

Newton Village Study

Newton Centre Survey Report

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NEWTON COLL

THE NEWTON VILLAGE STUDY

NEWTON CENTRE SURVEY REPORT

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PREPARED FOR THE CITY OF NEWTON, MASSACHUSETTS
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SUMMARY OF FINDINGS

- Newton Centre is a city-wide business center, serving the City with a wide variety of commercial and institutional services.
- It is an important destination area for shoppers and commuters.
- The City Government has established a strong presence here in the form of public buildings, a public park and public parking lots.
- Updated traffic counts indicate that traffic is moderate to heavy on the principal streets of the study area.
- Analysis of the major intersections on Beacon and Centre Streets indicates that heavy left turn movements are not being fully accommodated by present signalization so that excessive delays are occurring at key points.
- Newton Centre has a large parking deficit of 579 spaces; supply is only 67% of demand, the lowest of any village center.
- This deficit is most severe east of Centre Street, where convenience businesses predominate.
- This large parking deficit contributes to the substantial intrusion of business related and commuter parking in nearby residential areas.
- The present parking system operates inefficiently, many long-term off-street spaces available west of Centre Street are not used fully.
- Parking turnover is relatively low, indicating substantial meter-feeding, which greatly reduces the effective supply of spaces.
- It is estimated that over 1,000,000 square feet of new non-residential floor area could be built in Newton Centre under present zoning. This is an increase of 145% from the present base of 707,000 square feet.
- Newton Centre's traditional perception as the City's "downtown", its continuing popularity, and its function as a commuter station are all factors influencing development pressure here.
- New development will most likely be characterized by 3 story office buildings, with perhaps ground floor retail and underground parking.
- The number of new dwelling units that could be built as-of-right in Newton Centre is 23, an increase of 11.2% from the existing base of 206 units.

NEWTON CENTRE SURVEY REPORT

2.2.1 MARKET ORIENTATION

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 retail 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 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.

FINDINGS

Table 1.1 and Figure 1.1 show that Newton Centre is a city-wide center. A great majority of its businesses serve a broad Newton market, but there also remains a strong presence of neighborhood convenience businesses. The types of mix of businesses is characteristic of the "downtown" or central business district of a small city.

TABLE 1.1

MARKET ORIENTATION OF BUSINESS ACTIVITY IN NEWTON CENTRE
BY BLOCK AND FLOOR AREA

	<u>Blocks</u>	<u>Floor Area</u>	
1. Neighborhood Convenience Shops and Services	61027	40316	
	61032	1560	
	61033	28358	
	61035	19596	
	61036	49241	
	61038	22983	
	62011	3000	
	62012	22239	
	64028	33600	
	64029	9232	
	64030	13337	
		Sub Total	243,462
2. Community-wide Business and Services	61033	106474	
	61035	8037	
	61036	83476	
	61038	19324	
	62012	107158	
	64028	54618	
	64029	43270	
		Sub Total	422,357
		Total	665,819

NEWTON CENTRE SURVEY REPORT

2.2.2 URBAN DESIGN AND ENVIRONMENT

INTRODUCTION

In the visual survey we have endeavored to discuss the general environment of the Village Center with special emphasis devoted to those areas which are "perceived" as the "central core", (usually the central commercial block.) Within this discussion, emphasis is further placed on the quality and clarity of entry (gateways), "spatial definition" (the quality and continuity of the commercial edge and the space formed by the building massing scheme) and the effect of these elements on the perception of the viewer. Other positive and negative aspects specific to the center are also discussed. Considerations such as areas of negative residential/commercial interface, the role and extent of vehicular/pedestrian participation in the space, as well as facade/signage problems, are examined to provide insight into the many seemingly unrelated elements within the center which contribute to our perceptions of it as an environmental whole.

FINDINGS

Figure 2.1 presents the findings of the visual survey

In Newton Centre, there are four main points of access each providing a distinct sense of entry. These are located on Beacon Street, at the east and west ends of the village, and on Centre Street, to the north and south. Of these, all maintain a positive visual character except to the east on Beacon Street where discordant facade/signage treatments disrupt the visual quality.

Newton Centre is unique in that off street parking is centralized, and hence, pedestrian circulation is encouraged. However, due to the visual impact of the unscreened parking areas and large volumes of traffic, the automobile dominates the landscape.

Unlike most of Newton's other villages, Newton Centre seems to function more as a destination area than merely a transitory visual experience. This is due, possibly, to the relative abundance of off-street parking in addition to the obvious commercial attractions.

This village suffers, as do most others, from a lack of facade/signage conformance. However, the Union Street area is a welcome exception to this observation and lessons learned from these improvements should be put to work elsewhere.

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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 Table 3.1 and figure 3.1. The table shows for each use 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.)

FINDINGS

Newton Centre is one of the City's larger village centers and has traditionally been perceived as Newton's "downtown". It contains over 700,000 square feet of retail and office floor space in a wide variety of businesses and services. The density of these commercial uses is higher than in most other centers. It is also one of the few centers with a central public open space providing a civic presence.

Of 206 dwelling units within the study area, the majority are 2 and 3 family structures. A new apartment building for the elderly on Summer Street (shown as an institutional use) is a recent addition to the housing supply in this area. The City of Newton has a strong presence with substantial ownership of key blocks and parcels.

There is also a strong presence of private institutions on Centre and Beacon Streets.

TABLE 3.1 EXISTING LAND USE CHARACTERISTICS NEWTON CENTRE

<u>CATEGORY</u>	<u>LAND AREA IN ACRES</u>	<u>FLOOR AREA IN SQ. FT.</u>	<u>FAR%</u>	<u>DWELLING UNITS</u>
Residential:				
Single Family	16.60	--	--	64
2 and 3 Family	9.40	--	--	101
Apartments/Condos	3.62	--	--	41
Commercial	8.66	425,384	1.127	
Office	5.30	241,765	1.048	--
Industrial/Manufacturing	0	--	--	--
Mixed Use - mostly Commercial	0.35	40,146	2.7	--
Mixed Use - mostly Residential	0.52	4,689	.182	--
Transportation/Parking	NA	--	--	--
Institutional	NA	--	--	--
Open Space/Recreation	NA	--	--	--
Vacant Land	1.42	--	--	--

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2.2.4 TRAFFIC CONDITIONS

This report conveys the results of the manual and automatic traffic counting program initiated in October 1985, together with pre-existing traffic count data, from previous City counts and consultant studies, made available to us by the Newton Planning and Public Works Departments.

The objective of assembling available information on traffic volumes, intersection geometrics, and existing traffic control was to create a "Base Case" traffic scenario against which alternative future scenarios can be compared in later phases of the study. Since the principal traffic impact of additional development in any center will be the generation of added volumes, it was important to have reasonable estimates of existing volumes on key streets.

In conducting the traffic surveys, we noted existing intersection geometry and traffic control, pointing out where these create or accommodate present-day bottlenecks. We also tried to identify parallel routes most likely to be used as bottleneck bypasses by drivers familiar with existing traffic conditions.

We used the Level of Service methodologies for analyzing signallized and unsignallized intersections to characterize existing operations, with one important caveat related to signallized intersections: signal phasing and timing patterns assumed at such intersections were not those in current operation. We deemed it more useful to analyze an optimal allocation of signal green time based on existing traffic volumes, in order to be able to compare operations given potential capacity and existing volumes, with future operations when these volumes can be assumed to increase with different development scenarios. 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 design. Thus, the reported Levels of Service may not correspond with current daily experience at existing signallized intersections operating with less-than-ideal phasing and timing.

NEWTON CENTRE

Traffic Conditions

Newton Centre is the largest local retail/commercial center within the City of Newton. It is traversed by 3 major Newton arterial streets: Centre Street, Beacon Street, and Langley Road, which form a triangle area in Newton Centre devoted to metered parking. In addition, metered on-street parking serving commercial uses is found along each of these streets within the Centre, limiting the capacity of the streets to carry through traffic. However, 2 approach lanes are available on all streets where they approach the 3 major triangle intersections, and an additional channelized right-turn lane from Center Street Northbound is available at the Beacon/Centre Street intersection.

An automatic 24-hour traffic count on Beacon Street east of Dalton Street was conducted in October 1985 by the Newton Public Works Department; additional 24-hour counts are planned for Centre Street during the next phase of the study. The Beacon Street count was factored to represent 1985 Average Daily Traffic (ADT); the resulting volumes were:

Eastbound	9,975
Westbound	10,180

Peak hour turning movement counts in the area were were conducted at several intersections within Newton Centre during October/November 1985:

- Beacon/Langley/Sumner Streets (signallized)
- Beacon/Centre Streets (signallized)
- Herrick/Union Streets (unsignallized)
- Union Street/Langley Road (unsignallized)

These counts were adjusted to represent average annual existing peak hour traffic volumes, and balanced. The resulting Existing Traffic network is depicted in Figure 4.2. Peak hours observed from the current counts were 8:00-9:00 AM and 5:00-6:00 PM.

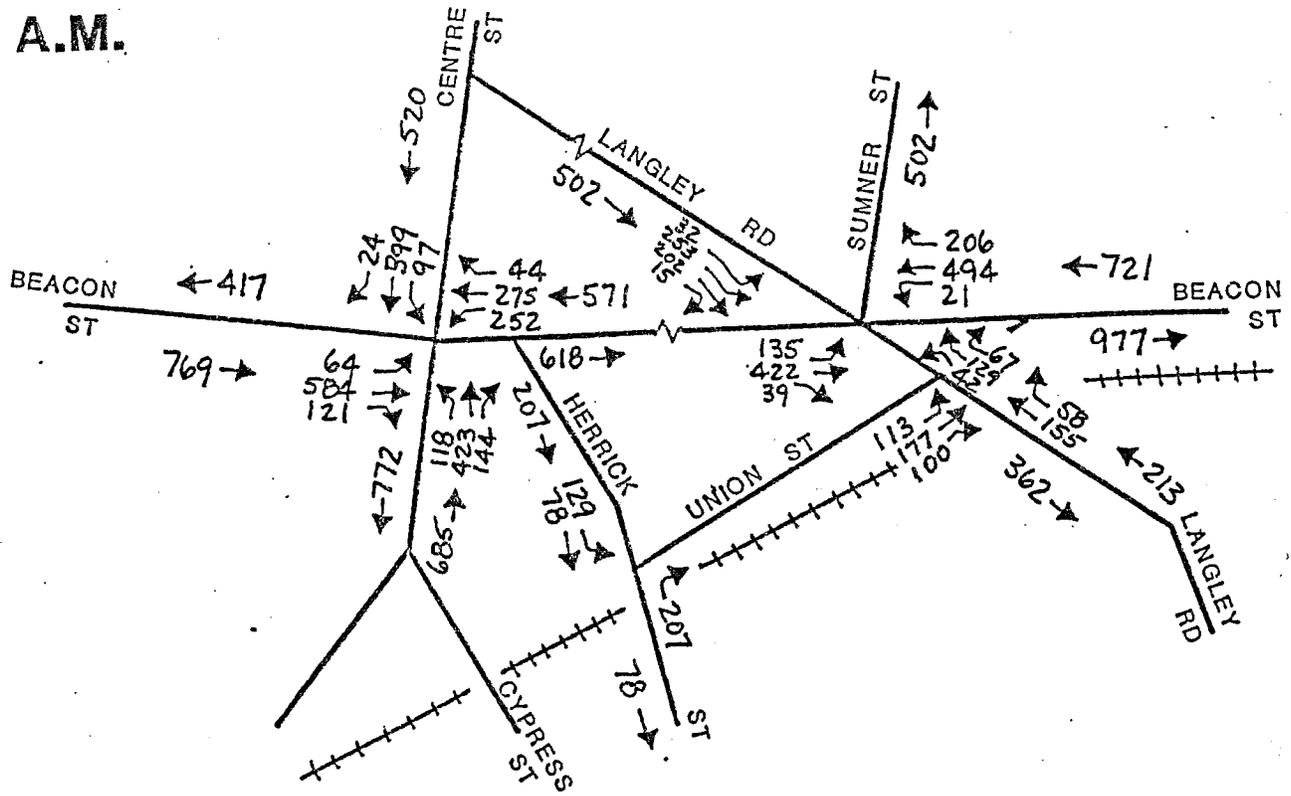
During the turning movement counts, moderate volumes were observed on all approaches, with significant turning volumes in the peak directions. Signal phases were not always fully-loaded for each approach--there were cycles when excess green time existed with no vehicle demand. The existing signal system works reasonably well in the Centre, with excessive delays occurring mainly when queues of 3 or 4 vehicles must wait to turn left at key points. This was noted particularly at Beacon/Centre Streets (westbound Beacon St. traffic turning left towards Route 9) and Beacon Street/Langley Road (Langley eastbound traffic turning onto Beacon Street). A police officer is available to control traffic at Beacon/Center Street during the evening peak hour.

Existing operations at both signallized intersections were analyzed using Level of Service analysis procedures for signallized intersections. The purpose of the analysis was to determine how well the intersections could function, given their present geometric design and ideal or desirable signal timing, and existing traffic volumes, as a measure of how much potential capacity at these intersections is presently utilized. At a later phase of the study, projected volumes can be compared against present volumes, assuming an optimal traffic throughput at the existing intersection.

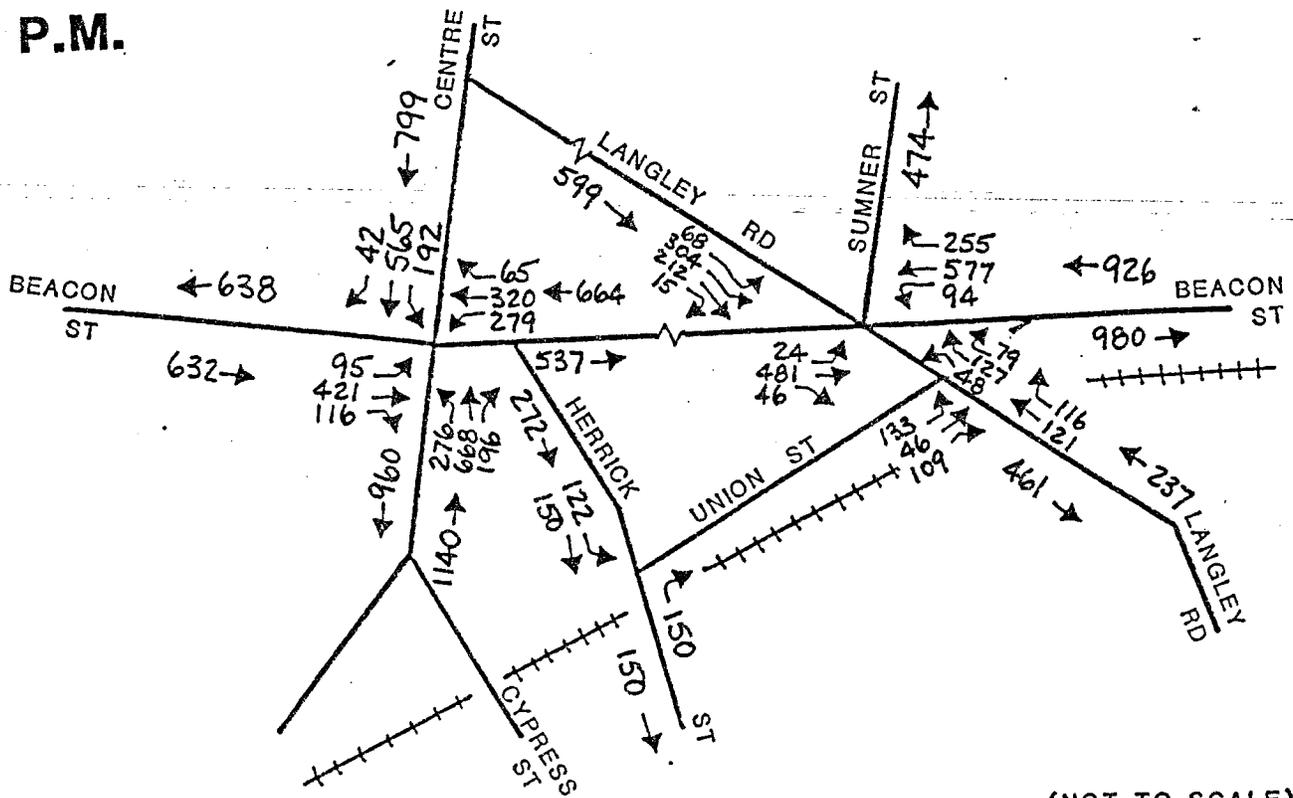
The results of this analysis are illustrated on Figure 4.3. As can be seen, the Langley/Beacon Street intersection has enough street capacity to function at adequate-to-good levels of service, given existing volumes and geometrics. It should be noted, however, that this analysis considered an idealized case, in which the existing difficulty of conflicting Langley/Beacon movements, in particular, is ameliorated by alteration of the existing signal phasing at this intersection; and left turns at Beacon/Centre Streets are protected by an advance green to the Beacon Westbound leg, as a substitute for a peak-hour traffic control officer.

Conditions at the Beacon Centre Street intersection are congested, primarily because of very heavy left turns on multiple approach legs during both the AM and PM peak hours. Even under the optimized signal timing assumed for this analysis, there is insufficient street capacity to accommodate these moves efficiently. Improvements would require the provision of left-turn lanes on Beacon WB and Centre NB, and associated changes in existing signal phasing and timing.

A.M.



P.M.



(NOT TO SCALE)

NEWTON VILLAGE STUDY

PEAK HOUR TRAFFIC VOLUMES - NEWTON CENTRE

FIGURE

4-2

NEWTON CENTRE SURVEY REPORT

2.2.5 PARKING

INTRODUCTION

This report presents the results of the following parking studies and analyses performed for the Newton Centre study area.

- A parking inventory (figure 5.1)
- A parking supply/demand analysis (figure 5.2)
- A parking use survey

The parking inventory was prepared from field survey and from information provided by the Newton Departments of Public Works and Planning and Development. The inventory identifies all available public and private, on-and off-street, posted and metered, parking spaces in the study area.

The parking supply/demand analysis was performed by the Consultant using computerized land-use data provided by the Newton Assessors, and the above parking data. This analysis provides a measure of the difference between an assumed business parking demand and actual supply.

The parking use survey was conducted on Friday, November 22, 1985, between the hours of 8 a.m. and 5 p.m. The area surveyed included all on-and off-street metered spaces except the Langley Street lot which was surveyed by the City in March 1985. Several posted streets were also surveyed and/or counted, including Trowbridge, Willow, Summer, Pelham, Pleasant and Beacon Streets, and Braeland Ave.

The purpose of the survey was to measure the actual level of use (as a percent of capacity) and the turnover rate, or parking duration, of all metered spaces and in many cases, posted spaces. Friday was chosen as the day of survey, since it is traditionally the busiest day, combining end-of-week convenience shopping and local employee and commuter parking.

SUMMARY OF FINDINGS

a. Supply vs Demand

1. Newton Centre has a parking deficit of 579 spaces; the present total supply of public and private spaces is only 67% of the existing demand.
2. Newton Centre has the largest parking deficit of all the centers surveyed in both numerical and proportional terms.
3. The deficit is more severe east of Centre Street, particularly in the block bounded by Herrick, Union, and Beacon Streets and Langley Road.

4. The existing parking supply deficit contributes to the observed long-term parking in residential areas, and the numerous occurrences of double parking and other forms of illegal parking in Newton Centre.

b. Parking Use Survey

1. The overall average level of use of on-street parking spaces was the highest of all centers surveyed. From 9:30 a.m. to the end of the business day, Newton Centre not only appeared full (at 85% of capacity) but the Union Street area operated near or over capacity for significant periods of time. However, the public parking lots west of Centre Street were not heavily used for most of the day.
2. The average turnover rate in on-street spaces was relatively low, reflecting the "downtown" nature of Newton Centre business activity. However, the prevalence of illegal "feeding" of on-street meters is one cause of this low turnover and reduces the actual parking supply.
3. There is a significant amount of long-term parking in the residential neighborhoods near Union Street and the MBTA station. This suggests that the demand for long-term parking in this area is not being met within the commercial area. As a result, those employed locally tend to "meter feed" or park on residential streets.
4. At the same time, many long-term metered spaces in the Pelham and Pleasant Street lots were not used at all, a further indication of the inefficiency of the present parking supply system.

SUPPLY VS DEMAND

Table 5.1 shows that of the total 1,160 spaces available, 53% or 611 spaces are public spaces and 47% or 549 are private spaces. Thus, the parking supply burden is evenly shared by the public and private sectors. However, the majority of the public spaces are found east of Centre Street, while the private spaces are more randomly located throughout the center.

Total estimated demand is for 1739 spaces resulting in an overall deficit of 579 spaces. Commercial areas east of Centre Street have the largest deficit, particularly the Union/Herrick/Beacon Street block (Sec./Bl #61036) and the Langley/Lyman Street block (Sec./Bl #61033) Other blocks have parking deficits, but not to the same degree.

Some sections show a parking surplus, such as the block bounded by Cypress and Centre Street (Sec/Bl #62012) and the block bounded by Willow and Lyman Streets (Sec/Bl #61032).

These areas tend to be on the periphery of the commercial area and are also bounded by residential streets. The Langley Street Parking Lot (Sec/B1 #61034) and abutting on-street parking has no demand assigned to it, so that a large surplus is shown. This parking of course supplements the supply in the surrounding blocks.

The lack of available parking spaces contributes to the intrusion of parking into the residential areas, long-term parking on-street, and the numerous instances of double parking and other forms of illegal parking.

PARKING USE CHARACTERISTICS -- ON-STREET

The average on-street use of spaces for all periods was 91% of capacity, the highest average of any village center surveyed. During the peak hours of 12 noon to 2 p.m., use reached 101% of capacity; the statistical peak occurred at 1:30 p.m. at 103%. The afternoon use falls below 100%, but only to an average 96% level. At 5:30 p.m., the center has its second peak and parking reaches 101% of capacity. The double peak phenomenon is characteristic of regional or city-wide commercial areas whose range of goods and services is broader than what is found in predominantly convenience oriented areas.

Average parking turnover was 61 minutes, lower than most village centers surveyed. This figure reflects the "downtown" nature of Newton Centre, where comparison and window shopping is a central activity. However, the duration rates are swelled by the fact that fully 15% of the one-hour meters were used for parking durations in excess of three hours.

The four public parking lots are also heavily used although turnover rates vary. The Langley Street lot was surveyed by the Newton Public Works Department in March, 1985. Our observations confirm the results of this earlier survey. The lot was nearly full at 10 a.m.; during the mid afternoon, its use declines to under 100%, but was never less than 90% after 10 a.m. It is not unusual to see 2 or 3 cars waiting for spaces to clear. The Langley Street Lot has three-hour meters, is effectively enforced, and appeared to turn over well. This observation also supports the City's earlier findings.

The Cypress Street Lot has 38 12-hour meters and except for a minor break around the noon hour, the lot was at capacity from 9 a.m. to 5:30 p.m., indicating its use by commuters and employees. The 19 3-hour meters were essentially fully used the entire business day. While 6 vehicles were parked all day in the 3 hour portion of the lot, the turnover rate for these spaces was only one hour and 22 minutes, indicating that this part of the Cypress Street lot supplements the on-street short-term parking in this area of Newton Centre.

The Felham Street Lot had an average level of use of 85%, which is considered to be "full", but the Pleasant Street Lot attained only 60% use. Almost all vacancies recorded were in the 12-hour meters (35 at the Pleasant Street Lot and 15 at the Felham Street Lot).

CORE AREA PARKING USE CHARACTERISTICS

Parking demand was high in most of Newton Centre. However, the Union Street area exhibited a much stronger demand for both on-street and off-street parking than the area west of Centre Street where spaces could be more readily found, particularly in the two public lots.

The Union/Herrick Street area, with 73 on-street spaces, experienced extraordinary parking demand. The area contains numerous shops, restaurants, and a bank, and it also contains the MBTA station and hosts an impromptu drop off and waiting area. The average level of use for the area exceeds the legal capacity (101%); peak use reaches 114% and from 11 a.m. to 3 p.m. the area maintains a level of use above 100%. After 3:30 it "drops" to 97%. Average turnover was a high 51 minutes, because of "meter feeding", but this is somewhat deceiving since the area exhibited a large amount of short-term "drop-off" parking. Again, the meter feeding seriously reduces the availability of parking spaces in this area.

PARKING IN RESIDENTIAL AREAS

Despite the fact that long-term spaces in the public lots on Felham and Pleasant Streets were not fully used, it appears that the demand for long-term parking is not met with the existing supply. Our survey found 100-125 vehicles parking in residential areas near the MBTA station (not including Braeland Road) The streets accommodating this long-term parking are either unrestricted or posted for two hours. The streets most affected are Trowbridge Street, Norwood Avenue, Centre Street (beyond Paul Street), Paul Street, Cypress Street (beyond the forked intersection), Warren and Chase Streets. Felham and Pleasant Street did not register significant parking beyond the parking lots. This area does not contain many convenience stores and is removed from the MBTA station.

PARKING MANAGEMENT

Parking management is accomplished through the use of parking meters and meter attendants. The attendants work regular routes and actively enforce the metered times. However, there is presently no easy way to enforce the regulation against meter feeding. Thus, there are many cars parked in metered spaces on street all day, significantly reducing parking efficiency. This problem is traditional in meter-managed areas, and is exacerbated in areas like Newton Centre that

have a deficit of long term parking spaces. More strenuous parking enforcement could be attained with more parking attendants but the root cause of "long-term parking supply deficit" will not be addressed by enforcement alone, and may actually force more vehicles on to residential streets.

The parking use survey indicates that there are approximately 50 spaces available in the Pelham and Pleasant Street Lots that can be used to absorb part of the parking deficit. However, these spaces are generally outside the area of greatest demand and even if they were used, a large deficit would remain. Given the relatively low on-street turnover rate of 61 minutes, there is room for improving the efficiency of parking space use in Newton Centre. However, given the size and characteristics of the present deficit, any program to improve parking conditions should be focused on the east side of Centre Street.

TABLE 5.1 NEWTON CENTRE

PARKING SUPPLY AND DEMAND BY BLOCK

SEC/BL	DEMAND	PRIV	OFFST	ONST	PUBL	SPPLY	SURPLUS
61027	86	0	0	19	19	19	-67
61031	0	0	0	0	0	0	0
61032	0	12	0	16	16	28	28
61033	423	198	0	31	31	229	-194
61035	84	0	57	0	57	57	-27
61036	497	18	0	48	48	66	-431
61038	70	20	0	27	27	47	-23
62009	0	14	0	9	9	23	23
62010	15	12	0	5	5	17	2
62011	13	0	0	5	5	5	-8
62012	198	246	0	0	0	246	48
62013	0	0	0	0	0	0	0
64028	197	18	87	25	112	130	-67
64029	121	0	75	14	89	89	-32
64030	35	11	0	13	13	24	-11
61034	0	0	143	37	180	180	180
TOTAL	1739	549	362	249	611	1160	-579

PRIV: Private off-street spaces
OFFST: Public off-street spaces
ONST: On-Street metered and posted spaces
PUBL: Total off-and on-street metered and posted spaces
SPPLY: Total public and private spaces.

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2.2.8 ZONING/THE DEVELOPMENT ENVELOPE

INTRODUCTION

This report presents the results of the analysis of existing zoning in Newton Centre. The purpose of the analysis is to provide an understanding of the present and future development environment of the study area, or to answer several basic questions:

- 1) How much growth is allowed by present zoning?
- 2) How much of this growth could most likely occur in this village center?
- 3) What will this development most likely consist of and look like?

A fourth, and equally important question, (what will be the impact of this growth?) will be examined in the next phase of the study.

In order to answer these questions, the following analyses or estimations were performed:

The Zoning Envelope: This estimates the total amount of residential, commercial and office development that is presently allowed by the zoning ordinance on each parcel of land and for the study area as a whole. This represents the "as-of-right" capacity of zoning as if every parcel of land were developed to the fullest extent allowed by present zoning.

The Development Envelope: This is an estimate of the amount of development that could and is more likely to occur when existing and recent development is considered along with present zoning. This development envelope, or umbrella, combines the concept of zoning "right" and the realities of the marketplace to produce a more reasonable estimate of long term development that could occur "as-of-right" or without special permit.

A Development Model: This is a simple representation of the kind of development that exists, has been recently built, or proposed in the area, and is most likely to be built in the foreseeable future.

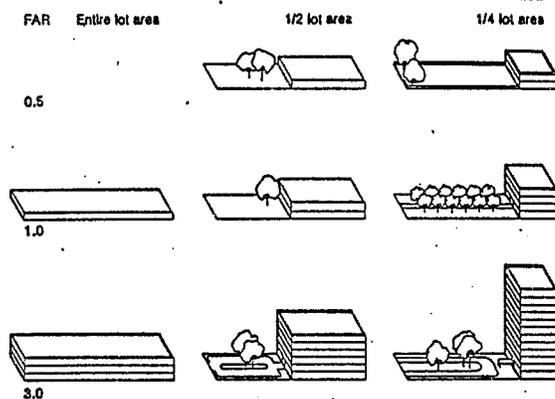
SUMMARY OF FINDINGS

- It is estimated that over 1,000,000 square feet of new non-residential floor area could be built in Newton Centre under present zoning. This is an increase of 145% from the present base of 707,000 square feet.
- The perception of Newton Centre as the City's "downtown", its continuing popularity, and its function as a commuter station are all factors influencing development pressure here.
- New commercial development will most likely be characterized by 3 story office buildings, with ground floor retail and underground parking.
- The number of new dwelling units that could be built as-of-right in Newton Centre is a modest 23, an increase of 11.2% from the existing base of 206 units.

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 $3 \times .50$, or 1.50.

FLOOR AREA RATIOS ILLUSTRATED



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	0.70
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	-----	-----	-----	-----
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	-----	-----	-----	-----
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	-----	-----	-----	-----
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	-----	-----	-----	-----
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

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 development that can be built as-of-right in each zoning district. (The Zoning Envelope)

<u>ZONING DISTRICT</u>	<u>FAR ALLOWED</u>
Business (BAA)	1.00
Limited Manu- facturing (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 straight-forward. 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:

<u>ZONE</u>	<u>DWELLING UNITS PER ACRE</u>
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

The allowable floor area ratios and unit densities are now applied to the actual zoning in the study area as shown on Figure 8.1. The results, the zoning envelope are as follows:

The Zoning Envelope in NEWTON CENTRE

. TOTAL NEW COMMERCIAL FLOOR AREA ALLOWED	409,784 s.f.
. TOTAL NEW OFFICE FLOOR AREA ALLOWED	761,062 s.f.
. TOTAL NEW DWELLING UNITS ALLOWED	23

PRESENT AND RECENT DEVELOPMENT

The above estimates assume that all properties will be redeveloped to the maximum allowable. Therefore, as estimates of actual possible development, the figures 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 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.

TABLE 8.2

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

<u>DEVELOPMENT</u>	<u>ADDRESS</u>	<u>FAR</u>	<u>ZONE</u>
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, 1 story retail, underground parking	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	313 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. 5 story offices, surface parking	233 Needham	0.77	MFG
3. 4 story offices, surface parking	118 Needham	0.57	MFG

NEWTON HIGHLANDS

1. Offices		0.53	BA
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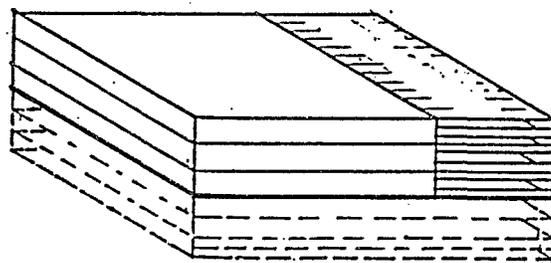
Average FAR for Office Development with
parking in surface lots 0.54

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

A MODEL OF RECENT DEVELOPMENT

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 a particular center. For Newton Center, the following non-residential development type is expected to be built in the foreseeable future:

Figure 8.2 A MODEL OF RECENT OR EXPECTED DEVELOPMENT



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

FAR = 2.34

This type of development is now matched with the requirement of the present zoning ordinance to obtain its allowable floor area ratio:

<u>DEVELOPMENT TYPE</u>	<u>ZONES/ALLOWABLE FLOOR AREA RATIO</u>				
	BA	BB	M	BAA	LM
75% Prkg. Underground 25% Prkg. Surface Garage					
. 3 story office/retail	2.34	2.34	2.34	----	.75
. 4 story office/retail	----	----	----	1.00	----

THE DEVELOPMENT ENVELOPE

The estimate of total development allowable under present zoning (the Zoning Envelope) is now tempered with a more realistic view of the economic environment of the study area, and results in an estimated development envelope shown in Table 8.3 and Figure 8.3.

The estimated residential development envelope is the same as the residential zoning envelope. The number of units allowed is relatively small and there is no reason to assume that housing will not be built to the maximum allowed by zoning.

As indicated, an estimated total of 1,024,600 square feet of new non-residential floor area could be built in Newton Centre, a substantial increase of 144.9%. At the same time, the potential for new dwelling units represented by present zoning is relatively small, a total of 23 units, an increase of 11.2%.

THE PATTERN OF POSSIBLE NEW DEVELOPMENT/REDEVELOPMENT

Figures 8.2 and 8.3 show the amount and probable pattern of possible new development or redevelopment.

Figure 8.2 indicates the present intensity of use in the study areas, those parcels that are presently vacant, and those that are presently underused. The underused parcels are those whose present density is less than that allowed by existing zoning. While this map does not and cannot show which parcels will be developed to greater density, it provides a good indication of where new development activity might occur.

On the basis of existing densities, development opportunities exist throughout Newton Centre, but particularly east of Centre Street. Substantial growth could occur in the Lyman, Langley, and Summer Streets block, the block bordered by Cypress and Centre Streets, and the block presently containing the auto dealership on Beacon Street.

Newton Center's traditional role as the City's "downtown", its continuing popularity as a shopping area, and the existence of an MBTA stop are all factors which will sustain pressure for growth in Newton Centre.

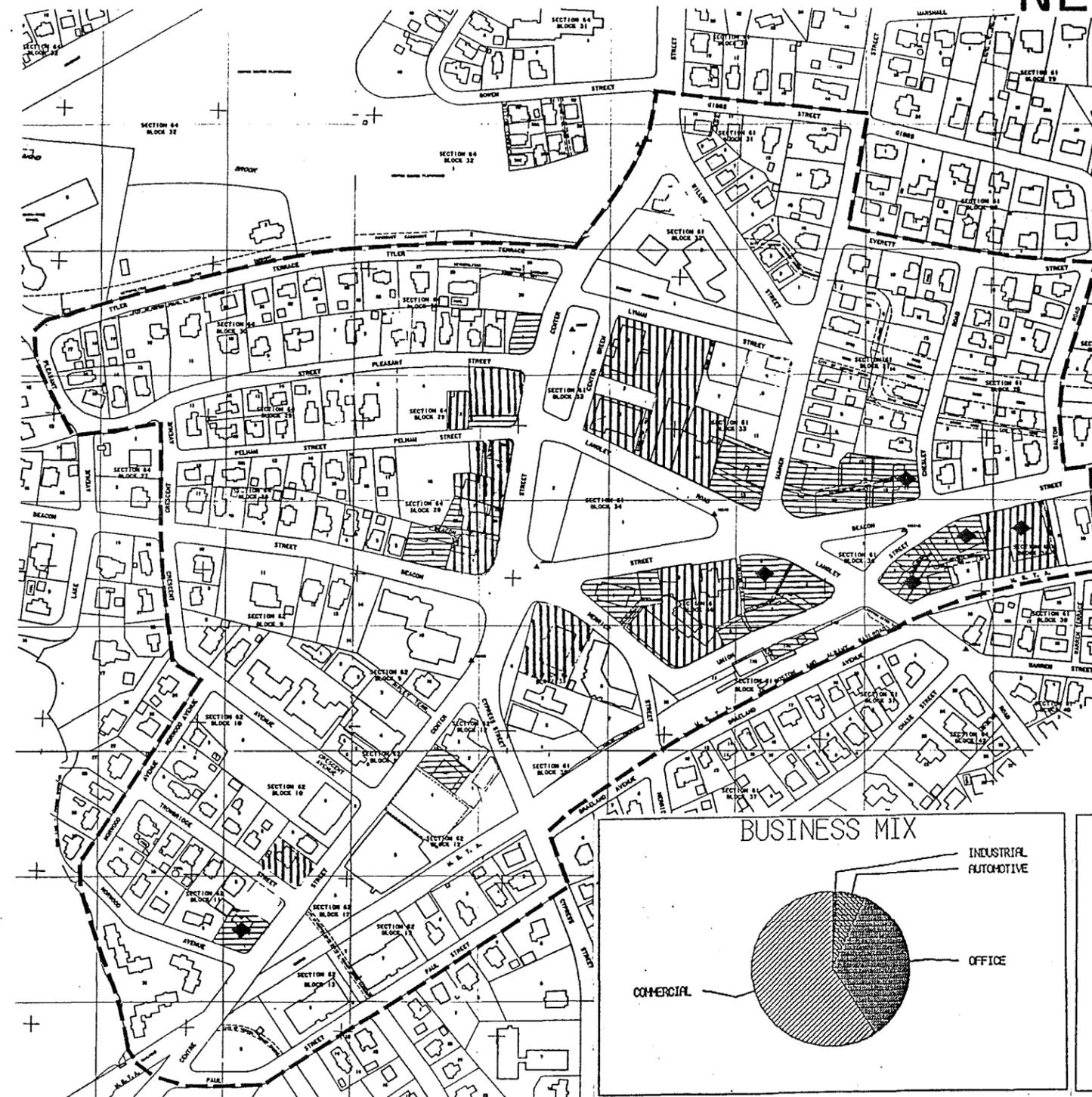
TABLE 8.3

THE PRESENT DEVELOPMENT ENVELOPE:

GROWTH THAT COULD OCCUR IN NEWTON CENTRE

• New Commercial/Retail Floor Area that could be added	270,779
Existing Commercial/Retail Floor Area	465,530
• Percent Added	58
• New Office Floor Area that could be added	753,861
Existing Office Floor Area	241,765
• Percent Added	311
• New Dwelling Units that could be added	23
Existing Dwelling Units	206
• Percent Added	11.2
• Total New Non-Residential Floor Area that could be Added	1,024,640
• Total Existing Non-Residential Floor Area	707,295
• Total Percent Added	144.9

NEWTON CENTRE

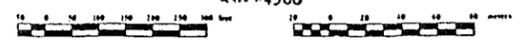


-  NEIGHBORHOOD CONVENIENCE BUSINESS AND SERVICES
-  COMMUNITY/CITY-WIDE BUSINESS AND OFFICES
-  REGIONAL/CITY-WIDE BUSINESS CENTERS AND OFFICES
-  AUTOMOTIVE SERVICES

FIGURE 1.1 MARKET ORIENTATION OF BUSINESS USES

NEWTON VILLAGE STUDY

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

SCALE 1" = 4300'

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NEWTON CENTRE

NEGATIVE VISUAL IDENTITY

- VEHICULAR DOMINATION
- NEGATIVE COMMERCIAL/RESIDENTIAL INTERFACE
- ASPHALT DOMINATED LANDSCAPE
- VEHICULAR/PEDESTRIAN INTERFACE

LACK OF SPATIAL DEFINITION

- AUTOMOBILE DOMINATION
- LACK OF FACADE/SIGNAGE CONFORMANCE
- PEDESTRIAN/VEHICULAR CONFLICT
- THRU TRAFFIC
- ASPHALT DOMINATED LANDSCAPE

★ FIRST BAPTIST CHURCH,
CENTRE AND BEACON STREETS

★ NEWTON CENTRE RAILROAD STATION,
UNION STREET

LEGEND

- NON-COMMERCIAL STRUCTURE
- BUILDING AT COMMERCIAL CENTER OR COMMERCIAL BUILDING
- △ PERCEIVED POINT OF ENTRY (VISUALLY POSITIVE)
- △ PERCEIVED POINT OF ENTRY
- ▨ PARKING LOT REQUIRING IMPROVEMENTS
- ▨ AREA REQUIRING STREETScape IMPROVEMENTS
- ▨ AREA UNDER CONSTRUCTION
- ▨ NOISE
- ★ AREA OR STRUCTURE OF HISTORIC VALUE
- ▨ NEGATIVE AREA AT RESIDENTIAL/COMMERCIAL INTERFACE

POSITIVE STREETScape IDENTITY

- PEDESTRIAN ORIENTED (WITH LINKAGES)
- FACADE/SIGNAGE CONFORMANCE
- UNIQUE SENSE OF PLACE

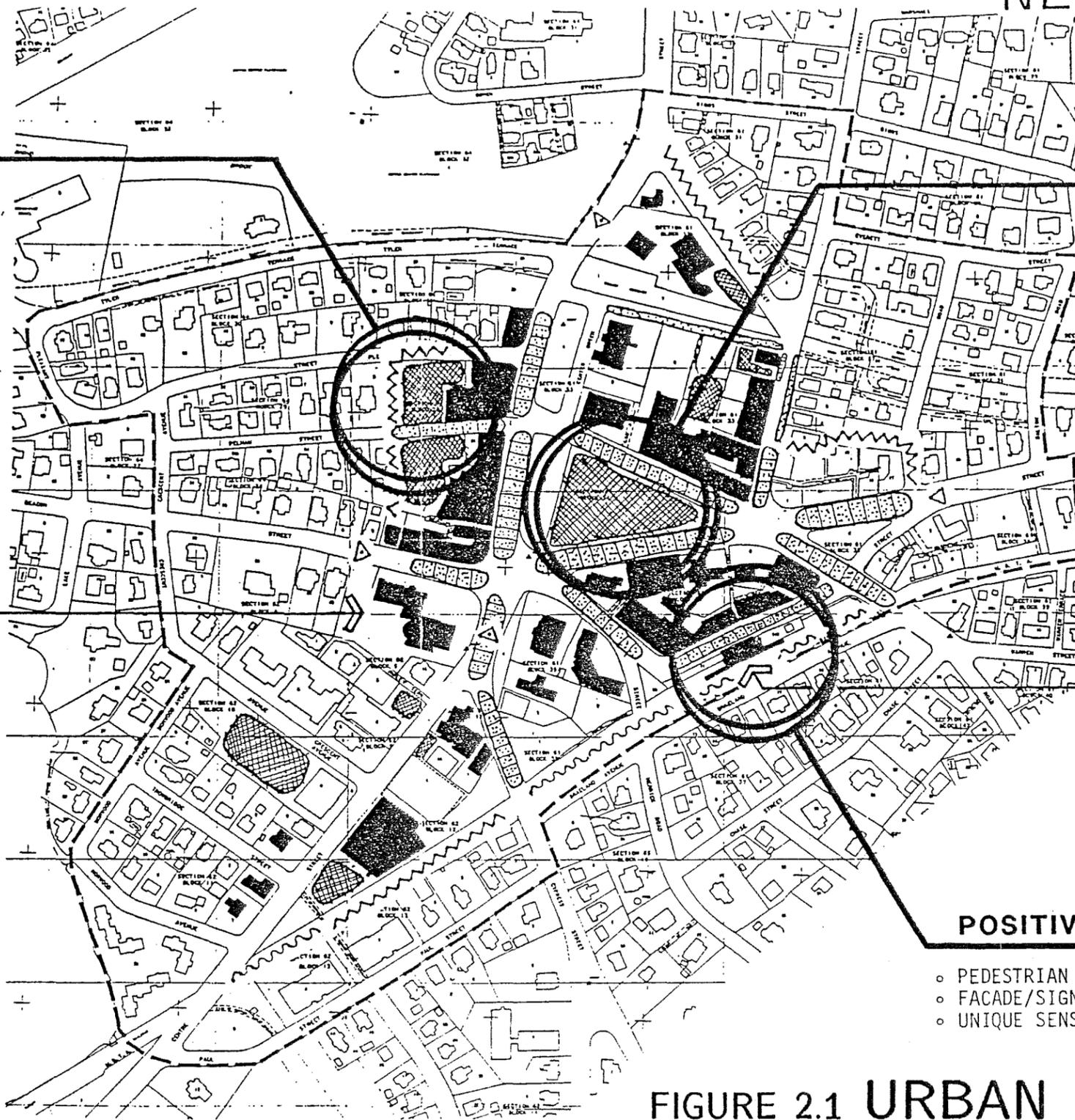
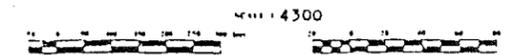


FIGURE 2.1 URBAN DESIGN SURVEY

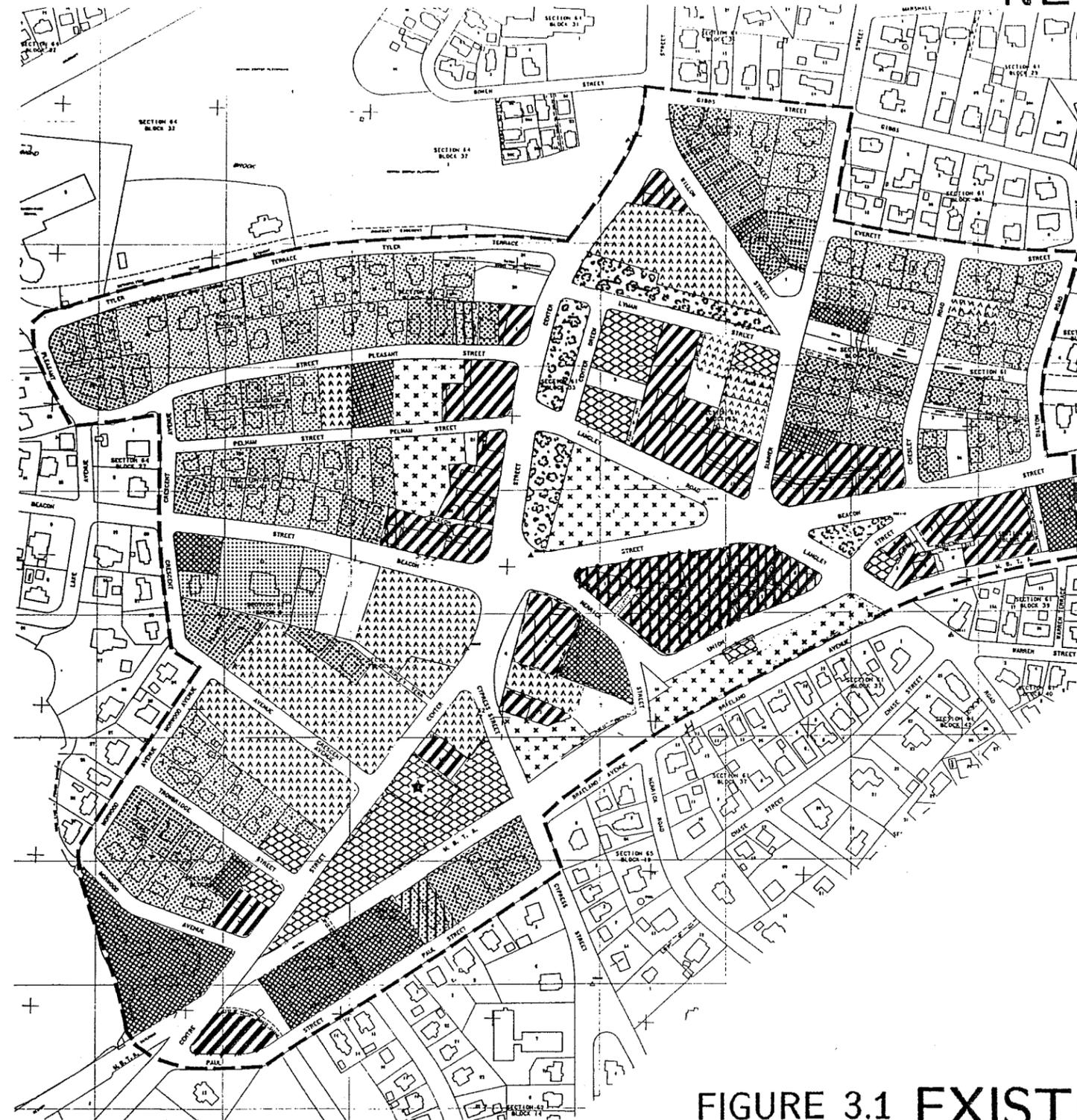
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NEWTON CENTRE



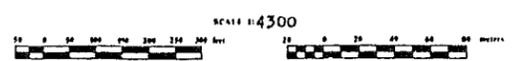
-  RESIDENTIAL-SINGLE FAMILY
-  RESIDENTIAL- 2 and 3 FAMILY
-  RESIDENTIAL-APARTMENTS/CONDOS
-  COMMERCIAL
-  OFFICE
-  INDUSTRIAL/MANUFACTURING
-  TRANSPORTATION/PARKING
-  MIXED USE-MOSTLY RESIDENTIAL
-  MIXED USE-MOSTLY COMMERCIAL
-  INSTITUTIONAL
-  OPEN SPACE/RECREATION
-  ★ PROPOSED OR UNDER CONSTRUCTION

FIGURE 3.1 EXISTING LAND USES

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Connerly Associates
22 Westwood Lane, Westwood, MA 02156, (617) 752-1000



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NEWTON CENTRE

LEVELS OF SERVICE

- A FREE FLOW: AVERAGE DELAY 10 SECONDS
- B STABLE FLOW: AVERAGE DELAY 15 SECONDS
- C STABLE FLOW: AVERAGE DELAY 20 SECONDS
- D APPROACHING UNSTABLE FLOW: AVERAGE DELAY 40-45 SECONDS
- E UNSTABLE FLOW: AVERAGE DELAY GREATER THAN 1-2 MINUTES
- F FORCED FLOW: AVERAGE DELAY INDETERMINATE

KEY TO INTERSECTIONS

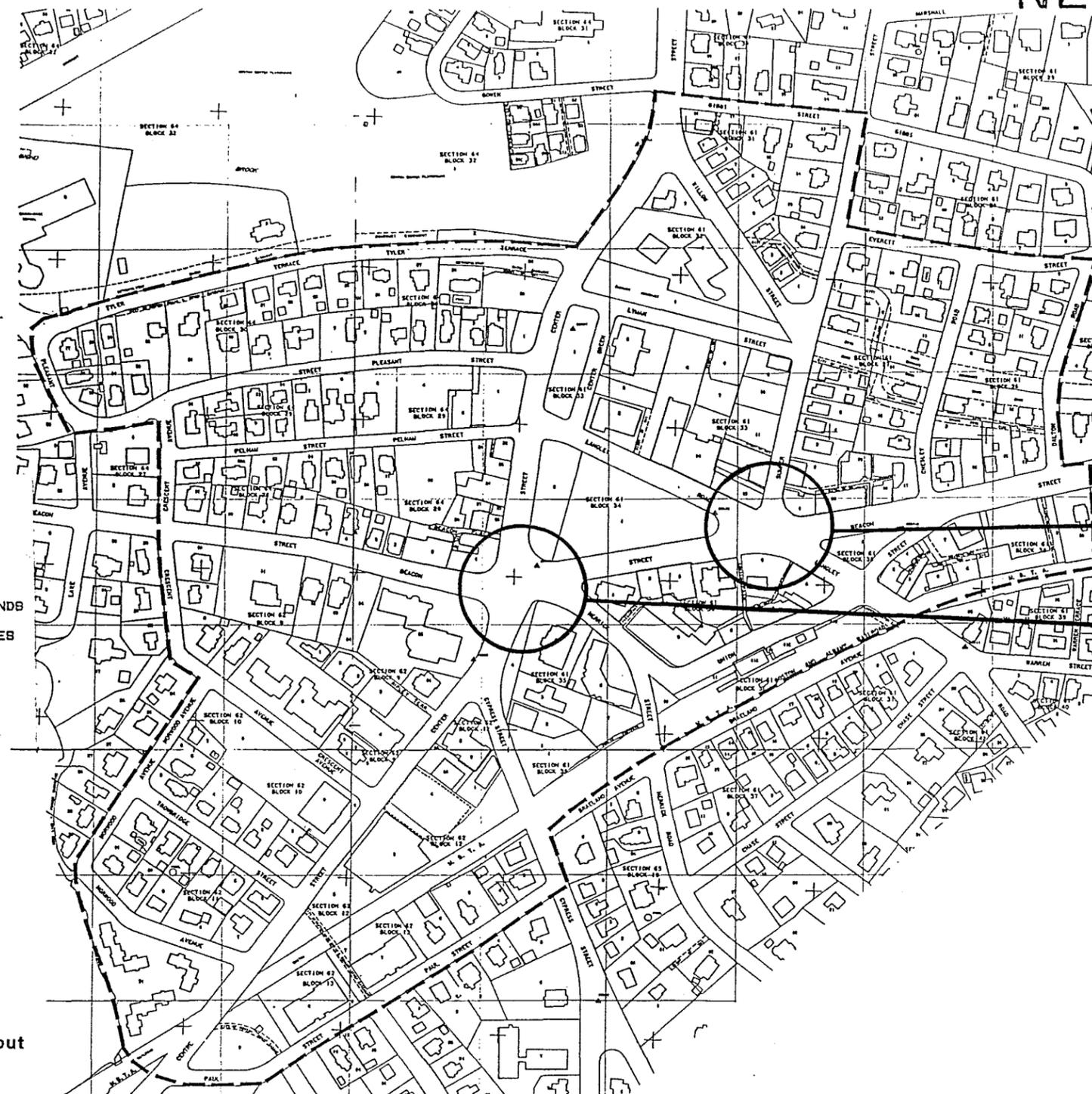
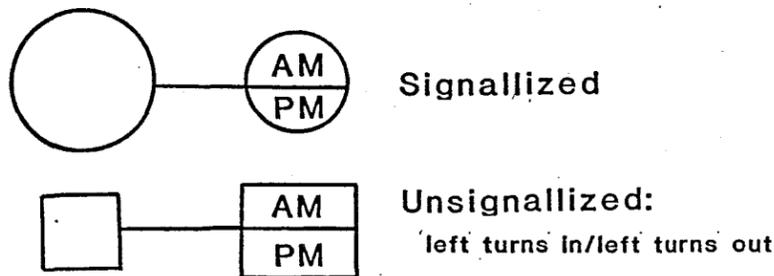
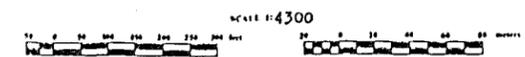


FIGURE 4.3 OPTIMAL INTERSECTION LEVEL OF SERVICE

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Connery Associates
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NEWTON CENTRE



- PRIVATE BUSINESS PARKING SPACES**
-  IN SURFACE LOTS
-  IN PARKING GARAGES/PROPOSED
- PUBLIC PARKING SPACES**
-  OFF-STREET METERED
-  OFF-STREET NON-METERED
-  ON-STREET METERED
-  ON-STREET POSTED
-  SPACES IN RESIDENTIAL LOTS
-  SPACES IN INSTITUTIONAL LOTS

FIGURE 5.1 EXISTING PARKING INVENTORY

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 Connery Associates
145 Washington Street, Boston, MA 02108 (617) 552-1000

SCALE 1:4300

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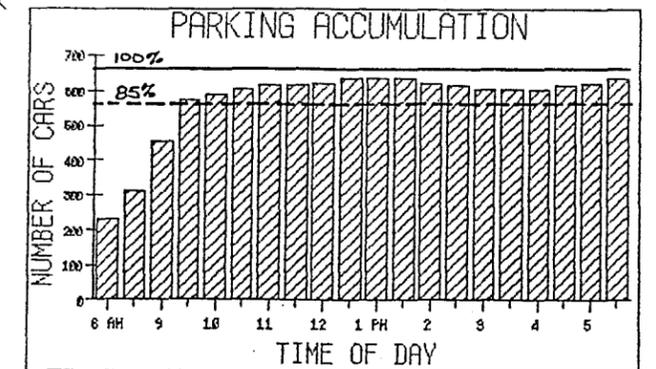
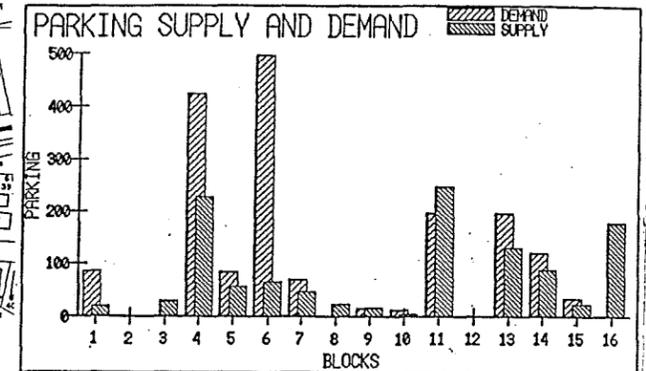
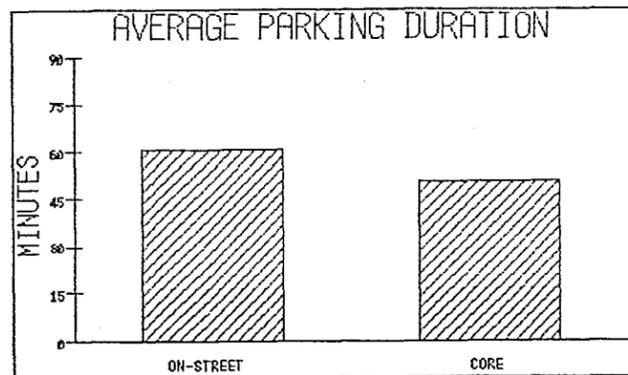
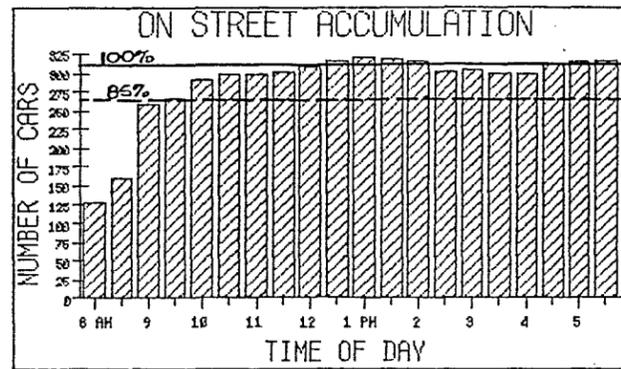
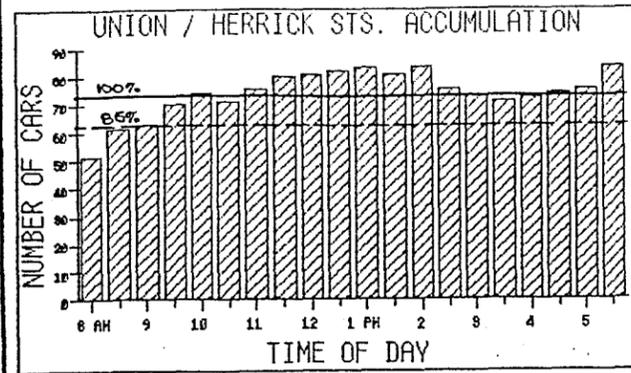
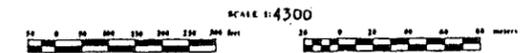


FIGURE 5.2 PARKING CHARACTERISTICS

NEWTON VILLAGE STUDY

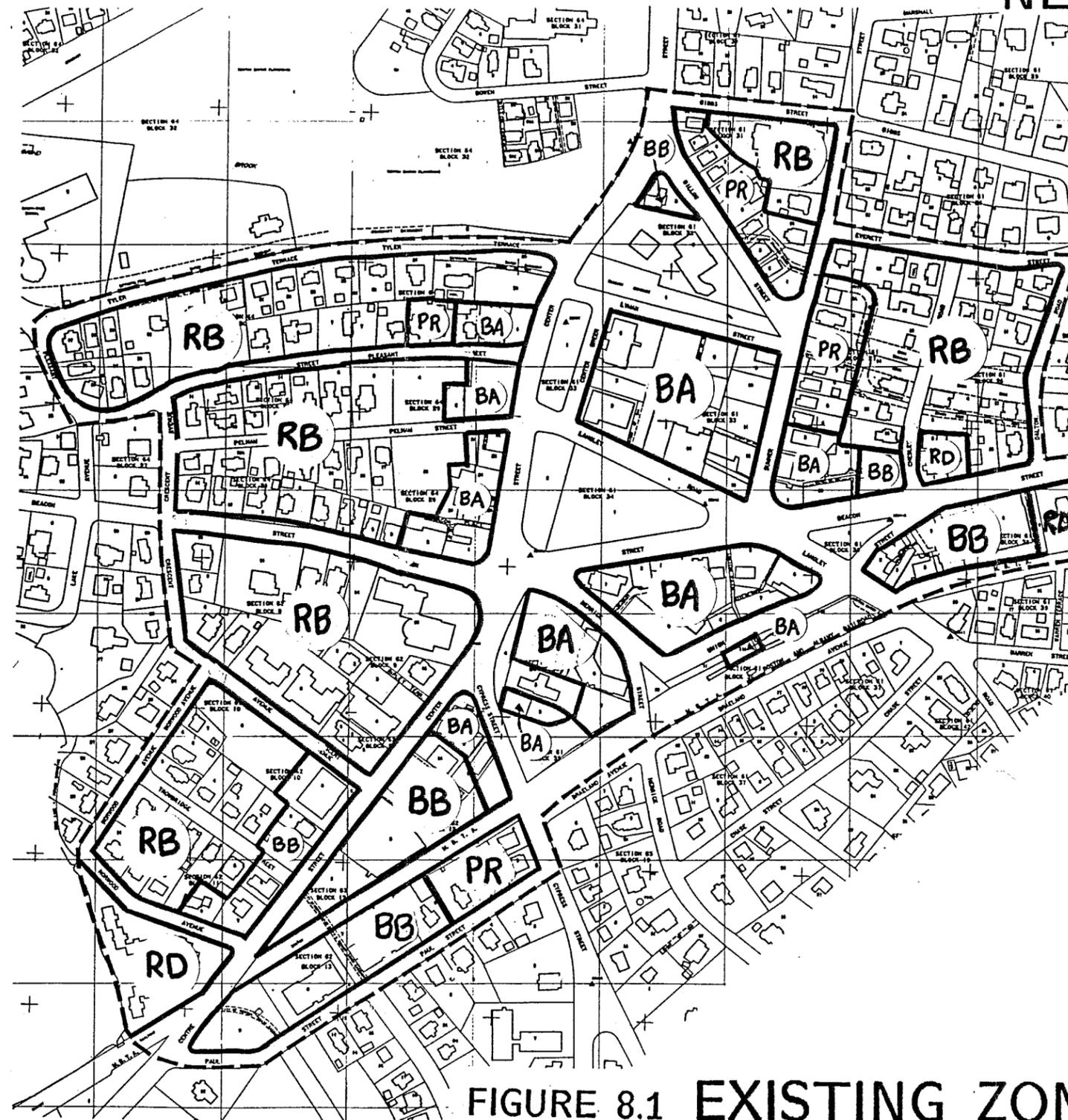
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- RA RESIDENCE A
- RB RESIDENCE B
- RC RESIDENCE C
- PR PRIVATE RESIDENCE
- RD RESIDENCE D
- RE RESIDENCE E
- RF RESIDENCE F
- BAA BUSINESS AA
- BA BUSINESS A
- BB BUSINESS B
- LM LIMITED MANUFACTURING
- M MANUFACTURING

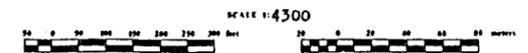
FIGURE 8.1 EXISTING ZONING DISTRICTS

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DATE _____

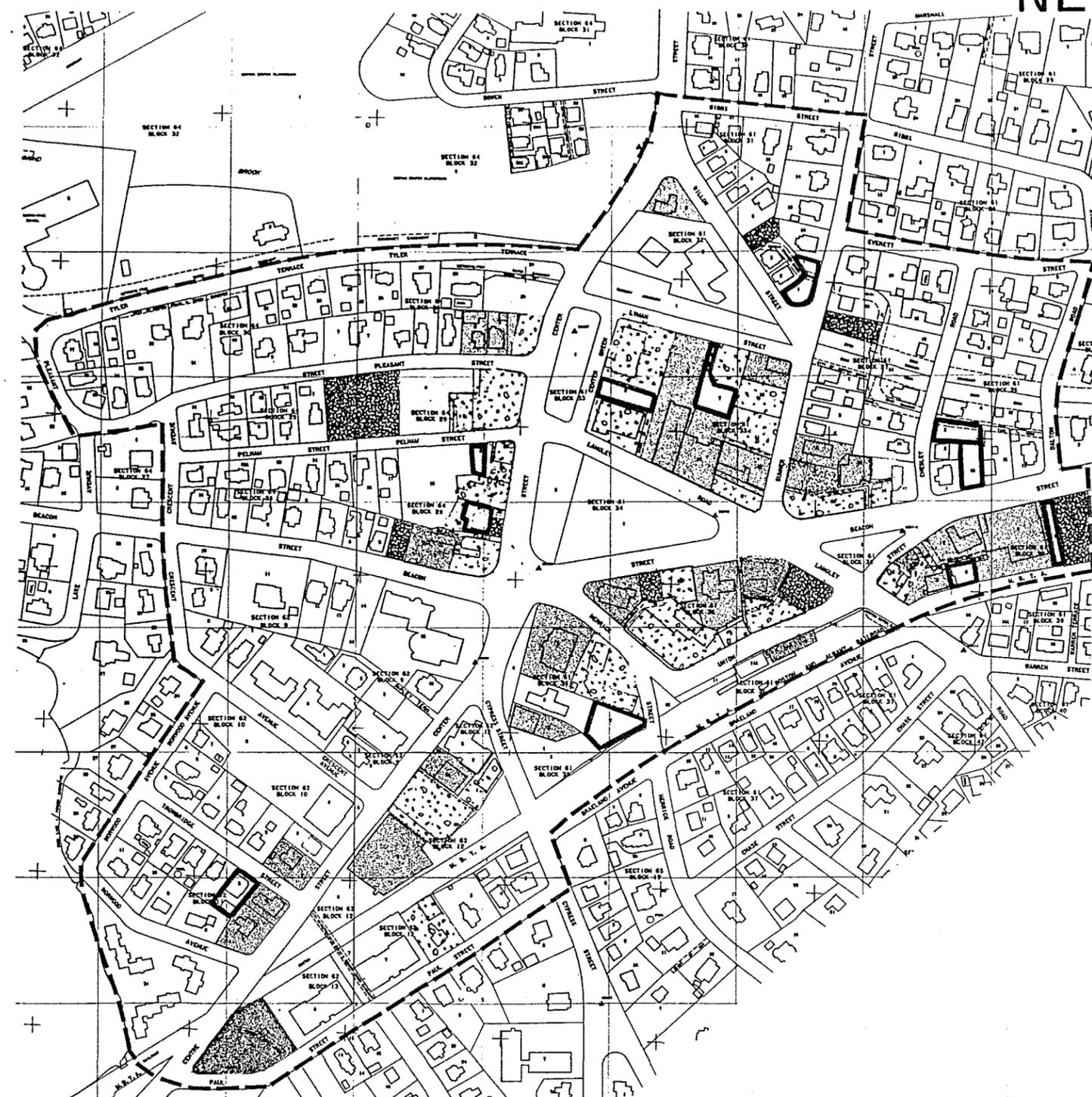
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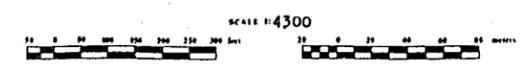
-  PRESENT DENSITY EXCEEDS THAT ALLOWED BY ZONING
-  PRESENT DENSITY IS 50% TO 90% OF THAT ALLOWED BY ZONING
-  PRESENT DENSITY IS LESS THAN 50% THAT ALLOWED BY ZONING
-  VACANT LAND

FIGURE 8.2 EXISTING INTENSITY OF DEVELOPMENT

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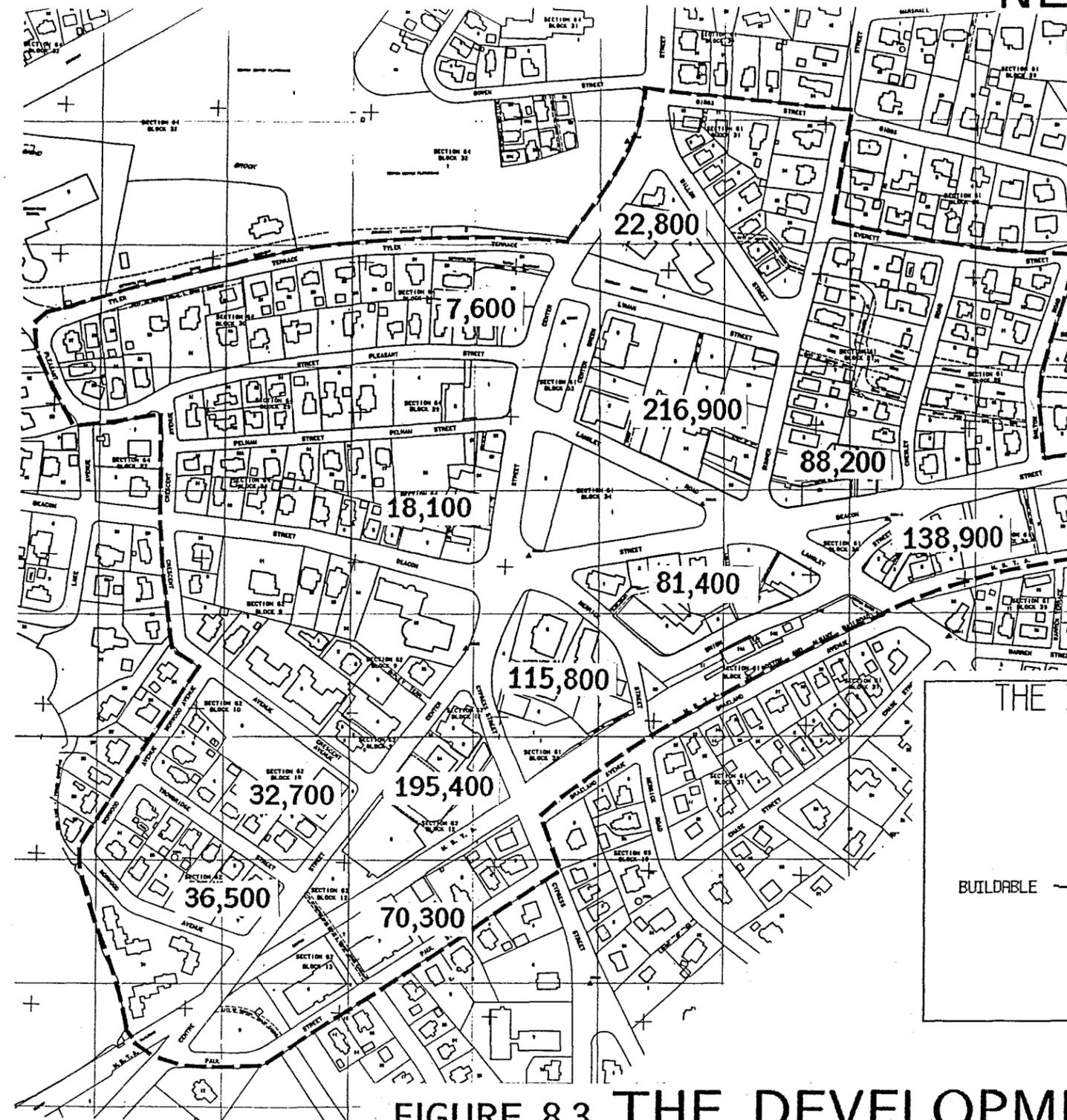
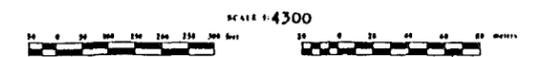


FIGURE 8.3 THE DEVELOPMENT ENVELOPE

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