A REDEVELOPMENT PLAN FOR THE FRAMINGHAM CENTRAL BUSINESS DISTRICT

by

MELVIN FRANK LEVINE

B.S., Northeastern University
1944

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER IN CITY PLANNING

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
July, 1956

Signature of Author. . . . . .
Department of City and Regional Planning, August 20, 1956

Certified by. . . . . .
Thesis Supervisor

Accepted by. . . . . .
Chairman, Departmental Committee on Graduate Students

68 American Legion Highway
Dorchester 24, Massachusetts
August 20, 1956

Professor Frederick J. Adams, Chairman
Department of City and Regional Planning
Massachusetts Institute of Technology
Cambridge 39, Massachusetts

Dear Professor Adams,

I am very happy to submit my thesis entitled "A Redevelopment Plan for the Framingham Central Business District" in partial fulfillment of the requirements for the degree of Master in City Planning.

Very truly yours,

Melvin F. Levine

Arch. Jan. 8. 1957

THESIS ABSTRACT

A REDEVELOPMENT PLAN FOR THE FRAMINGHAM CENTRAL BUSINESS DISTRICT

MELVIN F. LEVINE M.C.P. THESIS M.I.T. AUGUST 1956

This thesis tests the feasibility of application of a number of contemporary design concepts to an existing central business district. The central business district of Framingham, Massachusetts is the subject of the study. It is plagued by physical ailments of traffic congestion, parking shortage and a railroad grade crossing compounded by economic competition from Shoppers' World, a recently established controlled regional shopping center.

Following a discussion of CBD locational and market factors, surveys of CBD area characteristics are conducted; design objectives formulated; a general circulation and land use plan for the CBD area and a detailed project plan for the CBD core are presented; and the effectuation, operation and financial implications of the plans are considered.

The thesis concludes that the CBD can continue to flourish within a trade area limited by the influence of the regional shopping center if physical improvements such as suggested in the plan are undertaken so that adequate access, parking and shopping amenities will obtain in the CBD.

The plan would have to be financed by contributions from merchants, property owners, parking meters and the town in order to obtain an economical and equitable distribution of the costs.

ACKNOWLEDGEMENTS

To Professors Adams, Howard, Isard, Kelly, Lynch and Rodwin of the Department of City and Regional Planning

For insights, attitudes and points of view imparted to me during the several courses of study under their guidance

To Messrs. Whittemore, Dodge, Dyer, Griffin, McAuley and Ward of the Framingham Planning Board

For their continuing interest and encouragement

To Gerald Carrothers, Professor Marvin Goody, Richard Bolan, Joseph Savitsky and Samuel Ellsworth

For specific assistance, suggestions and constructive criticism during the preparation of this thesis

To all of my fellow students in the Department of City and Regional Planning

For their willing and unwilling ears all these months

And most of all

To my thesis supervisor Professor Roland B. Greeley

For his guidance, counsel, patience and faith.

TABLE OF CONTENTS

INTENT AND SCOPE

The intent of this thesis is to examine the feasibility of converting an existing "pre-automotive" central business district into a shopping and community center of contemporary design. A specific town center has been selected as a case study area wherein an analytical approach and a design solution are evolved. It is hoped that the process of analysis and design demonstrated will be of general interest to others engaged in studies of central business districts in similar circumstances.

The central business district (CBD) of Framingham, Massachusetts has been chosen for this study. It is afflicted with physical ailments common to other long established CBDs: traffic congestion, parking shortage and a railroad grade crossing condition. Of more significance for current developments, however, are its economic ills which have been engendered by competition with a "controlled regional shopping center", Shoppers' World, recently established on a major highway within the boundaries of the town.[1]

In this thesis, major emphasis has been placed on the design of a redevelopment plan for the Framingham CBD. Some rudimentary market investigation has been conducted in order to discover if redevelopment activity could be justified in view of the economic pressures extant, but an exhaustive market analysis has not been attempted. Such an undertaking to be thoroughly conclusive would constitute a thesis in itself and is beyond the scope of this treatment.

1. Eugene J. Kelley, Locating Controlled Regional Shopping Centers, The Eno Foundation for Highway Safety Control, Saugatuck, Conn., 1956, pp. 4-8.

Herein, after locational and market factors are considered; a survey and analysis of the CBD and environs is presented; objectives for redesign are formulated; general and project plan provisions are proposed to achieve the objectives; the effectuation and financing of the proposals are discussed and the implications of the plans evaluated.

CBD LOCATION DISCUSSION

The Town of Framingham is the center of commercial activities for a small group of communities on the western edge of the Boston Metropolitan Area, half way between the major Massachusetts cities of Boston and Worcester. (See Illustration I, p. 4.) The town has grown from a nucleus of industrial activities grouped around a railroad junction into a balanced community providing commercial and institutional services and employment for residents of neighboring towns as well as for its own population. Most of the regionally oriented commercial activities have concentrated around the railroad junction mentioned above and now constitute the Framingham central business district (CBD). (See Illustration II, p. 5.)

Two transportation junctions occur in the CBD; the intersection of the east-west main line of the Boston and Albany railroad with the north-south freight line of the New York, New Haven and Hartford railroad, and the intersection of the east-west Massachusetts state highway Route 135 with the north-south Route 126. The major transportation facility in the town, however, is Route 9, the Worcester Turnpike, which runs east-west through Framingham about a mile north of the CBD. This will soon be superseded, but its importance to the town not necessarily diminished, by the Massachusetts Turnpike, a toll road, scheduled for completion in November, 1956.

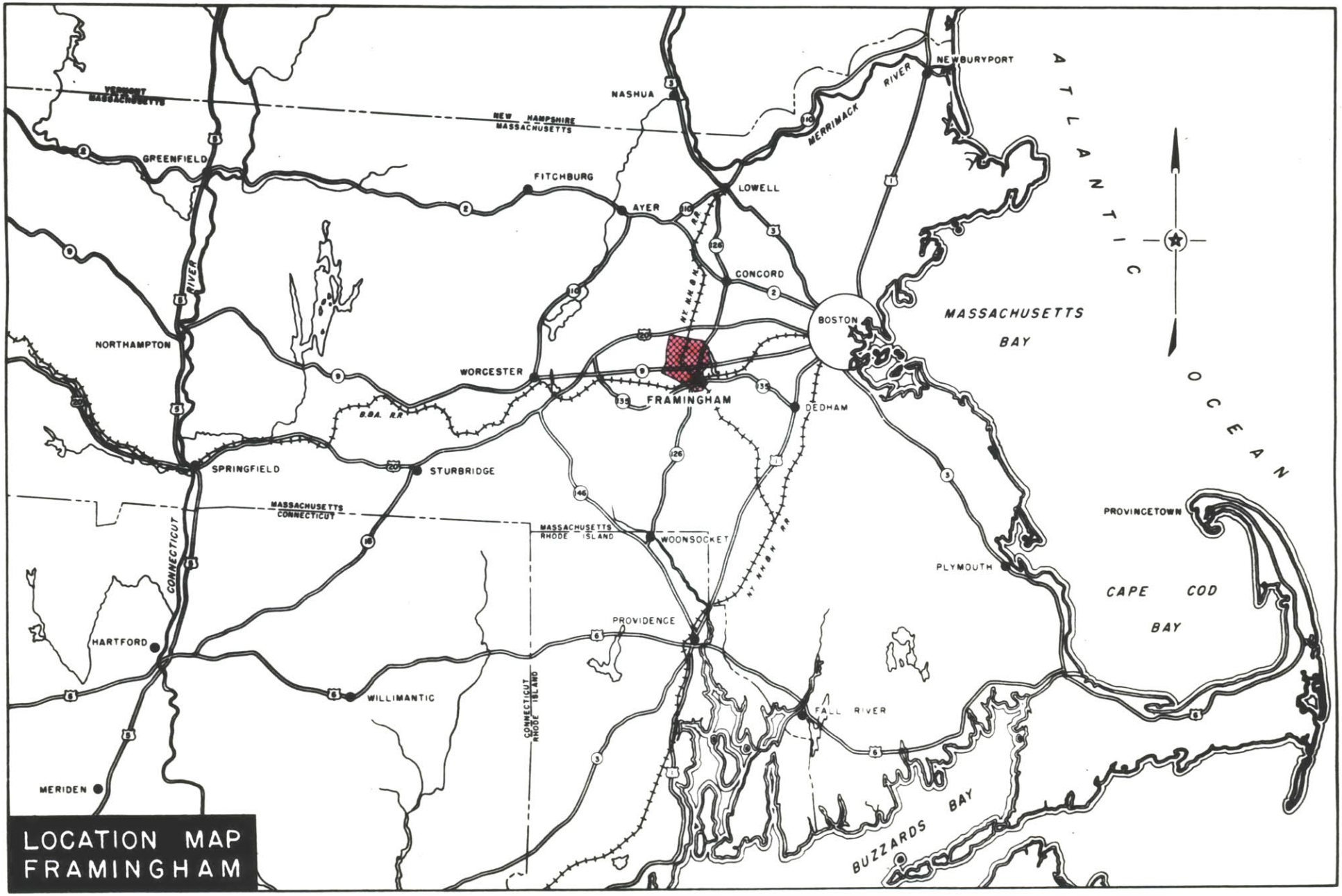
The locational impetus for the Framingham CBD was provided by the railroads in the mid 1800's. Now, since highways have become major transportation and locational influences, it becomes necessary to re-examine the locational factors affecting the present CBD to determine

CBD LOCATION DISCUSSION

The Town of Framingham is the center of commercial activities for a small group of communities on the western edge of the Boston Metropolitan Area, half way between the major Massachusetts cities of Boston and Worcester. (See Illustration I, p. 4.) The town has grown from a nucleus of industrial activities grouped around a railroad junction into a balanced community providing commercial and institutional services and employment for residents of neighboring towns as well as for its own population. Most of the regionally oriented commercial activities have concentrated around the railroad junction mentioned above and now constitute the Framingham central business district (CBD). (See Illustration II, p. 5.)

Two transportation junctions occur in the CBD; the intersection of the east-west main line of the Boston and Albany railroad with the north-south freight line of the New York, New Haven and Hartford railroad, and the intersection of the east-west Massachusetts state highway Route 135 with the north-south Route 126. The major transportation facility in the town, however, is Route 9, the Worcester Turnpike, which runs east-west through Framingham about a mile north of the CBD. This will soon be superseded, but its importance to the town not necessarily diminished, by the Massachusetts Turnpike, a toll road, scheduled for completion in November, 1956.

The locational impetus for the Framingham CBD was provided by the railroads in the mid 1800's. Now, since highways have become major transportation and locational influences, it becomes necessary to re-examine the locational factors affecting the present CBD to determine



LOCATION MAP
FRAMINGHAM

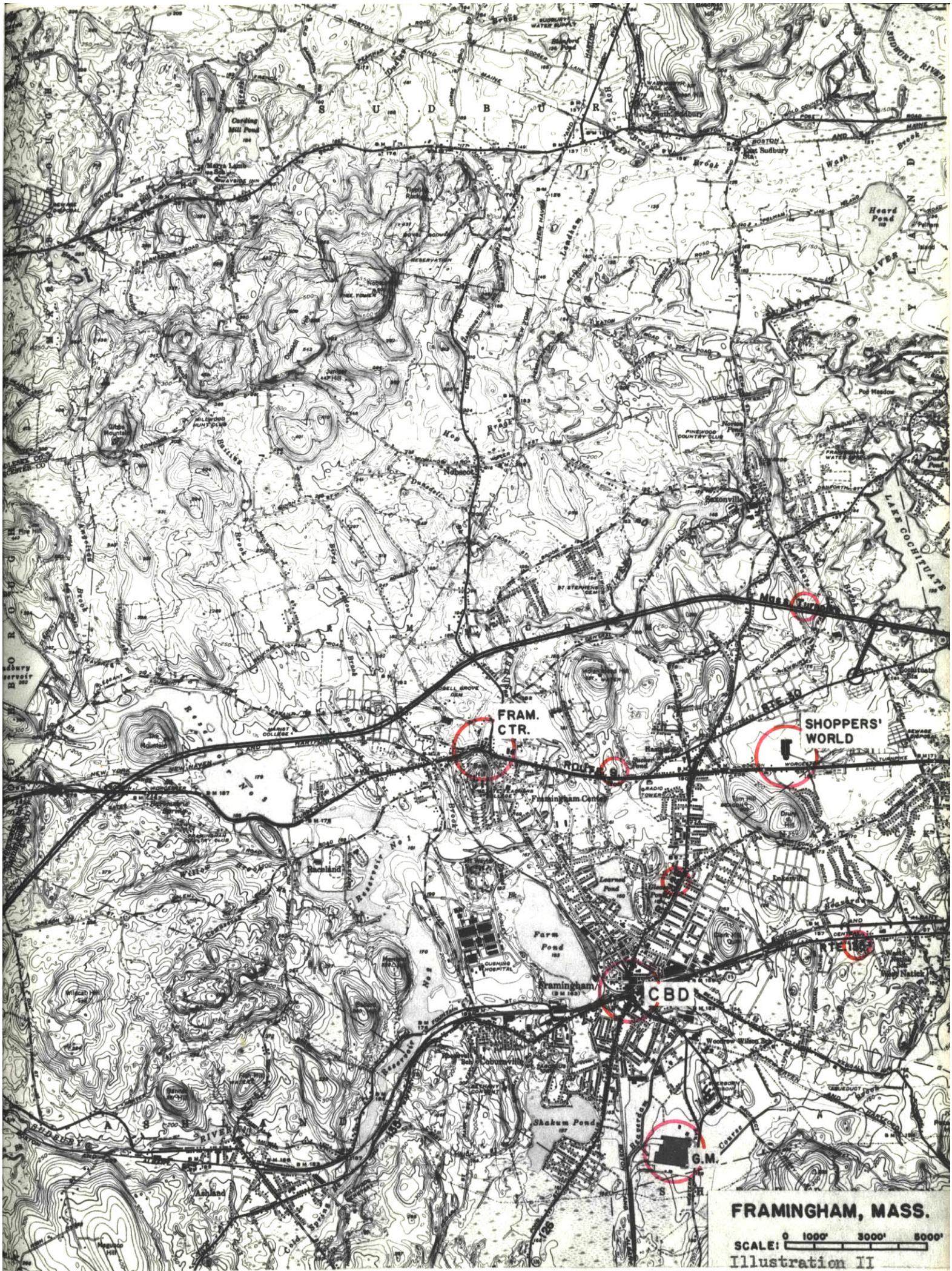


Illustration II

first if it should remain at its existing site, before proposing redevelopment action.

Framingham Center

Prior to the establishment of the railroads in Framingham, most of the population and activities were concentrated at Framingham Center, near the geographic midpoint of the town (Illustration II). During the latter part of the nineteenth century, the railroads drew industrial and commercial development, employment opportunities and population to South Framingham, the present site of the CBD, and Framingham Center became a secondary focus of activity.[1] The growth of highway transportation during the twentieth century and the development of Route 9 as a major highway by-passing the CBD but passing through Framingham Center suggest the possibility of relocating the CBD to Framingham Center where it would be more directly served by modern transportation means. The transportation attractiveness of the Framingham Center site is enhanced by the locations of two interchanges with the Massachusetts Turnpike which will feed traffic to Route 9 east and west of the Center. In addition, there exists at Framingham Center a Town Common with a group of historic and civic buildings which could serve as a picturesque civic nucleus for a relocated CBD. The probability of such a relocation was precluded, however, by the creation in October, 1951, of Shoppers' World, a controlled regional shopping center located on Route 9 approximately two miles to the east of Framingham Center (Illustration II).

1. Framingham: Your Town Your Problem, prepared by Planning Students in the Graduate School of Design, Harvard University, Cambridge, Mass., 1948, p. 15.

Shoppers' World vs. Framingham Center

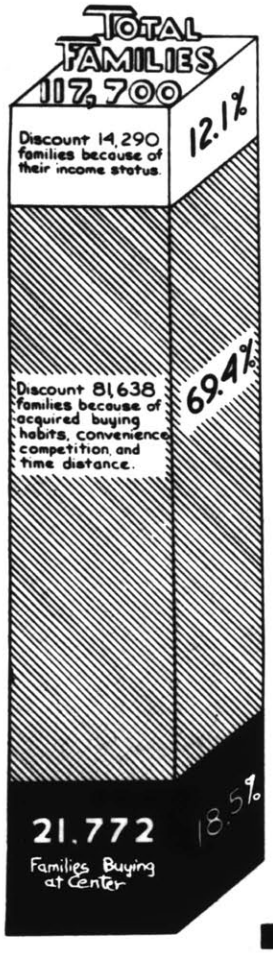
Shoppers' World is a highway oriented shopping facility designed to operate at "automobile-scale", its accessibility calculated in terms of "time-distance" rather than lineal distance measured from the market center to a service area boundary line. A study conducted prior to the creation of Shoppers' World established a market area delimited by a 29 minute driving-time isochrone and indicated that the prospective shopping center could expect to serve only 18.5% of the families living within the area (Illustration III, p. 8).[1] The percentages of total families expected to buy at Shoppers' World ranged from about 50% of those in the nearby towns of Framingham and Natick to about 3½% of the families in such distant towns as Concord and Maynard. The remainder of the families would continue to be served by the existing business districts within the area. Thus the market area for Shoppers' World could be vizualized as an umbrella covering a number of smaller, more concentrated market areas each tributary to an existing shopping center.

If relocation of the CBD from South Framingham to Framingham Center were contemplated (provided that the South Framingham location proved to be untenable), the business development would have to be of size and type comparable to the present CBD in order to maintain its services for the area. The major highway location indicates that the new center would have to be planned to operate at "automobile-scale" on almost the same basis as Shoppers' World. If Shoppers' World did not exist, further investigation of the relocation of the CBD as part of

1. Kelley, op. cit., pp. 79-94 for a more complete description and discussion of the location analysis for Shoppers' World.

SHOPPERS' WORLD
In NEW ENGLAND
Framingham
ROUTE 9

Source: National Market Research Corporation, "SHOPPERS' WORLD of New England, Framingham, Massachusetts". Boston, Mass. 1950.



Time Distance in Minutes		1950 Families * in Region	1950 Families Buying at Center
7	Framingham	6,850	3,312
7	Natick	5,120	2,654
10	Wellesley	5,140	1,980
11	Weston	960	364
12	Sherborn	260	105
12	Southborough	530	180
13	Ashland	870	347
14	Wayland	1,110	422
15	Dover	400	147
16	Needham	4,370	1,352
19	Holliston	900	270
19	Marlborough	4,220	726
19	Newton	20,250	3,555
19	Waltham	10,820	1,403
19	Westborough	1,170	242
21	Watertown	9,110	1,601
22	Sudbury	540	88
22	Westwood	1,540	244
24	Brookline	14,600	941
25	Dedham	4,650	439
25	Lincoln	490	61
25	Medfield	550	74
25	Medway	910	108
25	Millis	540	74
26	Hopkinton	850	73
26	Hudson	2,210	145
26	Norwood	4,170	349
29	Belmont	7,070	236
29	Concord	1,880	84
29	Lexington	3,660	127
29	Maynard	1,960	69
	TOTAL	117,700	

21,772

* Urban and Rural non-Farm

Illustration III

a long range plan for the development of Framingham might be constructive. Shoppers' World does exist, however, and it seems unlikely that a new shopping center could be located at Framingham Center to serve essentially the same market area on essentially the same basis as Shoppers' World. A Framingham Center site would be only two or three minutes driving time from Shoppers' World and served by practically the same access roads so that the Shoppers' World market analysis could be applied almost directly to it, including the assumptions that were made in that analysis regarding discounts from total families because of low income status, past buying habits and local competition.[1] Within the discounted group would be much of the trade now drawn by the present CBD which might be lost in a shift to a Framingham Center location so that the new center would have to compete directly with Shoppers' World for the portion of the regional market represented by the 18.5% figure cited in Illustration III. If both shopping centers were to continue in operation, the buying power of the present portion of the area serviced would have to at least double. If not, one or the other shopping center would have to yield in the competitive battle for a smaller market, a prospect not to be encouraged by public policy.[2]

Shoppers' World vs. the Framingham CBD

The situation vis-a-vis Shoppers' World and the CBD in its present location is of a different nature than discussed above. Right now, the

1. National Market Research Corp., (now National Planning and Research, Inc.), SHOPPERS' WORLD of New England, Boston, Mass., 1950.
2. Especially since Shoppers' World is a large source of tax revenue for the town of Framingham: 1955 assessed value $2,217,000, taxes paid $104,199.

Framingham CBD is coexisting with Shoppers' World. A recent opinion survey of the CBD property owners and merchants disclosed that there has been no absolute loss in sales volume in the CBD since the opening of Shoppers' World. But, there has been no increase in sales volume commensurate with regional population increases and the general feeling is"that Shoppers' World is getting a larger percentage of the business of the residents of new developments" than are the CBD merchants.[1] The report indicates further that the present measure of market co-existence with Shoppers' World was achieved only after strenuous merchandising efforts and improvement of parking facilities had been undertaken by CBD occupants.

Traffic congestion and parking difficulties are still painfully evident to even casual observation and it seems clear that if the CBD is to continue to prosper to the extent limited by Shoppers' World competition, some physical changes must be wrought in order to alleviate circulation difficulties if nothing else.[2] The extent of other improvements which could be undertaken would be limited by the amount of prospective sales revenues which might accrue to the CBD as a result of the improvements. A discussion of market factors which obtain in the area is entered upon in the pages following in order to gauge future sales potential for comparison with estimated improvements costs for the CBD.

1. From a report by the Framingham Planning Board published in The Framingham News, February 26, 1956. See Illustration IV, p.11.
2. Improvements made to maintain sales volume would also aid in maintaining property valuations and tax revenues from CBD property.

Report Shoppers' World Has Not Cut Previously Established Businesses

Source: The Framingham NEWS
February 26, 1956

The Shoppers' World has had a salutary effect on the town of Framingham, and has not reduced previously established businesses nor depreciated older business properties, according to a report prepared by the Framingham Planning board.

The board had received, early in October, a request from the Middletown, Conn., planning board for information concerning the impact of the huge shopping center. Planning board member Homer K. Dodge undertook the job of compiling pertinent information and preparing a report, which has been accepted by the full board.

Mr. Dodge contacted local officials, businessmen, real estate owners and representatives of the shopping center in carrying out this study. His findings are as follows:

"This report is not based on exhaustive research, but we believe it is sufficiently thorough to indicate accurately the effect of Shoppers' World on both the pre-Shoppers' World downtown shopping area and on the town as a whole. In finding these facts the planning board has conferred with the principal property owners of downtown real estate, the merchants' committee of the Chamber of Commerce, the board of assessors, the management of Shoppers' World, and sveral individual merchants in both areas.

"Shoppers' World has been in operation a little over four years and was planned and was publicized about three years before that, so it has been a factor in Framingham's thinking for over seven years.

Apparent Changes

"In the investigation to prepare a report of this nature there is a series of assumptions and 'might have been's' that are brought to our attention. All are based on what would have happened had not Shoppers' World been built, but Shoppers' World was built so these ideas remain speculations and no doubt many of them will be fondly promoted for many years to come.

"It should be noted that there were several changes in the growth of Framingham that were apparent before Shoppers' World became a factor. Some of these were: (1) the residential growth of Framingham north of Worcester road (Route 9), had already begun to pick up speed, (2) new business establishments were either opening or being planned along Worcester road in considerable number, (3) land values along Worcester road were already rising, (4) the extreme southern end of the downtown shopping area, principally south of Irving square, had been slowly losing its attractiveness to customers for a number of years, and (5) the traffic problem was acute in the downtown area, and traffic was too heavy on Worcester road. All of these trends have continued or accelerated, and it is most difficult to determine whether or not Shoppers' World had any positive effect on them. It has not deterred them.

"In the downtown area there had been only one new store building of any size constructed since the war. At the time Shoppers' World was announced two new buildings were under consideration. Neither of these have been built. Shoppers' World undoubtedly contributed to the decision not to build them, but according to information we have received, it was not the only factor. It must be remembered that with or without Shoppers' World, Worcester road was becoming a very desirable business location, and a number of businesses were at least discussing moving there.

Initial Effect

"As was to be expected when plans for Shoppers' World were announced there were several who claimed that such a large merchandising enterprise would certainly ruin the existing downtown shopping area. There were others who held opposite opinions. Five firms (two national and three local), backed their opinions by opening stores in Shoppers World and keeping their downtown stores. All seem satisfied after four years. For several months after the opening of Shoppers' World, in early October, 1951, it seemed that the prophets of doom were partly right as business fell in the downtown area. After the first of the year those merchants who would match Shoppers' World advertising and merchandising effort soon recaptured their lost volume, and many have gained consistently since.

"Within nine months of Shoppers' World opening nearly all of the capable downtown merchants had regained their lost volume. This was not done without considerable effort. The downtown merchants held highly promoted cooperative sales days. The owners of the store buildings went to considerabl expense to increase parking facilities near their buildings, so that downtown Framingham now has some of the best parking facilities in this region for older business center. This, however, does not mean that parking is adequate.

"While all of the downtown merchants would like to be more prosperous there is every indication that they are doing as well as merchants in similar areas in other towns of similar size. There is a feeling among a number of them that Shoppers' World is getting a larger percentage of the business of the residents of new developments than they are. Since Shoppers' World is closer than downtown Framingham to the larger developments in both Natick and Framingham, this is probably at least partly true. However, there is also the probability that if Shoppers' World were not there, new stores would have been built along Worcester road to serve these new residents. The planning board is unable to find figures that are more than presumptious estimates on how much new business is going to either area from new residents or on how much business could have increased in downtown Framingham without Shoppers' World.

Property Values Downtown

"In regard to property values in downtown Framingham, Shoppers' World probably arrested or decelerated rapidly rising property values, but it has not depreciated them. Assessments have remained almost stable for the last four years. What the revaluation scheduled for next year will do is not available to the planning board. There has been only one tax abatement granted in the entire downtown area and that had nothing to do with Shoppers' World competition. The top two floors of an older four story building were removed. There was one other request for an abatement, but that concerned a local competitive situation in regard to a parking area.

"The principal property owners state that their expenditures for increased parking facilities were both desirable and necessary, but admit that the advent of Shoppers' World did spur them to act sooner and more boldly. They have not reduced any store rents, and have increased some. While there are no vacancies in desirable store properties, the waiting list for possible vacancies in the downtown area is appreciably shorter than it was four years ago. There are vacancies in the top floors of older three and four story buildings, but none of the establishments in Shoppers' World would use this type of space at any time in any location.

"Shoppers' World itself has had its problems. The company that promoted and constructed the facility has gone bankrupt. It has been taken over by the mortgagor, who is now operating it. A few of the original tenants have given up and either moved or gone out of business. The majority of the tenants are still there and are prospering. The financial problems of Shoppers' World, Inc., are not entirely germane to this report as the organization is still in business and the stores located there do not seem to be affected by the problems of their landlord. The basic idea of a regional shopping center seems to be sound. The original assssment on the property was reduced by $1,000,000 and thus reduced the taxes received by the town by about $45,000 per year, but this was not caused by the bankruptcy.

Assessment and Taxes

"At the present time Shoppers' World is assessed for $2,217,000 and paid to the town last year $104,199 in real estate taxes. The various stores also pay a substantial amount in corporation taxes, some of which get back to the town. Being commercial, Shoppers' World produced no school children. This last year the average employment was 770 and at the peak the employment was 1400 persons. These items are of substantial benefit to the town. For those who might still think that it would be nicer not to have Shoppers' World as a competitor there is a very good possibility that if Framingham had vigorously opposed its location here, it would have located just across the line in Natick, and we would have had the competition without receiving the taxes.

"Shoppers' World effect on the traffic problem is hard to assess. Traffic was bad and getting worse. Shoppers' World unquestionably added to the traffic on both Routes 9 and 30. The State went to considerable expense to widen Route 9, build the left turn storage areas and install traffic lights. This improvement relieved what would have beeen an almost impossible traffic condition, however, it is not solved. Possibly the toll road will help.

"In summary, it seems that Shoppers' World has not reduced previously established business nor depreciated older business properties and has increased considerably our tax revenue and opportunities for employment. Therefore, it has been a good development for Framingham.

Illustration IV

MARKET DISCUSSION

Comparisons of past sales and income figures for Framingham and other areas were conducted prior to estimating future market potential for the CBD. Per capita figures for retail sales and "effective buying income" for Framingham and its two closest major market towns, Marlboro and Natick were compared with similar data for Boston and Massachusetts in order to get an indication of the extent of regional market influence extended by the subject centers.[1] (Considering the Massachusetts data to be indicative of a relatively self-contained market area and the Boston data to be indicative of a market center with a high degree of regional influence beyond the borders of the city, it was reasoned that areas having per capita sales figures higher than those for Massachusetts were regionally oriented, serving areas in addition to their own, while areas with per capita sales lower than those for Massachusetts were losing local trade to other markets. These judgements were tempered by comparison with the data for "effective buying income" per capita, for high income figures would tend to increase sales figures if regional sales were not present.) (See Illustrations V, VI, VII, pp. 14-17.)

The comparisons show that Framingham had a small degree of regional orientation which was increasing slowly prior to the establishment of Shoppers' World. The 1953 figure for Framingham sales, about 60% higher than in 1952, indicates the effect of Shoppers' World in the area.

1. Data for the business districts alone was not available so that data for total town business has been used in these comparisons, under the assumption that total town and CBD trends would be close enough for the nature of this analysis. In the case of Framingham, however, this assumption would probably not be valid for data since the establishment of Shoppers' World.

Marlboro and Natick which both had higher effective buying income per capita did not show sales increases of nature comparative to the Framingham trends, and in fact may have suffered sales decreases since the establishment of Shoppers' World. It is also interesting to note that with Shoppers' World, the Framingham per capita sales figures are higher than comparable figures for Boston.

Further consideration of specialized sales categories disclosed that the large total sales increase shown for Framingham in 1953 was accounted for mostly by General Merchandise sales, the increase in this category being almost 10-fold. The increase of approximately $20,000,000 was matched by a corresponding decrease of almost $14,000,000 in General Merchandise sales for Boston. There were no significant decreases in this category for Marlboro and Natick. This may indicate that downtown Boston rather than the business districts close to Shoppers' World has been more negatively affected by the new shopping facility.

The limitations of data and in the scope of this study prohibit more extensive investigation of the general area discussed above. The indications that Framingham was an increasing regional center before Shoppers' World and that its CBD may be holding its own against Shoppers' World impel investigation of the CBD market area itself in order to quantify future sales potential.

FRAMINGHAM , MASSACHUSETTS

Year	Population	Total Retail Sales	per cap.	Effective Buying Income	per cap.	Gen. Merch. Sales	per cap.	Food Sales	per cap.
1948	28,000	26,600,000	950	26,628,000	952	2,168,000	77.5	8,082,000	298
1949	28,400	25,001,000	880	26,039,000	916	1,960,000	69.0	7,428,000	264
1950	28,200	35,588,000	1262	28,651,000	1016	2,500,000	88.7	9,322,000	331
1951	28,500	37,006,000	1300	39,064,000	1370	2,572,000	111.0	10,164,000	356
1952	29,900	39,751,000	1330	41,870,000	1401	2,629,000	87.9	11,103,000	372
1953	30,300	64,269,000	2120	43,693,000	1441	22,706,000	750,0	11,327,000	374
1954	30,900	56,505,000	1830	46,137,000	1495	19,716,000	638.0	10,177,000	329
1955	32,500	67,906,000	2090	50,570,000	1556	19,247,000	592.0	11,025,000	346

MARLBOROUGH,, MASSACHUSETTS

1948	16,000	15,260,000	954	17,488,000	1092	287,000	17.9	5,180,000	309
1949	16,200	14,343,000	885	17,072,000	1054	259,000	16.0	4,793,000	296
1950	16,000	15,969,000	996	18,672,000	1065	857,000	53.5	4,822,000	302
1951	16,200	16,605,000	1025	19,986,000	1232	881,000	54.3	5,257,000	325
1952	16,300	17,837,000	1095	24,843,000	1525	900,000	55.2	5,742,000	352
1953	16,300	19,864,000	1219	25,575,000	1569	926,000	56.8	5,858,000	360
1954	16,300	17,987,000	1014	26,002,000	1596	828,000	50.8	5,420,000	333
1955	16,400	17,625,000	1075	27,001,000	1648	1,168,000	71.1	4,773,000	291

NATICK , MASSACHUSETTS

1948	18,500	13,178,000	713	24,087,000	1302	405,000	20.9	4,000,000	206
1949	18,700	12,386,000	661	23,473,000	1256	366,000	19.6	3,701,000	198
1950	20,000	11,955,000	599	27,800,000	1390	344,000	17.2	4,064,000	203
1951	20,200	12,431,000	615	29,538,000	1462	354,000	17.5	4,431,000	209
1952	20,400	13,353,000	655	29,830,000	1462	362,000	17.7	4,840,000	247
1953	22,300	14,871,000	667	33,562,000	1503	373,000	17.7	4,937,000	221
1954	23,000	14,380,000	625	35,832,000	1560	357,000	15.6	4,879,000	212
1955	24,000	17,213,000	717	38,976,000	1624	455,000	19.0	4,807,000	200

Illustration V
1 of 2

BOSTON , MASSACHUSETTS

Year	Population	Total Retail Sales	per cap.	Effective Buying Income	per cap.	Gen. Merch. Sales	per cap.	Food Sales	per cap.
1948	815,000	1,108,748,000	1360	1,320,300,000	1620	286,653,000	351	216,987,000	266
1949	824,400	1,053,310,000	1279	1,287,600,000	1561	265,936,000	323	203,968,000	247
1950	803,200	1,132,829,000	1410	1,389,536,000	1729	269,410,000	335	229,343,000	286
1951	807,200	1,254,167,000	1553	1,364,903,000	1565	296,325,000	367	270,244,000	335
1952	804,000	1,298,127,000	1615	1,238,058,000	1540	291,827,000	363	284,447,000	354
1953	804,000	1,321,727,000	1645	1,292,028,000	1608	277,883,000	346	287,240,000	358
1954	811,000	1,324,767,000	1630	1,374,778,000	1695	275,081,000	339	294,215,000	362
1955	752,200	1,377,182,000	1830	1,323,572,000	1760	351,620,000	468	308,446,000	410
MASSACHUSETTS STATE									
1948	4,678,900	4,229,018,000	903	6,364,527,000	1360	548,572,000	117	1,229,693,000	261
1949	4,732,800	3,978,635,000	841	6,207,047,000	1321	503,165,000	106	1,138,797,000	240
1950	4,736,900	4,689,903,000	989	6,871,859,000	1452	525,221,000	110	1,246,015,000	262
1951	4,788,000	5,060,405,000	1059	7,558,349,000	1580	567,239,000	117	1,412,981,000	295
1952	4,791,000	5,217,684,000	1090	7,583,631,000	1582	558,220,000	117	1,481,175,000	310
1953	4,847,900	5,422,783,000	1120	7,879,024,000	1629	573,373,000	118	1,482,550,000	306
1954	4,945,200	5,334,024,000	1080	8,223,945,000	1662	557,994,000	113	1,488,885,000	301
1955	4,932,000	5,960,968,000	1210	8,548,515,000	1732	831,290,000	169	1,457,670,000	296

Source: "Annual Survey of Buying Power", Sales Management, 1949 through 1956.

Illustration V
2 of 2

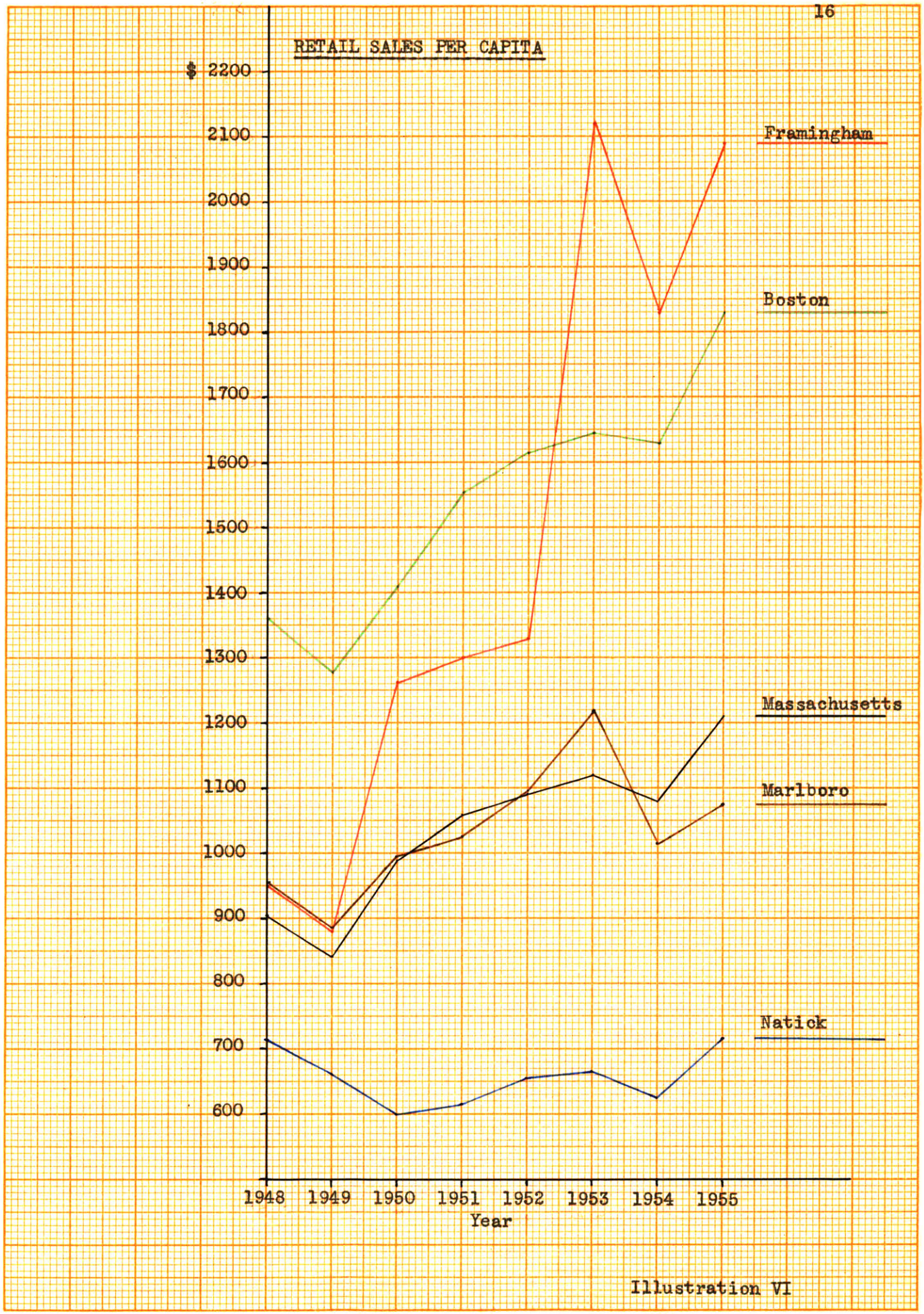


Illustration VI

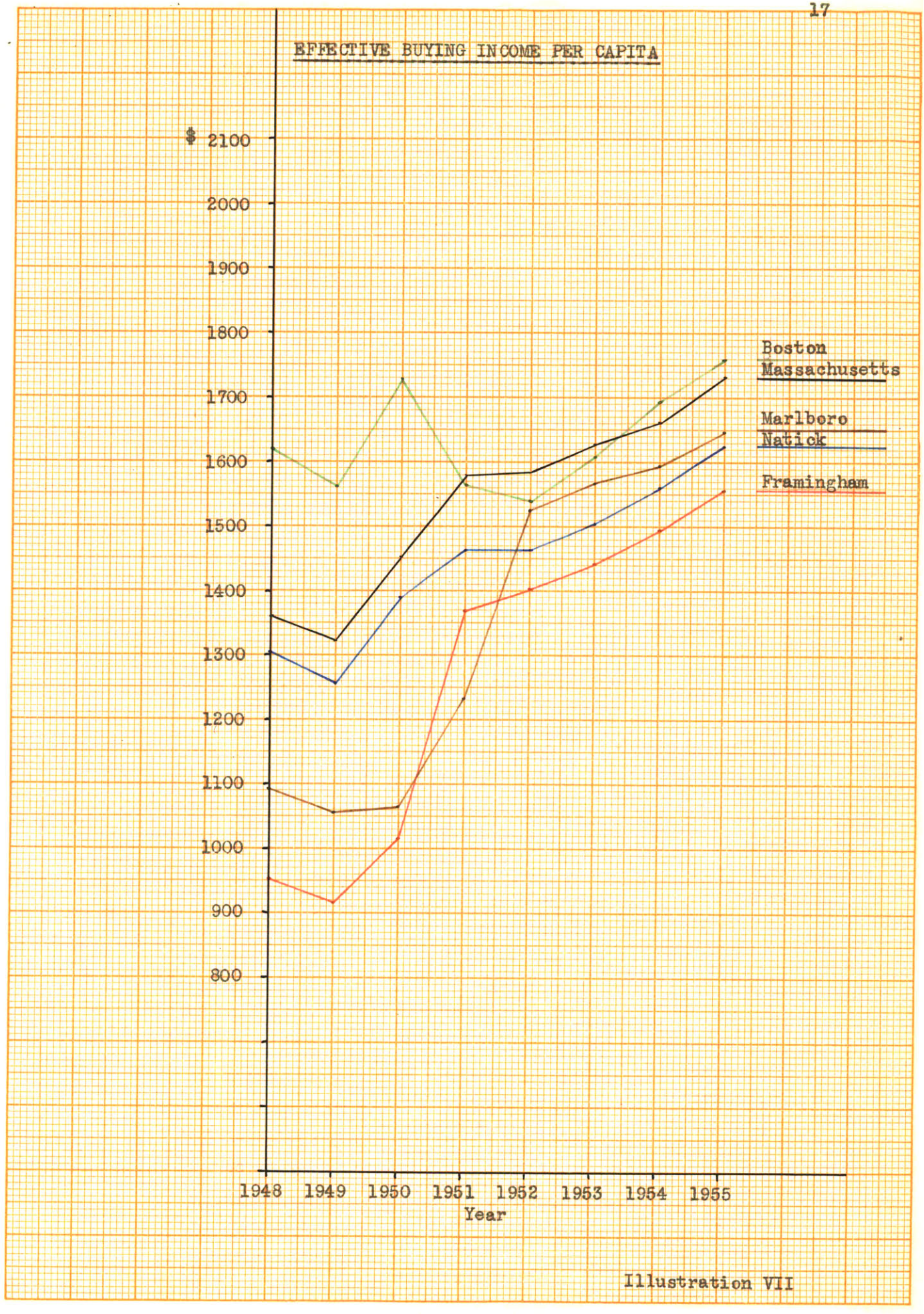


Illustration VII

CBD Market Area

The areal extent of the Framingham CBD market area prior to the establishment of Shoppers' World can be approximated from information contained in a 1949 survey which noted that customers came to the CBD from Framingham and 56 other localities.[1] 15 of these 56 localities supplied 96% of the customers. Located on a map they give an idea of the market area served by the Framingham CBD (Illustration VIII, p. 19). The other major business districts within the market area indicated were in Wellesley, Milford, Marlboro and Natick, in descending order of magnitude. Their relative sales volumes were shown by the 1948 U.S. Census of Business:

	Total Retail Sales for the year 1947
Framingham	$31,883,000
Wellesley	23,247,000
Milford	15,504,000
Marlboro	14,321,000
Natick	10,675,000

In establishing a trade or market area for the purpose of estimating future sales potential for the Framingham CBD, four so-called principles of retail location analysis were utilized as guides, viz:

(1) "Shoppers move toward, rather than away from the most dominant trading center.

(2) "Shoppers will not go through one trading center to get to another center of equal facility.

(3) "Shoppers will patronize the closest center of equal facility.

(4) "Shoppers tend to follow traditional circulation patterns." [2]

1. Dwight M. McCracken and Angus J. MacNeil, Report of a Parking and Traffic Survey of the Town of Framingham Central Business District, Framingham Planning Board, Framingham, Mass., 1950, table V, p. 40.
2. Real Estate Research Corp., Perimeter Plan for Englewood Plaza, Economic and Legal Analysis, Chicago, Illinois, 1953, p. 11.

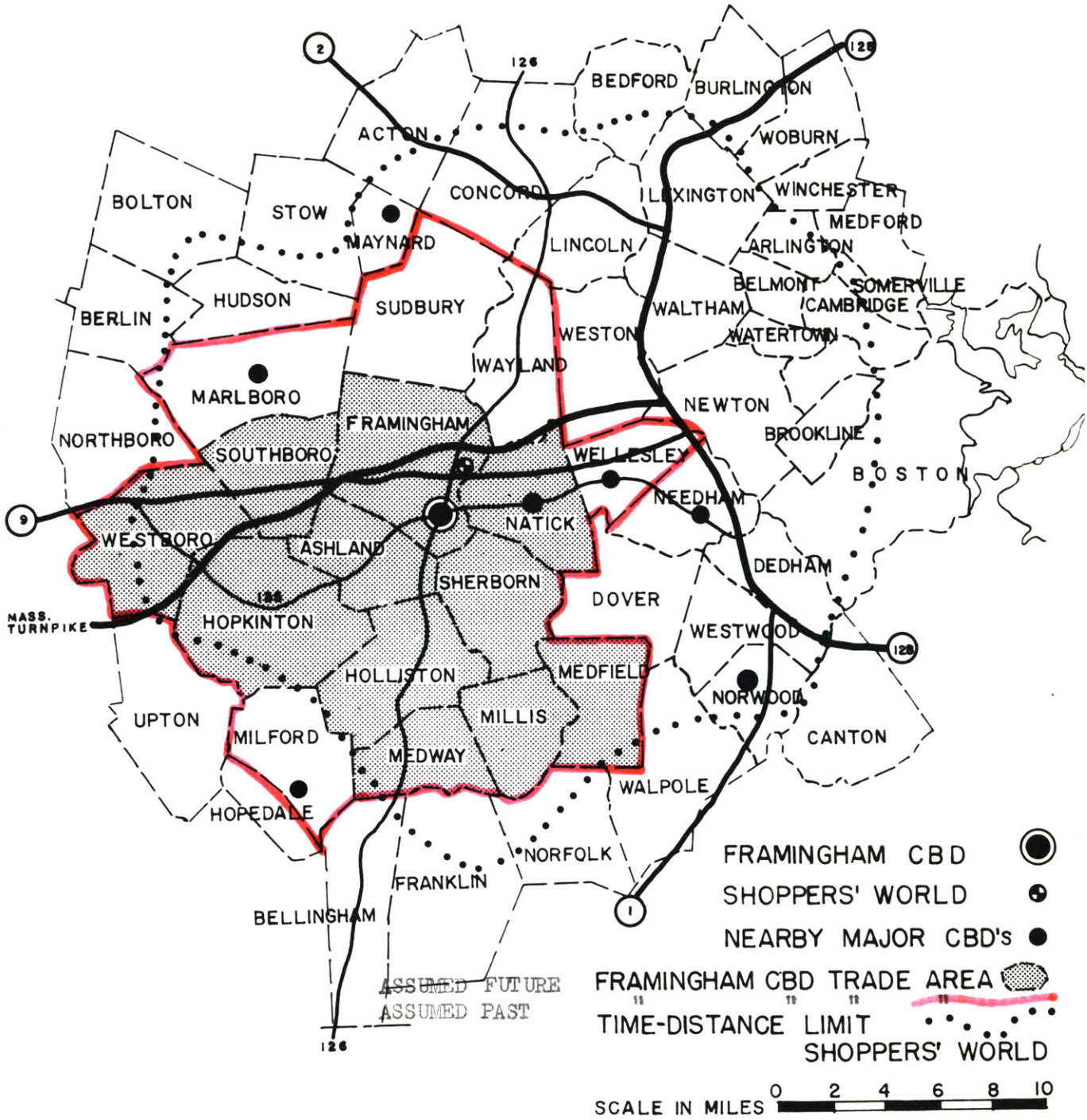


Illustration VIII

On the basis of these criteria, a minimum future trade area for the Framingham CBD was established within the 16 town area which applied prior to the creation of Shoppers' World. The communities of Wellesley, Marlboro and Milford were eliminated because of their strong local shopping districts, and Sudbury and Wayland were eliminated since their trade could be intercepted by Shoppers' World. The new trade area would contain 11 communities within which the Framingham CBD could have competitive opportunities for trade equal to or better than Shoppers' World and the major town business districts if "equal facilities" are provided and if the principles of retail analysis cited earlier prevail. (See Illustration VIII, p.19.)

Population estimates for each of the communities in the trade area were made by simple projections of past growth rates to a 1970 target date. Assuming a low growth rate equal to the 1940-1950 increase and a high growth rate equal to the 1945-1955 increase, the population of the area would increase from 40% to 60% over the 1955 figures by 1970. (Illustration IX, p. 21).[1]

If the Framingham CBD continues to share the market within this trade area with other business districts on the same basis as it does now, and if **sales increases in the area vary in rough proportion to population growth, Framingham CBD sales should increase from 40% to 60% by 1970.**

1. The total populations for Framingham and Natick are included although it is recognized that Shoppers' World will serve a large portion of each town perhaps more advantageously than the CBD. This defection could be sufficiently compensated for by increments of trade from other towns outside the trade area indicated so that gross errors should not appear in the final result.

POPULATION ESTIMATES: FRAMINGHAM CBD TRADE AREA

Community	1940	1945	1950	1955	Estimated Pop. low 1970	high 1970
Framingham	23,214	25,502	28,086	31,589	44,000	45,000
Natick	13,851	15,789	19,838	26,213	46,000	57,000
Sherborn	1,022	1,036	1,245	1,439	2,050	2,400
Southboro	2,231	2,330	2,760	3,173	4,400	5,100
Ashland	3,479	2,920	3,500	5,828	6,000	8,300
Holliston	3,000	3,311	3,753	4,471	6,200	7,100
Westboro	6,463	6,665	7,378	8,130	10,000	10,100
Medfield	4,384	4,199	4,549	5,293	5,600	7,500
Medway	3,297	3,363	3,744	4,169	5,100	5,800
Millis	2,278	2,329	2,551	3,030	3,700	4,600
Hopkinton	2,697	2,856	3,486	4,407	6,400	8,300
	65,916	70,295	80,890	97,732	139,450	161,200

139,450 - 97,732 = 41,718 Say 40% increase

161,200 - 97,732 = 63,468 Say 60% increase

Sources: 1940 and 1950 population according to U.S.Census of 1940 and 1950.
1945 and 1955 population according to Mass. State Census.
low 1970 population: 1955 plus increase in proportion to 1940 to 1950 growth.
high 1970 population: 1955 plus increase in proportion to 1945 to 1955 growth.

Illustration IX

This possible increase in sales could only be made possible by improving the physical facilities of the Framingham CBD in order to cope with the increased traffic and parking demand which would be engendered by increased sales volume.

The foregoing discussion of future market potential for the CBD was based on the assumption that sales in the CBD would increase in proportion to population increases. With improved facilities, however, it might be possible that the CBD could capture a greater proportion of this limited trade area than it does at present, thus increasing the sales potential beyond population increases. The extent of trade within the area now going to markets other than the CBD is indicated in a recent survey of shopper's buying habits (Illustration X, p. 23). This survey shows that the Framingham CBD ranks third behind Shoppers' World and Downtown Boston in almost all categories of merchandise bought by residents of an area including most of the limited trade area of 11 towns evolved for this discussion, plus the towns of Dover, Maynard, Norfolk, Sudbury and Wayland.

While the possible degree of sales increases estimated may not be precisely conclusive because of the limited nature of the market study which could be attempted within the scope of this thesis, the order of magnitude of the potential increase can provide a measure against which to compare estimated costs of proposed improvements to the CBD.

WHERE RESIDENTS OF FRAMINGHAM AREA BUY

Area Includes: Dover, Ashland, Framingham, Hopkinton, Maynard, Medfield, Medway, Millis, Natick, Norfolk, Sherborn, Southboro, Sudbury, Wayland

Merchandise Classifications	Downtown Boston	Wellesley	Shopper's World	Framingham
	%	%	%	%
Untrimmed Cloth Coats	28	11	32	14
Fur Coats	50	4	13	16
Street Dresses	22	12	36	14
Washable Dresses	16	8	39	17
Women's Sports & Beach Wear	17	13	36	16
Slips and Nightgowns	17	12	33	17
Millinery	18	9	35	19
Women's Shoes	25	9	23	18
Hosiery	11	5	35	21
Handbags	17	9	36	20
Cosmetics	12	5	33	20
Costume Jewelry	15	8	36	21
Fine Jewelry	43	4	18	22
Children's Wear	10	10	37	16
Men's Shirts, Ties, etc.	23	6	32	16
Men's Suits and Coats	46	2	23	11
Men's Shoes	33	2	19	15
China & Glassware	34	3	34	14
Sheets, Pillow Cases, etc.	28	5	31	17
Pressure Cookers	27	2	27	18
Electric Irons	22	3	24	20
Clothes Washers	18	2	30	19
Electric Refrigerators	20	2	25	19
Furniture	36	1	21	16
Radio & Television	20	2	22	19

Source:
John P. Alevizos & Allen E. Beckwith, Downtown and Suburban Shopping Habits Study of Greater Boston, Boston Herald and Traveler Corp., Boston, Mass., 1954.

Illustration X

SURVEYS

In order to establish requirements for improvements to the Framingham CBD, surveys of various characteristics of the area were conducted to determine their present relationships to and future significance for the CBD. The information compiled provided bases for decisions regarding general land use proposals for a section of South Framingham containing the CBD as well as for the CBD proper. Thus, detailed proposals for CBD improvements were made within the context of a general plan for the surrounding area so that a rational pattern of land use would result.

Five categories of area characteristics were considered:

1. Population Characteristics: Data concerning population distribution, age composition and income levels in the CBD area was compiled from existing sources.

2. CBD Area Land Use: A survey of general land use and housing conditions in the CBD environs was conducted to serve as a base point from which to determine future land use possibilities.

3. CBD Land Use: Detailed land use, building conditions and property valuations in the CBD proper were noted for use in CBD improvements recommendations.

4. Circulation: Existing studies of traffic flows and parking in the CBD area were utilized to establish requirements for future circulation proposals.

5. Transportation: The nature of existing transportation facilities was briefly noted in order to indicate possibilities for future utilization of mass transportation.

POPULATION

Investigation of population characteristics in the area adjacent to the CBD was specifically prompted by a survey conducted in 1949 which showed that 56% of CBD customers came from the South Framingham area,[1] Considering that the residents within a mile radius of the CBD in the South Framingham area would still be more strongly attracted to the CBD because of its proximity than to other shopping districts, a core population of 17,000 for the CBD trade area is located in South Framingham.[2] This is over half of the 1955 total population of 31,589.[3] Most of the new growth in the town since 1950 occured in the area north of Route 9, 1470 building permits being issued for new dwellings in that area from 1950 through 1954.[4] 901 building permits were issued for the area south of Route 9 over the same period, of which 225 were for public housing units.[5] Total population for the southern section remained about the same in 1955 as in 1950 since the Cushing Veterans Hospital which accounted for about 1500 persons in the 1950 census was vacated before the 1955 count.[6]

Cultivation and maintenance of this populous core for the CBD trade area would insure a large increment of future sales volume. Provision of suitable facilities and environment for this section of the town should be considerations of a general plan for the area.

1. McCracken and MacNeil, op. cit, Table V, p. 40.
2. Massachusetts State Census, 1955, detailed count sheet procured from the Director of the Census.
3. Ibid.
4. Annual Report, Town of Framingham, 1954, p. 350.
5. Ibid.
6. U.S.Census, 1950, detailed enumeration district counts procured from the U.S. Director of the Census.

Observation of age composition and migration tendencies within the town provided data significant for general planning considerations. South Framingham has a higher percentage of its population in the upper age groups and lower percentages in the lower age groups than does the north portion of the town as shown below:[1]

Age Group	% North	% South
0-6	16.3	12.8
7-19	19.9	18.7
20-39	32.4	30.4
40 plus	31.4	38.1

The predominance of the upper age groups in South Framingham would be more notable if the data were available separating the public housing group from the total population since the former group appears to consist mostly of young families.[2]

The impression gained from observation of migration tendencies is that new migration of young families into Framingham has been into the north section of town and relocation of residents within the town has been to the south Framingham section.[3] Ages of those in the latter group are generally higher than ages of the new immigrants.

The combined tendencies discussed above should also influence general plan considerations for residential and service developments in the South Framingham area.

1. Mass. State Census, 1955, op. cit.
2. Ibid., and Street List of Residents for Framingham, 1950-1955.
3. Street List of Residents, Framingham, 1950-1955.

Income

Comparison of income characteristics of the population of the Framingham region, the town and the CBD area showed differences of significance for future planning for the CBD. A recent study of regional income disclosed that the Framingham area with 41.7% of its families in the "over $100 weekly income" bracket was second only to the wealthy Wellesley-Brookline area in this respect in Massachusetts. The latter area had 44.4% of its families in the same income category. By comparison, the Greater Boston region had only 28.4% of its families in the "over $100 weekly income" group in 1954.[1]

In the town itself, "effective buying income" data shows that per capita income for the town has risen relative to per capita income for the state as a whole from 1948 to date. For Massachusetts, this value increased 27.4% from 1948 to 1955 while the Framingham per capita income increased 63.5% over the same period. By comparison, the neighboring communities of Marlboro and Natick showed increases of 51% and 24.8% respectively and the city of Boston increased only 8.8%.[2] The sharp rise in Framingham income levels can probably be attributed to the quality of the new residential growth in the town in recent years, new population in higher income brackets than existing population would raise the total town average income.

Income levels in the area immediately adjacent to the CBD, were the lowest in the town according to the 1950 U.S. Census, and there have been no indications of changes since then to change their status for 1955.

1. Alevizos and Beckwith, op. cit., p. 6.
2. Supra, Illustration V, p. 14.

Median income figures for tracts MC-143 and MC-144 containing the CBD area were $2,808 and $3,015 respectively compared to the other tract incomes of $3176, $ 3607 and $ 4056.[1]

The limitations of data and of scope of this study do not allow more detailed analysis of income characteristics to be carried out, but the impressions gained from the observations which have been conducted show that CBD services will be oriented to a large extent towards the buying habits of the large low-income group adjacent to the CBD area. This buying group is almost completely ignored in the study for Shoppers' World and can perhaps be considered almost exclusive trade for the CBD.[2]

In light of the foregoing discussion, two more principles of retail trade can be cited which may be pertinent to this situation:

(1) "Consumers travel farther to buy high-priced than low-priced goods....

(2) "Upper-income families travel farther to shop than low-income families."[3]

Hence, the existence of a large low-income group near the CBD assures a stable nucleus of trade which can be augmented by merchandise attractions for higher-income mobile patrons from the more distant areas. Thus, a shopping center of broader appeal than Shoppers' World can be promoted.

1. U.S. Census, 1950.
2. National Market Research Corp., op. cit.
3. P.D. Converse, A Study of Retail Trade Areas in East Central Illinois, University of Illinois, Urbana, Illinois, 1943, p. 13.

CBD AREA LAND USE

A survey of the land use pattern within walking distance of the CBD was undertaken in order to determine the nature of the surrounding uses and their relationship to the CBD activities.

Uses were recorded in categories described below and shown on Illustration XI, page 30.[1]

CBD AREA LAND USE CATEGORIES

RESIDENCE
- 1 Family (1-family detached structures.)
- 2 Family (2-family detached structures.)
- 3 Family (3-family detached structures.)
- 4 Family and over (Apartments, row housing, rooming houses.)

BUSINESS
- Business I (Consumer retail and service uses, not including automotive service and gasoline stations.)
- Business II (Wholesale, warehousing, storage uses; automotive service and gasoline stations; commercial service uses not requiring mass public access.)

INDUSTRY
- Industry I (Low nuisance industrial and manufacturing uses and services.)
- Industry II (Industrial and manufacturing and other uses with high nuisance potential or requirements for special facilities such as major highway access or railroad spurs.)

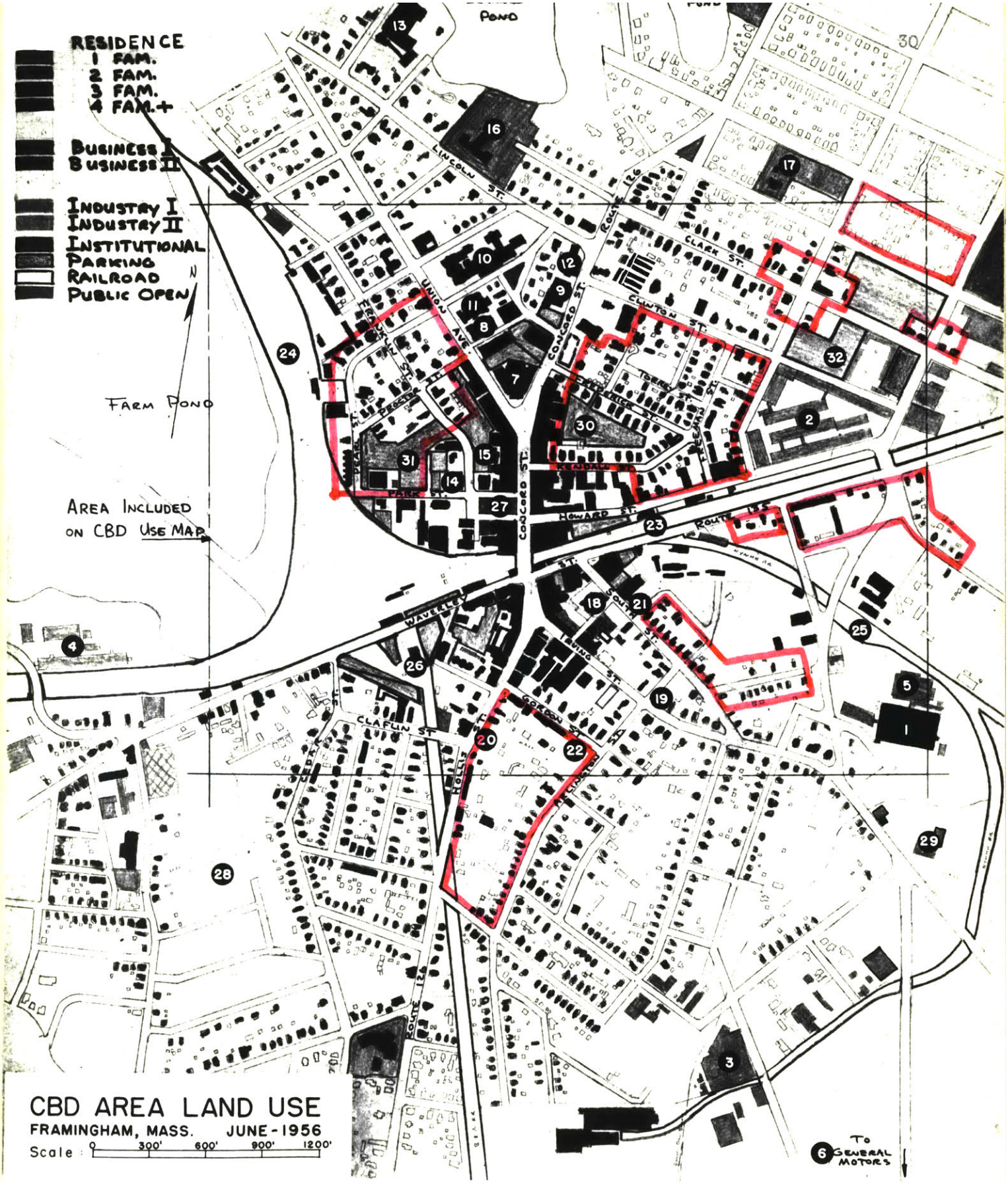
INSTITUTIONAL (Schools, churches, civic and public service uses, organizational uses and the like.)

PUBLIC OPEN SPACE (Recreation areas, school grounds.)

PARKING (Major off-street parking areas.)

RAILROAD (Right of way and property.)

1. A photostat of the CBD Area Land Use map is included herewith for general reference purposes. The original study, in full color, is filed separately.



Source: Field survey.
Note: This is a photostatic copy of the original study map for reference purposes in this thesis.

Illustration XI

Blighted or near-blighted blocks. See p. 32.

Residential Use

The average residential density for the environs of the Framingham CBD is about 7 dwelling units per net residential acre. A few blocks adjacent to the business property in the CBD have densities of about 10 to 12 dwelling units per acre. Structures are mostly one, two and three story wood frame units with a few scattered apartment houses built for multi-family use. Many of the 3 and 4 and over dwelling unit structures have been converted from structures which were originally built as one and two family homes. There are about 10 rooming houses on each side of the railroad tracks and many of the private homes supply rooms for boarders as well. Two hotels north of the tracks and one south of the trac ks furnish about 140 rooms for transients and long term inhabitants. Combined residential and business uses are not extensive with only two stuctures in the north part of the CBD and four in the south having apartments over first floor stores. There is a concentration of residences with professional offices in the north and northwest section of the CBD environs, the location of doctors and dentists in the area probably influenced by the proximity of the regional Framingham Union hospital.

The residential block pattern in the northern portion of the area is fairly regular with a few small odd shaped blocks in the west section. On the south side of the tracks, however, the residential blocks are generally irregular in shape with some back lot residences and large inner block areas not used to good advantage. The structures also appear to be more closely spaced than the residences in the northern area, imparting a more congested feeling to their surroundings.

Housing Conditions

The 1950 U.S. Census of Housing indicated that the oldest and worst housing in Framingham was located in the area adjacent to the CBD. 68.5% of the units in census tract MC-143, north of the railroad tracks and 68% of the units in tract MC-144 south of the tracks were built before 1919. Both tracts showed over 10% of the dwelling units "with no private bath or no running water or dilapidated.[1]

Blighted areas were more closely pinpointed by a survey of blighted housing which rated 16 blocks within the town as "blighted" or "near-blight".[2] 8 of the 16 areas were within the CBD Area Land Use study section (Illustration XI, p. 30).

There have been a few houses cleared from the CBD area since the observations cited above were made, but the general area has not undergone any residential improvement. In fact, the houses are just 9 years older and worse than they were when the blight study was made in 1947.

The inefficient street and block pattern noted earlier and the high incidence of old and dilapidated housing indicate a need for general use planning of the area to remove blighting conditions and to indicate areas for possible housing renewal or redevelopment for other uses.[3]

1. U.S. Census of Housing, 1950.
2. Framingham: Your Town, Your Problem, op. cit., p. 17.
3. Supra, p. 31.

Business Uses

Business I retail activities are concentrated along Concord St. north of the railroad tracks with extensions of continuous business frontage north along Concord St. and Union Ave., and south of the railroad tracks along Hollis and Irving Sts. The major exception to this concentration is the location of Mammoth Mills (1), a recently established "super-market" type of retail department store.[1]

Business I office activities are grouped along Union Ave. and Lincoln Sts., consisting for the most part of medical and dental offices. Other office activities are located on the upper floors of the retail store buildings in the core of the CBD.

Business II activities, consisting mostly of building materials establishments and wholesale outlets and storage facilities are located on side streets off of the main shopping street, generally mixed in with residences. This juxtaposition does not insure the continued upkeep of the residences or the efficient operation of the business uses. Present zoning provisions for the area around the CBD core will enable more of this type of use-mixing to occur without protective regulations for either category of use.[2]

Overall planning for the area should consider the locational requirements for Business I office uses and Business II uses in order to achieve an orderly and efficient distribution of land uses for the CBD and its environs.

1. See Illustration XI, p. 30 for this citation (1) and other similar citations which will be similarly indicated ().
2. Zoning By-Law, Town of Framingham, p. 8.

Industrial Uses

The Industrial uses are located in a loose ring about one half mile out from the CBD core with a few small concerns in the fringes of the core area. A laundry, a machine shop and a bedding factory are located in the north section of the CBD core and a garment manufacturing concern is located in the south section of the core.

Major Industrial II uses are located principally along the railroad rights-of-way: the Dennison Mfg. Co. (2); the Hodgman Rubber Co. (3); the Framingham Wool Co. (4); Gregg and Son, Inc., millwork (5); and the Framingham Hat Co. (29). An important Industrial II use just beyond the survey area is the General Motors Assembly plant (6).

The major effect produced on the CBD area by the industrial uses is caused by their traffic generating tendencies. Over 5000 people are employed by the firms noted and their rush-hour travel plus the traffic of trucks and industrial equipment produce deleterious effects on the surrounding non-industrial uses.

Reexamination of existing zoning and consideration of general planning provisions for industrial use allocation and traffic routing should be undertaken to ameliorate the ill effects of the uses on the area as well as to provide a land pattern within which the industrial uses can operate more efficiently and productively.

Institutional Uses

The most significant group of institutional uses is grouped just north of the CBD core and contains the Town Hall (7), a National Guard Armory (8), Civic League offices and auditorium (9), the High School (10), a large church (11), and a nursing home (12). A few residences and two garages are mixed into the grouping. The requirement common to all these uses is parking space (limited parking is available for (7), (9) and (10)), and the present grouping plus the hours of use of the various elements in this area suggest a common treatment for the group in a general plan context.

Other institutional uses north of the railroad tracks are: a general hospital (13); the post office (14); police headquarters (15); and two schools (16) and (17). The post office and police headquarters are within the CBD core. The post office functions well within this area, providing services to people who come to the CBD for other purposes at the same time. The police headquarters, with its incident traffic generating effects does not appear to fit efficiently into the core pattern and could perhaps function better in another location.

South of the railroad tracks, a generating station (18); an old vocational school (19); fire department headquarters (20); and the offices of the UAW-CIO (21) constitute the institutional uses. A vacant school building (22) is also in the area.

Aside from the obvious need for replacement of the vocational school structure, the major requirement for study in this group is the location of the fire headquarters which at this time can be easily cut-off from a large part of its service area north of the railroad tracks by the frequent dropping of the railroad crossing gates.

PUBLIC OPEN SPACE

Aside from the Town Common (27) located within the CBD core, school playgrounds provide the only accessible public open space in the CBD area. The south section of the area is especially lacking in open space for recreational use. A potential site for recreational development is the east bank of Farm Pond, an area presently preempted by the New Haven Railroad freight yard (24).

Other open space in the area is undeveloped vacant land located within the industrial zoned section of the area, and a large swampy tract (28).

This category of use should be reexamined within the context of a general plan in order to provide for the recreation needs of the residents of the area.

PARKING

Major off-street parking areas for public use are located east and west of the Concord St. business buildings, (30) and (31). The area (32) is for Dennison Mfg. Co. employee use. Smaller parking lots are scattered in the southern portion of the CBD; north of the Town Hall; and amid alleys and yards in the Howard-Kendall St. block. The lots are almost uniformly ill-paved and ill-lit with circuitous limited accessibility. These limitations were sharply pointed up in a survey conducted in 1949 but only few improvements have been made to date as a result of the survey.[1] Directions and access, especially to lot (30), are not readily discernable by the inexperienced driver not familiar with the area.

1. MacCracken and McNeil, op. cit., pp. 21-26.

RAILROAD USE

Railroad property and right-of-way are among the most noticeable and least admirable of the uses in the CBD area. The Boston and Albany tracks (23) are the most intensively used of the routes. Area (24) is a freight handling yard for the New Haven Railroad whose right of way (25) cuts across the B & A tracks and continues southeast through the area with a spur track swinging west from its main line to serve industries such as Hodgman Rubber Co. (3). A right-of-way from the B & A tracks turns southwest from the mainline through a small freight car yard (26) en route to Milford and Holliston.

Where the railroad lines serve industrial uses within the survey area, they relate efficiently to the uses abutting. The large area occupied by the New Haven freight tracks (24) does not appear to conform with this impression. It is certainly not the highest and best use for the bank of a pond which could be a potentially attractive recreation area for public benefit. Consideration of relocation of the freight tracks to another route, possibly through the Cushing Hospital site, should be examined within the context of a general plan for the area.

Relationship between railroad areas and residential areas in the southern portion of the area should be studied for possibilities of changing abutting uses to non-residential categories, or shielding the residential uses from the blighting effects of the railroad tracks.

CBD LAND USE

A detailed survey of land use in the CBD core was carried out within the larger CBD area land use study. Building conditions and property valuations were also noted for use in improvements planning.

The survey area was delimited on the east by the Dennison Mfg. Co. property, on the west by the railroad freight yards and on the north and south by the end of continuous shop frontage, the entire area falling within a pattern roughly hexagonal in shape measuring approximately 2200' across flats. (See Illustration XII, p. 40.)[1]

Categories of use similar to those noted in the CBD Area Land Use survey (Illustration XI, p. 30) were employed with additional sub-categories under the Business I section:[2]

Business IA: Food, Eating and Drinking Places; General Merchandise and Apparel stores; Drug and Proprietary stores and Miscellaneous small retail establishments.

Business IB: Furniture, Furnishings and Appliances; Automotive Parts and Accessories (not including gasoline and service stations); Hardware; Miscellaneous Hard goods.

Business IC: Personal and Repair Services; Offices; Banks.

In addition to graphical representation by the general use categories described above, detailed lists of first floor functions were compiled for comparison of activities between the north and south sections of the CBD and between the CBD and Shoppers' World. (See Illustration XIII, pp. 41-49.)

1. A photostatic copy of the original study map is included here for general reference purposes. The original study is filed separately.
2. These categories are derived from the listing of the U.S. Census of Retail Trade, 1948.

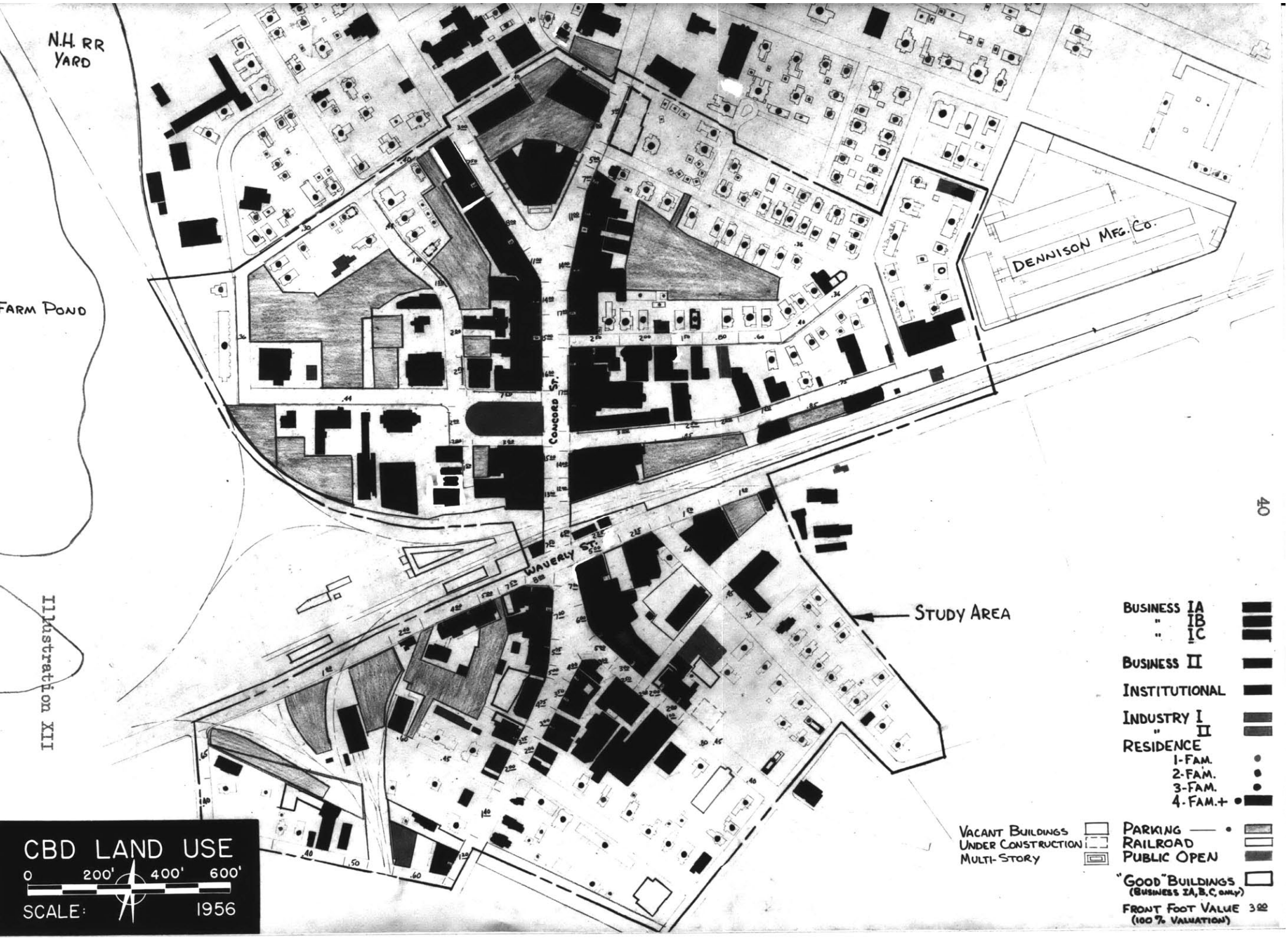


Illustration XII

SUMMARY SHEET: RETAIL AND SERVICE USES, FIRST FLOOR AREAS ONLY.

Category	CBD North Section				CBD South Section				Shoppers' World
FOOD GROUP	No.	Area sq.ft.	Sales $/sq.ft.	Total Sales	No.	Area sq.ft.	Sales $/sq.ft.	Total Sales	No.
Super Markets	2	19040	112	2,130,000	1	6400	112	715,000	1
Other Food	8	8940	115	1,030,000	6	7160	115	824,000	3
EATING AND DRINKING PLACES									
Eating Places	3	6000	35	210,000	7	7730	35	270,000	1
Drinking Places	1	(1000)			7	(13400)			-
GENERAL MERCHANDISE									
Department Stores	5	50400	65	3,270,000	-				2
5 & 10	2	17220	35	603,000	-				-
APPAREL GROUP									
Family and Women's Wear	7	18520	65	1,205,000	2	1940	40	77,500	8
Women's Specialties	7	5540	40	222,000	-				
Men's and Boy's Wear	4	7680	55	422,000	1	1600	55	88,000	2
Shoe Stores	6	7900	40	316,000	2	6130	40	245,000	3
Children's Wear	1	800	55	44,000	-				1
Other Apparel	2	1360	40	54,500	-				3
FURNITURE, FURNISHINGS AND APPLIANCE GROUP									
Furniture	1	(8000)			6	(30200)			-
Furnishings, Appliances	2	1920	35	67,200	5	11970	35	42,000	2
AUTOMOTIVE GROUP									
Automotive accessories, toys	3	4900	35	171,000	2	4590	35	161,000	-
LUMBER, BUILDING, HARDWARE GROUP									
Paint, Wallpaper, Hardware	2	3040	35	106,000	5	12820	35	450,000	1

Illustration XIII
(1 of 9 pages)

Category	CBD North Section				CBD South Section				Shoppers' World[1]
	No.	Area sq.ft.	Sales $/sq.ft.	Total Sales	No.	Area sq.ft.	Sales $/sq.ft.	Total Sales	No.
DRUG STORES AND PROPRIETARY STORES	5	7890	35	276,000	4	5920	35	207,000	1
OTHER RETAIL STORES									
Liquor Stores	2	2830	100	283,000	2	1825	100	182,500	--
Other Retail	11	9570	35	335,000	5	8000	35	280,000	6
SERVICES									
Barber, Beauty Shops	5	2320	25	58,000	5	3200	25	80,000	1
Cleaning, Laundry, Tailor	9	4840	25	121,000	3	2080	25	52,000	1
Shoe Repair	2	800	25	20,000	2	1080	25	27,000	-
Watch Repair	1	400	25	10,000	2	624	25	15,600	-
OTHER FIRST FLOOR AREA									
Services and Offices	11	(13070)			2	(5390)			-
Banks	5	(23850)			-				1
Theaters	2	(17700)			1	(7000)	Vacant		1
TOTALS, NOT including ( );	89	181900		$ 9,961,000	54	83069		$ 3,716,600	36

Sources: Uses obtained by field survey.
Floor Areas obtained by measuring Assessor's maps of the Town of Framingham.
Sales per sq. ft. figures derived from values cited in:
National Planning and Research, Inc., "Analysis for Jordan Marsh Co.-The Center for the North Shore," Table 1., 1955.
Urban Land Institute, Technical Bulletin No. 20, "Shopping Centers", p. 74. , 1953.
American Institute of Planners, Chicago Regional Chapter, "Regional Shopping Centers Planning Symposium", p. 53, 1952.

Note 1: Floor areas for Shoppers' World uses not available.

ESTIMATED FIRST FLOOR AREAS AND GROSS INCOME, FRAMINGHAM CBD

CBD NORTH	Floor Area sq.ft.	Estimated Gross Income	
Retail	173,540	$ 9,752,000	$ 56.20/sq.ft.
Service	8,360	209,000	25.00/ "
Other First Floor Uses	(181,900)s 63,620	(9,961,000)s	(54.70/ ")
	(245,520)s		
CBD SOUTH			
Retail	76,085	3,542,000	46.50/sq.ft.
Service	6,984	174,600	25.00/ "
Other First Floor Uses	(83,069)s 55,990	(3,716,600)s	(44.75/ ")
	(139,059)s		
Total Retail & Service Area	264,969	13,677,600	51.60/sq.ft.
Total First Floor Area	384,179		

Note: Area and income figures are for "order of magnitude" discussion only.

Source: Illustration XIII, p. 42 : "Summary Sheet: Retail and Service Uses."

XIII
(3 of 9 pages)

RETAIL STORES:	CBD NORTH	CBD SOUTH	SHOPPERS' WORLD
Food Group			
(Super Markets)			
Stop and Shop	8000	A & P 6400	Stop and Shop
First National	11040		
(Other Food)			
Goldman's (Fancy Groc.)	1440	Imperial 1440	
Kennedy's "	1440	Meatland 800	
Copanos Fruit	640	Framingham Fruit 2400	
Fanny Farmer (Candy)	1440	Blue Goose Fruit 1000	Candy Cupboard
Barron's "	640		Creed's (Ice Cream Candy)
Paul's Bakery	800	John and Son Bakery 720	
Dietz "	1900		
Super Quality Do-Nut	640		Tic-Toc Do Nut
		Waverly Spa 800	
Eating and Drinking Places			
Wellworth Cafeteria	3360	Cozy Cafeteria 2460	Sharaf's
Friar's Cafeteria	1840	Copper Kettle 720	
Crescent Cafe	800	J & C 480	
		Aldo's Grille 640	
Gagne's (Bar)	(1000)	Laury's Dely 930	
		Bonina's Diner 1600	
(Kendall Hotel-Rest., Bar)		Dixie Lee Diner 900	
(Park Central Hotel-Bar)			
		Connery's (Bar) (2880)	
		Towne House 2160	
		Shamrock Cafe 1200	
		Waverly Tap 880	
		Happy Swallow 2080	
		The Roundup 3200	
		Casa Sevilla 1000	

	CBD NORTH		CBD SOUTH		SHOPPERS' WORLD
General Merchandise:					
Gilchrist's		20000	(Mammoth Mills	64000)	Jordan Marsh
J.M. Fields		8800			Gorin's
J.C. Penney		4400			
Gorin's		10800			
Allen's		6400			
F.W. Woolworth		9920			
J.J. Newberry		7300			
Apparel Group					
Sportswear	FW	6000	G & B Surplus	600	
The Outdoor Shop		960	Army and Navy Store	1340	
The New York Store	WW	1920			Beverly's
Alpen's		1440			Country Flair
Miller's		1600			MacDonnell's
Bell Shops		3720			Peck & Peck
Rayfield's		2880			Plotkin Bros.
					Marguerite Alain
McElroy (Lingerie, corsets)		600			Maternity Shop
Cele's (Dresses)		1100			
Betty's "		640			
Molly Ann		800			
Modernette Millinery		800			Dorothea's
The Ladies Hat Shop		800			
Peg's Accessories		800			
Six Little Tailors	MW	2800	The Wardrobe	1600	Kennedy's
Carpenter's		1440			Modell's
Perlmutter's		1600			
Hastings		1840			

CBD NORTH		CBD SOUTH		SHOPPER'S WORLD
Shoe Stores				
Thom McAn	1920	Seymour's	800	Kerwin's
Henderson	1120	The Shoe Rack	5330	Spencer's
Kay's	320			Talcoff's
Morse	2300			
The Shoe Mart	1120			
Chas. Panza, Cancellation	1120			
Other Apparel Stores				
Young's Children's Wear	800			M.S. Berny Linens
Mill Ends Fabrics	960			Tots 'N Teens
Wonder Shop Fabrics	400			Van's Hosiery
				Stitch 'n Knit
Furniture, Furnishings and Appliance Group				
Hansen's Furniture (8000)		Goodwin's Furniture	8000	
The Cradle Shop	1120	Lewis Furniture	8000	
Garino's Radios TV	800	Poplin's Furniture	8000	
		Elm Furniture	1000	
		Rico's Furniture	4000	
		Hy-Grade Furniture	1200	
		Acme Drapery	1440	Lepie's Curtains
		Masciarelli Jwlry.Furn.	1170	Sears Roebuck
		Sear's Roebuck	7200	
		Singer Sewing Mchnes.	1440	
		Mor-real " "	720	
Automotive Group		Western Auto	1920	
Halloran's Auto Supplies	1700	Jack and Harry's	2670	
Acme Auto Supply (Toys)	1600			
Landry Cycle	1600			

CBD NORTH		CBD SOUTH		SHOPPER'S WORLD
Lumber, Building, Hardware Group				
Martin's Wallpaper & Paint	1280	Geo. Howard Wallpaper	800	C & T Paint & Wallpaper
The Boston Store Hardware	1760	Auchubon Hardware	4850	
		Waverly Hardware	2290	
		White Hardware	3440	
		Town Hardware	1440	
Drug Stores and Proprietary Stores				
Arcade	800	Bond's	2800	The Pharmacy
Hughes	1750	Rice	800	
Liggett's	3500	Clough's	800	
The Professional Pharmacy	1120	Hollis	1520	
Carroll's Cosmetics	720			
Other Retail Stores				
M&M Liquor	860	Datti's Liquor	800	
Framingham Liquor	1970	Barbarino's Liquor	1025	
Jennison Jewelry	320	Kay's Jewelry	1840	Johnson-Gordon Jwlry.
Earl's Jewelry	880	Robertson Jewelry	1600	
Unicorn Bookstore	800	Bates Stationers	1840	
Pendolari Cards Gifts	1440			Idea Box Cards
Ahearn's Cards Gifts	850			Brett's Leather goods
Brown Sporting Goods	1600	Horton Sporting Goods	1920	
Kynoch's Toys Sptng. Goods	960			Suburban Playlands
Sy's Smoke Shop	560	Garbarino Tobacco	800	
Fitt's Photo and Cameras	1120			Fitt's Photo and Cameras
Art's Gifts	640			
Framingham Craft Center	400			The Album, Records

	CBD NORTH		CBD SOUTH		SHOPPER'S WORLD
. SERVICES AND OTHER FIRST FLOOR USES					
Barber, Beauty Shops					
Gabriel	640		Johnny's	400	Pierre-Marcel Beauty
Paul	400		Irving Sq.	480	
Barber	400		Little Joe	400	
Barber	480		Modern Beauty	720	
Swan Beauty	400		Milady Beauty	1200	
Cleaning and Laundry Service and Tailoring Service					
Queen's Cleaner's	640		Framingham Cleaners	1440	Sarni Cleaners
Original "	560		Featherman "	640	
Chin Laundry	480				
Gee Sam "	720				
Laundry (Arcade)	400				
Jay's	600				
Chakiris Tailor	400		Marinofsky Tailor	720	
Gumben "	640				
Tailor	400				
Shoe Repair					
Brandolini	320		Rapid	480	
Brandolini	480		United	600	
Watch Repair, Jewelers					
Pickering	400	$25	Aceti	224	
			Puce	400	

CBD NORTH		CBD SOUTH	
OTHER FIRST FLOOR USES			
Framingham Optical Co.	1120	Ideal Amusement Co. (Pinball Service)	390
Fram. Hearing and Optical	400		
Western Union	270		
Framingham Typewriter Service	480		
Boston Edison Co.	2800	Worcester Gas	5000
N.E.Tel & Tel.	2240		
Offices	5760		
BANKS			
Framingham National	7450		
So. Middlesex Coop.	1600		
Farmers Mechanics	4600		
Framingham Trust	6400		
Framingham Coop	3800		
THEATERS			
St. George (1325 seats)	11300	Hollis (Vacant)	7000
Gorman (925 seats)	6400		

Functional Comparison

The CBD use survey revealed a natural grouping of "Primary Shopper Goods" outlets in the north section of the CBD and a grouping of "Secondary Shopper Goods" in the south section of the CBD. "Convenience Goods" outlets were about equally distributed between the two sections of the CBD with a predominance of Hardware stores in the south section evident within the category.[1] (See Illustration XIII, pp. 41-42.)

In general, there is more interaction among the Primary uses than between Primary and Secondary Goods outlets so that the physical division between the sections of the CBD formed by Waverly St. and the B & A railroad tracks, while certainly a nuisance, is not necessarily an insuperable obstacle to trade within the CBD.

Personal and Repair Services appear in both sections of the CBD in fairly equal proportion. The North section, however, has all the banks, the two operating theaters, and a variety of second story activities (not specifically itemized herein) including several "Loan and Finance" offices, professional suites, and general offices.

---

1. In this analysis, functional groupings utilized were:
"Primary Shopper Goods": General Merchandise and Apparel.
"Secondary Shopper Goods": Furniture, Furnishings and Appliances; Eating and Drinking Places.
"Convenience Goods": Food, Drug and Proprietary Stores, Liquor and Hardware Stores.
Real Estate Research Corp., op. cit., pp. 36-37.

A few Primary Goods establishments are located in the south section of the CBD, but they are almost all of the "bargain" or "surplus" type specifically oriented to low price shopping. An additional Primary Goods outlet which merits mention is Mammoth Mills (Illustration XI, p.30,(1)) a recently opened "super-market" type of department store which has not been in operation long enough to produce definitely attributive effects on the CBD, but may have been the influence for several revisions of operating policy in a few of the CBD stores to similar "super-market" techniques.

Between the north and south sections of the CBD, a complete range of shops and services is offered for its trade area. For "the primary trade area", walk-in trade and CBD employees, there are convenience stores and services; for "the secondary trade area", those within a 15 or 20 minute driving range, its has "Primary Shopper Goods" and "Secondary Shopper Goods"; for the "fringe trade area", within 25 to 30 minutes driving time, it can offer a complete panoply of shops and services if it provides proper circulation and parking facilities and shopping amenities comparable with competitive trade centers such as Shoppers' World.[1]

The comparison with Shoppers' World shows that it is mostly oriented to "Primary Goods" shopping and within that category it does not have as large a group of stores to provide the range of comparison shopping that is provided by the CBD.

1. The Community Builders Handbook, Urban Land Institute, Washington, D.C., 1954, p. 136.

Gross Income Estimates

An estimate of gross income for the CBD, excluding Furniture stores, bars and banks, yielded an "order of magnitude" total of $13,677,600. (Illustration XIII, pp. 41-43). In estimating the floor areas for the various uses which were a basis for calculating income, only first floor figures were used. A number of the stores surveyed had mezzanine or basement sales space which was not included. It is felt that this area would add about 10% to the estimated income, producing an approximate figure of $15,000,000. (about $52 per sq. ft.). This would be split between the north and south CBD $11,000,000 and $4,000,000 respectively. Furniture store income would add a sizeable increment to the total and to the south section if it were available. The difficulty of estimating furniture sales area within reasonable accuracy limits precluded assembly of this data.

By comparison, gross income for Shoppers' World was estimated at about $19,000,000 for 1955 with 500,000 feet of selling space.[1] (About $38 per sq. ft.). This total is verified to a degree by the increase in total retail sales for the Town of Framingham indicated by the overall sales figures available for the years before and after the creation of Shoppers' World. Total town sales for 1952 were estimated at $39,751,000 against $64,269,000 for 1953, an increase of $24,518. The General Merchandise increase for the same period was $22,706,000 less $2,629,000 or $20.077,000.[2]

Similar sources of data for verification of the estimate of CBD are not available so that the figure quoted above is specifically <u>not</u> intended for quantitative use.

1. Eugene J. Kelley, op. cit., p. 79.
2. Supra., Illustration V, p. 14.

Building Conditions

Building conditions in the CBD were evaluated by subjective criteria intended to discover the suitability of existing structures for future use. Structural condition, fire resistance, adaptability to expansion, and compatibility for future CBD use were considered. In these respects, most of the buildings along Concord St. in the north side of the CBD were considered suitable for continued use while most of the business structures in the south side of the CBD were deemed unfit for extended future use (Illustration XII, p. 40).

Property Valuations

Further differences between the north and south sections of the CBD were indicated by a survey of recent property valuations.[1] The main shopping street "front foot" valuations taper north and south from the "hot corner" figure of $17 to lows of $3 at the north end and $2 at the south end. A sharp break in the value diminution occurs at the railroad track proceeding south from the $17 value. The marked difference in relative desirability of property between north and south sides is pointed up by comparison of top values: $17 for the north against $8 for the south. Land values for side street locations also drop off sharply from main street figures. $2.50 for a Kendall St. location compared with $17 on Concord St. just around the corner.

Primary and Secondary Shopper Goods outlet locations and land values between north and south sections appear to exhibit mutual relationships, "Secondary" locations occuring in the lower valued south side and on side streets in the north side of the CBD.

1. Property valuations indicate 100% value appraisals determined by a revaluation study of the town conducted during 1955 and currently undergoing discussion by town authorities.

CIRCULATION

The proper circulation of traffic, customers and goods is a vital necessity for the successful operation of a business district. Since the automobile has been and will be the major means of bringing trade to the CBD, provision for automotive access, circulation and parking must be adequately made. As of 1949, 67% of the patrons of the CBD came by automobile, 23% walked and 10% came by bus.[1] Since most of the population increase from which new trade will come will be in areas outlying from the CBD, the automobile increment of trade will necessarily increase if trade is to increase. Therefore increased facilities for access and parking will have to be provided.

At present, automobile traffic converges on the CBD from six directions, meeting at a railroad grade crossing. The traffic consists of vehicles passing through the CBD from one area to another plus vehicles coming to the CBD for business therein. In 1949, the increment of through traffic was estimated at 56% leaving 44% of the traffic with destinations in the CBD.[2] Analysis of origin and destination data from a survey made in 1950 discloses that through traffic then was about 53% of the total leaving 47% destined for the CBD.[3] Changes in the area such as great regional population growth and the locations of Shoppers' World and the General Motors plant have probably altered these proportions. Local observers feel that there has been an increase in the incidence of through traffic, but no quantitative data is available. For the purpose of this study, through traffic will be assumed to be 60% of the total, leaving 40% bound for CBD destinations.

1. McCracken and MacNeil, op. cit., p. 12.
2. Ibid., p.31.
3. See Illustration XIV, p. 55.

ESTIMATES OF TRAFFIC FLOW TO AND THROUGH THE FRAMINGHAM CBD
(Based on Origin and Destination study of Framingham conducted by the Massachusetts Department of Public Works in 1950, published 1952.)

TO THE CBD (Zones 001 & 002)

From Zone	Directly to 000	Across RR tracks
100	2188	972
200	2580	957
300	1022	569
400	374	284
Sta. 910 thru 914	1991	1761
915 thru 919	1991	828
	10146	5371

Total: 15517 trips to the CBD
(7759 vehicles)

THROUGH THE CBD

From	To		Across RR Tracks
100	400		1114
100	300		1640
200	300		1071
200	400		964
(915 (thru (919	300		902
"	400		1331
(910 (thru (914	100		3055
"	200		2842
(915 (thru (919	910 thru 914)		3690
910	914	1150	
910	913	174	
		1324	16609

Total: 17933 trips thru the CBD
(8967 vehicles)

(47%) (53%) (100%)
15517 plus 17933: 33450 Total trips
(16725 Total vehicles)

RAILROAD CROSSINGS

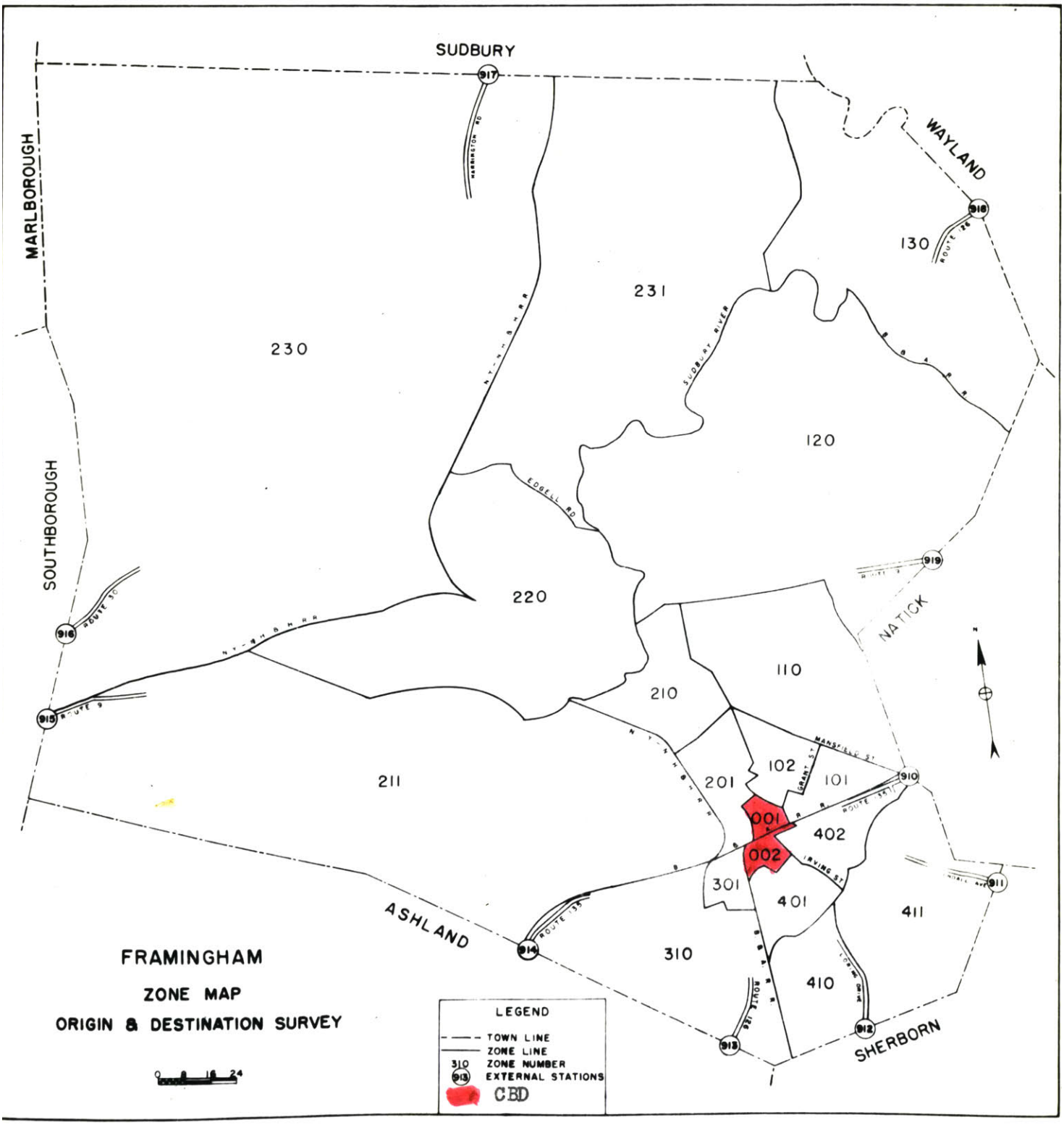
Of 33450 total trips, 21980 (66%) were across the railroad tracks.
(10490 vehicles)

Of 15517 trips <u>to</u> the CBD, 5371 (29%) were across the railroad tracks.
(2686 vehicles)

Of 17933 trips <u>through</u> the CBD, 16609 (93%) were across the tracks.
(8305 vehicles)

NOTES: Trips divided by 2 equals vehicles.
Zone and Station numbers from Zone Map, Illustration XV, p. 56.
Origin and Destination trip data from Illustration XVI, p. 57.

Illustration XIV



Source: Origin and Destination Study for the Town of Framingham, Commonwealth of Massachusetts, Department of Public Works, 1952.

Illustration XV

Inter Zone, Inter Station, and Trips Between External Stations and Zones——————All Types of Motor Vehicles

Zone	001	002	101	102	110	120	130	201	210	211	220	230	231	301	310	401	402	410	411	910	911	912	913	914	915	916	917	918	919	Total
001	–	–	3	6	950	604	625	–	503	298	1502	98	179	–	569	7	7	40	230	851	159	85	212	454	345	277	147	314	908	9373
002	–	–	–	–	466	283	223	4	133	155	558	43	64	7	1015	6	19	57	292	814	129	123	474	451	162	92	55	160	359	6144
101	3	–	–	3	541	296	149	–	136	41	238	43	46	9	553	–	–	31	95	584	69	32	250	352	46	119	26	134	275	4071
102	6	–	3	–	239	92	91	8	61	26	151	18	6	–	208	–	–	43	53	188	42	30	42	67	38	25	19	50	114	1620
110	950	466	541	239	–	4	–	266	10	43	34	–	4	93	321	151	181	58	83	232	21	31	107	211	13	11	2	2	2	4076
120	604	283	296	92	4	–	–	156	–	19	–	–	–	57	194	74	97	20	42	151	25	36	129	129	–	–	–	–	–	2408
130	625	223	149	91	–	–	–	87	4	21	–	–	–	60	145	48	90	16	32	88	18	20	76	125	–	–	–	–	–	1918
201	–	4	–	8	266	156	87	–	265	109	589	47	50	11	240	–	–	46	98	312	63	33	154	166	130	132	81	86	284	3417
210	503	133	136	61	10	–	4	265	–	6	2	2	–	26	121	21	45	12	33	124	24	17	73	42	–	–	–	4	15	1679
211	298	155	41	26	43	19	21	109	6	–	16	–	6	85	65	50	45	16	21	329	53	38	85	14	–	–	15	18	138	1712
220	1502	558	238	151	34	–	–	589	2	16	–	–	–	131	315	107	116	81	145	500	101	94	308	198	–	–	–	–	–	5186
230	98	43	43	18	–	–	–	47	2	–	–	–	–	9	31	7	14	7	15	20	3	4	7	3	–	–	–	–	–	371
231	179	64	46	6	4	–	–	50	–	6	–	–	–	5	32	15	17	41	12	50	–	3	14	10	–	–	–	–	–	554
301	–	7	9	–	93	57	60	11	26	85	131	9	5	–	403	3	4	49	59	207	34	33	154	153	29	3	8	26	113	1771
310	569	1015	553	208	321	194	145	240	121	65	315	31	32	403	28	263	330	58	112	610	73	53	96	76	104	61	29	86	443	6634
401	7	6	–	–	151	74	48	–	21	50	107	7	15	3	263	–	13	52	123	503	78	116	154	87	49	20	23	72	85	2127
402	7	19	–	–	181	97	90	–	45	45	116	14	17	4	330	13	–	9	82	426	56	32	79	137	34	25	32	49	67	2006
410	40	57	31	43	58	20	16	46	12	16	81	7	41	49	58	52	9	2	3	270	4	2	25	103	326	55	123	55	152	1756
411	230	292	95	53	83	42	32	98	33	21	145	15	12	59	112	123	82	3	–	96	6	9	32	76	50	15	9	31	59	1913
910	851	814	584	188	232	151	88	312	124	329	500	20	50	207	610	503	426	270	96	–	29	65	174	1150	534	147	101	56	92	8703
911	159	129	69	42	21	25	18	63	24	53	101	3	–	34	73	78	56	4	6	29	–	4	12	60	98	17	15	11	20	1224
912	85	123	32	30	31	36	20	33	17	38	94	4	3	33	53	116	32	2	9	65	4	–	15	59	53	28	38	34	39	1126
913	212	474	250	42	107	129	76	154	73	85	308	7	14	154	96	154	79	25	32	174	12	15	–	74	158	84	267	171	424	3850
914	454	451	352	67	211	129	125	166	42	14	198	3	10	153	76	87	137	103	76	1150	60	59	74	–	–	–	85	348	870	5500
915	345	162	46	38	13	–	–	130	–	–	–	–	–	29	104	49	34	326	50	534	98	53	158	–	–	–	–	–	–	2169
916	277	92	119	25	11	–	–	132	–	–	–	–	–	3	61	20	25	55	15	147	17	28	84	–	–	–	–	–	–	1111
917	147	55	26	19	2	–	–	81	–	15	–	–	–	8	29	23	32	123	9	101	15	38	267	85	–	–	–	–	–	1075
918	314	160	134	50	2	–	–	86	4	18	–	–	–	26	86	72	49	55	31	56	11	34	171	348	–	–	–	–	–	1707
919	908	359	275	114	2	–	–	284	15	138	–	–	–	113	443	85	67	152	59	92	20	39	424	870	–	–	–	–	–	4459
	9373	6144	4071	1620	4076	2408	1918	3417	1679	1712	5186	371	554	1771	6634	2127	2006	1756	1913	8703	1224	1126	3850	5500	2169	1111	1075	1707	4459	89660

Source: Ibid.

Illustration XVI

Traffic Flow

The survey of traffic conducted in 1949 was for a peak shopping day, a Friday, with stores open until 8:00 PM. The total time period studied was from 9:00 AM to 9:00 PM. 27,515 vehicles entered the CBD during that period.[1]

The origin and destination survey conducted in 1950 showed that the average daily flow in the CBD for a 12 hour period was approximately 16,725 vehicles.[2]

In order to estimate present traffic flow in the CBD area, in the absence of current data, the foregoing traffic counts were increased in proportion to the 22% increase in regional population from 1950 to 1955 yielding an estimated range of traffic flow from an average of 21,000 vehicles to a peak of 34,000 vehicles during a 12 hour period.[3]

From the 1949 and 1950 studies, it is estimated that the traffic flow to the CBD is distributed among the major entering streets in approximate proportion as follows:[4]

From		From	
Waverly St. (west)	17%	Waverly St. (east)	15%
Concord St.	17%	Hollis St.	14%
Union Ave. and Franklin St.	15%	Irving St.	10%

1. McCracken and MacNeil, op. cit., p. 8.
2. Mass. D.P.W., op. cit., and Illustration XIV, p. 55.
3. Supra, Illustration IX, p. 21.
4. McCracken and MacNeil, op. cit., p. 8, and Mass. D.P.W. data Ill. XIV.

The Railroad Crossing

The most controversial aspect of the CBD traffic situation is the railroad crossing situation. Discussion of and efforts for the elimination of the crossing have been continually in process since 1895. It is aesthetically objectionable and has become increasingly a functional impediment as automotive traffic has increased over the years.

Summation and distribution of origin and destination data show that 66% of the total traffic in the CBD area crosses the tracks in the course of their travel. Of the through traffic in the area, 93% crosses the tracks; of the CBD oriented traffic, only 29% crosses the tracks.[1]

A study of the crossing situation made in 1947 pointed out that the grade crossing gates were dropped 72 times per day for a total of 105 minutes. Of this total, 21 minutes occured during the peak traffic hours 4:00 to 6:00 PM.[2] Five passenger trains pass the gates during this period.

It is clear that some solution to the grade crossing situation must be found in order to ease the increasing traffic congestion which will inevitably follow increased traffic flows predicted for the future.

1. Illustration XIV, p. 55.
2. Railroad Crossing Study by a Harvard University group, Framingham Planning Board, 1947.

Parking

Parking areas are the most vital adjuncts to contemporary shopping centers. Ratios of parking area to shop area ranging from 1 to 1 to 4 to 1 are mentioned in the literature as requisites for various types of shopping facilities. Shoppers' World has a basic parking ratio of 3.5 to 1, enough space for 6000 automobiles compared with 500,000 sq. ft. of selling space.[1] The Framingham CBD has space available for parking approximately 3100 cars compared with a total first floor area of 384,179 sq. ft.[2] This floor area consists only of Business I uses, however, not including institutional and Business II uses in the CBD area. Also affecting the parking requirements for the CBD are the upper story office and service uses.

An estimate of parking demand made in 1949, when a total of 2735 spaces was available in parking lots and at curbs, indicated a need for 1533 additional spaces at the peak overload hour on a peak shopping day. The average overload was 720 spaces. The report recommended adding 720 spaces to take care of almost all but the three peak hours.[3] Since 1949, about 465 spaces have been added to make the present estimated total of 3100. Thus, present parking capacity is short even of the 1949 needs and traffic in the CBD has increased over 20% since then.[4]

Assuming parking demand increase in rough proportion to regional population increase, the present peak demand should be 4250 for 1949 plus 22% or 5200 spaces. This is 2100 more than the present supply. The average demand, on the same basis, would be for approximately 4200 spaces.

1. Kelley, op. cit., p. 79.
2. Supra, Illustration XIII, p. 43.
3. McCracken and MacNeil, op. cit., p. 9.
4. Supra, p. 58.

Transportation

At present, the CBD is served by four bus lines: the Boston and Worcester line which operates local routes connecting the CBD with the Saxonville and Framingham Center sections of the town, and inter-urban routes along Route 9 to points east and west; the Middlesex and Boston Street Railway Co. which operates through the town on Route 135 connecting with points east to Newton Corner; Johnson bus lines connecting the CBD with Holliston and Milford via Route 126; and the Transit bus line operating between Framingham CBD and Foxboro. The B & W and the M & B lines both operate fairly frequent schedules, busses running on about half hour intervals. The other two lines operate less frequently: Johnson has 12 trips per day; Transit information was not available.

Officials of the various lines contacted shared the view that bus patronage has not increased as regional population has increased over the past few years. None seemed overly enthusiastic about the future of their operations. However, the 1949 traffic survey showed that 10% of CBD trade arrived by bus, an increment of trade not to be lightly dismissed.[1]

In view of ever-increasing automobile traffic with concomittent congestion, mass transportation facilities should be encouraged in general planning for the CBD area to preserve and increase use of such facilities for the benefit of the CBD and the users.

Railroad transportation does not now play a large role in CBD affairs. About .4% of the customers arrived by rail in 1949.[2] The relationship between railroad activities and CBD could increase as commutation increases, however, especially in regard to parking

1. McCracken and Macneil, op. cit., p. 12.
2. Ibid., p. 12.

provisions. Railroad employees disclosed that there are about 500 daily commuters from Framingham to Boston on the B & A railroad, many of whom leave their automobiles parked near the railroad terminal. This amount has increased greatly since 1950. As regional population increases, and as population decentralization increases, commuting activities may assume significant proportions as far as parking space requirements near the CBD are concerned, and even as far as CBD sales patronage is concerned. A study of this situation should be undertaken in order to provide for it in general planning for the area.

DESIGN OBJECTIVES

Present problems and future possibilities of the Framingham CBD area have been revealed in the course of the survey process conducted to this point. These observations plus study of published material on the subject of business districts and allied matters have provided bases from which a set of design objectives have been derived to serve as guides in the design process for the CBD area.

A summary list of ten major objectives intended to be achieved by provisions of general and project plans for the CBD area has been compiled:

(1) Improve access to the CBD from the communities in the trade area in order to provide the "equal facility" to enable it to compete with other business centers in the area for a fair share of the market.[1]

(2) Reinforce pedestrian trade from nearby residential areas. The large increment of existing business forthcoming from the adjacent areas should be maintained as a nucleus of trade for the CBD.[2]

(3) Eliminate incompatible uses from the CBD area. Uses which act as blighting influences in the area or which could function more efficiently in other contexts should be relocated to enable compatible uses in the CBD area to thrive.[3]

(4) Eliminate through traffic from the CBD in order to ease driving conditions and access for shopping traffic. The high percentage of through traffic at present inhibits operation of the district and discourages potential additional shopping traffic.[4]

1. Supra, p. 18.
2. Supra, p. 25.
3. Supra, pp.29-53.
4. Supra, p. 54.

(5) Maintain the relationship of the CBD to the surrounding area so that it will continue to function as an integral part of the community.

(6) Separate conflicting forms of traffic within the CBD so that circulation for all of the forms of traffic, pedestrian, automobile and service vehicles may be eased.

(7) Retain the character of the CBD as a community center as well as a shopping center so that it does not become just a "machine for shopping". It should provide social, civic and psychic functions as well as business functions.

(8) Provide adequate parking for the several types of parking needs in the CBD.

(9) Maintain for the present the existing pattern of multiple ownership of business property in order to encourage private individual participation in the CBD improvement process.

(10) Provide a firm short range plan for immediate improvements to the CBD to be implemented within the context of a general land use plan for the CBD area.

THE GENERAL PLAN

A general plan showing proposed land use in the CBD area has been evolved to provide a background against which project plan provisions for the CBD core can be indicated.(See Illustration XVII, p. 66.)

All or part of a number of the major design objectives can be achieved by provisions of this plan.

Objective (1): Improved access to the CBD is provided by additional roads from the more populous sections of the trade area to the CBD. The basic concepts of a highway plan recently proposed by the Massachusetts Department of Public Works which provides new approaches to the CBD area from the northeast, northwest and southwest quadrants indicate this.[1] (See Illustration XVIII, p. 67.) Items A, B, C and D of this proposal provide a new northeast access road to alleviate the overburdened existing Route 126 and provide also for ready access from the interchange with the Massachusetts Turnpike. Item M provides improved access from the southeastern section of the trade area which includes South Natick, Sherborn and Medfield. Item N provides a route from Route 9 and the western interchange with the Turnpike to the CBD to relieve the load on Franklin St. and Union Ave,, the present northwest approach roads, and encourage new trade traffic from Framingham Center and Southboro. The imminence of the Massachusetts Turnpike commencement of operation plus the rate of present traffic increase indicate that these proposals should be implemented within the next few years.

Objective (2): Trade from the adjoining residential area can be increased by increasing population and income levels of the area. Long range proposals are made for increased residential densities in the area,

1. Framingham, A Summary of Studies , Mass. Dept. of Public Works, 1956.

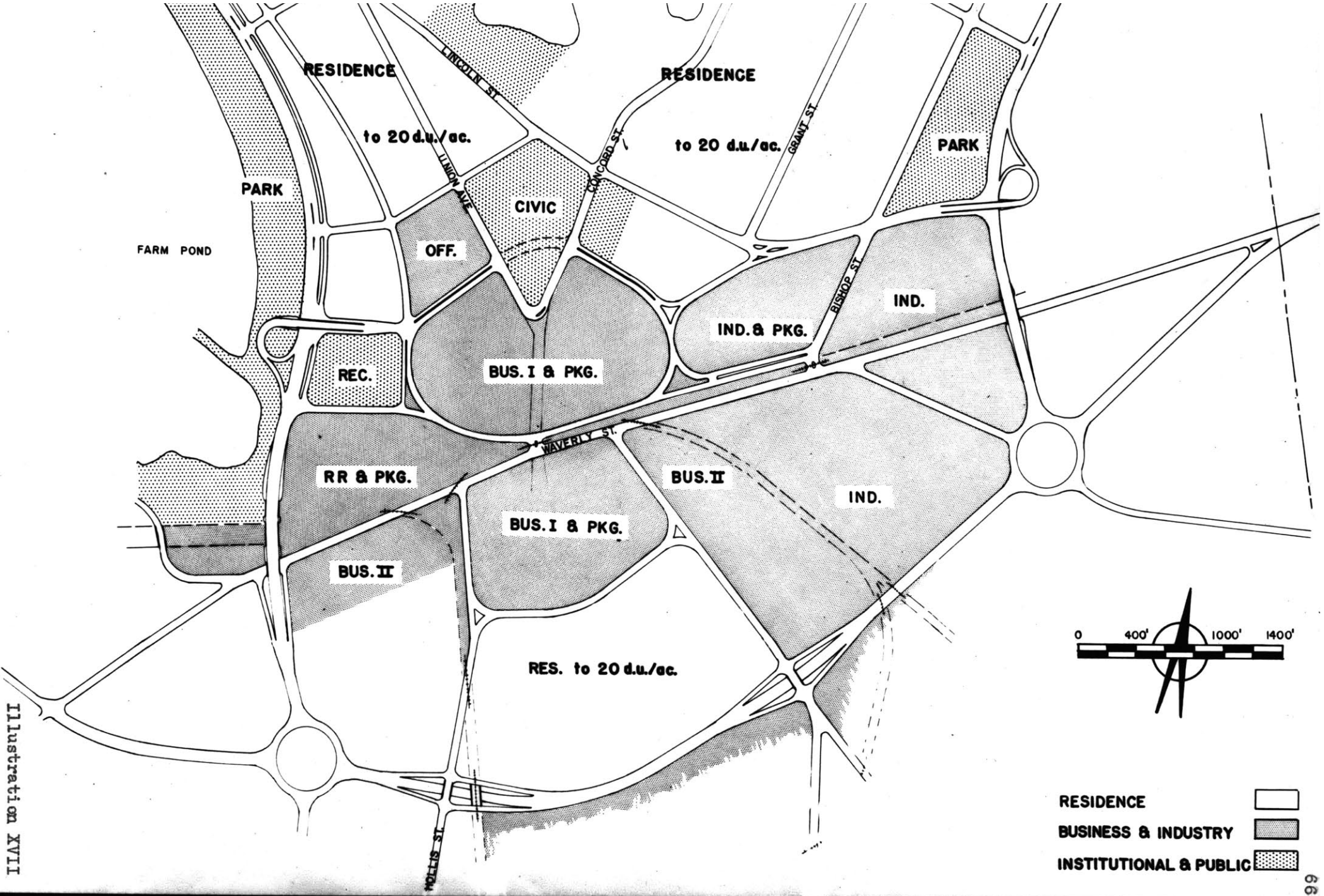


Illustration XVII

GENERAL PLAN-PROPOSED LAND USE-CBD AREA-FRAMINGHAM, MASSACHUSETTS-1980

PROPOSED HIGHWAY PLAN
FRAMINGHAM, MASS.

SCALE: 0 2000' 4000'

By: Mass. Dept. of Public Works-1956

Illustration XVIII

based on impressions that the current tendencies towards multi-family, small dwelling-unit usage are increasing and that in the future there will be increased demand for rental units in the area as the young families in the new developments north of the Worcester Road outlive the utility of their single family homes. That is, many of the present parents in the 25 to 35 age group might desire the convenience of apartment dwellings near the CBD after their children have grown and left their homes.

Residential densities in the order of 10 to 20 dwelling-units per net acre, of row housing or garden apartments, are envisioned as possible developments in the area. The northwest residential area could be expected to be developed by private enterprise for higher income groups than now are in the area, thus increasing potential buying power in the area.

Other residential areas might require municipal and federal assistance through Urban Renewal procedures and Public Housing provisions in order to assure their continuation as healthy residential sections.

Objective (3): Elimination of incompatible uses in the area would assist in raising the tone of residential and business areas near the CBD core. Removal of the New Haven freight yards from the east bank of Farm Pond would free that area for recreational development and also make the adjacent residential area more desirable for private residential development of the nature indicated above. Buffer zones of open space such as park development, green strips or roads between railroad and industrial property and residential areas could ameliorate the blighting effects of the non-residential uses on the residential uses.

Objective (4): Through traffic would be eliminated from the CBD by a by-pass road system similar to the loop E-F-G-J-K proposed by

Mass. state authorities (Illustration XVIII) but revised to conform with overall planning considerations for the CBD area (Illustration XIX, p. 70). In the revised loop plan, sections F and G of the State proposal are pulled in closer to the CBD, both to minimize the circuitous nature of that proposal and also to provide a buffer between the southern industrial zone and abutting residential areas.

Section K of the State proposal is replaced by a short street link between Lincoln St. and the east by-pass road which overpasses the railroad.

These by-pass road proposals also provide a solution for many of the functional problems posed by the railroad crossing. All of the through traffic which must pass over the tracks can do so on either the eastern or western overpass incorporated in the by-pass system. Shopping traffic from the north can go directly to the north section of the CBD or use the by-pass loop to the south section. Shopping traffic from the south can by-pass to the north or go directly to the south. Thus, only a small portion of the traffic formerly mixed into the CBD need use the grade crossing which would still exist at the junction of Concord and Waverly Streets.

The two overpasses and the southern section of the loop could be constructed as the first stage of the road plan, tieing into Bishop St. on the east and Franklin St. on the west until the new east and west connections with Route 9 were completed.

Objectives 5 thru 9 would be achieved principally by proposals of a project plan for the CBD core and are discussed in that connection.

Objective 10: A project plan for immediate improvements to the CBD is proposed in the pages following. A plan for the north section of the CBD alone has been formulated herein. The differences in functio-

Illustration XIX

and condition between the north and south sections of the CBD indicate that different scales of treatment would be required for each section. Immediate improvements for both sections are recommended within the context of the general plan for the area. A project plan for the north section of the CBD wherein most of the business buildings are in condition for extended future use is presented. Since most of the buildings in the south section of the CBD are not considered as readily adaptable for extended future use, a different type of plan would be required for its improvement than here presented. Such a plan should be done. Its formulation is not possible within the scope of this thesis.

THE PROJECT PLAN

The project plan for the north section of the Framingham CBD covers an area of approximately 40 acres, from the Dennison Mfg. Co. on the east to the New Haven railroad property on the west and from Waverly St. on the south to the end of continuous store frontage on the north, the northern boundary following the alignments of Proctor, Ordway, Sanger and Torrey Streets. (See Illustration XX, p. 73.)

The topography of the site is relatively flat and level with a slight depression in the center of the area west of Concord St.[1] There are water and sanitary sewer lines and storm sewers beneath all of the accepted streets in the area.[2] None of these factors would inhibit the implementation of the project plan proposed.

Major objectives 5 through 9 could be achieved by provisions of the project plan.[3]

Objective (5): The relationship between the CBD and the surrounding area is maintained by: (a) keeping the major pedestrian access points north and south oriented to pedestrians, so that the traditional approaches are unchanged. (b) The existing street frontages of Torrey and Proctors Streets can also remain unchanged for the present and still relate agreeably to the CBD. (c) Future development to the west to connect with the recreation and open areas proposed for the east bank of Farm Pond will relate to the pedestrian and automobile circulation system of the CBD. (d) Future complete development of the Institutional area north of the CBD can be completed and tied the the CBD area by bridging over the loop road connecting the Town Hall with the area north of the loop road.

1. Illustration II, p. 5., topography.
2. Water and Sewer maps, office of the Town Engineer, Framingham.
3. Supra, p. 64.

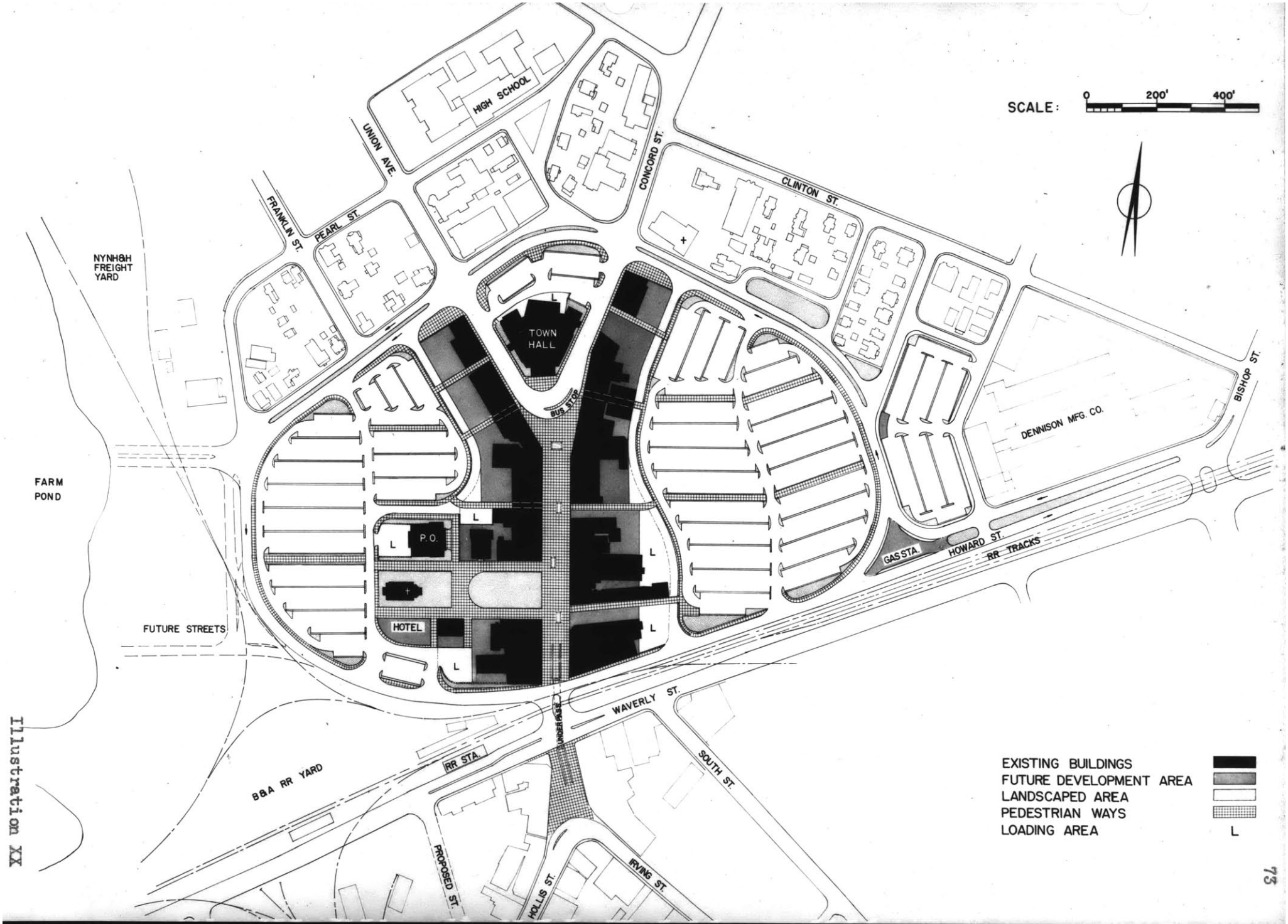


Illustration XX

Objective (6): Conflicting types of traffic are separated by: (a) Providing a one-way loop road around the entire CBD area to distribute automobile traffic to and from the entering streets and parking areas. (b) Providing separate truck ways and loading areas within the CBD serving one side of the stores, leaving the other sides open to pedestrian access. Truck areas would be shielded from view by fences and or planting. (c) Providing a system of pedestrian ways leading from the parking areas through arcades in the shop areas onto a pedestrian mall which would be the main shopping thoroughfare. The walks in the parking area could be lined with trees and covered with canopies if desired so that most of the walk from the parking area to the shops would be sheltered in the event of inclement weather. A canopy system could also be provided for the main pedestrian mall to serve the same purpose.

Objective (7): The character of the CBD as a community center would be maintained by retaining institutional uses such as the Town Hall, the Post Office and the several churches in proximity to the CBD as well as retaining its traditional main street pedestrian orientation so that its remains an area to walk through as well as to. Retention of institutional and office functions will enable new residents in the area, especially those in the new northern developments who have been oriented to the town generally by the Worcester Turnpike and Shoppers' World, to become acquainted with the traditional center of activities in the town in the course of their visits to these uses for their special services.

Objective (8): A total of 2326 parking spaces are provided within the project area. About 1400 spaces are within 600' walking distance

of the main shopping thoroughfare with an additional 600 spaces within 800' walking distance. 288 spaces are provided at the east end of the area next to the Dennison plant, about 1000' walking distance. Observations in other areas have shown that the maximum walking distance from parking space to shopping destination should be from 400' to 800'.[1] Thus, about 2000 spaces would be available within 800' for most shopping time use. The spaces beyond this limit could be used for CBD employee parking or for peak shopping days.

Some 40 curb spaces are provided in the north section of the plan adjacent to the Town Hall to provide for very short time parking by patrons of convenience stores who might want to stop for one or two items without having to go into the parking lot and walk additional distances to and from shop and car. These spaces could be controlled by short time meters, perhaps set for 12 minute intervals.

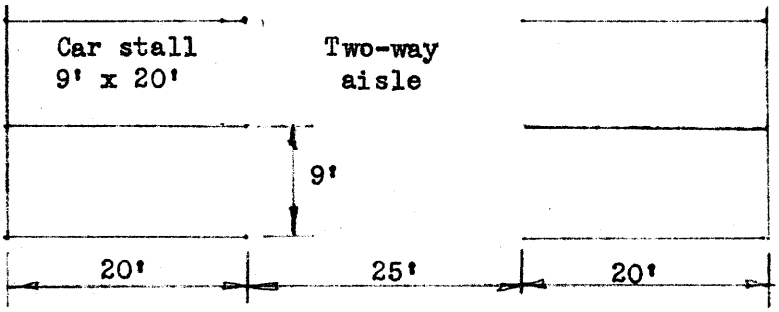
Estimates of current parking demand based on extrapolation from the 1949 parking survey indicate that the 2326 spaces provided would just about meet current/average requirements. Peak demand for the entire CBD is estimated at 5200 spaces, average demand approximately 4200 spaces.[2] The 1950 origin and destination survey indicated that CBD destination traffic was bound 60% for the north side and 40% for the south side.[3] Assuming that the same proportions prevail at present, peak demand for the north side should be 3120 spaces, average demand 2520 spaces.

If considerable expansion of demand occurs in the near future, beyond the expectations indicated in this study, parking provisions may

1. Shopper Bottleneck, Chamber of Commerce of the U.S., Washington, D.C., 1953, p. 60.
2. Supra, p. 60.
3. Estimated from Illustration XVI, p. 57.

have to be supplied vertically, by decking over portions of the parking areas or building multi-story parking garages. Additional horizontal spread would be limited by the walking distance limitations.

This plan utilized the following parking module and provided for pedestrian walkways within the parking area. Conceivably, the parking allowances could be diminished slightly, but the dimensions shown are recommended in view of the increasing car sizes and inexpertness of drivers, male and female, daily demonstrated.



Encouragement of the use of mass transportation and discouragement of CBD employee parking in the area would also assist in alleviating parking overloads.

Objective (9): Multiple ownership of business property within the CBD is encouraged since so much of the property left after clearance is adaptable for expansion within the limitations of the plan. This ownership pattern would insure the excitement of "rapid changes in character and tempo, wide varieties of architectural style, even clashes in form and color that shock the sensitive observer (which) represent in our urban scene a visual expression quite appropriate to a heterogeneous society."[1]

The intent of this objective is not to encourage disorder, but to encourage initiative and imagination on the part of a number of parties within the CBD in dealing with individual and common problems of the area

1. Frederick J. Adams, Problems of Implementation of Urban Design, a paper delivered at the Urban Design Conference, Harvard University, Cambridge, Mass., 1956.

so that solutions to problems which might evade a few minds might more readily be found if many minds are at work.

About 200,000 sq. ft. of land is provided for future development in addition to the developed area of approximately 225,000 sq. ft. in existing stores and first floor uses remaining after clearance. Compared with approximately 890,000 sq. ft. in the parking areas, a ratio of parking to first floor shop area of almost 4 to 1 would exist with current development, about 2 to 1 with complete development.[1] However, if extensive shop development beyond the expectations of this study are foreseen, a complete redesign of the CBD area should be undertaken, perhaps under the aegis of a property owners-merchants organization, to cope with the requirements at that future date.

1. It should be noted that this ratio pertains to first floor area only. Uses in upper floors also require parking spaces. However, relocation of such uses to a separate office area could release more parking area within the project area for shoppers parking. An office area is indicated on the general plan for the area, Illustration XVII, p.66.

EFFECTUATION AND OPERATION

Since there will be requirements for relocation of families and commercial enterprises cleared from the project area, and since other renewal and redevelopment plans will be implemented if the proposals of the general plan are followed, a redevelopment authority could be established to handle this project and continue in operation to manage future projects. Such an authority would have the powers of eminent domain for the acquisition of private property for public purpose and would also have borrowing capacity for financing its projects.

Under such an authority, the property within the project area could be acquired, the resident families relocated and assistance given to relocation of commercial enterprises to nearby areas proposed for similar uses. About 194 dwelling units would be removed in the clearance operation. It is estimated that about 80 or 90 of the occupant families would be eligible for public housing so that that number of public housing units might be required for their relocation. Homes for some of these families might be found within the existing public housing in the town and some new units might be necessary. Living quarters would have to be found for the other 100 displaced families in private accomodations in the area.

About 200,000 sq. ft. of institutional and business property would be demolished in the course of the project, 25,000 sq. ft. of it in retail or service use compatible with the CBD. This 25,000 area could be relocated within the developable area indicated on the plan so that it would continue to function as part of the CBD. The remaining property demolished could be relocated to areas in Business II or Industrial I zones indicated on the general plan for the area.[1]

---

1. Illustration XVII, p. 66.

A number of the buildings in the clearance area are of recent construction and in uses compatible with the CBD. It is felt that relocation of their activities and clearance of the structures now in order to achieve an efficient plan would be more economical than leaving them in private ownership until some of the improvements had been made. At the later date, the property values might be appreciated beyond economically sound acquisition levels.

The closing of Concord St. and the creation of the pedestrian mall would be the final step in the circulation pattern for the CBD plan. This concept has been proposed for other existing town centers and business districts, notably Rye, N.Y., Menlo Park, California and Englewood Plaza, Illinois but has not yet been implemented in any existing CBD's.[1] Pedestrian malls have been provided in a number of recently constructed controlled regional shopping centers such as Shoppers' World at Framingham, Mass., Northgate in Seattle, Washington and Stonestown in San Francisco, California where their utility has been proven.[2]

1. On Our Way, the Rye Development Program, City of Rye, N.Y., 1946, p.19. Shopper Bottleneck, op. cit., p. 19. The Menlo Park CBD. Real Estate Research Corp., op. cit., opp. p. 1. Englewood Plaza.
2. Geoffrey Baker and Bruno Funaro, Shopping Centers Design and Operation, Reinhold Publishing Corp., 330 West 42nd St., N.Y., 1951.

Operation

In this plan, the parking areas and ways would be owned and operated by the municipality, the business property by private individuals. Controls and regulations would be provided to govern provision of truck loading areas by the various businesses and to provide pedestrian access through the business property to the main pedestrian mall. On the plan shown, a two lane truck road is indicated behind most of the shops with deep loading areas for the large stores at the southern end of the CBD. It is felt that trucks and service vehicles could stop and deliver to the smaller stores and leave one lane open for other passing traffic. For the large stores, area is shown to provide for turning and parking of trailer trucks.

Three of the pedestrian arcades are shown passing through existing buildings. One of these exists, the other two would have to be constructed through existing entrance hallways. Future controls for arcades would not necessarily have to locate them precisely, but would require that rights-of-way be left through the business frontage at intervals to provide for public passage. Frontage along the arcades could be developed for business use.

A relationship between business space and parking area would have to be established so that additional parking area would be provided as new business space was added to the CBD. Maximum expansion could be controlled by a floor-area ratio which would effectively limit the amount of selling space in the CBD area so that it would not exceed a specified relationship to parking area.

FINANCIAL IMPLICATIONS

A variety of methods for financing projects of this nature where parking facilities are included have been utilized by communities throughout the country.[1] A few alternative methods of distributing costs for the project are discussed in order to indicate a range of possibilities for financing the project and comparing costs with prospective sales increases for justification of the expenses.

There are four major parties at interest in a project of this nature: (1) the merchants who profit from increased trade drawn to the area because of the improvements; (2) the property owners whose property is appreciated in value by the improvements enabling them to command higher rentals and higher sales prices; (3) the community as a whole which benefits from higher tax revenues which issue from improved property as well as from the improved services supplied to the townspeople by an improved CBD; (4) the customers who are furnished an efficient and amenable center for supplies, services and social activities.

Contributions from the merchants can be in the form of special assessments made on the basis of sales volume, floor area or number of customers served depending on the type of business and the financing plan adopted. Property owners can contribute through increases in property valuation which raises their regular tax payments and/or by special assessments for the specific project costs. The town can contribute its increment from the general funds by appropriating amounts annually to meet the sums required by the cost distribution. The customer contributes through the use of parking meters which control

1. Parking, Legal, Financial, Administrative, The Eno Foundation for Highway Safety Control, Saugatuck, Conn., 1956, pp. 43-72.

parking times and produce revenue as well.

Two cost categories have been established for this project: the capital costs which include property acquisition, site improvements and relocation expenses; and operating costs which include maintenance, of grounds, and meters and personnel expenses. (See Illustration XXI, pp.83,84.)

Capital costs are estimated at. . . . . $4,500,000.

Operating costs are estimated at. . . . . 78,500 annually.

An additional cost to the community would be the loss in tax revenues from the demolished property. This would amount to approximately $91,000. However, since it is hoped that most of the occupants of acquired property would be relocated in new quarters elsewhere in the town which would pay taxes, and since the valuations of the remaining property in the project would be enhanced by the parking improvements, and since new property would be added to the project area, this amount will not be included in the discussion of cost distributions.

Therefore, assuming that the capital costs of $4,500,000 could be financed for a 30 year period at 3½%, which is a usual charge for parking improvements, equal annual debt payments would be:[1]

$$(.035)(4{,}500{,}000)\frac{(1.035)^{30}}{(1.035)^{30}-1} \quad \text{equals} \quad \$245{,}000.$$

The total annual costs would then be: $245,000 plus $78,500

or . . . . .$323,500.

1. Parking Programs, American Automobile Association, Wash., D.C., 1954.

PROJECT COSTS

PROPERTY ACQUISITION (Land and buildings)	$ 3,365,984	
(Values set by 1955-1956 revaluation of town property by New England Survey Service, Inc. Prior to adjustment by the town assessors.)	Add 10% for contingency	
	TOTAL (SAY)	$ 3,700,000

DEMOLITION CHARGES

219,780 sq. ft. business and institutional property @ $100 per 300 sq.ft.	73,300	
Approx. 194 dwelling units @ $100 per D.U.	19,400	
Approx. 33 private garages @ $50 per unit	1,650	
	94,350	
	(SAY)	95,000

RELOCATION EXPENSES

194 families at $100 per family	19,400	
	(SAY)	20,000

ROADS AND SITE IMPROVEMENTS

Perimeter road: 3500' divided hwy.	@	$30 per ft.	105,000
1500' single pave.	@	20 " "	30,000
East access road: 1000' divided	@	30 " "	30,000
West access road: 500' "	@	30 " "	15,000
Grade and pave lots: 890,000 sq.ft.	@	.20/sq.ft.	178,000
Parking lot roadways: 4000'	@	8 per ft.	32,000
Regular parking stall medians: 7000'	@	6 per ft.	42,000
Wide medians, sidewalks, other pedestrian ways in lots: 9500'	@	8 per ft.	76,000
Concord St. Mall: 750'	@	50 per ft.	37,500
2 Arcades through buildings	@	20,000	40,000
4 Arcades on existing ways	@	5,000	20,000
Pedestrian Underpass			50,000
			655,000
Add 5% contingency. TOTAL (SAY)			685,000

Illustration XXI
(1 of 2 pages)

PROJECT COSTS SUMMARY

Property Acquisition	$3,700,000	
Demolition Charges	95,000	
Relocation Expenses	20,000	
Roads and Site Improvements	685,000	
GRAND TOTAL.		$ 4,500,000

ANNUAL OPERATING AND MAINTENANCE COSTS

Parking meters: annual maintenance and amortization @ $15/meter, 2300 meters	$34,500	
Parking area maintenance and snow removal	20,000	
Personnel: 6 @ $4000/year	24,000	78,500

ANNUAL TAX LOSS FROM DEMOLISHED PROPERTY

Prior valuation:	10,047,159
Less takings	- 3,365,984
Remaining valuation:	6,681,175

Property assessed at 45% of valuation figure so that assuming an impending tax rate of approximately $55 per thousand, the annual tax loss becomes:

.45 x 3,365,984 x 55per thousand = $ 90,500

(SAY) 91,000

Note: In the course of site acquisition, clearance and preparation, approximately 203,150 sq. ft. of cleared land would become available for resale for private business use. This land is in small fragments scattered throughout the project area, some as front land and some as back land. Assuming an average resale value of $2.50 per sq. ft. for this land, it would be possible to reduce the total project cost by about $500,000. In view of the probable appreciation of CBD property before land takings could begin, this amount is left unsubtracted from the total as an additional contingency allowance.

Illustration XXI
(2 of 2 pages)

Variation One: All parking free.

Annual Costs: $323,500 less $34,500 meter costs= $289,000.

(A)
If all costs borne by the town with 1955 total valuation of $61,387,350, addition to the tax rate would be: $4.72 now.

Projecting total valuation to a 1970 estimate of $100,000,000, addition to the tax rate would be: $2.89 in 1970.

(B)
If all costs borne by the merchants and property owners, considering the costs to be in the nature of increased rent, and assuming rent to be approximately 6% of gross sales income, the annual increment of sales which would be required to offset the project costs would be:

$289,000 divided by .06 = $4,820,000.

This would be about 44% of the current estimated sales of $11,000,000 in the area. Estimating a possible increase in sales, of about 40% by 1970, it would take that long before additional profits were realized by the merchants and property owners. All other things being equal.

(C)
If costs split 50-50 between the town and the merchants-owners group:

Present addition to the tax rate: $2.36

Addition to tax rate in 1970: $1.45

Required increase in sales: $2,410,000, 22% of current total.

This level would be achieved about 1963.

The foregoing discussion of cost allocation is for order of magnitude purposes only. During the course of time indicated, additional costs would probably be incurred for additional parking facilities which would affect the figures used herein. Also, additional business development would be added which would share the costs, reducing individual payments.

Variation Two: Parking meters used.

Annual income per meter in the Town of Framingham is now estimated at $73.50 for the approximately 350 parking meters in the town.

For this project, annual income per meter will be assumed at $70.00 for approximately 2300 meters or $161,000 per year.

Total annual costs of $323,500 less $161,000 is $ 162,500.

(A) All costs borne by town.

Add to present tax rate: $2.65.

Add to 1970 tax rate; $1.61

(B) All costs borne by merchants-owners.

Increase sales $2,680,000 or 24% of current total.

This level would be achieved by about 1965.

(C) Costs split 50-50 between town and merchants-owners.

Add to present tax rate: $1.33

Add to 1970 tax rate: .81

Increase sales $1,340,000 or 12% of current total.

This level would be achieved by 1960.

Variation Three: Federal Assistance.

The possibilities of federal assistance for a project of this nature should be investigated under the provisions of the Urban Renewal procedures extant since the 1954 Housing Act. Provisions of that legislation are that the federal government will share net costs of an approved Urban Renewal project on a 2/3 - 1/3 basis with the municipality. If this area could qualify as such a project, the net costs would be the total project costs estimated less the income from prepared land resold for private development. However, since most of the cleared land would be put into parking use under municipal control, application of the legislation to the area would be uncertain.

EVALUATIONS AND CONCLUSIONS

1. Changes in the Framingham area and CBD area in recent years indicate that up-to-date studies of the traffic and parking situation should be done in order to determine the possible effects of the Massachusetts Turnpike and the proposed by-pass road system on the CBD.

2. An accurate and conclusive market analysis of the Framingham area should be conducted to determine the relationship between the CBD and Shoppers' World and quantify the effects of the latter on the former. so that conclusive information will be available upon which to base decisions regarding improvements to the CBD area.

3. The rough analysis performed herein indicates that a project of the scale indicated would require participation by all of the parties at interest if cost allocations to any of them are to be within economically justifiable reason. Parking meters would also be required to aid in the financing of the improvements.

4. The least that should be done would be the construction of the by-pass loop around the CBD in order to relieve it from the increasing congestion which will inhibit its earning capacity in its present stage and will certainly discourage additional trade.

5. Valid generalizations based on this specific study which was based on inconclusive data cannot be made. The tentative opinion that controlled regional shopping centers need not spell the death knell for all nearby CBD's is ventured, provided that the CBD's can provide access and facilities comparable with the new shopping center and provided that the CBD is locationally related to a market area within which it can compete on equal terms with the controlled regional shopping center.

BIBLIOGRAPHY

1. Adams, Frederick J., Problems of Implementation of Urban Design, paper given at the Urban Design Conference, Harvard University, April, 1956.
2. Alderson and Sessions, Philadelphia Central Business District Study, Philadelphia Planning Commission, Phila., Pa., 1951.
3. Alevizos, John P. and Beckwith, Allen E., Downtown and Suburban Shopping Habits Study of Greater Boston, Boston Herald-Traveler Corp., Boston, Mass., 1954.
4. Alevizos, John P. and Beckwith, Allen E., "Downtown Dilemna," Harvard Business Review, Vol. 32, No. 1, Jan.-Feb. 1954.
5. American Automobile Association, Parking Programs, Washington, D.C., 1954.
6. American Institute of Planners, Chicago Regional Chapter, Regional Shopping Centers, Planning Symposium, Chicago, Ill., June, 1952.
7. Applebaum, William and Spears, Richard F., "How to Measure a Trading Area," Chain Store Age, January 1951.
8. Applebaum, William and Spears, Richard F., Shopping Habits of Super Market Customers, Marketing Research Dept., Stop and Shop Inc., Boston, Mass., 1947.
9. Baker, Geoffrey and Funaro, Bruno, Shopping Centers Design and Operation, Reinhold Publishing Co., New York, N.Y., 1951.
10. Community Planning Associates, Inc., A Study of the Central Business District, Borough of Princeton, N.J., 1955.
11. Converse, P.D., A Study of Retail Trade Areas in East Central Illinois, University of Illinois, Urbana, Ill., 1943.
12. DeBoer, S.R., Shopping Districts, American Planning and Civic Association, Wash., D.C., 1937.
13. Fisher, Ernest M. and Robert M., Urban Real Estate, Henry Holt and Co., Inc., New York, N.Y., 1954.
14. Fordham, Jefferson B., Parking, Legal, Financial, Administrative, The Eno Foundation for Highway Safety Control, Saugatuck, Conn., 1956.
15. Great Britain, Ministry of Town and Country Planning, The Redevelopment of Central Areas, London, 1947.
16. Greenwich, Conn., Planning and Zoning Commission, Plan of Redevelopment-Old Greenwich Business Center, 1954.
17. Harvard University, Planning Students in Graduate School of Design, Framingham: Your Town, Your Problem, Framingham, Mass., 1948.
18. Hoyt, Homer, An Economic Analysis of the Rye Business District, Planning Commission, Rye, N.Y., 1945.
19. Jonassen, C.T., The Shopping Center Versus Downtown, Ohio State University, Columbus, Ohio, 1955.
20. Kelley, Eugene, J., Locating Controlled Regional Shopping Centers, The Eno Foundation for Highway Safety Control, Saugatuck, Conn., 1956.
21. LeCraw, Charles S., Jr., and Smith, Wilbur S., Municipal Regulation of Parking Lots, The Eno Foundation for Highway Safety Control, Saugatuck, Conn., 1949.
22. Massachusetts, Department of Public Works, Origin and Destination Study for the Town of Framingham, 1952.
23. Massachusetts, Department of Public Works, Framingham, A Summary of Studies, 1956.

24. McCracken, Dwight M. and MacNeil, A.J., Report of a Parking and Traffic Survey of the Town of Framingham, Central Business District, Planning Board, Framingham, Mass., 1950.
25. Metropolitan Life Insurance Co., Selecting Locations for Retail Stores, New York, N.Y., 1934.
26. Mogren, Edward G., Parking Authorities, The Eno Foundation for Highway Safety Control, Saugatuck, Conn., 1953.
27. Murphy, Raymond E., Vance, J.E., Jr., and Epstein, Bart J., Central Business District Studies, Clark University, Worcester, Mass., 1955.
28. National Planning and Research, Inc. (formerly National Market Research Corp.), Analysis for Shoppers' World, Framingham, Mass., Boston, Mass., 1950.
29. National Planning and Research, Inc., Analysis for Jordan Marsh Co., the Center for the North Shore, Boston, Mass., 1955.
30. Nirenstein, Nathan, "There'll Always be a Main Street," Appraisal Journal, January 1947.
31. Qualls, William H., A Bibliography for the CBD, Tennessee State Planning Commission, Johnson City, Tennessee, 1955.
32. Ratcliff, Richard U., The Madison Central Business Area, University of Wisconsin, Madison, Wisconsin, 1953.
33. Real Estate Research Corp., Economic and Legal Analysis, Perimeter Plan for Englewood Plaza, Chicago, Ill., 1953.
34. Rye, City of, On Our Way, the Rye Development Program, Rye, N.Y., 1946.
35. Skiadaressis, George, Study of an Urban Core, Stoneham, Mass., M.C.P. Thesis, M.I.T., Cambridge, Mass., 1952.
36. U.S. Chamber of Commerce, Shopper Bottleneck, Washington, D.C., 1953.
37. U.S. Chamber of Commerce, The Big Squeeze, Washington, D.C., 1953.
38. Wehrly, Max S. and McKeever, J.Ross, (Editors) The Community Builders Handbook, Urban Land Institute, Washington, D.C., 1954.

LAND USE

RESIDENCE
1 FAM.
2 FAM.
3 FAM.
4 FAM.+

BUSINESS I
BUSINESS II

INDUSTRY I
INDUSTRY II
INSTITUTIONAL
PARKING
RAILROAD
PUBLIC OPEN

LEARNED POND
GLEASON POND
FARM POND
AREA INCLUDED ON CBD USE MAP

LINCOLN ST.
ROUTE 126
CLARK ST.
CLINTON ST.
UNION AVE.
FRANKLIN ST.
CONCORD ST.
PROCTOR ST.
PEARL ST.
FREDERICK ST.
TORREY ST.
FREEMAN ST.
KENDALL ST.
PARK ST.
HOWARD ST.
ROUTE 135
WAVERLEY ST.
SOUTH ST.
IRVING ST.
GORDON ST.
CLAFLIN ST.
CEDAR ST.
HOLLIS ST.
ARLINGTON ST.
MASS. CENTRAL R.R.
NYNHH R.R.
BEAVER BROOK

1 TO GENERAL MOTORS
2 3 4 5

XI p.30

CBD AREA LAND USE

FRAMINGHAM, MASS. JUNE - 1956

Scale : 0 300' 600' 900' 1200'

FRAM. CBD 1" = 300' Mel

XII P.40

CBD LAND USE

FRAMINGHAM, MASS.

SCALE: 1"=80' JUNE, 1956

N

N.H. RR YARD

FARM POND

DENNISON MFG. CO.

CONCORD ST.

WAVERLY ST.

STUDY AREA

M.F. LEVINE M.I.T. IV-B

BUSINESS IA terracotta
" IB pink
" IC salmon

BUSINESS II red

INSTITUTIONAL green

INDUSTRY I lt blue
" II dk blue

RESIDENCE
1-FAM. yellow
2-FAM. ochre
3-FAM. orange
4-FAM.+ brown

VACANT BUILDINGS
UNDER CONSTRUCTION
MULTI-STORY

PARKING grey
RAILROAD purple
PUBLIC OPEN lt green

"GOOD" BUILDINGS (BUSINESS IA, B, C, ONLY)

FRONT FOOT VALUE 300 (100% VALUATION)