

STUDY OF AN URBAN CORE:

STONEHAM, MASSACHUSETTS

by

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Dipl. Ing., Munich Technische Hochschule

Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master in City Planning at the
Massachusetts Institute of Technology

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City and Regional Planning

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Massachusetts Institute of Technology
Cambridge, Massachusetts

September, 1952.

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Thesis Abstract

The subject of this study has been the investigation of the possibility and the conditions under which an existing town center can be renewed. The study has been made with reference to the town of Stoneham, Massachusetts and has included the development of a plan for the complete rehabilitation of the town's core. The results are summarized as follows:

1) The renewal is economically feasible through the increase of functional efficiency and economic productivity of the central area.

2) The economic functions (in this case primarily retail trade) are not only compatible but complementary with other functions that belong to the same area, such as government, culture and recreation. Their proper interrelationship can result in mutual benefit.

3) For the realization of the objectives sought, a basic change in the pattern of land ownership, land use and circulation is necessary. This presupposes a program with direct participation of the town.

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Noted (Arch.) Nov 7, 1952

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September 5, 1952

Dean Pietro Belluschi
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Dear Dean Belluschi:

In partial fulfillment of the requirements for the degree of Master in City Planning, I herewith submit a thesis entitled, "Study of an Urban Core: Stoneham, Massachusetts."

Respectfully,

George A. Skiadaressis

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I. INTRODUCTION

The recent history of urban growth has been primarily a history of urban expansion; an expansion to the width (i.e., in coverage) at the periphery and to the height (i.e., in intensity) at the center. In this period new elements have been added to the urban environment, mostly in the form of individual buildings which manifest a definite departure from a preceding Architecture, i.e., from a preceding way of living. At the same time the actual urban pattern, understandably, has undergone relatively little basic change. Deviations from the old pattern, as they have been realized in new developments, have occurred in inverse proportion to their proximity to the central area.

Meanwhile the period of expansion is gradually being paralleled (if not succeeded) by a period of transformation. While thus far the additional quantity of urban functions (as resulted from the rapid increase of population, industry, commerce, etc.) has been the guiding force of urban growth, it is the quality in the performance of these same functions that is increasingly influencing further development; the quality as judged by maturing criteria of economic and functional efficiency, as well as of social and esthetic values. A series of adjustments in

the urban structure is already in process, in the form of new patterns, on new or old locations, of residential and industrial developments and more recently of retail (or shopping) centers, based on a not necessarily increased population, labor force or tributary area.

Judging from the nature and the rising frequency of these phenomena, there is reason to believe that they are not accidental but, more likely, a new phase in the evolution of the urban structure, a phase which has long been anticipated and sought. It is also obvious that since these changes do not apply solely to residential areas but also to central uses and functions, the urban centers themselves are likely to be affected to an extent, thus far avoided or delayed.

Our concern with the urban core, as an area where common functions, interests and pursuits take place and find their ultimate fulfillment and expression, originates from the belief that in a multitude of cases and in various degrees it has ceased to satisfy contemporary requirements. It is also based on the assumption that these common needs are inherent in social or communal life and that their proper setting is an inseparable objective of any form of urbanization.

The purpose of this study is to investigate the ways and extent to which new criteria and physical standards for the performance of collective functions may affect an existing urban center; to investigate further the role that such a center might play in response to contemporary needs of social life; and, finally, to investigate the feasibility and conditions of a conceivable renewal.

For the purpose of avoiding ambiguous abstractions, the study has been focussed on the case of an existing town inside a metropolitan area. The size of the town and the town center will make it possible, it is hoped, to follow the essentials of the problem by reducing the dimensions of the task in terms of time and means as required by such a study. It is also hoped that although every town, like every individual, differs from the others, conclusions of more general interest may be drawn.

II. THE CORE OF STONEHAM

1. Present Conditions

a. The Town in General

Stoneham is a town of about thirteen thousand people (1950) within the Metropolitan Area of Boston. Situated in a pleasant physical environment, with the Middlesex Reservation to the south, it developed originally as a small center of industry. However, with the decline of local manufacturing due to regional shifts and with its proximity to the big city, Stoneham found itself later, together with some forty other towns, in the immediate influence of twentieth century metropolitan growth.

The major result was a change in character, from a relatively independent settlement to a contemporary suburban town. Most of the small factory buildings were gradually removed, most of the working people started commuting to other areas to work and some people from other areas started commuting into the town to sleep.

Figures 1 and 2 and Chart 1 show the location of Stoneham in the Boston Area as well as the general trends of population growth in the area as a whole.

b. Factors Behind the Decline of the Town Center

In the first period of metropolitan adjustment Stoneham was in a less favorable situation than most of the surrounding towns. Various reasons account for this, such as the location of the railroad net which better served other towns, the presence of declining industry which was not attractive to City people looking for a "protected" residential suburb, and other factors which influence and guide metropolitan expansion and whose analysis lies outside the scope of this study. As a result of these conditions, stronger suburban nuclei, or Centers, developed all around the Town. The Center of Stoneham remained static. In a "dynamic" period of growth, however, to remain "static" means to fall behind, unless there are inherent assets which have enough power of attraction to make up for functional inefficiencies. But one should look in vain for such assets in the Town Centers of the Metropolitan Area. They have all been developed in the same form as the old city; a micrography of superseded patterns, with "Main Street" and its string of shops on both sides, with the same principles of land speculation, the same proportion (more or less) of shacks, or slums, which desperately wait for the happy moment that will turn them into "big business," and the same inadequacy for circulation and functional efficiency.*

*In the case of Stoneham, as in many similar towns, a well-maintained Town Hall with a garden around it is there, to remind somebody of a communal will and self-respect, that has not entirely given place to trivial interests or indifference.

Under these conditions every small improvement creates an advantage against possible competitors, of which there are so many in a mobile area, and every small gain prepares the ground for the next. Thus, the bigger nuclei around Stoneham have been able to achieve a series of small, or piecemeal, improvements, which, far from being adequate for a modern town, have still been sufficient "to keep them going" and eventually to offer a better choice to the commerce of the Metropolis, which, feeling enough pressure in the congested downtown area, has long started to establish "outposts" in the suburbs.

c. Pessimistic Prospects

There is no doubt left as to the future prospects of the Stoneham Center: In a critical period of metropolitan growth, with an accelerated decentralization of population and of City trade, unable to compete with stronger surrounding neighbors, not to speak of modern shopping centers which have already appeared on the horizon, it will follow the path of continuing decline, vegetating with the elementary trade and other activity that for other reasons cannot move from the Town. Or it will do so, unless a way is found to regain lost ground and to provide the Town Center with enough attractive power to enable it to perform the role and the functions that the Town needs. Is there such a way?

d. The Concern of the Town

The above question has been in the citizens' minds for some time. Being entirely aware of the consequences of these conditions not only on the local trade but also on the general economic activity of the Town and on whatever else a Town Center can stand for (much of it, even if not directly conscious, is always affecting people's attitudes), they contemplated at different times measures which were intended to serve as a remedy. The plan that was produced a few years ago, and failed by only a few votes to pass the Town Assembly, is characteristic of the seriousness of purpose and determination to proceed with measures to the extent of substantial surgery.

e. The Problem in the Light of a General Master Plan

Concerned with the future development not only of the Center but of the Town as a whole, the Planning Board of the Town called upon consultants to prepare a Master Plan. This Master Plan, submitted in 1951, provided the basis for guiding the future growth of the Town. The problem of the Town Center was clearly outlined and emphasis was given to the need for an adequate solution. In the light of the Master Plan the problem appears as follows: Stoneham may expect to grow from a population of about thirteen thousand to about twenty thousand in the next twenty years (1950-1970). At

this stage, and by maintaining the residential densities as recommended, the Town will have reached a point of complete development of present vacant areas, suitable and desirable for building houses. A certain amount of local employment is expected, but its character will remain predominantly that of a suburban town. The Town Center, now obsolete and inadequate, should be redeveloped in such a way as to make "an efficient setting for the central uses carried on there: shopping, government, meetings, recreation and culture." It should adequately satisfy the functional needs of these uses through the provision of the proper buildings, circulation facilities and parking areas. In this Master Plan the problem of the Town Center was outlined as a subject requiring an independent study of its own.

f. Facts and Physical Characteristics

Figures 4 and 5 show the existing conditions in the Town Center: the general layout of the streets, the type of buildings and the way they are used.* Main Street, which is at the same time Route 28, is suffering from heavy through

*It should be mentioned here that the Commercial Center was originally near the railroad station, in other words, near the place of greatest circulation. As the role of the railroad was taken over by the bus and the private car, the Center moved toward Main Street, which now serves as the main artery. This circulation finally outgrew the merchants' expectations to the point that it dominated the Street, and made it unpleasant to be near and more unpleasant to cross. Needless to add that the traffic on this street (mainly through traffic) is also very inadequately provided for.

traffic. Off-street parking is practically nonexistent, except for a small area near the Town Hall, neither near enough to the stores nor well related to them. Most of the buildings, with the exception of the public ones, are run-down and obsolete: cheap facades on rotten wooden frames, a few substandard dwellings or offices above, and dirty yards behind. A great number of trees serves to cover some of the ugliness in summer.

Table 1 gives a summary of the various uses by block as well as in total. The same information, arranged by types of use, is given in Table 2.

It is apparent that both the spatial distribution of most uses as well as the conditions under which they are performed are neither rational nor efficient. In the very heart of the Town, where the demand for space is intense and the land values accordingly high (see Table 4), 42% of the land and 28% of the gross floor area is occupied by dwellings of mostly poor quality. Small industrial buildings, garages, etc., are also located here to no particular advantage: a pattern developed over a long period of time, sometimes by accident but mostly by reasons and criteria which have long ceased to be valid. Occasionally one of the old structures burns, the remaining site retains the high price but the new promoter is not easily found (e.g., the corner of Main and

Maple Streets). It is unusual and difficult for an individual to overcome deficiencies created by an inadequate over-all pattern.

One of these unusual cases is the furniture store located a few blocks to the north, at the corner of Main and Montvale Streets, which represents the antipode to the conditions prevailing in the Town Center. With foresight as to the physical and operational requirements of an up-to-date store, it has managed to grow far beyond the scale of the Town market, and serves a larger region.

g. The Kind of Center to Plan For

By analyzing the shortcomings of the Town Center as it now stands, by pointing out what is wrong and what is missing, the first notions arise as to what is needed. Nevertheless, it is necessary to clarify what kind of Center one should plan for, in terms of type and scale of functions that it would serve. Does the fact that it does not grow by itself, that some disappearing buildings are not being replaced, and that there are also some vacancies in Main Street, does all this perhaps reflect the actual size of demand, so that any further provision would be unrealistic? Or does the fact that one establishment (the above-mentioned furniture store), with an adequate structure and some off-street parking, has grown up to a regional market level,

provide evidence that the whole Town Center, properly improved or rebuilt, could grow to a similar magnitude? Probably both alternatives are possible. Nevertheless, it does not seem to be a wise policy for a Town to embark on a program that inevitably involves risks, inevitably implies substantial shifts in the trade pattern of a larger area, and inevitably implies a change in the economic character of the whole Town, something that develops over a longer period of time as a step-by-step evolution.

Instead we shall keep in mind that a Town Center, or an urban core, means much more than just an area where retail trade takes place. It is an area where people gather to pursue a multitude of interests, whether connected with shopping, or other commercial affairs, or Town government, or recreation, or culture, or (why not?) education. And we shall also have to keep in mind not merely notions as to how things should ideally be, nor emotional or irrational ties with what once used to be, but the present needs and the future needs, so far as they can be anticipated. Because any plan, if it is going to serve any purpose, has to be based on reality, and as we shall later see, it also has to be financed. We shall therefore take the Town itself as the tangible reality, with its population and its resources, whatever they are. And we shall use the scale of the Town to serve as a yardstick for all phases of the plan, economically, socially and (last but not least) visually.

2. Economic Analysis

The purpose of this analysis is to find out the scale, or magnitude, of economic activity that can be expected in the Town Center, since this activity will suggest to a great extent the physical requirements that should be provided for, as well as the means for their realization. Shopping plays thereby the dominant role in terms of both economic importance and occupied space. It will be necessary, therefore, to estimate the shopping activity in the Town Center. For this purpose information will be needed concerning the purchasing power (i.e., the income level) of the population to be served and the pattern according to which purchases will be made.

Although the political boundaries of a town do not necessarily define the trade area of the Town Center (less so, when the town lies in a metropolitan area), the population of the Town, living in direct proximity to the Center and being closely related to the other functions besides shopping, will be used as the base for the economic analysis. The results will then be adjusted in order to express what might be regarded as the realistic conditions.

a. Estimate of Purchasing Power

At the time this study is made, no direct information is available concerning the income of the Town's population, and a method had to be devised in order to arrive at an estimate. The method used is based on a correlation of income to rents. It was found thereby safer to make the estimate as of 1940, because at that time the relationship

between the two was not distorted by factors like rent controls, housing shortage, etc., which came into play later. Besides, the information on the 1940 rents is available from the 1940 Census of Housing, whereas the same information for 1950 has not yet been published. The 1940 income estimate was then projected to 1950. For a detailed explanation of the method used, see Appendix A. The result was a total income of \$24,202,380 in 1950, i.e., \$1,800 per capita or \$6,400 per family, which compares with the per capita income payments in Massachusetts of \$1,600.* This estimate of income, naturally, is not expected to be precise. It is expected, however, to be a close enough approximation for the purpose of this study. (Concerning the rent differentials between New England and the national average (Chart 2), the known points, or values, were not sufficient to allow a reliable development of the curve. However, alternative methods used, such as averaging the percent differences, did not have a significant effect on the final income figures. Applying the same rate of increase over all income groups, between 1940 and 1950, is also an approximation. Within the expected limits of accuracy, however, a refinement of the method through the development of different rates of increase for the different groups was deemed unnecessary.) Following checks have been applied on the method and the result of the estimate:

*Survey of Current Business, August, 1951.

For the purpose of checking the assumption as to the relationship of rents to income, a comparison was made between rents and another item that presumably is related to income: the valuation of motor vehicles made by the State for the purpose of taxation. Thus, the average rent and per capita valuation in Stoneham have been compared with the corresponding averages of the surrounding towns as well as of Boston and Massachusetts (see Table 6). This comparison confirms the assumption in general. (Boston, and to a lesser degree Malden and Medford, show a lower figure for the per capita valuation of motor vehicles than their average rent. This should be expected, considering the role of mass transportation in the large city and proportionately in the two others, which lie closer to Boston and are better connected.)

The estimated 1950 income for Stoneham has been tested in the following ways:

a) Based on the relationship of average rents between Stoneham and Massachusetts, the per capita income in Stoneham should be equal to the per capita income in Massachusetts divided by .88. For 1940 this would be $\$764 / .88 = \868 . The estimate for 1940, according to Table 5 (see Appendix A), was a total income of $\$9,527,750$ or $\$885$ per capita. If the same relationship with the State average is applied directly to 1950, then the per capita income in Stoneham would be $\$1,600 / .88 = \$1,820$.

b) Among the towns surrounding Stoneham, the 1950 income of the following was estimated by *Sales Management.** In Table 7 the income of Stoneham has been calculated according to the relationship of average rents as of 1940, with each of these towns separately.

TABLE NO. 7. INCOME, 1950, DERIVED INDIRECTLY FROM ESTIMATES IN SURROUNDING TOWNS.

Town	Income, 1950		Relationship of Av. Rent to Stoneham	Income in Stoneham, 1950	
	Per Family	Per Capita		Per Family	Per Capita
Malden	\$5,552	\$1,800	.88	\$6,320	\$1,800
Medford	6,450	1,700	1.02	6,330	1,700
Wakefield	6,534	1,990	.93	7,020	1,990
Melrose	6,619	1,670	1.18	<u>5,610</u>	<u>1,670</u>
Average				\$6,320	\$1,790

The above tests support the results of the applied method for the estimate of income. This estimate, i.e., \$1,800 per capita, will be used in the further development of the economic analysis. The disposable per capita income as well as the amount that is spent in expenditures of

*See "Survey of Buying Power," 1951.

current consumption is \$1,620 and \$1,458, respectively.*

At a later stage consideration will be given to the range of income levels within which the basic decisions in the development of the Plan can be economically supported.

b. Estimate of Total Purchases

In the analysis that follows, the same breakdown in major categories of retail trade has been applied as used in the U. S. Retail Census of Business. This offers the advantage of comparison of information given by the Census for different towns and areas. Different breakdowns from other sources have been adjusted to represent the equivalent of the categories used.

Table 8 gives information on the retail trade in Stoneham and the surrounding towns as of 1948.** The same information for the City of Boston and the State of Massachusetts has been included for the purpose of comparison. The figures

*According to the Bureau of Labor Statistics, "Family Income and Expenditures in 1947," Serial No. R. 1956, for the income group of \$6,000 to \$7,500 in Manchester, N. H., the personal taxes (i.e., Federal and State taxes) have been 10% of the gross income and the expenditures for current consumption 90% of the remaining. It was found safer and simpler to apply these percentages on the average income instead of calculating them for every income group separately. Manchester, N.H., is of comparable economic level as the Boston area. No other direct information was available.

**In the table only those major categories of retail trade have been included for which provision is expected to be made in the Town Center of this study. The location of other categories of trade will be discussed in the Development of the Plan.

in the Table refer to sales made in each town or area and not to the purchases made by the population of the respective localities. The figures for the State total, however, are assumed to represent the magnitude and general pattern of purchases made by the population of the State.*

Considering that the per capita income in the State is comparable to and slightly lower than that in Stoneham, it is expected that the total purchases made by the population of the Town follow the same general pattern as indicated by the per capita sales for the State. Other sources have been used in order to check, and eventually adjust, the information as given for the State total, before final decision was made. The result is shown in Table 10.**

The discrepancy between total purchases made by Stoneham residents and the actual sales in the Town is obvious. This discrepancy is partially explained by the proximity of the Town to Boston and partially by the inadequacy of the existing shopping facilities. To what extent the discrepancy can be reduced remains to be estimated.

*It has not been possible to check this assumption, but it is generally believed to be justifiable, although the per capita sales for apparel in the State total are lower than the usual expenditures for the same item.

**For the preparation of Table 10, the figures of sales for the State total, and accordingly the expenditure pattern had to be adjusted from 1948 to 1950. The same adjustment was made for the sales in Stoneham. Details are given in Appendix B. In the same Appendix information is given about the other sources and the way they have been used.

c. Estimate of Potential Market for a New Town Center

Before any estimate of the sales that can be expected in the new Town Center is made, careful consideration should be given to the present conditions of retail trade in the Stoneham area, as well as to the long-range trends. The surrounding towns and the respective town centers, marked to the scale of their 1948 sales, are shown in Figure 3. Chart 3 shows the per capita sales in the surrounding towns as of 1948* (Boston and Massachusetts have been included for comparison).

In almost all categories Stoneham has the lowest volume of sales as well as the lowest per capita sales (with the exception of the furniture group, as expected). Boston, on the other hand, has the highest per capita sales, as is natural for a metropolis serving a larger area. In none of the surrounding towns, however, do the per capita sales in any category indicate the existence of regional trade. In Malden, which has the largest shopping center among the towns near Stoneham, the per capita sales only approximate those of the State average. The only exception occurs in Stoneham, with the large furniture store, and in Winchester, where a branch department store exists. It is therefore only Boston that has clear characteristics of regional retail trade in almost all major categories.

*For the exact figures see Table 8.

In the examination of the present conditions in the Stoneham Town Center, the inadequacy of the existing shopping facilities has been illustrated. It is the general feeling in the Town that any physical improvement would decrease the loss of the Town's trade, as it is also true that this lost trade is not completely drawn by Boston. A considerable amount is being scattered to the surrounding towns. The results of a survey made by the local Department of Commerce is shown on page 77. These results can be summarized as follows: Only a small part of the average family's buying power is spent in the Town. The reason is that stores are not attractive enough, they fail to carry sufficient merchandise and there is no parking provided.

The estimate of the potential sales in the Town Center will depend on the attraction that can be created for the potential customers in terms of physical facilities and adequacy of merchandise, as well as on their total buying ability. Their total purchases have been estimated. It is going to be assumed that the present physical shortcomings are offset, in fact that they are replaced, by the optimum physical conditions (whether and how these can be provided will be examined in the progress of the study). It remains to be estimated to what extent these assets can counteract the drawing power from other Centers and particularly from Boston.

A complete analysis of all factors involved would grow beyond the scope of this study and the available means. Generally, the assets of the Town's Center will be the following: Convenience in terms of distance as well as in terms of physical characteristics of a modern shopping center (parking, adequate buildings, etc.), integration with other functions of the Town Center (offices, recreation, etc., that enhance the use of nearby shopping facilities), and the good will of the residents, as expressed in the answers to the above-mentioned questionnaire, which can be effective only after the other, tangible, assets have been provided. The large City, on the other hand, will maintain, by and large, the asset of extensive shopping districts, with great variety and depth of merchandise (the competition from the surrounding towns, under the physical conditions assumed, would be rather negligible).

Table H shows the results of this estimate, in terms of percentage of the total purchases of the Town residents that can be expected to be made in the new Town Center. They are based on evaluation of the multitude of factors involved, as well as on the experience of leading merchants in the Town. The percentage figures are believed to represent a rough, reasonable guess, closer to the conservative than to the optimistic side.* The Table contains also the required gross

*P. D. Converse suggests a method, or rather a mathematical formula, for the calculation of the proportion of lost to retained trade in a town. Use of this formula has not been

floor areas for the stores, assuming an average capacity.*

From the long-range point of view, the drawing power of Boston tends to decrease. The retail trade in the periphery is growing more rapidly than in the City (a trend that applies to most metropolitan areas). According to the "General Plan for Boston:" "...it appears probable that Boston is not getting as large a percentage of the suburban business as formerly, for while the 20-year decline in the share of business was 9%, the drop in the share of population was only 3%." ** In a recent survey in the Boston area it was found that "Department and specialty store branches have experienced more rapid increases in sales than either independent stores of similar size or their own parent stores. This fact points up a continuing growth of

made, because of the difficulty in estimating the "inertia factor" with due consideration of different parking and other facilities, as the case would be between Boston and a new Town Center in Stoneham. Generally (i.e., with other terms being equal, or similar), the formula gives for our case a proportion of lost to retained trade equal to 1.35. The proportion now (1950) is 1.82. (See: P. D. Converse, "New Laws of Retail Gravitation," Journal of Marketing, Vol. 14, 1949, pp. 379-384.)

*The capacity of the stores, i.e., the relationship of volume of sales to gross floor area, depends on many factors, like design, management, seasonal or daily fluctuations of sales, etc. The figures of the North Shore Shopping Center have been used here as a guide. (See: Morris Ketchum, "Shops and Stores," p. 277.)

**See "General Plan for Boston," Preliminary Report, 1950, City Planning Board, p. 18.

consumer preference toward shopping in retail units which are easily accessible."*

For the specific number and type of stores that would be best suited to handle the estimated trade, a special study would be necessary. Suffice it to mention here that the total volume of trade is enough to support a small department store (about 20,000 sq.ft.) and a food market, combined with sufficient numbers of specialized stores as to achieve an adequate balance.

*See Milton P. Brown, "Operating Results of Department and Specialty Store Branches, A Survey as of 1950," Harvard University Graduate School of Business Administration, Bureau of Business Research, Bulletin 136, p. 49.

3. Development of Plan

a. Functions and Required Areas

Among the various functions that belong to the Town Center, those that could be called public or quasi-public are at present adequately served (i.e., Town Hall, Churches, Post Offices, etc.), so that no estimate is necessary, with the exception of a High School for which consideration has been given in the Master Plan of the Town. Their role in the development of the Plan will be discussed in a later section.

i. Shopping

It has already been estimated that the gross floor area of stores that could handle the expected volume of sales is nearly 100,000 sq.ft. (see Table II). From this area at least 30% on the average will be used for storage and about one fourth of the remaining 70,000 sq.ft. of selling space can be in a different level.* This leaves about 50,000 sq.ft. as a required built-up area for stores. These buildings, if they are new (as will probably be the case, considering the condition of the existing ones), should be freely designed, with the objective of both efficient operation and the creation of a pleasant environment. An open space equal to the built-up area is

*This applies primarily to a department store and a few other major stores.

tentatively assumed as necessary. This makes the total required area for shopping equal to about 100,000 sq.ft. (i.e., twice the built-up area).

ii. Parking

This parking estimate is made with reference to shopping. Additional parking space will be considered, if needed for other functions.

In the existing bibliography on the problem of parking for a shopping area, there is a general agreement that no precise estimate is possible. Empirical figures, related to the volume of sales or to the selling space, vary, depending on the type of center (and type of stores), its connection with means of mass transportation, the percentage of customers that may arrive on foot, etc. The highest estimates for an outlying, regional shopping center go up to a ratio of 1:6 (selling space to parking space), whereby provision is made for the highest seasonal or yearly peaks.

Compared to such an outlying shopping center, the Center in the core of a town has the following advantages: a) because of its proximity to the residences of the customers and its convenience of access, the sales and accordingly the frequency of arrivals can be more easily distributed with a respective decrease of the peaks. "On

the last Saturday before Christmas" they can decide to walk, or use the bus.* b) "Arrivals on foot" will be relatively high, considering that a great percentage of the population lives within a radius of one quarter of a mile from the Town Center. c) Reserve spaces, like curb parking, can be used exceptionally, during higher peaks. Taking these factors into consideration, it is estimated that the required parking area should be from two to three times the selling area of the stores, i.e., 150,000 - 200,000 sq.ft.**

The space requirements for shopping and parking together are approximately 250,000 sq.ft. in reference to the needs as of 1950. The increase of population between 1950 and 1970 is expected to be about 7,000, or slightly over 50%. If the income level of the population remains

*It should be mentioned that almost all of the residents of Stoneham live within a distance of one mile from the Town Center, and bus lines cross the Town in most directions.

**A comparison was made between this estimate and the conditions in a recently built shopping center in the Town of Medford. The selling space is about 100,000 sq.ft. and the parking area (oddly shaped and therefore not efficiently used) about 90,000 sq.ft., whereof about 20% is permanently taken by noncustomers, mostly people from nearby offices. (The parking area is municipal.) The ratio is therefore 1:.7. According to the tenants of this shopping center, the parking area should be from two to three times larger than it is now in order to be adequate. This would raise the ratio to about 1:2.

the same, then the estimated volume of sales and consequently the required areas will increase accordingly, although perhaps not at the same rate, at least as far as the buildings are concerned. Provision for possible expansion should therefore be made for an ultimate area of 300,000 to 350,000 sq.ft.

iii. Offices

The presently occupied office space and the eventual increase of demand in a renewed Center has been used as a guide. The estimated gross floor area is 20,000 sq.ft., including lodging spaces. A built-up area of 7,000 to 10,000 sq.ft. would be required, assuming three stories as the maximum height. A parking area of about 20,000 sq.ft. should be adequate.

iv. Recreation, Culture, Education

Only a rough estimate of these requirements is possible. Recreation can be partly integrated with the facilities under "Eating and Drinking Places" which have already been included in the requirements for the shopping center.

A theater adequate for moving pictures as well as for plays and concerts with 500-800 seats should be provided, possibly combined with a community center where meetings

and exhibits could take place. The gross floor area for both would be about 10,000 sq.ft.

v. Other Open Spaces

Open spaces, other than those functionally connected with shopping, will be discussed later. No estimate is possible, because their role and size is related to visual as well as to functional considerations and they largely depend on the relation of the Town Center to its immediate environment, as well as on the relation of the various functions among each other.

b. New Provisions and Their Possible Location

The problem of new functional provisions is primarily a problem of providing adequate facilities for shopping, because on the one hand, as already mentioned, public and other functions are adequately served, at least as far as buildings are concerned, and on the other hand, the economic future of the Town Center will largely depend on the effectiveness with which present shortcomings in the shopping center will be offset. Moreover, any serious change in this respect will have effect directly not only on the other activities but on the form of the Town Center as a whole.

The present facilities for shopping in terms of type, number, gross floor area and location of stores are given in

Table 12. The present gross floor area is not much less than that required for the estimated trade (it is about 70% of it). The inadequacy of the present conditions, however, can be analyzed in the following respects: 1) The stores lie too close to the traffic artery and are located on both sides of it. (almost evenly distributed, if one considers that those on the west side, less in floor area, are the most intensively used, because of their type). This disadvantage cannot be offset so long as the present pattern is maintained. 2) Off-street parking, now non-existent, could be provided only behind the stores. This would inevitably result in a certain duplication of space, because of the difficulty of crossing the street, or in a less efficient utilization of it. Besides this, the approach would be from the back side, the "slum side," of the present stores. 3) The buildings are inefficient in layout and extremely poor in condition. Only rebuilding could be considered for most of them, whereby the above disadvantages as well as the pattern of land ownership would exercise a discouraging effect.

In view of these conditions, the following alternatives can be conceived: Either a possible gradual shift of the shopping area along Main Street and toward the North with new stores and some provision for parking on presently vacant or lower-priced sites. In this case, the known disadvantages

of string development would be perpetuated, and, at the same time, the present Center will continue to decline because of competition. Or rebuilding of the existing Center on principles that can satisfy the contemporary requirements and anticipate those of the future.

c. Proposed Plan

The main elements on which the proposed plan is based and the reasoning behind them are outlined below:

i. Type of Development

The estimated needs of shopping facilities can then be met effectively only if new physical provisions are designed according to contemporary standards. For this purpose they should be concentrated and functionally inter-related, uninterrupted but easily accessible by motor traffic. This implies that the new shopping center should be built on a clear site, free from obstacles imposed by existing structures and pattern of land use.

ii. Location

The new buildings will be located on the East side of Main Street, forming an integral whole with other important elements of the present Town Center, among which is the Town Hall. The area presently occupied by Blocks A to F and, if necessary, parts of G and H, properly rebuilt, will comprise the Core of the Town. Advantage can thus be taken of existing public property and open spaces in this

area. Elimination of secondary streets (Church, Winter, Central, Common, Emerson, Block and Fuller Streets) adds approximately 100,000 sq.ft. to the available space.

The new shopping center is being located on the southern part of the area, surrounded by Main, Pine and Franklin Streets. The last will be relocated for the addition of more space and a better connection with Main Street. Other buildings, like a theater, a community center and an office building, as well as open spaces as suggested by criteria of circulation, function and aesthetique, will be included in this area.

iii. Circulation

The suggested location of the Town Center takes advantage of the present artery as well as of the future approach to the Town when the by-pass of Stoneham and Reading is built, as contemplated in the Highway Master Plan of the metropolitan area and indicated in the Master Plan of the Town. This approach will be from Franklin Street.

The shopping center will be directly and easily accessible from both arteries. Main Street is expected to remain a circulation artery, serving the Town as well as adjacent areas even after the mentioned by-pass is built.

The additional traffic created by the new shopping center is therefore concentrated on Pine Street through the location of the parking facilities on this side. In addition to even distribution of circulation, this offers also the advantage of possible use of reserved open spaces for parking on this side and across Pine Street, if this is necessary in the future.

iv. Relation to the Immediate Environment

The basic change in the form of the Town Center is conceived to maintain not structural details of the present condition (of which none represents any significance), but essentially the spirit and the scale of the Town, as it now is and as it is expected to be in the future. These essentials should guide the detail of the site plan and design of the new buildings. Mention should be made here of the relationship of these new elements to their immediate environment.

A group of churches to the North forms an intimate area which will be further improved and enhanced through the elimination of unnecessary streets and their replacement by a park, properly landscaped. The Town Hall serves here as a link between this area and the busy commercial section of the southern side. A new office building, together with the Town Hall on the one side and the existing

Post Office, banks, etc., on the other form a group of interrelated functions, adjacent to the new shopping center. The office building, facing on both sides, separates the above-mentioned space from the space of the shopping center, which is different in character.

East of the actual Core, i.e., on the east side of Pine Street, is at present the Town Yard, the railroad tracks and terminal (which have long ceased to serve any important purpose and are expected to be removed in the future*), a public play field and the old cemetery.

These open spaces will be unified in the future and will serve for outdoor recreation, including a sport field. Space is provided there for a future Senior High School which can take advantage of the facilities provided in the Town Center. The development of this area, by maintaining the existing houses, should include a connection with the old cemetery, a significant and presently hidden feature in the central area of the Town.

Franklin Street in its new location forms the southern border of the shopping center. Across this street this area will be used for "general business" as suggested in the Master Plan. This area can be more effectively utilized through the elimination of Spencer Street, and will be

*See Master Plan.

used for other commercial or light industrial purposes, like small workshops, garages, etc., for which no provision is made in the actual Town Center. ¶ Special attention must be paid to the future of the side west of Main Street. It should be expected that after the new shopping center has been built, the present retail activity will further decline, considering that sufficient space will be provided in the new development and that the few important establishments on this side, if not most of them, will be interested (and should be encouraged) to locate in the new Center. Rebuilding or other improvements for retail trade on this side should not be encouraged. Not only would such measures perpetuate disadvantages of circulation, of which mention has already been made, but the competition which will tend to be created would be to the mutual disadvantage of both sides.

Instead, and considering the structural condition of the buildings on this side, it is suggested that this area also be included in the program of redevelopment and then be turned to its best use. Such a use would be garden apartment buildings, for which there is a great demand in the Town.

v. Program of Development

The above-outlined Plan can be logically divided into two stages: (Fig. 6 and 7):

The first stage should include the redevelopment of the Core of the Town as defined by Main, Franklin and Pine Streets and the group of churches to the north. The redevelopment of this area should be carried out as one single operation. A step-by-step procedure would fail to create the power of attraction needed for a new shopping center. This can be achieved only by the combination of a multitude of facilities. It would also have as a result the rapid increase of land values in the adjacent sites, rendering thus the continuation of the program difficult if not impossible.

The second stage would consist of a series of steps in the immediate environment of the Core, such as the redevelopment of the west side of Main Street and the improvements on the Playfield area, including the High School. This program can be developed over a longer period of time, if necessary, because the areas involved are either public property already or they can be controlled through proper zoning.

vi. Relocation of Functions

According to this Plan some of the present functions, or uses, in the central area (see Table 1) will have to be relocated. There may be some retail trade which will

either not be incorporated in the new Shopping Center or which can be supported over and above the capacity of the Center. This trade will be located in suitable zones already provided for in the Town's Zoning Ordinance. The same applies to the "general business" as mentioned in the foregoing section. It should be emphasized here that not only is there space for relocation but that this space is from all points of view more suitable for the above functions than the space presently occupied. For the relocation of existing residences (about 65 dwelling units) there is sufficient suitable space in the Town.

4. How

This Plan is not to the scale and character that would serve single, individual needs. It is intended to serve the Town as a whole. That this will require the initiative and power of the Town for its effectuation is, therefore, obvious, as it is obvious that it will need capital for its realization. The role of each of these two factors will be described separately. Before this is done, an estimate of the expected costs is necessary.

a. Cost Estimate*

The costs for the first stage of the Plan fall into the following major items:

Acquisition of Site (includes clearance and administration)	\$1,132,741
New Buildings	2,150,000
Improvements on the Site (including landscaping)	<u>80,000</u>
Total	\$3,362,741

b. A Combined Enterprise

The Town will exercise the power of eminent domain in order to acquire the land and assemble it under one ownership. The present type and condition of the buildings on the area as well as the purpose of the Plan justify this

action. The Town will keep ownership of the whole site

*For details see Appendix C.

and, after clearance, will lease it to a Development Corporation which will construct and own the shopping center. It is essential that the ownership of the land remain with the Town. Thus any speculation on land values is prevented and the Town is able to control its use and any adjustments that would ever become necessary in the future. The details of the lease should be designed so as to secure the proper use and development of the site, according to the spirit of the Plan. The Town in turn will exercise its power (including zoning) to support the same plan. Cooperation in this case between the Town and the investors will serve their mutual interests.

c. A Balance Sheet for the Town

The Town needs a capital of approximately \$1,140,000 for the acquisition and clearance of the site. It can borrow this capital under the terms of 2% interest rate and 50 years' amortization. The carrying charges for both will then be 3.17% of the loan. The Town will further lose the taxes from the existing properties. On the other hand, it will charge as a ground rent 4% of the acquisition costs, and will receive the taxes from the new buildings. This makes the following balance sheet:

Interest and Amortization:

$$\$1,140,000 \times 3.17\% = \$36,138$$

Taxes lost:*

$$\$779,523 \times 5.6\% = \underline{43,653}$$

\$79,791

Ground Rent:

$$\$1,140,000 \times 4\% = 45,600$$

Taxes from new buildings:**

$$\$1,612,500 \times 5.6\% = \underline{90,300}$$

135,900

Net Revenue

\$56,109

There is, therefore, sufficient margin for the Town to finance its part profitably. Revenues can be used for the second stage of the Plan.

d. A Balance Sheet for the Investor

The investment capital is \$2,230,000 or (including contingents) \$2,250,000. Considering the type of investment and the decrease of risks through the Town's participation, this can be financed under the following terms: 30% equity and 70% mortgage. The mortgage will be amortized in 30 years at an interest rate of 4% on the unpaid balance. The equity, on the other hand, will be presumed

*The tax rate in the Town is 56 per thousand as of 1952.

**It has been assumed that the assessment will be 75% of the construction costs.

to be amortized in 15 years. This makes the carrying charges for interest and amortization on the mortgage equal to 5.8% and those of the equity equal to 6.67%. In addition will come the ground rent and the taxes to the Town.

The revenue, on the other hand, will consist of rents received from the new buildings (mostly stores). These rents, if related to the volume of gross sales, represent usually 6-7% of them. (This depends on the type of store and, eventually, the particular tenant. The above percentage is an estimated average based on the experience of other shopping centers.)

The balance sheet for the investor is then the following:

Interest and amortization on mortgage:

$$\$1,575,000 \times 5.8\% = \$91,350$$

Amortization of equity:

$$\$675,000 \times 6.67\% = 45,023$$

Ground rent: 45,600

Taxes to the Town: 90,300

Insurance and Maintenance:* 15,000

\$287,273

Rents from the shopping center:

$$\$7,400,000 \times 6\% \quad \underline{444,000}$$

Net revenue: \$156,727

*Maintenance concerns only exterior repairs.

Another way of judging the economic scene from the investor's point of view would be by using the general rule of thumb, according to which the net revenue from the investment (i.e., gross revenue from rents less the charges for ground rent, taxes, insurance and maintenance) should provide a coverage of 50% above the financing charges.

The required coverage then would be:

Interest and amortization on mortgage:	\$91,350	
Amortization of equity:	<u>45,023</u>	
	\$136,373	
Increased by 50%:	<u>68,187</u>	
Required coverage:		\$204,560

The actual coverage is:

Gross revenues:	\$444,000	
Ground rent, taxes, ins. and maint.:	<u>150,900</u>	
Actual coverage:		\$293,100

d. Possible Variations

The above balance sheets have been based on the estimate of a number of factors, Variation of any of them would have a direct effect on the foregoing calculations.

As far as the Town is concerned, a possible variation could be in the estimated costs of land acquisition. Although the estimated compensation of existing properties

is at least fair, if one considers the long-range trends in the Town Center if conditions are left as they are, the Town is in a position to carry higher charges within the margin of the balance sheet. On the other hand, variation of the ground rent could either increase the revenues of the Town or decrease the carrying charges of the investor, if necessary.*

Concerning the Development Corporation (the Investor), the most important factor is probably the estimated gross revenue from rents and consequently the estimated volume of sales. Taking the required coverage as a basis, the gross revenue should be equal to \$204,560 plus \$150,900, i.e., \$355,460. By maintaining the relationship of 6% between gross revenue and total sales, it would require a volume of \$5,924,300 instead of \$7,396,000 that was estimated. This again, being proportional to the buying power of the population, would correspond to a per capita gross income of \$1,440 or an average family income of \$5,125. A rate of rents higher than 6%, as could be expected, would further decrease the above figures.

*If the Town would acquire the west side of Main Street, with \$330,000 representing cost of acquisition and clearance, and under the same terms of financing, the carrying charges (including lost taxes) would be approximately \$22,000. The Town could afford to turn this land to a use (like garden apartments) which would not necessarily be the most income-producing.

It should be noted that in the estimate of gross revenues, the office building, as well as the theater and community center have not been included. Rents from the office building will be in addition to the estimated revenues. As far as the theater and community center are concerned, although they could produce income to the developer (particularly the former, being the only theater in the Town), it is suggested that they be operated by the Town, leased on a non-profit basis. The Town should be able to control these facilities that can best be used for educational and cultural purposes with the least possible influence of monetary considerations.

III. CONCLUSIONS

The example of Stoneham throws an optimistic light on the possibility of renewing the Town's center. Taking into consideration all physical requirements for the best performance of central functions and the means to provide for these requirements, sufficient margins have been found for an economically sound operation. Moreover, the Town obtains non-monetary benefits of a scale and magnitude which under the conventional practices could not have been conceived.

It remains to examine how far these results are due to exceptional local conditions and under what circumstances similar results can be expected.

1. When and Why it Pays to Rebuild

From the economic point of view and as far as the Town (or rather the Town Budget) is concerned, the replacement of existing structures should always be profitable, provided that the capital costs of the new buildings and consequently their assessed value is higher than that of the old, as is frequently the case. Even if the Town has to acquire the land and sell it or lease it for the new development, as is more apt to be the case in the central area, the economic scene will be favorable for the Town, since carrying charges

under the conditions and terms a Town can borrow, are relatively low and it is in the very central area where the discrepancy between existing and the new property values in the aggregate is the highest. This is roughly illustrated in Chart 4 . It is of course needless to mention that the difference between carrying charges and net revenues could also become negative (i.e., in the case where the existing land values would require excessive carrying charges for the acquisition of the land). How far this is the case would have to be checked in every particular example. It should be borne in mind, however, that the advantage of the Town in such an operation lies not only in the ability to borrow under more favorable terms than the private investor, but also on the ability to bring a larger area under one ownership and management. This not only allows a higher efficiency of performance of the anticipated functions but also decreases the over-all cost of the land through the inclusion of properties in less favorable location under the previous pattern of land use and structurally often in the poorest condition. (In a larger city, the existing slums and overzoned commercial areas come under this category.)* In our example the over-all land costs have been considerably reduced by including a great percentage of residential properties of much lower value than the buildings on the "hot spots."

*For a treatment of this problem see Martin Wagner, "Wirtschaftlicher Staedtebau," Julius Hoffman Verlag, Stuttgart, 1951, p. 96 ff.

As far as the investment of private capital is concerned, we deal again with the same criterion, the relationship between carrying charges and expected revenues. That the carrying charges are much lower than under any other conditions without the Town's participation, is clear. Because not only advantage is taken of the Town's borrowing power with the result of a minimum ground rent, but the total investment and the risk is substantially decreased through the elimination of investment for the land. Additional decrease of risk is effected by the identification of the Town's interest in the same project and by measures that the Town can take, such as zoning, to secure the proper relationship of uses between the Town core and the adjacent areas to the mutual advantage of both.

In Chart 4 an attempt is made to illustrate graphically the relationship between net revenues and carrying charges for the private capital. (The illustration, obviously oversimplified, is hoped to maintain the essential elements.) With the type of development in mind whereby the objective is not a short-sighted "business," but an enterprise fit to stand criteria of long-range efficiency as well as of social values, the project and, consequently, the investment must be of enough size or scale to be able to provide and take advantage of attractions (e.g., parking, freely designed buildings, proper relationship among the different types and

the strong power resulting from the combination of complementary functions) foreign and beyond the reach of the conventional, small enterprise. Thus, the curve of the net revenues is shown with a lower value below a certain amount of investment. After this point the values of the curve grow beyond those of the carrying charges and tend to reach an asymptote, which would be related to the maximum economic activity (or, say, maximum amount of sales) that can be expected in the Town Center. From there on any additional investment would not be able to find economic support. For the purpose of comparison, the same relationships are shown in dotted lines as they would illustrate the present practice, or possible further growth under the present practice. Not only the carrying charges would be proportionately higher but also the expected maximum economic activity would be lower, as is now the case. As was shown in the market analysis, the total amount of sales could be expected to increase almost seventy percent beyond the present level.* Here again the carrying charges could, eventually, be too high to allow the expected net revenues. This would happen if the carrying charges of the Town and consequently the necessary ground rent were excessive.

As already mentioned, a great variation is possible among the different factors. The Town, for example, could

*An increase of thirty-three percent would be sufficient to support the suggested program of renewal. See p.41

give up any revenues or even assume a fair loss for the sake of nonmonetary benefits. Or it could make use of possible subsidies. Within the range of possible combinations, final calculations and decisions can be made only with reference to the specific case and circumstances. What is important is that these possibilities exist.

2. Some Further Considerations

Since the renewal in the core of a single town has been based primarily on the increase of economic (or commercial) activity in this particular area, it should be interesting to examine the implications for the whole metropolitan area and the metropolis itself if the same example were to be followed by all other towns.

Assuming that there would be no further increase of population or of economic activity in the area as a whole (which is always possible), the increase of activity in one part would necessarily imply a respective decrease in another. In the case of Stoneham it has been estimated that the potential retail trade, in the groups considered, would be about 60% of the total trade made by the population. Taking this 60% as a measure, although it should vary in every particular case, still 40% of the total purchases remain to be disposed of in other areas. A study of the metropolitan area as a whole would probably show that the aggregate of 40% from all towns would still lie at a lower level than the percentage from the same areas that goes into the metropolis. In the long run it would therefore be the metropolis that would suffer from the improvement in the individual towns. The size of the impact is difficult to calculate. How far this would be a "suffering" is also a

matter of interpretation. The release of pressure, or decentralization of the center, has for so long a time been foreseen and hoped for that specific merits do not need to be discussed here. Eventually, an adjustment of the type and magnitude of functions that belong in the metropolis and a resulting adjustment of land values will make feasible the gradual renewal of the metropolis itself.

In any case, the development in this direction is already in the process. The town of Medford, for example, has had a new shopping center built in the central area after 1948, and the volume of sales now should be considerably higher than that shown in the 1948 census. The appearance of "outlying shopping centers" is certainly more significant in this respect.

It should also be emphasized that adjustments like the one suggested in the case of Stoneham do not represent a form of succession in the realm of habitual practice, whereby every change lies within the scale and sphere of interests of the individual. Here lies the significance of the problem for a town; this is, in fact, what makes it a problem. An urban core is by definition an area of collective concern. Its structure and form (the economic, the social and the visual are different aspects of one reality) have always been the result of the same forces that shape the life of

the human group. Patterns of towns, like patterns of life, create a framework within which the individual unfolds its own role. When a new way of living renders the physical framework obsolete, then it takes more than an individual effort to cope with the new reality and give to it form, as always happens in the creative moments of a town's history.

APPENDIX AEstimate of Income 1940, 1950 (Table No. 5)

1. The breakdown of monthly rents, 1940, was taken from the U. S. Census, 1940*, given as "Contract or Estimated Monthly Rents." It was estimated that rents above \$100 not given in the Census, would correspond to the assessed values of dwellings above \$10,000. The corresponding 1940 income of these families (relatively few in number) was estimated on information collected locally.
2. A study made by the U. S. Department of Labor** was used for the relationship between rents and income groups. Since the study was made in 1941, the average 1940 rents of Stoneham were adjusted to 1941 by assuming the same rate of change as in the national average for large cities.*** (This was an increase of 1.5%.)
3. Since the rents in the Department of Labor study refer to the national average it was thought necessary to adjust them to the area of our study, considering regional

*Housing, Second Series, General Characteristics, Mass., p. 66.

**U. S. Dept. of Labor, "Family Spending and Saving in Wartime," Bulletin No. 822.

***"Statistical Abstract of the United States, 1951," p.282, Table No. 329.

differences in the proportion of income spent for rent. These regional differences were taken from "Family Expenditures in the United States, 1941," published by the National Resources Planning Board, as shown in Table 3 . The difference between New England and the national average for income groups not given in the Table have been interpolated assuming a linear relationship between the known values (see Chart 2).

4. The New England rents of 1941, with the corresponding average income have been then compared with the 1941 rents of Stoneham. Thus the average income corresponding to every average rent has been derived (see Table 4).
5. The average 1941 income for the various rent categories was reduced at the rate of 15% to the 1940 level. This was the rate of change of income between 1940 and 1941 in the State of Massachusetts.* The number of families in each rent category is given in the 1940 Census of Housing together with the rents (number of families is taken here as identical to number of Dwelling Units). Sixteen nonreporting families were added to the category closest to the average rent, thus making a total of 875 families in that category (see Table 5).

*See Robert E. Graham, "State Income Payments in 1950," Survey of Current Business, August 1951, pp. 11-21.

6. The average income of 1950 was derived from the 1940 figures, whereby it was assumed that the per capita incomes in the Town increased from 1940 to 1950 at the same rate as the per capita income payments in the State of Massachusetts over the same period of time. This increase was 109%.* Considering the 5% decrease of the family size in the Town, the increase of income was taken as 100%, or twice the income of 1940.

7. The increase in the number of families between 1940 and 1950 has been distributed proportionately over all rent categories.

*During the same period the increase in the continental United States was 150% and in New England 115%. See *ibid.*

APPENDIX BEstimate of Total Purchases, 1950

In Table 10 (page 67) the total purchases in Stoneham have been calculated according to the expenditure pattern suggested by different sources. The percentages refer to the total expenditures for current consumption, i.e., \$1,458. Finally, the calculations have been made according to the expenditure pattern that has been estimated to apply for Stoneham. In connection with the sources used, the following explanations are necessary:

1. Average expenditure pattern in Massachusetts. This, as already mentioned, has been derived from the total sales in the state. In the Retail Census the sales are given for 1948. The increase (or decrease) between 1948 and 1950 has been assumed the same as in the United States total. Table 9 shows the 1950 sales for Massachusetts as well as for Stoneham. The total purchases per capita, 1950, for Stoneham have been derived from the per capita sales, 1950, in Massachusetts, increased in the proportion by which the per capita income in Stoneham is higher than that of Massachusetts. These values, and the percentages as derived from them, have been introduced in Table 10.

2. Expenditure pattern in Manchester, N. H., 1947. Reference has already been made to this source. In this case the percentage expenditures for the various items are given and from them the dollar values with reference to Stoneham have been worked out. For the purpose of comparison with the categories of expenditures as given in the Retail Census, the category of "food" had to be divided into "food group" and "eating and drinking places." This has been done by accepting the same relationship between the two as appears in the sales for Massachusetts, 1950, i.e.:

	<u>Food Group</u>	<u>Eating + Drinking Places</u>	<u>Total Food</u>
Sales in \$ thousands	1,224,058	353,778	1,577,836
Percent of total	77.6%	22.4%	100.0%

3. Relative Importance of Items.* Although the figures of relative importance do not represent an actual expenditure pattern, they can be used as a close approximation to it, suitable for the purpose of this study. Here again the dollar values have been worked out from the percentage distribution of the major categories, with reference to the proportion of the per capita income in Stoneham that represents expenditures for current consumption.

*See Monthly Labor Review, June 1951, and B.L.S. Bulletin No. 1039.

In all three cases, the expenditures for "furniture" have not been included, because the Town's sales in this item are far beyond the normal level, due to regional trade. The estimate has been made for "radio and appliances," whereby the proportion of these two items to "furniture" as well as the whole group has been taken according to their "relative importance." The figure for 1950 sales in Stoneham in the same two items has been based on information obtained locally.

APPENDIX CEstimate of Costs*1. Acquisition of Site

Estimate of this cost presupposes a decision as to the "fair compensation" of properties acquired through the exercise of the power of eminent domain. This decision was here based on the relationship between assessed values and recent transactions in the Town Center as shown in the Table below:

TABLE NO.13. RECENT TRANSACTIONS IN THE TOWN CENTER

<u>Location</u>	<u>Date of Transaction</u>	<u>Price Sold</u>	<u>Assessment</u>	<u>Percent Difference</u>
2 + 4 Church Street 2 Winter Street	Feb. 15, '52	\$15,000	\$13,650	10%
352 Main Street	June 14, '50	16,000	9,800	60%
366-68 Main Street	Sept. 21, '46	11,000	7,550	<u>50%</u>
				Average 40%

The estimate has been based on a 50% increase of the assessed values, with the exception of the tax-exempt buildings, for which the assessed value was taken. The total

*Utility lines exist on all streets surrounding the site. Improvements on these streets have not been included. They are usually taken care of by the Town's budget for Public Works. The same applies to the piece of Franklin Street between Pine and Main Streets.

estimate is \$1,082,741. It is given by blocks in Table 14 .
The assessments on the individual buildings are given in
Table 15 .

2. Clearing the site and administration: approx. \$50,000
(an average of \$500 for each structure)

3. New Buildings*

Stores: 100,000 sq.ft. x \$16.50 = \$1,650,000

Office Building: 20,000 sq.ft. x \$15.00 = 300,000

Theatre and Community Center:

10,000 sq.ft. x \$20.00 = 200,000

4. Parking Area*: 200,000 sq.ft. x \$0.15 = 30,000

5. Landscaping* and site improvements:

100,000 sq.ft. x \$0.50 = 50,000

TOTAL \$3,362,741

*Construction prices, as of 1952.

TABLE NO. 1 . PRESENT USES IN THE TOWN CENTER BY TYPES

Type of Use	Total Area sq.ft.	% of Total	Built up Area sq.ft.	% of Total	Gross Floor Area sq.ft.	% of Total
<u>BLOCKS A to H:</u>						
Residential	214,961	47.6	35,610	24.6	82,071	31.2
Retail	79,309	17.6	44,908	30.9	41,128	15.6
Other Commercial	5,770	1.3	4,800	3.3	28,801	10.9
Industrial	57,727	12.8	23,576	16.2	62,224	23.6
Auto	39,041	8.7	22,940	15.8	22,940	8.7
Public + Semi-Public	<u>54,392</u>	<u>12.0</u>	<u>13,350</u>	<u>9.2</u>	<u>26,300</u>	<u>10.0</u>
Total	451,200	100.0	145,184	100.0	263,464	100.0
<u>BLOCK I:</u>						
Residential	--	--	--	--	4,106	9.6
Retail	38,861	61.3	17,697	71.6	29,373	68.4
Other Commercial	13,490	21.3	7,000	28.4	9,488	22.0
Industrial	--	--	--	--	--	--
Auto	11,000	17.4	--	--	--	--
Public + Semi-Public	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>--</u>
Total	63,351	100.0	24,697	100.0	42,967	100.0
<u>BLOCKS A to I:</u>						
Residential	214,961	41.8	35,610	21.0	86,177	28.1
Retail	118,170	23.0	62,605	36.9	70,501	23.0
Other Commercial	19,260	3.7	11,800	6.9	38,289	12.5
Industrial	57,727	11.2	23,576	13.9	62,224	20.3
Auto	50,041	9.7	22,940	13.5	22,940	7.5
Public + Semi-Public	<u>54,392</u>	<u>10.6</u>	<u>13,350</u>	<u>7.8</u>	<u>26,300</u>	<u>8.6</u>
Total	514,551	100.0	169,881	100.0	306,431	100.0

TABLE NO.2 . PRESENT USES IN THE TOWN CENTER BY BLOCKS

Location	Residential			Retail			Other Commercial*		Manufacturing			Auto.			Public and Semi-public		
	Total Area sq.ft.	Built up Area sq.ft.	Gross Floor Area sq.ft.	Total Area sq.ft.	Built up Area sq.ft.	Gross Floor Area sq.ft.	Total Area sq.ft.	Built up Area sq.ft.	Total Area sq.ft.	Built up Area sq.ft.	Gross Floor Area sq.ft.	Total Area sq.ft.	Built up Area sq.ft.	Gross Floor Area sq.ft.	Total Area sq.ft.	Built up Area sq.ft.	Gross Floor Area sq.ft.
BLOCK A	21,112	3,900	9,992	11,274	4,950	4,100			2,800	2,192	2,192						
BLOCK B	12,220	2,250	15,499	23,997	17,553	13,523			3,085	700	3,554				3,148	650	2,300
BLOCK C	6,820	1,560	3,102	14,958	9,080	10,480	5,770	4,800			800	13,574	5,500	5,500			
BLOCK D	7,342	1,300	2,654									9,000	5,440	5,440	17,944	7,500	15,000
BLOCK E	92,384	11,960	19,362						7,200	4,584	4,584				28,800	3,700	6,000
BLOCK F	46,589	8,720	16,213		100	100									4,500	1,500	3,000
BLOCK G				21,371	11,725	12,225			44,642	26,100	51,094						
BLOCK H	28,494	5,920	15,229	6,894	1,600	800						16,467	12,000	12,000			
TOTAL	214,961	35,610	82,071	79,294	44,908	41,128	5,770	4,800	57,727	23,576	62,224	39,041	22,940	22,940	34,392	13,350	26,300
BLOCK I			4,106	38,861	17,697	29,373	13,490	7,000									
TOTAL	214,961	35,610	86,177	118,155	62,605	70,501	19,260	11,800	57,727	23,576	62,224	39,041	22,940	22,940	54,392	13,350	26,300

*Offices, studios, etc.

TABLE NO. 3 . AVERAGE HOUSING EXPENDITURES OF URBAN FAMILIES
IN 5 GEOGRAPHIC REGIONS, AT SELECTED INCOME LEVELS, 1935-36.

Income Level and Region	Expendi-	Percent	Proportion	Difference Between	
	ture*	of	of Avg.	New England and	Average
	\$	Families*	Rent	\$	%
\$500-1,000					
New England	209	6.6	14		
North Central	207	49.7	103		
South	127	30.0	38		
Mountains + Plains	196	6.4	13		
Pacific	182	7.3	13		
Average Rent		100.0	181	28	+15%
\$1,500-2,000					
New England	319	6.6	21		
North Central	344	49.7	172		
South	278	30.0	83		
Mountains + Plains	306	6.4	20		
Pacific	275	7.3	20		
Average Rent		100.0	316	3	+ 1%
\$3,000-4,000					
New England	569	6.6	38		
North Central	553	49.7	275		
South	513	30.0	154		
Mountains + Plains	523	6.4	33		
Pacific	472	7.3	34		
Average Rent		100.0	534	35	+ 7%
\$5,000-10,000					
New England	1,126	6.6	74		
North Central	1,007	49.7	500		
South	819	30.0	246		
Mountains + Plains	879	6.4	56		
Pacific	766	7.3	56		
Average Rent		100.0	932	194	+21%

*Source: N. R. P. B., "Family Expenditures in the United States," Table No. 47, p.15.

TABLE NO. 4 . RENTS, 1941,
AND CORRESPONDING AVERAGE INCOME.

Item	Under \$500	Annual Money income of:						
		\$ 500 to 1,000	\$1,000 to 1,500	\$1,500 to 2,000	\$2,000 to 2,500	\$2,500 to 3,000	\$3,000 to 5,000	\$5,000 to 10,000
Av. Income, U. S., 1941	\$300	750	1,250	1,750	2,250	2,750	4,000	7,500
Rent,* U. S., 1941	109	177	253	294	346	405	472	643
U. S. Rent Adjusted to New England**	+20% 22 \$131	+15% 27 204	+8% 20 273	+1% 3 297	+3% 10 356	+4% 16 421	+9% 43 515	+21% 135 778
Rents in Stoneham, 1941	\$ 85 146		238	329		421	543	665 816 1,062
Corres- ponding Av. Income in Stone- ham, 1941	195 334		1,090	1,940		2,750	4,220	6,410 7,860 10,250

*Source: U. S. Dept. of Labor, Bureau of Labor Statistics,
"Family Spending and Saving in Wartime,"
Bulletin No. 822

** See Chart 2

TABLE NO. 5 . ESTIMATION OF FAMILY INCOME, 1940, 1950.*

Monthly Rent 1940	Annual Rent 1940	Av. Anl. Rent 1940	Av. Anl. Rent 1941	Av. Anl. Income 1941	Av. Anl. Income 1940	No. in Group	Total Income 1940	Av. Anl. Income 1950	No. in Group	Total Income 1950
Under \$9	Under \$84	\$ 84	\$ 85	\$ 195	\$ 170	21	\$ 3,570	\$ 340	27	\$ 9,180
10-14	\$120-168	144	146	334	290	55	16,000	580	71	41,200
15-24	180-288	234	238	1,090	950	402	382,000	1,900	515	978,000
25-20	300-348	324	329	1,940	1,690	350	591,000	3,380	447	1,510,000
30-39	360-468	414	421	2,750	2,390	875	2,090,000	4,780	1,118	5,330,000
40-49	480-588	534	543	4,220	3,670	578	2,120,000	7,340	739	5,410,000
50-59	600-708	654	665	6,410	5,570	293	1,630,000	11,140	374	4,160,000
60-74	720-999	804	816	7,860	6,840	208	1,420,000	13,680	265	3,620,000
75-99	900-1,188	1,044	1,062	10,250	8,920	79	705,000	17,840	101	1,800,000
Assets Value '40:										
10-15,000					10,000	38	380,000	20,000	48	960,000
15-20,000					12,000	6	72,000	24,000	6	144,000
20-30,000					15,000	8	120,000	30,000	8	240,000
Total						2,913	\$9,527,570		3,719	\$24,202,380

* For explanation of the table see p 51

TABLE NO. 6 . COMPARISON OF AVERAGE RENTS WITH MOTOR VEHICLE VALUATIONS
IN THE STONEHAM AREA

Location	Av. Rent	Total Valuation of Motor Vehicles	Population	Per Capita Valuation	Total Valuation of Motor Vehicles	Population	Per Capita Valuation	Comparison With Respect To:		
	1940	1940	1940	1940	1950	1950	1950	Av. Rent	Per Cap. Val. 1940	Per Cap. Val. 1950
Stoneham	\$37.66	\$ 824,800	10,765	\$ 77	\$ 2,446,770	13,229	\$185	1.00	1.00	1.00
Medford	39.00	4,847,240	68,083	77	10,852,853	66,113	164	1.02	1.00	.89
Winchester	61.40	1,891,770	15,081	125	4,459,900	15,509	288	1.63	1.62	1.56
Woburn	29.31	1,226,270	19,751	62	3,150,240	20,492	154	.78	.81	.83
Reading	41.26	975,355	10,861	90	2,774,000	14,006	198	1.09	1.17	1.07
Wakefield	35.22	1,211,070	16,223	75	3,750,740	19,633	191	.93	.97	1.03
Melrose	44.53	2,756,190	25,333	109	5,668,530	26,988	210	1.18	1.42	1.14
Malden	33.12	3,329,220	58,010	57	8,614,110	59,804	144	.88	.76	.78
Boston	32.74	37,688,200	770,816	49	87,665,730	801,444	109	.87	.64	.59
Massachusetts	33.28	297,882,362	4,316,721	69	752,779,680	4,690,514	161	.88	.90	.87

TABLE NO. 8 . RETAIL SALES IN THE STONEHAM AREA, 1948
(in thousands of dollars)

LOCATION Population, 1948 Number of Families	Local Sales	All Retail Stores	General Merchandise Group	Apparel Group	Furniture Household Radio Group	Total G.A.F. Groups	Food Group	Eating and Drinking Places	Total Food and Eating and Drinking Places	Drug Stores	All Other Stores	Total of Foregoing Groups
STONEHAM 12,735 3,558	Sales Number of Stores Sales per Store Sales per Family Sales per Capita	8,098 106 76.3 2.275 .635	232 5 46.4 .065 .018	153 8 19.1 .043 .012	1,945 6 324 .546 .153	2,330 19 122.5 .655 .183	2,215 29 76.4 .623 .174	321 9 35.7 .090 .025	2,536 38 66.7 .694 .199	241 5 48.2 .068 .019	1,158 15 77.2 .325 .091	6,265 77 81.4 1.760 .482
MEDFORD 65,503 17,485	Sales Number of Stores Sales per Store Sales per Family Sales per Capita	37,404 397 94.2 2.170 .570	677 9 75.3 .039 .010	664 19 35 .037 .010	833 14 59.5 .048 .013	2,174 42 51.8 .125 .033	11,685 160 73 .668 .178	1,551 32 48.6 .089 .024	13,236 192 68.9 .756 .202	1,451 29 50 .083 .022	12,392 59 210 .708 .181	29,253 322 90.800 1.673 .446
WINCHESTER 15,423 4,037	Sales Number of Stores Sales per Store Sales per Family Sales per Capita	9,162 110 83.4 2.270 .594	142 5 28.4 .035 .009	1,453 14 104 .360 .094	435 9 48.4 .108 .028	2,038 28 72.7 .505 .132	3,334 30 111 .827 .234	326 11 29.6 .081 .021	3,660 41 892 .905 .237	205 3 68.3 .051 .013	870 14 62.2 .218 .056	6,773 86 78.8 1.680 .439
WOBURN 20,344 5,168	Sales Number of Stores Sales per Store Sales per Family Sales per Capita	16,589 235 70.5 3.200 .815	956 9 106.5 .185 .047	951 25 38.1 .047 .047	348 9 38.7 .017 .017	2,255 43 52.5 .437 .111	4,410 75 58.8 .853 .217	922 26 35.5 .179 .045	5,332 101 52.8 1.030 .262	559 9 62.1 .108 .028	4,600 36 127.7 .890 .226	12,746 189 67.3 2,460 .626
READING 13,376 3,821	Sales Number of Stores Sales per Store Sales per Family Sales per Capita	8,417 111 75.8 2.200 .630	366 6 61 .096 .027	342 10 34.2 .089 .026	126 3 42 .033 .009	834 19 44.1 .218 .062	3,410 23 147.3 .892 .255	698 13 53.7 .183 .052	4,108 36 114 1.074 .313	209 4 52.2 .055 .017	908 17 53.4 .238 .068	6,059 76 79.8 1.587 .440
WAKEFIELD 18,953 5,365	Sales Number of Stores Sales per Store Sales per Family Sales per Capita	14,804 191 77.5 2.780 .791	441 6 73.5 .082 .023	842 18 46.8 .154 .044	463 11 42.1 .086 .024	1,756 35 50.2 .327 .092	4,154 54 77 .775 .219	452 18 25.5 .084 .024	4,606 72 63.9 .858 .243	498 8 62.3 .093 .026	2,556 32 79.8 .475 .135	9,416 147 64 1.755 .497
MELROSE 26,657 7,632	Sales Number of Stores Sales per Store Sales per Family Sales per Capita	14,029 177 78.3 1.835 .526	377 6 62.8 .049 .014	509 15 33.9 .067 .019	358 7 51.1 .047 .013	1,244 28 44.5 .163 .047	5,633 58 97 .747 .212	418 16 26.1 .055 .016	6,051 74 81.8 .793 .227	602 12 50.2 .079 .023	2,086 25 83.4 .277 .078	9,983 139 71.8 1.308 .374
MALDEN 59,445 16,895	Sales Number of Stores Sales per Store Sales per Family Sales per Capita	51,272 598 85.8 3.040 .863	4,596 17 270 .272 .077	4,616 53 87 .273 .078	1,967 27 72.8 .117 .033	11,179 97 114 .662 .212	15,907 202 78.8 .942 .268	3,673 62 58.2 .218 .062	19,580 264 74.2 1.160 .329	2,019 36 56 .129 .034	5,564 85 65.5 .330 .094	38,342 482 79.5 2,270 .645
BOSTON 795,316 222,514	Sales Number of Stores Sales per Store Sales per Family Sales per Capita	1,086,720 9,926 109.4 4.880 1.363	280,724 361 777 1.262 .352	124,789 1,033 120.6 .560 .157	55,050 524 105 .248 .069	460,563 1,918 240 2.070 .578	224,918 3,182 70.6 1.010 .282	118,213 1,766 66.9 .530 .148	343,131 4,948 69.3 1.540 .430	29,748 424 70.1 .134 .037	133,176 1,749 76.2 .598 .167	966,618 9,029 107 4.342 1.212
MASSACHUSETTS 4,615,721 1,371,288	Sales Number of Stores Sales per Store Sales per Family Sales per Capita	4,302,147 53,902 79.8 3.140 .931	528,716 1,686 313.5 .386 .115	373,311 4,656 80 .272 .081	211,417 2,846 74.2 .154 .046	1,113,444 8,188 136 .811 .247	1,180,958 15,969 74 .861 .256	385,728 9,234 41.7 .281 .084	1,566,686 25,203 62 1.142 .344	139,742 2,078 67.2 .102 .030	569,642 8,357 68 .415 .123	3,389,514 43,826 77.2 2,470 .734

Compiled from: U.S. Census of Business, 1948, Retail Trade
U.S. Census, 1950, Population, Housing, Preliminary (Adjusted to 1948)

TABLE NO. 9 . SALES IN MASSACHUSETTS AND STONEHAM 1948, 1950; TOTAL PURCHASES 1950

	General Merchandise	Apparel	Furniture, Radios, Appliances	Food Group	Eating + Drinking Places	Drug Stores	All Other Stores
<u>U.S.:</u>							
Increase or decrease of Total sales, 1948-1950*	-1.45%	-5.70%	+13.40%	+3.65%	-8.29%	-1.30%	-1.27%
<u>Massachusetts:</u>							
Total Sales 1948 (in \$ thousands)	528,716	373,311	211,417	1,180,958	385,728	139,742	569,642
Total Sales 1950	521,056	352,041	239,767	1,224,058	353,778	137,925	562,402
Per Capita Sales 1950 (in \$)	111	75	51	261	75	29	120
<u>Stoneham:</u>							
Total Purchases per Capita, 1950 (in \$)	124	84	57	292	84	32	134
Total Sales 1948 (in \$ thousands)	232	153	1,945	2,215	321	241	1,158
Total Sales 1950	229	144	2,205	2,296	294	238	1,143

*Source: Survey of Current Business, February 1951, p. 22.

TABLE NO. 10. EXPENDITURE PATTERN AND TOTAL PURCHASES, 1950*

Source Used	Total Food		Food Group		Eating + Drinking Places		Apparel (Clothing)		Radios, Appliances		Total of Foregoing Groups		General Merchandise		Drug Stores		All Other Stores		Total of Groups in Table	
	%	\$**	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$
Massachusetts Avg. Expenditure Pattern	25.8	376	20	292	5.8	84	5.8	84	2	29	33.6	489	8.5	124	2.2	32	9.2	134	53.5	779
Manchester, N.H., 1947 (All income groups under \$7,500)	34.6	504	26.8	390	7.8	114	16.2	236	4	58	54.8	798	***	---	---	---	---	---	74.7	1,088
Relative Importance of Items	33.3	485	25.8	376	7.5	109	12.8	187	4	58	50.1	730	***	---	---	---	---	---	70.0	1,020
Estimate for Stoneham	30	437	24	350	6	87	12	175	4	58	47.0	670	8	117	2	29	9	131	66.0	947
Total Purchases, 1950, in \$ thousands (13,229 population)	5,780		4,630		1,150		2,320		767		8,867		1,550		384		1,733		12,534	
Sales in Town, 1950	2,590		2,296		294		144		100		2,834		229		238		1,143		4,444	

*See explanation in Appendix B.

**The percentage refers to all expenditures for current consumption; the dollar values are per capita.

***Not given in the source. Assumed the same as above.

TABLE NO. 11. POTENTIAL SALES IN THE TOWN CENTER, 1950,
AND GROSS FLOOR AREA OF STORES REQUIRED

Item	Total Food	Food Group	Eating + Drinking Places	Apparel (Clothing)	Radios, Appliances	General Merchandise	Drug Stores	All Other Stores	Total of Foregoing Groups
Total purchases by Town residents, 1950, in \$	5,780	4,630	1,150	2,320	767	1,550	384	1,733	12,534
Actual sales in the Town, 1950, in \$	2,590	2,296	294	144	100	229	238	1,143	4,444
Sales in Town, 1950, as percentage of total purchases	45.8%	49.5%	25.6%	6.2%	13.0%	14.8%	62.0%	66.0%	35.4%
Sales in the new Town Center, as percentage of total purchases	60%	60%	60%	50%	70%	60%	70%	60%	59%
Sales in the new Town Center (\$ thousands)	3,460	2,770	690	1,160	537	930	269	1,040	7,396
Capacity of new stores (\$ sales/sq.ft.)		170	40	75	70	60	66	50	
Gross floor area of new stores (sq.ft.)		16,300	17,250	15,450	7,670	15,500	4,070	20,800	97,040

TABLE NO. 12 . RETAIL STORES IN THE TOWN CENTER

Category	East of Main Street						West of Main Street				Both Sides									
	Block A No. sq.ft.	Block B No. sq.ft.	Block C No. sq.ft.	Block G No. sq.ft.	Block H No. sq.ft.	Total No. sq.ft.	Block I No. sq.ft.	Block K No. sq.ft.	Total No. sq.ft.	No.	sq.ft.									
General Merch.	1	800	1	1,200			2	2,000	1	4,000	1	4,000	3	6,000						
Apparel			3	1,900	1	2,100	2	2,400			3	5,340	9	11,740						
Radio, Appliances			2	1,900	1	800	3	3,660			1	600	1	600	7	6,960				
Food	1	850	2	1,100	2	2,730			1	800	6	5,480	6	9,900	2	1,200	8	11,100	14	16,580
Eating + Drink- ing Places	1	850	1	550	1	1,300	2	2,065			5	4,765	1	1,300			1	1,300	6	6,065
Drug Stores			1	1,500							1	1,500	3	4,300	1	600	4	4,900	5	6,400
Other Retail	1	800	3	2,923	1	2,100	1	650			6	6,473	3	4,500	1	600	4	5,100	10	11,573
Service Stores			3	1,800	3	1,450	5	3,450			11	6,700			1	800	1	800	12	7,500
Vacant	<u>1</u>	<u>800</u>	<u>1</u>	<u>650</u>							<u>2</u>	<u>1,450</u>	<u>1</u>	<u>500</u>			<u>1</u>	<u>500</u>	<u>3</u>	<u>1,950</u>
Total	5	4,100	17	13,523	9	10,480	13	12,225	1	800	45	41,128	18	29,840	6	3,800	24	33,640	69	74,768

TABLE NO.14. SUMMARY OF ASSESSED VALUES
AND ESTIMATED ACQUISITION COSTS

Location	Assessments on Land \$	Assessments on Bldgs. \$	Total Assessments \$	Estimated Acquisition Cost, \$	Total Area sq.ft.
Block A	18,200	27,375	45,575	68,362	35,186
Block B	67,400	77,150	144,550	216,825	43,265
Block C	59,375	88,450	147,825	221,737	41,122
Block D	16,175	102,253	118,428	123,904	34,286
Block E	22,425	62,850	85,275	110,837	128,384
Block F	6,075	41,500	47,575	66,088	51,089
Block G	44,625	89,300	133,925	200,888	66,013
Block H	<u>15,525</u>	<u>33,875</u>	<u>49,400</u>	<u>74,100</u>	<u>51,855</u>
Total	249,800	522,753	772,553	1,082,741	451,200
Block I	<u>121,225</u>	<u>86,975</u>	<u>208,200</u>	<u>312,300</u>	<u>58,351</u>
TOTAL	371,025	609,728	980,753	1,395,041	509,551

TABLE NO.15 . ASSESSED VALUES

Location	Assessment on Land \$	Assessment on Bldgs. \$	Total Assessment \$	Gross Floor Area sq.ft.	Total Area sq.ft.	Type of Use
BLOCK A:						
Main St. No. 340-350	14,475	11,800	26,275	6,292	14,074	Retail, workshop
Church St. No. 2)		2,725		1,680		
)	1,450		6,600		9,725	Residence
No. 4)		2,425		1,712		
Winter St. No. 4	650	5,000	5,650	2,100	3,220	Residence
No. 6	1,625	5,425	7,050	4,500	8,167	Residence
Total	18,200	27,375	45,575	16,284	35,186	
BLOCK B:						
Main St. No. 352-354	4,800	5,000	9,800	2,808	2,128	Retail, residence
356-358	4,900	7,575	12,475	4,268	2,172	Retail, residence
360-364	7,725	4,100	11,825	3,781	3,421	Retail, residence
366-368	5,025	2,525	7,550	2,552	2,228	Retail, residence
370-378	8,250	7,000	15,250	4,005	3,672	Retail, residence
380-382	5,475	4,425	9,900	2,208	2,193	Retail, residence
388	19,725	25,250	44,975	15,880	4,928	Retail, offices
Central St. No. 2-8	3,050	7,975	11,025	2,923	4,070	Retail
10	1,550	2,075	3,625	1,554	3,085	Manufacturing
12	1,325	1,725	3,050	1,252	2,633	Residence
14	4,800	5,075	9,875	2,925	9,587	Residence
Winter St. No. 3	775	4,425	5,200	2,300	3,148	Semi-public
Total	67,400	77,150	144,550	46,456	43,265	
BLOCK C:						
Central St. No. 1-3	15,200	25,600	40,800	12,250	5,770	Retail, offices, printing
5-13	19,100	15,500	34,600	3,380	8,458	Retail
15-21	18,375	12,400	30,775	12,871	6,500	Retail, offices, storage
Fuller St. No. 4	500	3,025	3,525	2,068	4,190	Residence
6	325	1,800	2,125	1,034	2,630	Residence
Franklin St. No. 16	5,875	30,125	36,000	5,500	13,574	Auto. sales
Total	59,375	88,450	145,825	37,103	41,122	
BLOCK D:						
Emerson St. No. 7	375	2,325	2,700	1,136	3,150	Residence
11	500	3,250	3,750	1,518	4,192	Residence
Block St.	825	3,678	4,503	5,440	9,000	Garage
Central St.	14,475	93,000	107,475	15,000	17,944	Public
Total	16,175	102,253	118,428	23,094	34,286	
BLOCK E:						
Emerson St. No. 19	400	2,400	2,800	1,022	3,249	Residence
21-25	875	1,725	2,600	4,584	7,200	Manufacturing
Pine St. No. 27	700	2,250	2,950	1,035	5,860	Residence
29	425	4,000	4,425	1,722	3,570	Residence
29 1/2	150	1,800	1,950	820	2,900	Residence
31 + 33	575	6,050	6,625	3,449	8,327	Residence
35	625	3,175	3,800	1,458	5,236	Residence
Franklin St. No. 32	7,875	26,275	34,150	6,000	28,800	Public
38	3,350	4,925	8,275	2,996	32,100	Residence
60	5,925	3,800	9,725	2,244	20,364	Residence
Fuller St. No. 5-7	725	2,950	3,675	2,484	5,112	Residence
11	800	3,500	4,300	2,152	5,667	Residence
Total	22,425	62,850	85,275	29,966	128,384	

TABLE NO.15 (continued)

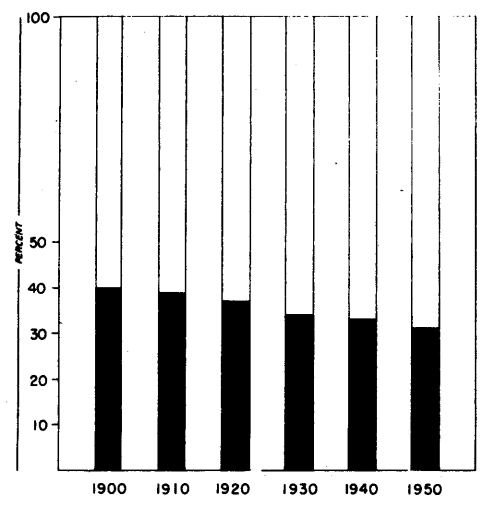
Location	Assessment on Land \$	Assessment on Bldgs. \$	Total Assessment \$	Gross Floor Area sq.ft.	Total Area sq.ft.	Type of Use
BLOCK F:						
Emerson St. No. 14	250	2,200	2,450	825	2,162	Residence
14A	100	1,200	1,300	740	540	Residence
14B	200	1,300	1,500	640	1,763	Residence
16	400	3,300	3,700	2,044	3,945	Residence
18	475	3,100	3,575	2,022	3,945	Residence
20-22	750	2,525	3,275	1,592	6,222	Residence
Pine St. No. 23	1,125	2,550	3,675	1,068	9,343	Residence
17	550	2,500	3,050	1,008	4,558	Residence
15 + 13	1,100	4,825	5,925	2,866	9,265	Residence, retail
11	250	3,675	3,925	1,616	2,086	Residence
Common St. No. 17	550	10,000	10,550	3,000	4,500	Semi-public
21	325	4,325	4,650	1,792	2,760	Residence
Total	6,075	41,500	47,575	19,213	51,089	
BLOCK G:						
Main St. No. 408-20	11,975	24,825	36,800	5,400	5,985	Retail
422	4,800	1,300	6,100	1,560	3,870	Retail
426	16,150	18,800	34,950	44,022	40,594	Manufacturing
Franklin St. No. 3-5	875	9,225	10,100	1,000	1,150	Retail
7-11	2,525	23,000	25,525	3,000	3,366	Retail, printing
13	3,050	1,400	4,450	5,072	4,048	Storage
19-27	5,250	10,750	16,000	3,265	7,000	Retail
Total	44,625	89,300	133,925	63,319	66,013	
BLOCK H:						
Franklin St. No. 41-45	7,700	16,225	23,925	16,000	16,467	Garage, residence
49	1,425	4,075	5,500	2,808	7,407	Residence
55	1,725	3,525	5,250	2,884	9,100	Residence
57	1,000	1,475	2,475	1,392	6,125	Residence
59	925	2,575	3,500	1,242	5,862	Residence
61-63	2,750	6,000	8,750	3,703	6,894	Residence
Total	15,525	33,875	49,400	28,029	51,855	
BLOCK I:						
Main St. No. 367-371	24,425	28,500	52,925	8,540	14,730	Retail
373-377	19,900	23,500	43,400	12,180	8,300	Retail, bank, offices
	44,325	52,000	96,325	20,720	23,030	
379-385	24,475	19,375	43,850	5,164	13,649	Retail
393	22,650	37,500	60,150	10,288	13,490	Retail, cinema, offices
397	8,450	4,700	13,150	3,222	2,646	Retail, Residence
403-407	12,675	6,000	18,675	4,384	4,125	Retail, residence
411-413	16,750	11,625	28,375	11,664	9,633	Retail
415-419	12,675	5,000	17,675	6,212	4,728	Retail
421	6,850	1,750	8,600	1,319	2,200	Retail
423	5,700	1,025	6,725	714	1,880	Retail
425-429	11,000	--	11,000	--	6,000	---
Total	121,225	86,975	208,200	42,967	58,351	

4. FIFTY-YEAR TRENDS

PROPORTION OF BOSTON'S POPULATION TO THE TOTAL

POPULATION OF METROPOLITAN BOSTON

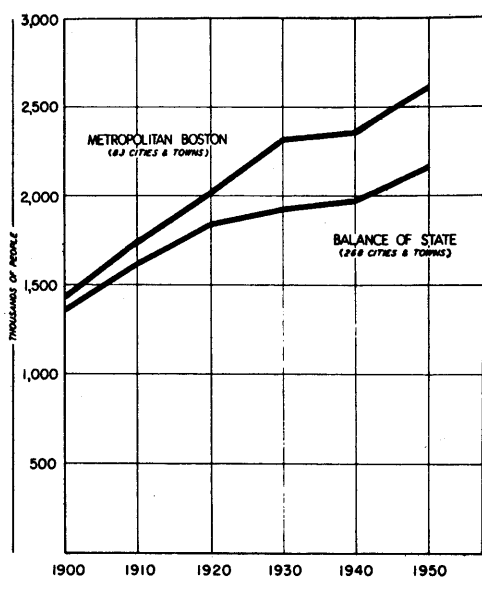
1900-1950



COMPARISON OF THE TREND OF POPULATION GROWTH BETWEEN

METROPOLITAN BOSTON AND THE BALANCE OF THE STATE

1900-1950



BOSTON (City)

Population
Increase, 10 years
Per Cent Increase

SUBURBS (82 Cities & Towns)

Population
Increase, 10 years
Per Cent Increase

METROPOLITAN BOSTON (Boston & Suburbs)

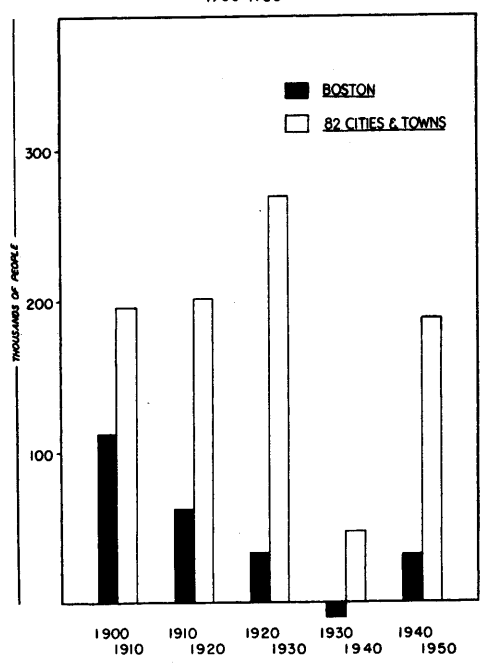
Population
Increase, 10 years
Per Cent Increase

	1900	1910	1920	1930	1940	1950
Population	574,136	686,092	748,060	781,188	770,816	801,444
Increase, 10 years	--	111,956	61,968	33,128	-10,372	30,628
Per Cent Increase	--	19.5%	9.0%	4.4%	-1.3%	4.0%
Population	864,439	1,062,256	1,263,651	1,532,677	1,579,698	1,757,137
Increase, 10 years	--	197,817	201,395	269,026	47,021	177,435
Per Cent Increase	--	22.9%	18.9%	21.3%	3.1%	11.2%
Population	1,438,575	1,748,348	2,011,711	2,313,865	2,350,514	2,558,581
Increase, 10 years	--	309,773	263,363	302,154	36,619	208,063
Per Cent Increase	--	21.6%	15.1%	15.0%	1.6%	8.9%

COMPARISON OF TEN-YEAR INCREASE

BETWEEN BOSTON AND ITS ENVIRONS

1900-1950



COMPARISON OF THE TREND OF POPULATION

GROWTH BETWEEN BOSTON AND ITS ENVIRONS

1900-1950

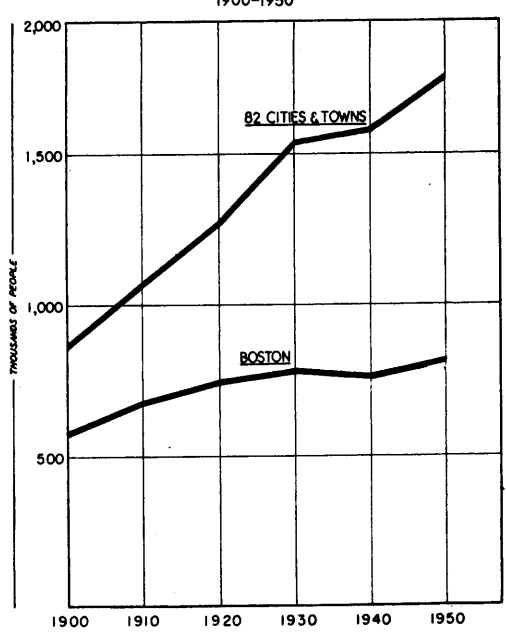


CHART I

5. COMPARISON WITH OTHER METROPOLITAN DISTRICTS

The following table is a comparison of the 1950 population of the twelve largest metropolitan districts in the country.

Since 1930 the United States Census Bureau has recognized and defined "metropolitan districts" for the larger urban centers.

In 1940 the Bureau fixed the definition for Metropolitan Boston as comprising 83 cities and towns including Boston. It was substantially similar to the 1930 definition.

In 1950 the Bureau made a radical change in its definition of these districts and designated them as "standard metropolitan areas." The results, at least in the case of Metropolitan Boston, failed to present an accurate picture. Twenty-one cities and towns were

arbitrarily lopped off the 1940 district and three were added. No valid reason for this change was given.

Consequently in this table and in all other parts of this publication, we adhere to the 1940 definition of the district of 83 cities and towns, but the census figures for this district are from the 1950 census.

This district as defined in 1940 has had a long period of recognition and in our opinion portrays the true situation more accurately.

For the other large districts in the country the 1950 definitions are used.

For purposes of record, the standard metropolitan area for Boston which the Bureau fixed in 1950, includes 65 cities and towns with a total population of 2,349,986.

Metropolitan Districts	The Central City or Cities		The Suburban Communities		Total District		% of Central City to Total	
	Area (sq. miles)	Population	Total Area	Population	Area	Population	Area	Population
New York-N.E. New Jersey	357	7,891,957	3,567	5,020,037	3,925	12,911,994	9.1%	61.1%
Chicago	207	3,620,962	3,410	1,874,402	3,617	5,495,364	5.7	65.9%
Los Angeles	451	1,970,358	4,402	2,397,553	4,853	4,367,911	9.3%	45.1%
Philadelphia	127	2,071,605	3,423	1,599,443	3,550	3,671,048	3.6	56.4
Detroit	138	1,849,568	1,827	1,166,629	1,965	3,016,197	7.0	61.3
Boston	43	801,444	1,014	1,757,137	1,057	2,558,581	4.1	31.3
San Francisco-Oakland	97	775,357	3,217	1,475,410	3,314	2,250,767	2.9	34.4
Pittsburgh	54	676,806	2,999	1,536,430	3,053	2,213,236	1.8%	30.6
St. Louis	61	856,796	2,459	824,485	2,520	1,681,281	2.4	51.0
Cleveland	75	914,808	613	550,703	688	1,465,511	10.9%	62.4
Washington, D. C.	61	802,178	1,427	654,376	1,488	1,456,554	4.1%	55.1
Baltimore	79	949,708	1,027	387,665	1,106	1,337,373	7.1	71.0

CHART No. 2 .- DIFFERENCE BETWEEN NEW ENGLAND AND U.S. AVERAGE RENTS, 1935-36

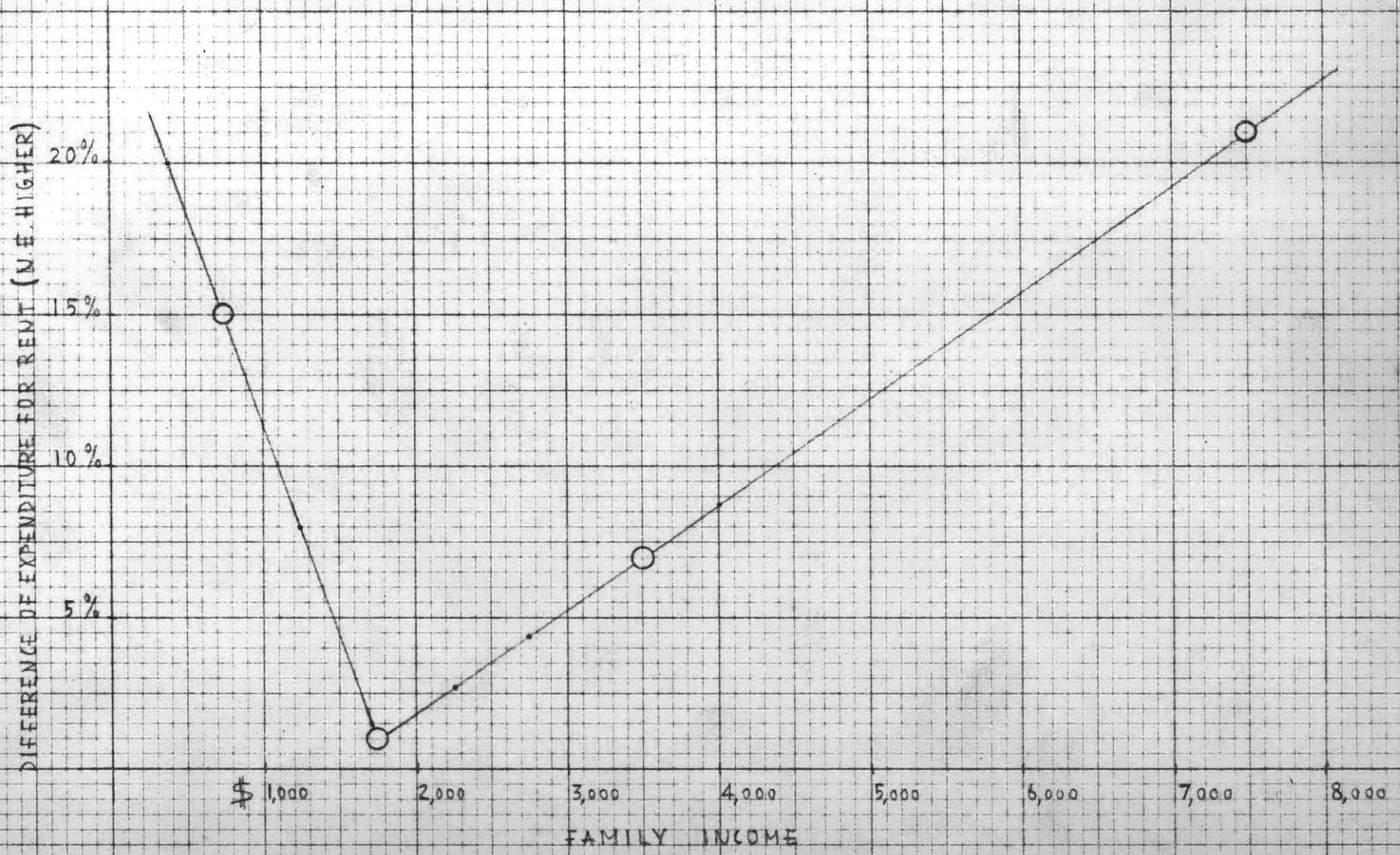


CHART No. 3 PER CAPITA SALES IN THE STONEHAM AREA, 1948

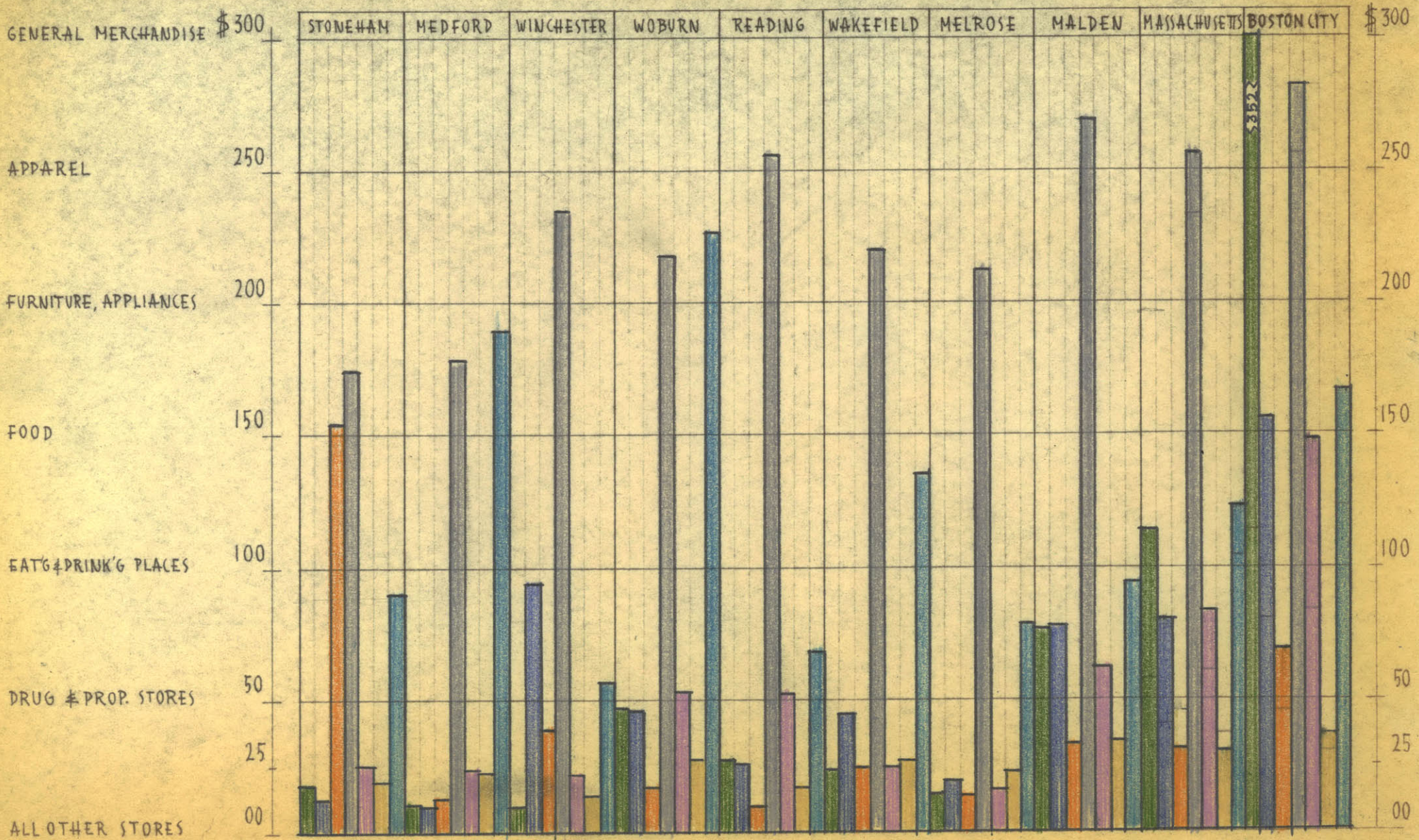
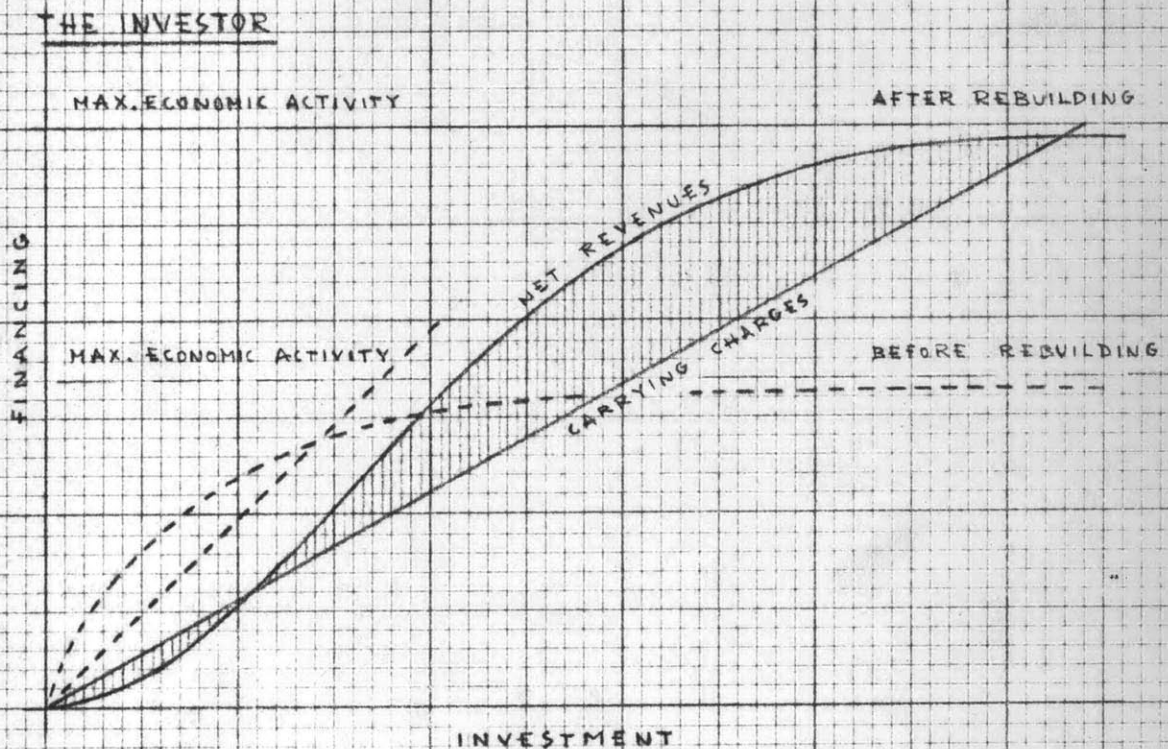
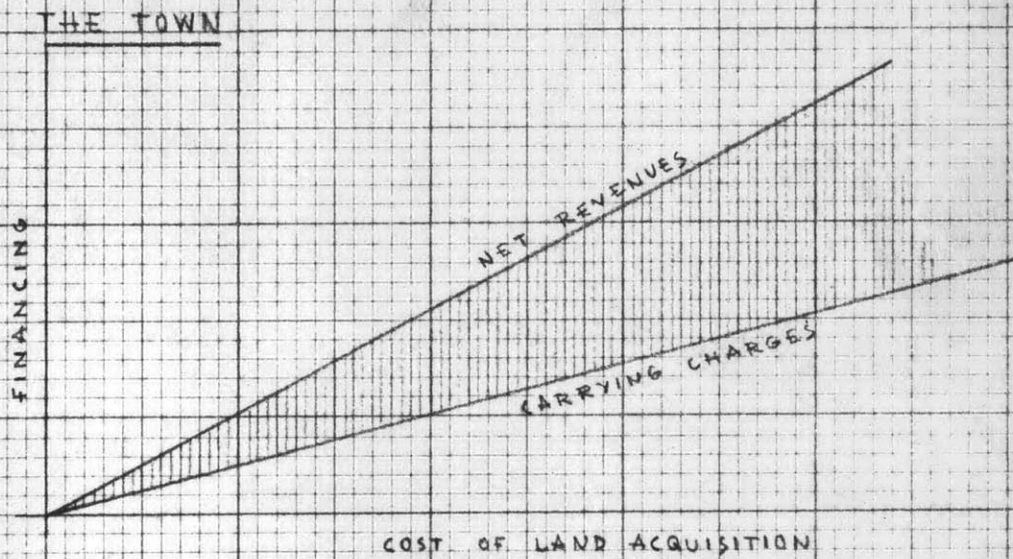


CHART No. 4 - THE ECONOMICS OF REBUILDING THE TOWN CENTER



EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO 340 11-10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH

Residents Evaluate Local Shopping Status

Recently a questionnaire was mailed to practically every home in Stoneham by the Chamber of Commerce. It concerned their reaction to the local shopping situation, stores, needs, etc. Here is the official reports of the evaluation committee:

The following percentage figures are based on the number of replies to individual questions and not to the number of questionnaires returned as a whole. The overall evaluation is based on 400 returns of a possible 2900 from 15 postal areas of Stoneham and without reference to names of persons who may or may not have signed their names.

Question No. 1

What part of your trading do you do in Stoneham?

It appears that the average family spends only 22.6% of their ordinary buying power in Stoneham.

Question No. 2

55% said store not attractive enough 45% said they were

Question No. 3

40% said store not well lighted 60% said they were

Question No. 4

44% said stores not arranged for shopping convenience 56% said they were

(Questions 2 and 3 need to be weighted in terms of remarks on questionnaires and therefore should be adjusted by 12% from the positive to the negative. For example: a man buys 10% in Stoneham yet finds clerks not courteous but lighting satisfactory, store arranged for convenience and these returns were numerous. Obviously answers cannot be accepted at full value or else why only 10%).

Question No. 5

25% found clerks not courteous 75% said they were

Question No. 6

55% said stores did not offer to get merchandise desired 45% said they did

Question No. 7

65% said stores do not carry quality desired 35% said they did

Question No. 8

80% said stores failed to carry sufficient merchandise in differing price ranges 20% said they did

Question No. 9

95% said needed new stores to help them trade at home 5% said no new stores needed

(Emphasis was on chain grocery stores, department stores, men and women's apparel, branches of Boston stores plus other smaller local stores. Quality, variety, price and more courteous and prompt service were underlying factors. Many, many criticisms were made of one store in particular which shall go nameless, but others were praised and condemned. Suggest that every merchant take time to read **remarks** carefully from the original returns).

Question No. 10

70% said parking was a problem to their trading in Stoneham 30% said it was no problem

Question No. 11

73% felt offstreet municipal parking would help them trade here 27% made no difference

Question No. 12

90% feel should be municipal parking offstreet 10% said no

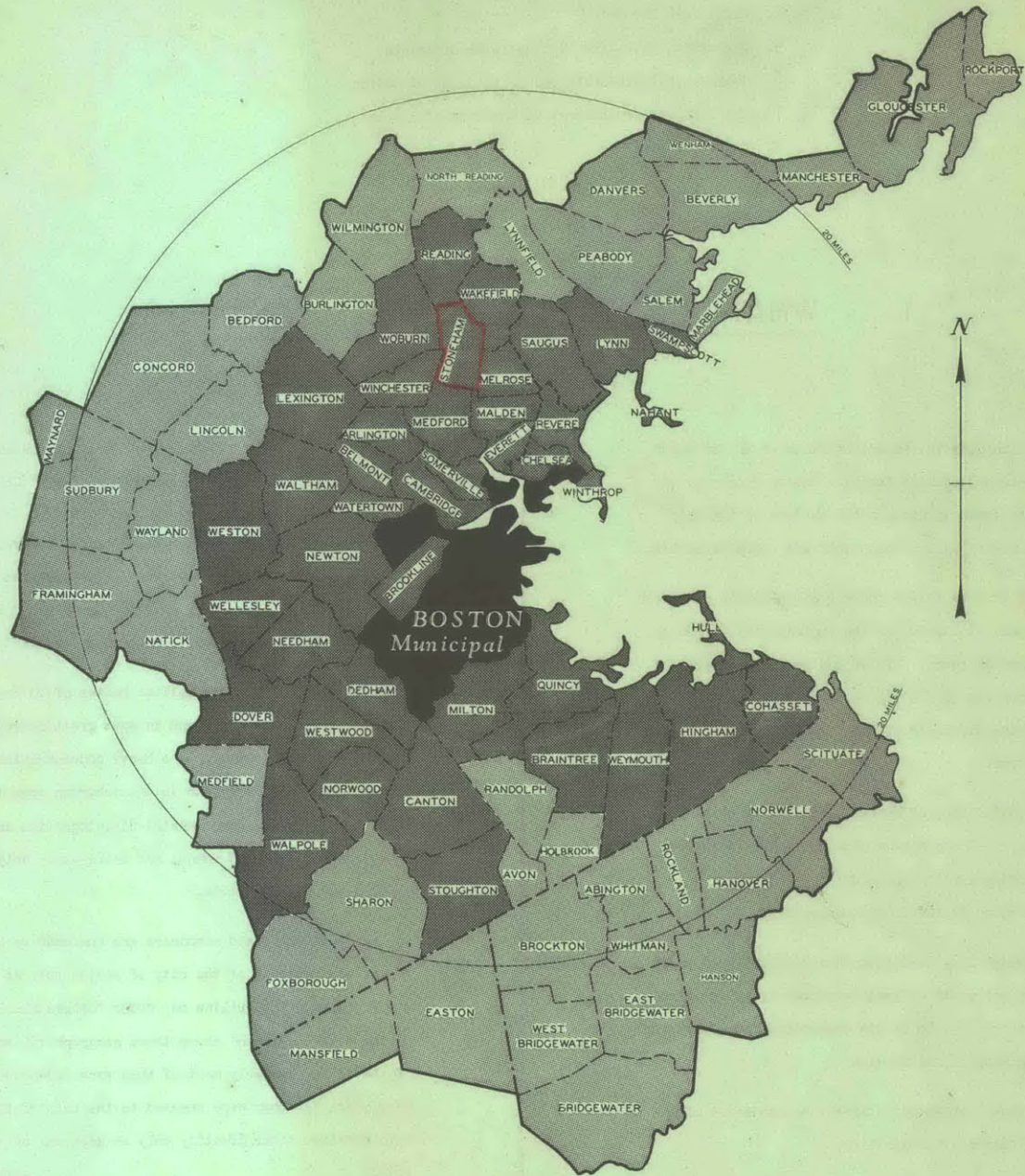
Question No. 13

50.5% felt no need for more advertising 49.5% felt need for more advertising

Question No. 14

85% will try to buy more during next three months 15% will not
(A large number of returns referred to the problem of taxi stands taking up the entire square and suggest they be moved. Others referred to parking meters as a help to enable them to do more trading in Stoneham. New store fronts, better lighting, new small stores, tearing down buildings and rebuilding modern stores and parking areas were mentioned in addition to above).

Metropolitan Boston



- A DISTRICT COMPRISING BOSTON, THE CENTRAL CITY, AND 82 OTHER CITIES AND TOWNS.
- ITS AREA - 1057 SQUARE MILES. ITS POPULATION, 2,558,000 PEOPLE.
- CONTAINS 14% OF THE AREA OF MASSACHUSETTS, BUT 55% OF ITS POPULATION.
- THE SIXTH LARGEST METROPOLITAN DISTRICT IN THE COUNTRY.
- A GROWING AND PROSPEROUS REGION. RICH IN ALL THE ASSETS WHICH MAKE FOR GOOD LIVING.

Civic Department
Boston Chamber of Commerce
 80 Federal St. Boston, Mass.

FIG. 1

TABLE OF CONTENTS

Cover-Map

1. What is Metropolitan Boston?
2. Facts on Metropolitan Boston's 83 Cities and Towns
3. Analysis of Population Increases in the 83 Cities and Towns
4. Fifty-Year Trends
5. Comparison With Other Metropolitan Districts
6. Geographical Sub-Divisions of the City of Boston
7. The Physical Development of the City of Boston
8. Census Tracts

I. WHAT IS METROPOLITAN BOSTON?

This folder contains the important facts on METROPOLITAN BOSTON. It is intended to help toward a better knowledge of this great district, and to furnish the answers to the more common questions regarding its components and characteristics.

As set forth in this folder, Metropolitan Boston comprises 83 cities and towns. Included are the central city of Boston, 8 other cities and 64 towns. All of one county and parts of five other counties are within its boundaries. It also contains four special-purpose districts with a varying number of cities and towns as members.

This is the definition of Metropolitan Boston which the United States Bureau of the Census made in 1940. It is the district which most accurately portrays the present-day economic unit of which Boston is the metropolis.

Although through long tradition this district is divided into many independent units of local government, it is commonly recognized as a single entity in its commercial and industrial activities and in many social aspects.

The map on Page 1 shows in outline the boundaries of the district and its component communities.

The central area in black is the corporate city of Boston, often termed "Municipal Boston."

The heavily shaded area includes 43 cities and towns which, with Boston, are considered an "inner district." Its 1950 population was 2,137,935.

These 43 cities and towns are members of one or more of the special-purpose districts which furnish certain governmental services through state-controlled agencies. These services are water supply, sewerage disposal, and parks and boulevards, administered by the Metropolitan District Commission; and interurban mass transportation, furnished by the Metropolitan Transit Authority. The member-communities of

each of these districts are shown in the table under "Facts On Metropolitan Boston's 83 Cities and Towns" in this folder.

Prior to 1930 this inner district was commonly defined as "Metropolitan Boston", but the larger district of 83 cities and towns has superseded it as a more modern and accurate concept of the economic and social unity in this region.

The present-day Metropolitan Boston of 83 communities has the characteristics found in most great metropolitan districts in the country, -- a heavy concentration of population, a more rapid growth in the suburban area than in the central city, a governmental disintegration into many independent cities and towns, and integration only through special-purpose districts.




Many visitors and newcomers are confused as to the status of certain sections of the city of Boston such as Dorchester and Brighton. The outline map under "Geographical Subdivisions of the City of Boston" shows these geographical subdivisions of the city. Formerly most of them were independent communities. Many years ago they were annexed to the city of Boston and they have retained their identity only as sections of the central city.

The question is frequently asked: "What is meant by 'Greater Boston'?" This term is synonymous with "Metropolitan Boston." It has no separate meaning.

In Massachusetts the functions of counties are relatively few, the most important being the administration of justice. None of the concepts of Metropolitan Boston, past or present, has any relation to county boundaries.

The Civic Department of the Chamber maintains a complete file of census material on Metropolitan Boston. The Department is glad to be of assistance in answering specific inquiries on points and details not covered by this folder.

THE STONEHAM AREA

-  Developed Areas
-  Rough Topography, Swamp.
-  Shopping Centers,
According to Total Sales, 1948

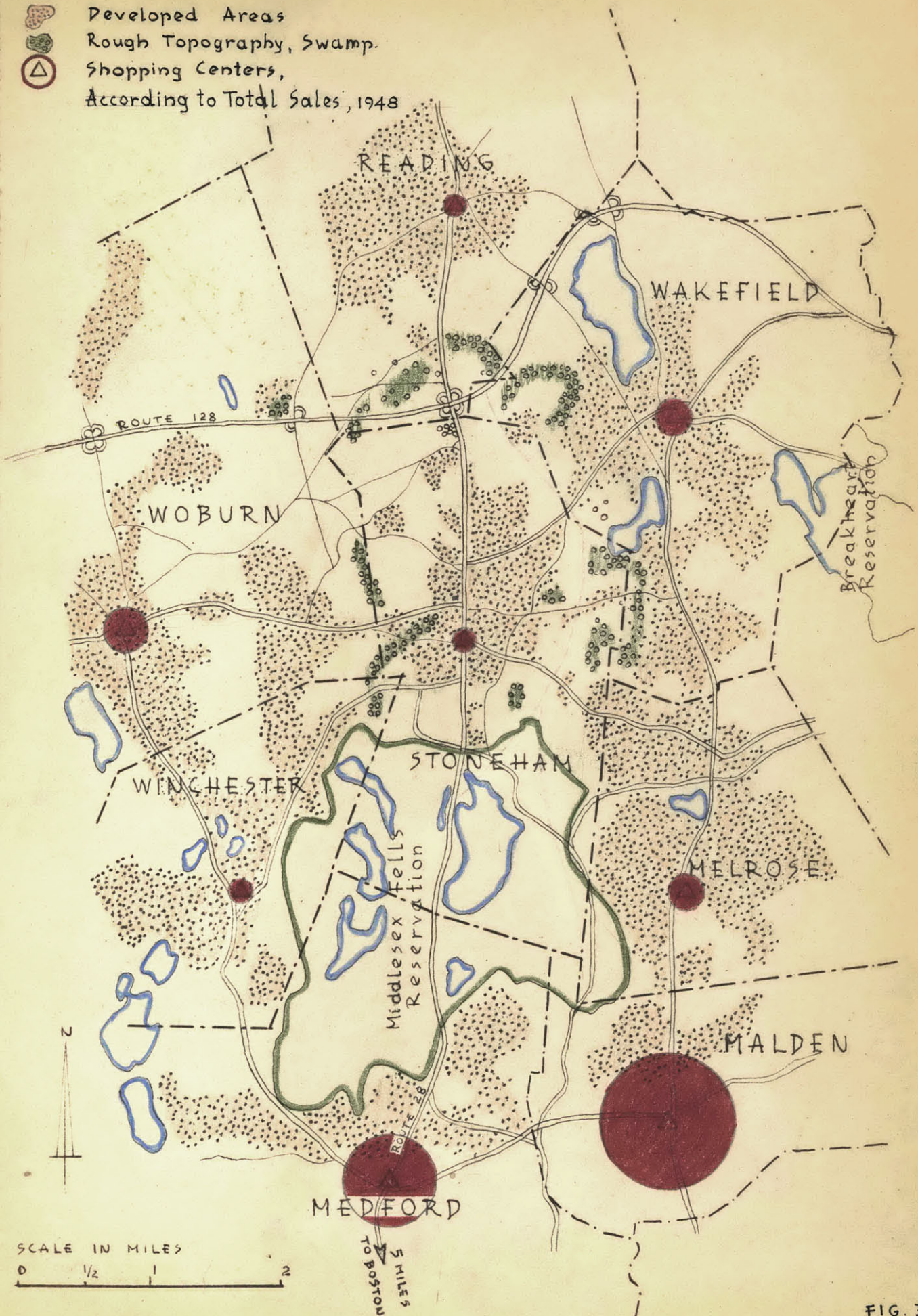
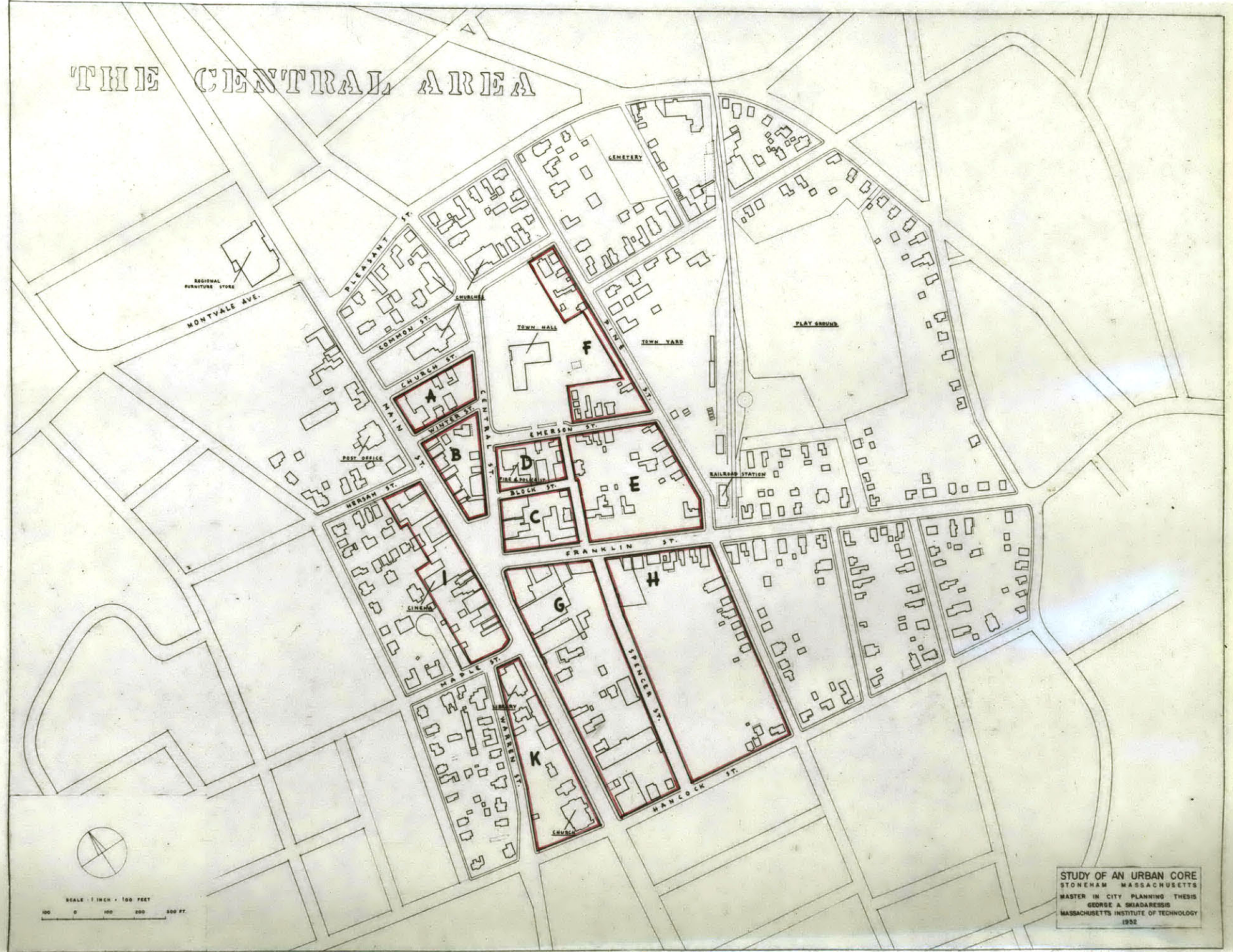


FIG. 3

THE CENTRAL AREA

FIG. 4



STUDY OF AN URBAN CORE
STONEHAM MASSACHUSETTS
MASTER IN CITY PLANNING THESIS
GEORGE A. GUADARESI
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
1952

EXISTING CONDITIONS

FIG. 5

-  RESIDENCE
-  SHOPPING
-  OFFICES
-  GENERAL BUSINESS
-  PUBLIC
-  SEMI-PUBLIC
-  OPEN SPACE - PARK
-  OPEN SPACE - PLAY AREA
-  AUTO
-  INDUSTRY




SCALE - 1 INCH = 100 FEET
0 100 200 300 FT



STUDY OF AN URBAN CORE
STONEHAM MASSACHUSETTS
MASTER IN CITY PLANNING THESIS
GEORGE A. SPADARESS
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
1952

FIRST STAGE

FIG. 6

-  RESIDENCE
-  SHOPPING
-  OFFICES
-  GENERAL BUSINESS
-  PUBLIC
-  SEMI-PUBLIC
-  OPEN SPACE - PARK
-  OPEN SPACE - PLAY AREA
-  PARKING, AUTO
-  INDUSTRY



SCALE - 1 INCH = 100 FEET
0 100 200 300 FT.



STUDY OF AN URBAN CORE
STONEHAM MASSACHUSETTS
MASTER IN CITY PLANNING THESIS
GEORGE A. SHADARESSIS
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
1952

SECOND STAGE

FIG. 7

-  RESIDENCE
-  SHOPPING
-  OFFICES
-  GENERAL BUSINESS
-  PUBLIC
-  SEMI-PUBLIC
-  OPEN SPACE - PARK
-  OPEN SPACE - PLAY AREA
-  PARKING



SCALE - 1 INCH = 100 FEET
0 100 200 300 FT



STUDY OF AN URBAN CORE
STONEHAM MASSACHUSETTS
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1952