	90	--	L-M	M-H	NO
(south)	---	75	H	H	SOME
Nonantum (area)	109	--	L	L	SOME
(core)	---	271	H	M	SOME
Oak Hill	53	--	L	*	NO
Chestnut/Elliot	96	--	L	*	SOME
Pettee Square	---	24	M-H	*	SOME
Waban	20	--	M-H	H	NO
West Newton (area)	555	--	M	M	NO
(core)	---	35	H	H	NO
	1843	1572			

Total Supply vs Demand 272

NOTES:

Use: H= High; all spaces used at peak hours and most used throughout the day.
M= Moderate; most spaces used at peak hours, but many available at other times.
L= Low; many spaces available at peak hours and other times.

Turnover: *= Turnover rates were not measured in these centers.

Intrusions: NO= No intrusion into any abutting neighborhoods was observed; should not be a significant issue.
SOME= intrusion occurs in some abutting areas, but is limited to the area closest to the commercial block faces.
YES= intrusion occurs in all streets abutting the commercial blocks, but is limited to the area closest to the commercial block face.
SIG.=Significant. Serious intrusion occurs in some areas; most surrounding neighborhoods are affected.

CITY-WIDE SUMMARY REPORT
2.2.8 ZONING/THE DEVELOPMENT ENVELOPE

INTRODUCTION

The purpose of this section is to estimate the amount of development that could or might reasonably occur in Newton's Village Centers, given present zoning and market forces. This estimation was made by determining the following:

1. The total amount of development allowed by the present zoning ordinance. (The Present Zoning Envelope)

2. The type and density of development that has been occurring recently, or has been recently proposed in the village centers. (Development Types)

3. The amount of this development that could occur, given present trends and market forces. (The Present Development Envelope)

In the next phase of the Village Study, (development of alternatives), the environmental and fiscal impacts of the present development envelope will be measured against alternative development envelopes in order to help the City decide on the future of the village centers.

SUMMARY OF FINDINGS

1. Newton's present zoning allows development of over 21 million square feet of new commercial and office space or four times existing development of 5.5 million square feet.(This is the zoning envelope).

2. When market forces and economic feasibility are considered as well as present zoning, there is a development capacity or "umbrella" in Newton's village centers of over 12 million square feet of commercial and office space. (This is the present development envelope).

3. Based on current trends and market potential, expected development densities will range from suburban-style shopping malls and office parks to dense urban office complexes with underground parking.

4. As expected, the largest amount of development capacity is located in Chestnut Hill and the village centers in north Newton with convenient access to the Massachusetts Turnpike.

5. The residential development envelope in the village centers is a very small proportion of the non-residential development envelope, and the potential new dwelling units represent only 2.6% of Newton's present housing supply.

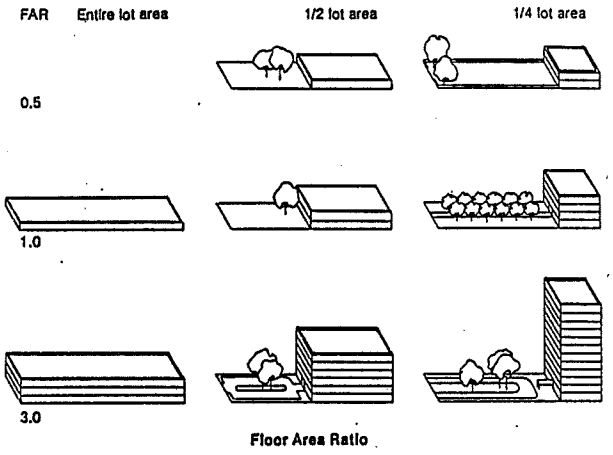
6. The number of new residential dwelling units that could be built is relatively small in most centers, the average increase over time estimated to be 15.3%.

7. Newton's zoning in the village centers will eliminate, over time, the remaining residential character of the village centers.

WHAT IS FAR?

The Floor Area Ratio (FAR) is a simple measure of development intensity. It expresses the ratio of a building's total floor area to the size of its site. A one-story building covering its entire site or parcel has an FAR of 1.0. A three story building of 100% coverage has an FAR of 3.0. The same building covering 50% of a site has an FAR of 3 x .50, or 1.50. (Figure 8.1)

FIGURE 8.1 FLOOR AREA RATIOS



WHAT IS THE ZONING ENVELOPE?

The zoning envelope is a measure of the amount of development allowed by the provisions of the existing zoning ordinance. This allowable development is expressed as total non-residential floor area and number of dwelling units that can be developed on each parcel of land and for an area as a whole. The floor area is determined by translating the provisions of the zoning ordinance into effective maximum allowable FAR's, or number of dwelling units for typical development that might occur in each zoning district. The estimated FAR's are shown in Table 8.1.

TABLE 8.1

EFFECTIVE MAXIMUM AS-OF-RIGHT FLOOR AREA RATIOS ALLOWED BY THE EXISTING ZONING ORDINANCE

Typical Development	Zoning Districts/FARs BAA	BA	BB	LM	M
1. Retail-surface prkg					
. 1 story	0.25	0.40	0.40	0.25	0.40
. 2 stories	0.50	0.62	0.62	0.44	0.62
. 3 stories	0.62	0.70	0.70	0.60	----
. 4 stories	----	----	----	0.70	0.81
2. Office-surface prkg.					
. 1 story	0.25	0.40	0.40	0.25	0.40
. 2 stories	0.50	0.59	0.59	0.41	0.59
. 3 stories	0.58	0.69	0.69	----	----
. 4 stories	0.61	----	----	0.60	----
3. Retail Ground floor, offices above-surface prkg.					
. 2 stories	----	0.59	0.59	0.44	0.59
. 3 stories	0.58	0.69	0.69	----	----
. 4 stories	0.60	----	----	0.58	----
4. Office-Ground floor prkg. or 1 prkg. level under building					
. 2 stories	0.50	0.98	0.98	0.50	0.98
. 3 stories	0.75	0.98	0.98	0.50	0.98
5. Retail Ground Floor office above - all prkg underground					
. 3 stories	0.75	2.70	2.70	0.75	2.70
. 4 stories	1.00	----	----	1.00	----
6. Retail Ground Floor above - surface parking garage					
. 3 stories	0.75	1.41	1.41	.75	1.41
7. Retail Ground Floor, offices above - 90% prkg. underground, 10% in surface garage					
. 3 stories	0.75	2.34	2.34	.75	2.34
. 4 stories	1.00	----	----	1.00	----

8. Storage Warehouse					
. 1 story	----	----	0.42	0.25	0.89
. 2 stories	----	----	1.67	0.50	1.61
9. Wholesale, manufacture, R&D labs - surface prkg.					
. 1 story	----	----	0.80	0.25	0.76
. 2 stories	----	----	1.27	0.50	1.25
. 3 stories	----	----	2.32	0.75	2.32
. 4 stories	----	----	----	1.00	----

Based upon analysis of the existing zoning ordinance and most recent non-residential development in Newton, the following FAR's were used to determine the total floor area of commercial/office developmnent that can be built as-of-right in each zoning district. (The Zoning Envelope)

ZONING DISTRICT		FAR ALLOWED
Business	(BAA)	1.00
Limited Manufacturing	(LM)	1.00
Business A	(BA)	2.70
Business B	(BB)	2.70
Manufacturing	(M)	2.70

Estimation of an allowable dwelling unit envelope for parcels in residential zoning districts is relatively straightforward. The residential zoning districts control density either through lot size or lot square feet per unit controls. Maximum allowable dwelling units for each zoning district are as follows:

ZONE		DWELLING UNITS PER ACRE
Residence A	(RA)	1.74
Residence B	(RB)	2.40
Residence C	(RC)	4.36
Private Residential	(PR)	8.72
Residence D	(RD)	8.72
Residence E	(RE)	27.20

Using these allowable floor area ratios and unit densities and applying them to existing zoning in each of the village centers, the estimated total amount of development allowed as-of-right by present zoning (the zoning envelope) is:

THE ZONING ENVELOPE: CITY-WIDE SUMMARY

Allowable New Residential Units	750
Existing Residential Units	4893
Percent Added	15%
Allowable New Retail Floor Area	5,535,600 S.F.
Existing Retail Floor Area	3,714,200 S.F.
Percent Added	149%
Allowable New Office Floor Area	16,415,200 S.F.
Existing Office Floor Area	1,843,800 S.F.
Percent Added	890%

DEVELOPMENT TYPES

The above estimates are very high and do not represent a realistic picture of the amount and type of development that could actually occur. Market forces and resulting rent levels, economic constraints, construction costs and site constraints must also be considered. These factors greatly temper the amount and density of development that does and will most likely occur in many of the village centers.

Therefore, allowable FAR's must be compared with those obtained from recent development, or development that has been proposed or is under construction. Table 8.2 shows the FAR's of commercial projects most recently proposed or under construction that have been or may be permitted as-of-right under present zoning. Many of these projects include surface parking structures so that the resulting FAR's, or actual office building floor areas, are less than allowable. That is, despite the intensity of the 5 story office development under construction at 29 Crafts Street, Newtonville, (FAR 2.23) it would have been built to an even greater intensity had all parking been planned to be underground. Based on Newton's strong office and retail market and the resulting high land values, it is expected that development of underground parking will become the rule rather than the exception in center areas such as Newton Corner, Chestnut Hill, and Newton Centre.

In other village centers, recent development has occurred at considerably less density. Surface parking lots are more the rule than the exception in these centers. Land values and marketable rents result in an economic environment in which the "suburban style" development is feasible and economically desirable.

It should also be noted that a number of these developments have had the benefit of the parking credit, so that the actual floor area ratio obtained was higher for the particular type of development that actually took place than

would have been possible if the full parking requirements had been met. On the other hand, the popularity of areas such as Newton Centre and Newton Corner for office development may have justified the provision of the additional parking underground.

The possibilities allowed by the zoning ordinance and a view of actual development resulting from market forces leads to an estimate of a type or model of development that may occur in village centers. These models or types are shown in figure 8.2, and schematically represent the kind of development that has been occurring and will continue to occur in the village centers.

TABLE 8.2

FLOOR AREA RATIOS (FAR) FOR DEVELOPMENT PROPOSED OR UNDER CONSTRUCTION

DEVELOPMENT	ADDRESS	FAR	ZONE
AUBURNDALE			
1. 3 story offices, surface parking	11 Bennett St.	0.56	BB
2. 2 story offices, surface parking	73 Lexington St.	0.48	BB
CHESTNUT HILL			
1. 3 story offices, parking garage	300 Boylston St.	2.38	BA
NEWTON CENTRE			
1. 4 story offices, parking garage	1320 Centre St.	2.59	BB
NEWTON CORNER			
1. 4 story offices, parking garage	1 Newton Pl.	2.12	BA
2. 3 story offices, parking garage	2 Newton Pl.	2.45	BA
3. 4 story offices, parking garage	31 Washington	2.67	BA
NONANTUM			
1. 5 story offices, surface parking	459 Watertown	0.55	MFG

NEWTONVILLE			
1. 5 story offices, parking garage	29 Crafts St.	2.23	MFG
UPPER FALLS			
1. 3 story offices, surface parking	75 Oak St.	0.34	BA
2. 4 story offices, surface parking	138 Needham	0.77	MFG
3. 4 story offices, surface parking	118 Needham	0.57	MFG
NEWTON HIGHLANDS			
1. Offices		0.53	BA

****

Average FAR for Office Development with parking in surface lots	0.54
Average FAR for Office Development with parking in a mix of underground and surface garages	2.41

Based upon the economic environment of each village center, a non-residential development model has been chosen to represent recent or expected development. The requirements of the present zoning ordinance are applied to each development model to determine an appropriate floor area ratio for each zoning district. The results of this analysis are shown in Table 8.3.

As shown, the village centers have been grouped by development type, based upon factors such as existing and recent development, market pressure, and location. Office and retail buildings with surface parking lots will be the most likely development type in Auburndale, Upper Falls, Waban, Four Corners and Oak Hill.

The estimated residential development envelope remains the same as the residential zoning envelope. The amount of housing being built or allowed in Newton is relatively modest compared to the demand for housing in the City and the metropolitan area. There is no reason to assume that housing will not be built to the maximum allowed by zoning anywhere in the City.

TABLE 8.3

DEVELOPMENT TYPE (CENTER)	FLOOR AREA RATIO/ZONING DISTRICT				
	BA	BB	M	BAA	LM
I Surface Parking Lot					
. 3 story office/retail	.69	.69	.69	--	--
. 4 story office/retail (Auburndale, Upper Falls Waban, Four Corners, Oak Hill)	--	--	--	.60	.58
II Surface Parking Structure					
. 3 story office/retail	1.41	1.41	1.41	--	--
. 4 story office/retail (Newtonville, Nonantum, West Newton, Lower Falls, Newton Highlands, Thompsonville)	--	--	--	1.00	1.00
III Underground Parking (75%) Surface Structure (25%)					
. 3 story office/retail	2.34	2.34	2.34		
. 4 story office/retail (Chestnut Hill, Newton Centre, Newton Corner)	----	----	----	1.00	1.00

THE NON-RESIDENTIAL DEVELOPMENT ENVELOPE

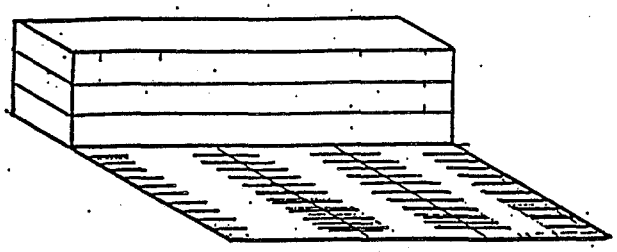
The development envelope represents a picture of the estimated amount and type of development that could occur over time in each village center. Tables 8.4 and 8.5 summarize this present non-residential development envelope.

The tables show that with regard to non-residential growth, present zoning in Newton provides a very large envelope or "umbrella" for development to occur. That is, the only real constraint on the amount of growth that can occur in the village centers is economic feasibility, based upon the Newton's market environment. Recent development occurring or proposed in Newton Corner, Newton Centre, Chestnut Hill and Newtonville shows that developers can and will develop buildings with structured parking in response to those economic forces.

Present zoning will allow over 9.6 million square feet of new office development, well beyond what the economic market will allow. The market studies have indicated that an average of 87,000 square feet of office space has been added annually in Newton since 1980.

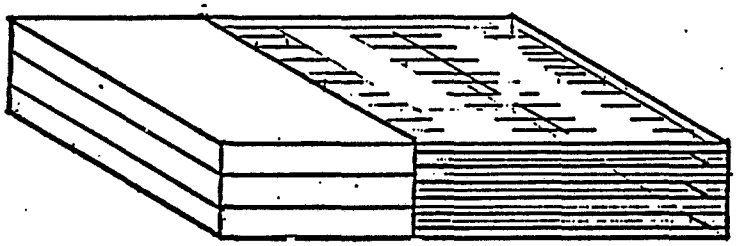
FIGURE 8.2

MODELS OF RECENT DEVELOPMENT IN NEWTON



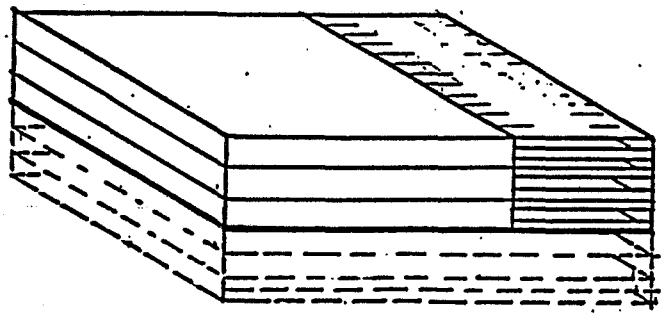
3 STORY BUILDING – SURFACE PARKING LOT

FAR = 0.69



3 STORY BUILDING – SURFACE PARKING GARAGE

FAR = 1.41



3 STORY BUILDING – 75% PARKING UNDERGROUND
25% SURFACE GARAGE

FAR = 2.34

Table 8.5 shows that, as expected, the larger and more advantageously located centers have the largest development envelopes. Presently a major regional center, Chestnut Hill comprises 39.8% of the total development envelope, so that zoning will be no constraint on growth of this center. Nonantum and Newtonville have a substantial amount of business and industrial zoning, and relatively low existing densities. While West Newton and Newton Centre do not have as much business zoning, existing densities are relatively low in these centers, allowing for the possibility of substantial growth. West Newton is advantageously located, while Newton Centre is a very popular business and shopping area.

Newton Corner's development envelope is being absorbed by the spate of new development taking place there. However, there remains in Newton Corner the capacity for over 655,000 square feet of new development.

Newton Highlands (the Boylston Street portion) and Lower Falls are also advantageously located on regional routes and are presently underdeveloped. While not well situated, present development density at Four Corners is very low, so that considerable development capacity exists. The total development capacity of the remaining centers (Auburndale, Upper Falls, Thompsonville, Waban and Oak Hill) represents only 3.9% of the total development envelope, but local impacts would be substantial.

THE RESIDENTIAL DEVELOPMENT ENVELOPE

Table 8.6 shows the present as-of-right residential development envelope in Newton's village centers. The data suggest several conclusions:

1. The capacity of Newton's as-of-right zoning to produce new housing units in the village centers is very small. The total capacity of 750 new units represents only 2.6% of Newton's present housing supply.

2. The 750 new units that could be added also represents a modest increase of 15% over the existing number of units within the vilage center study boundaries.

3. The residential development envelope is only 6.2% of the non-residential envelope, indicating that the "village" character of Newton could change over time. That is, the centers could become large commercial enclaves devoid of close-in residential neighborhoods that help give many of the villages their present character.

4. Except for Upper Falls, Thompsonville, and Four Corners, the number of new dwelling units that could be added is a relatively small proportion of the units presently within the study areas. In Newton Centre and Newton Corner, the

residential envelope of 23 units each is dwarfed compared to both recent and possible retail and office development in these centers.

In sum, there is a large imbalance in development opportunity in Newton's village centers, as the as-of-right development envelope is almost exclusively commercial in nature. Also, the city is commercially zoned far beyond the needs for economic development and the ability of the marketplace to absorb that growth.

The development expected to take place ranges from suburban style office/shopping centers to urban concentrations with underground parking. The "development model" approach provides the opportunity to measure the effect of increased density on each center.

TABLE 8.4

THE PRESENT DEVELOPMENT ENVELOPE: NON-RESIDENTIAL GROWTH THAT COULD OCCUR IN NEWTON'S VILLAGE CENTERS.

CENTER	COMMERCIAL/RETAIL		OFFICE		TOTAL		
	Existing Floor Area (000's)	Floor Area May Be Added	Existing Floor Area	Floor Area May Be Added	Existing	Added	% Added
All Centers	3714.2	2534.6	1843.8	9732.5	5558.0	12,267.1	220.7
Auburndale	181.5	66.7	144.7	301.8	325.8	368.5	113.1
Chestnut Hill	946.1	1192.4	153.2	3622.7	1099.3	4815.1	438.0
Thompsonville	42.7	1.9	27.4	65.3	69.8	67.2	96.3
Four Corners	109.8	64.7	59.7	166.0	169.5	230.7	136.1
Lower Falls	17.6	81.4	138.6	316.2	156.2	397.6	254.5
Newton Centre	465.5	270.8	241.8	753.9	707.3	1024.7	144.9
Newton Corner	468.7	123.8	701.1	531.4	1169.8	655.7	56.0
Newton Highlands	243.4	130.8	52.1	379.4	295.5	510.2	172.7
Newtonville	476.7	180.8	145.8	1143.7	622.5	1324.5	212.8
Nonantum	279.6	217.8	81.0	1403.8	360.6	1621.6	449.7
Oak Hill	5.9	0.0	0.0	17.9	5.9	17.9	303.4
Chestnut Elliot	83.7	14.0	7.89	76.9	91.6	90.9	99.2
Pettie Square	43.2	5.1	88.4	83.3	101.6	88.4	67.2
Waban	74.4	1.6	2.6	4.7	77.0	6.3	8.1
West Newton	275.3	182.8	340.4	865.5	615.7	1048.3	170.3

TABLE 8.5

THE PRESENT DEVELOPMENT ENVELOPE: THE VILLAGE CENTERS RANKED IN ORDER OF NON-RESIDENTIAL GROWTH POTENTIAL

	Percent of Total Existing	Percent of Total Added
1. Chestnut Hill	19.8	39.2
2. Nonantum	6.5	13.2
3. Newtonville	11.2	10.8
4. West Newton	11.4	8.5
5. Newton Centre	12.7	8.4
6. Newton Corner	21.0	5.3
7. Newton Highlands	5.3	4.2
8. Lower Falls	2.8	3.2
9. Auburndale	5.9	3.0
10. Four Corners	3.0	1.9
11. Upper Falls - Chestnut Elliot	1.6	.7
12. Upper Falls - Pettee Square	2.4	.7
13. Thompsonville	1.3	.5
14. Waban	1.4	.05
15. Oak Hill	.1	.1

TABLE 8.6

THE PRESENT DEVELOPMENT ENVELOPE: RESIDENTIAL GROWTH THAT COULD OCCUR IN NEWTON'S VILLAGE CENTERS VS EXISTING UNITS AND AS PERCENT OF NON-RESIDENTIAL DEVELOPMENT

CENTER	NEW UNITS ADDED	% ADDED	EXISTING UNITS	ADDED RESIDENTIAL Floor Area as a Percent of Total.***
Upper Falls - Pettee Square	154	100.0	154	174.2
Chestnut Hill	153	13.8	154	3.2
Newtonville	89	10.5	849	6.7
Nonantum	81	11.2	724	5.0
Thompsonville	73	58.9	124	108.6
Upper Falls - Chestnut/Elliot	72	31.2	231	7.9
West Newton	30	9.1	330	2.9
Newton Centre	23	11.2	206	2.2
Newton Corner	23	7.8	396	3.5
Four Corners	21	50.0	42	9.1
Newton Highlands	15	4.8	313	2.9
Auburndale	13	6.2	211	3.5
Waban	3	5.5	54	4.8
Lower Falls	0	0	100	0
Oak Hill	0	0	48	0
	750	15.3	4893	6.2

TOTAL NUMBER OF DWELLING UNITS IN NEWTON IN 1980: 29,131

*** Non-Residential Floor Area Added