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COMMONWEALTH OF MASSACHUSETTS
MASS TRANSPORTATION COMMISSION

DEMONSTRATION PROJECT PROGRESS REPORT NO. 2

MTC

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THE MASS TRANSPORTATION COMMISSION DEMONSTRATION PROGRAM

In the closing months of 1962 the Mass Transportation Commission of the Commonwealth of Massachusetts launched a $5.4 million mass transportation demonstration program designed to produce basic answers regarding the future of mass transportation within the pattern of regional development. Two-thirds of this sum consists of a $3.6 million Mass Transportation Demonstration Grant from the office of Transportation of the Housing and Home Finance Agency and the remaining $1.8 million was allocated to the MTC by the Massachusetts General Court. The demonstration program consists of a series of demonstration experiments in three major elements of mass transportation: commuter railroad, private buses and the Boston area's Metropolitan Transit Authority.

The MTC $5.4 million mass transportation program was designed to produce actual operational data, tested in the field, for evaluating the practicality of reducing the overall cost of urban and metropolitan transportation by encouraging more extensive use of public transportation facilities.

Origins of the MTC

In 1959, the Governor and other political figures in Massachusetts, recognizing the necessity of obtaining coordination and cooperation in comprehensive planning for both public and private transportation, established a new state agency, the Mass Transportation Commission.

The Mass Transportation Commission is charged with the responsibility of investigating and studying the

> *. . .relationship of mass transportation facilities, land use and urban renewal and development to the economic needs and opportunities of the Commonwealth. . .with particular emphasis on the financial, legal, economic, technical and social problems. The commission shall study and plan for coordinating the highway program of the Commonwealth and the federal government with other mass transportation facilities. The commission shall work with appropriate federal agencies and agencies of the commonwealth in connection with highway, transportation, land use and urban renewal and development studies. The commission shall from time to time make such recommendations to the governor and the general court for the coordination of highway and mass transportation programs and for the development of integrated plans for mass transportation and land use as the commission may deem it advisable.*

The MTC has 11 members. Six are *ex-officio* members from major state transportation agencies: the chairmen of the Metropolitan District Commission, the Metropolitan Transit Authority, the Massachusetts Turnpike Authority, the Massachusetts Department of Public Works, the Massachusetts Port Authority, and the Boston Traffic and Parking Commission. The other five are public members appointed for three-year terms by the Governor with the consent of the Executive Council. The statute provides that one such member must be experienced in railroad management and operation.

In addition to its statutory responsibilities, the MTC has become a *de facto* staff agency to the governor's office and the Massachusetts legislature. The MTC works closely with two joint legislative committees on Transportation and Metropolitan Affairs and a Special Legislative Recess Committee on Transportation.

In late May of 1961 the MTC and the legislative leadership agreed on a program for integrating the activities of the Commission with the studies by the two Joint Legislative Committees on Transportation and Metropolitan Affairs by means of a Special Joint Legislative Recess Committee on Transportation. The MTC staff serves as the staff of the Recess Committee. The joint efforts of the Committee and the Commission resulted in a report to the State Legislature in December of 1961 which recommended that the MTC undertake an integrated mass transportation demonstration and planning program.

With the support of the legislative and community leadership, in July 1962 the Massachusetts General Court appropriated the necessary funds for the Commission to initiate and undertake the proposed $10.2 million integrated program. Both the demonstration and planning projects were designed with the advice of legislators. The entire program was geared to the legislative timetable to provide accurate guide lines to assist the General Court in arriving at effective solutions to urgent problems.

The MTC is endeavoring to develop a practical way of implementing basic long-range federal policy objectives contained in the President's transportation message of April 1962, in the Housing Act of 1961, and in public policy statements of the administrative and legislative leadership at the federal and state levels.

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THE COMMONWEALTH OF MASSACHUSETTS

MASS TRANSPORTATION COMMISSION

120 Tremont Street, Boston, Mass.

Dr. Joseph F. Maloney
Executive Director

April 22, 1963

Mr. John C. Kohl
Assistant Administrator for
Urban Transportation
Housing and Home Finance Agency
1626 K Street, N.W.
Washington 25, D.C.

Dear Mr. Kohl:

This second progress report of the Mass Transportation Commission summarizes the status of the Demonstration Experiment Program and describes the results to date of the experiments in progress. With the cooperation of the Office of Transportation of the Housing and Home Finance Agency, experiments with two railroads, eight bus companies and the Metropolitan Transit Authority are already under way. Experiments with three additional bus companies will be underway by the end of April.

A substantial amount of interesting material has begun to emerge from our transportation experiments. In particular, I should like to call your attention to the analysis in this report of the three-month-long Lowell bus experiment which terminated in early March. The contents of this report are partially based on materials developed by MTC staff and partially by MTC consultant firms.

The operating results and the accompanying analysis of these experiments will prove of value in helping to guide transportation policies and programs in Massachusetts and elsewhere in the nation.

Very truly yours,

Joseph F. Maloney

Joseph F. Maloney
Executive Director

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THE COMMONWEALTH OF MASSACHUSETTS

MASS TRANSPORTATION COMMISSION

PROGRESS REPORT NO. 2

DEMONSTRATION PROGRAM

April 1963

The preparation of this report has been financed in part through a mass transportation demonstration grant from the U. S. Housing and Home Finance Agency under the provisions of Section 103 (b) of the Housing Act of 1949, as amended by Section 303 of the Housing Act of 1961.

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COMMONWEALTH OF MASSACHUSETTS

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EXECUTIVE DIRECTOR

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MASS TRANSPORTATION COMMISSION

MTC Staff

Dr. Joseph F. Maloney, Executive Director
John. J. Coffey, Special Counsel
Frank M. Leonardi, Jr., Head Administrative Assistant
James M. Geary, Supervising Transportation Analyst

Demonstration Project Staff

Dr. Melvin R. Levin, Planning Coordinator
Helen Chin, Assistant to Planning Coordinator
Thomas E. Kristopeit, Project Officer for Planning
Stephen R. Brockman, Associate Project Officer (liaison)

Ernest K. Bloss, Senior Project Officer for Railroad
Lloyd R. Higgs, Project Officer for MTA and Bus
Gordon H. Fay, Assistant Project Officer
Chester B. Cwalina, Assistant Project Officer

Ann Wood, Project Officer for Community Relations
Richard Chmielinski, Asst. Project Officer for Community Relations

Alice Straleau, Administrative Aide to Executive Director
James F. Ross, Associate Counsel
Edmund I. Mangini, Jr., Fiscal Officer

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Status of the Demonstration Experiment Program

Mid-April marks the completion of the third month of the $5.4 million Mass Transportation Commission-HHFA demonstration experiment program. In this three-month period $3.4 million in experiments with two major railroads, an experiment with the MTA and eight bus company experiments have been initiated. In addition, $225,000 in contracts with two consulting firms are under way; remaining elements of the program include possible experiments with three bus companies and two consulting firms. Overall, 79 percent of the $5.4 million program was under contract by mid-April.

Two significant improvements in the program have been made since December:

(1) The planning activities of the MTC have been substantially strengthened through the addition of professionally trained planners to the Commission staff.

(2) Surveys to analyze commuter habits have been conducted by the MTC staff, and additional studies will be undertaken to determine the extent of passenger diversion from private automobiles and car pools and from other forms of public transportation, and to examine parking patterns at rail and transit stations. These surveys assist the Commission in evaluating the impact of the experiments and will be helpful in analyzing possible future changes in the design of the experiments.

An overall statistical summary of the current financial status of the demonstration program reflecting these changes is shown in Table 1.

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Table 1 - Financial Status of Demonstration Program - April 1, 1963

	Proposed Gross Contract	Under Contract	Estimated Revenue Credit Sept. 1962	Revised Estimated Credit	Estimated Net Cost Sept. 1962	Revised Net Cost	Amount Paid to Date
RAILROADS:							
B. & M. R.R.		$2,200,000					$ 779,000
N.H. R.R.		1,200,000					180,000
Sub total		3,400,000					959,000
BUSES:							
Eastern Mass. St. Railway (Lowell Project)		22,044	$ 12,000	$ 12,294	$ 24,000	$ 9,750	4,967
Johnson Bus Line		66,260	20,000	20,000	45,000	46,260	3,986
Service Bus Line		17,506	12,500	12,500	6,000	5,006	2,101
Lynnfield Community		15,671	4,000	3,671	20,000	12,000	
Mass. Northeastern		39,597	33,600	18,597	21,300	21,000	
Fitchburg and Leominster		113,837	35,100	37,837	52,200	76,000	
Berkshire Street Railway		50,028	8,600	17,028	24,000	33,000	
Brush Hill Transportation Co.		27,091	8,800	8,091	20,000	19,000	
Barre Bus Company	$ 7,425		1,425		6,000		
Saugus Transit Inc.	13,300		13,300		0 000		
Worcester Bus Company	61,000		10,500		50,500		
Other Buses	346,300		230,300		116,000		
Sub total	428,025	352,034					11,054
M.T.A.							
Parking Lots		60,000	50,000		40,000	60,000	
New service - buses	1,261,300		495,000	465,000	770,000	886,000	
Sub total	1,261,300	60,000					
Consultants							
Systems Analysis and Research Corp.		90,000					22,500
McKinsey and Co., Inc.		135,000					
Wilbur Smith	40,000						
Public Opinion Consultant	10,000						
Sub total	50,000	225,000					22,500
Administration and Overhead	72,113	230,092					44,908
Sub total	72,113	230,092					44,908
Total	$1,811,438	$4,267,126					$1,037,462

Source: Mass Transportation Commission

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Demonstration Experiments and the Regional Development Pattern

One of the principal aspects of Boston region's development pattern is its complexity. There is considerable interweaving of residential subdivision in long-settled industrial communities, growing decentralization of development from urban centers in the Merrimack Valley and Brockton, overlapping with suburban movement out of Boston. Major renewal activities and large scale private investments in the city of Boston and other central cities are offering competition to the centrifugal attraction of suburban subdivisions, shopping centers and industrial parks. The Boston region's overall moderate growth in population, and urban and economic development should not be mistaken for stagnation. A number of changes are taking place in many areas on a scale and pace reminiscent of the development in the 18th and 19th centuries.

New expressways, and the suburban population and economic expansion in the territory between metropolitan areas have helped to blur the boundaries between the various parts of the region. One aspect of this growing interdependence is increased travel between central cities and suburbs and between metropolitan areas.

Most of this travel is accomplished through the use of private automobiles, partly because much of the newer urban development is located at points not easily accessible to fixed rail and transit facilities. Nevertheless, a major amount of travel is directed along traditional transportation corridors. The MTC demonstration experiments are for the

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most part concerned with attempts to recapture a larger share of this basic market for public transportation. For example, in addition to the five Boston and Maine lines and New Haven lines which converge on downtown Boston, one suburb-to-CBD bus route is now in operation and another is scheduled for the Boston area. Suburban-central city experiments have been designed for other parts of the state, in the Fitchburg-Leominster, Worcester and Pittsfield area. However, a number of bus experiments represent variations and extensions of this historical radial development pattern.

For the most part urban development in the Boston region has followed radial lines, moving out of Boston in corridors along streetcar and railroad lines and highways. As can be seen on the accompanying map, with the exception of the South Shore area, each of the major development corridors is served by rail and/or experiments. One bus experiment to the southwest of Boston was deliberately designed to test mass transportation in a lightly populated area located between development corridors. The construction of Route 128 has introduced a circumferential influence on population growth in the region. Two MTA bus experiments and four bus experiments elsewhere in the region are designed to provide circumferential bus service linking with transit and rail stations.

Only a third of the regionts land area had been developed in 1960. While continuous strip development along older roads tends to conceal the open character of most of the region; along new limited access expressways like Interstate 93, most

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of the adjacent territory is open and undeveloped. Urban growth has flowed in four principal directions:

1. Along the north and south shores. North and south of Boston suburban growth has filled in many of the areas between long-established urban centers. Population growth has been far more marked in recent years along the residential south shore area beyond Quincy than in the mixed residential and industrial north shore. Three bus experiments and the experiments with the Boston and Maine lines are in operation on the north shore.

2. South of Boston. Between Boston and Brockton and Providence, urban growth flows along two corridors. Development has been concentrated to a considerable extent in low-to-moderate income residential development. In addition to experiments on the New Haven Railroad, a bus experiment connecting a suburb of Brockton with Route 128 New Haven station and an MTA transit station is now in progress and a bus experiment linking a Brockton suburb with downtown Boston is under consideration.

3. West of Boston. The territory to the west of Boston has been a principal axis of urban development. Substantial growth of middle-to-upper income housing and major expansion of electronics manufacturing has taken place in this broad corridor. The Boston and Maine experiment serves part of this area.

4. North of Boston. The northern quadrant of the region has been the scene of considerable population and economic expansion in the past decade. Development is proceeding along radial highways linking the Boston area to the substantial urban concentrations in the Merrimack Valley. Experiments

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with rail service between Boston and Merrimack Valley communities are proceeding on the New Hampshire and western divisions of the B & M. In addition, an inter-city bus experiment is in progress in the northeastern arc of the Valley, and an intra-city CBD-oriented bus experiment was recently completed in Lowell.

MTC Community Relations Program

An active community relations program has been implemented by the MTC to develop a two-way flow of information between the Commission and the many communities served by the Demonstration program in the three-month period since the experiments were initiated in December. The MTC has issued more than 30 news releases, staff members have participated in many news media interviews, public addresses, conferences, and several hundred letters and telephone calls have been received from interested citizens and public officials. In addition to these continuing activities, the MTC has scheduled a series of meetings in communities served by the demonstration experiments.

Hamilton Meeting

On March 13, 1963 a community meeting was held in Hamilton, a centrally located community on the Eastern division, in connection with the experiment conducted on the Boston and Maine Railroad.

The meeting was held at the Hamilton Communications Center. Invitations were sent to all cities and towns along the B & M's Eastern Route, advising their elected officials, their Community Advisory Councils and their

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local newspapers of the meeting. Communities represented included South Hamilton, Danvers, Hamilton, Manchester, Salem, Ipswich, Wenham and Swampscott. The meeting elicited the following preliminary comments:

(1) The increase in peak hour patronage was derived from former car drivers or car pool passengers.

(2) (College) students who formerly roomed in Boston are now commuting and have given up their temporary living accommodations near their schools.

(3) Many off-peak riders are women using the new service to shop in the Boston Central Business District, or shop in adjacent large towns.

A schedule of future meetings is in preparation at the time of this writing. Steps are being taken to insure that the format for these meetings will be unified in nature. A questionnaire is being prepared for distribution which will pinpoint and record commuter opinions and measure attitudes in regard to the experiments.

Railroad Experiments

In mid-April, 1963 experiments with both of the Boston region's major commuter railroads were in progress. Results to date appear to indicate that (1) adequate service is of greater importance than fares in increasing ridership; (2) the rail experiment may soon be successful in stemming the post-war attrition in passenger revenues; and (3) a levelling off in ridership volumes at a point substantially higher than the comparable 1962 period may be in prospect.

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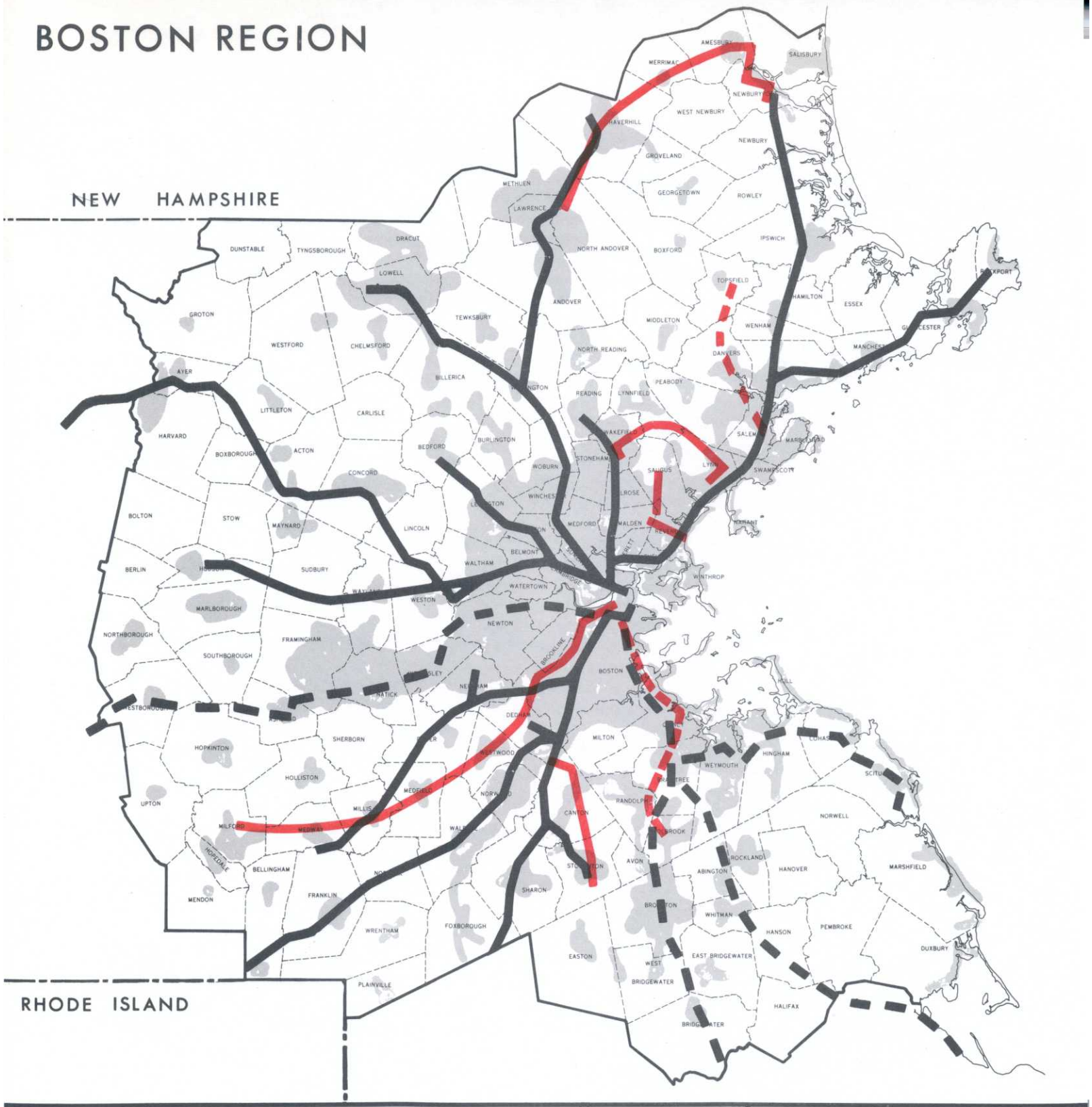
BOSTON REGION



Railroads in Experiment

Railroads not in Experiment

Bus Routes in Experiment

Proposed bus Experiments

Urban Areas, 1960

GENERAL INFORMATION

EXPRESSWAYS
UNDER CONSTRUCTION
PROPOSED

MAJOR HIGHWAYS

SECONDARY HIGHWAYS

MAJOR RAILROADS

SECONDARY RAILROADS

RAPID TRANSIT LINES

SYMBOL APPEARS ONLY WHEN LISTED ITEM IS SHOWN ON MAP

NORTH

1 SQUARE MILES = 2560 ACRES

0 5 10 MILES

MASS TRANSPORTATION COMMISSION

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Boston and Maine Railroad

The first rail experiment to be initiated under the rail portion of the MTC demonstration program was on the Boston and Maine Railroad which operates to the northwest, north and northeast of Boston.

The levels of ridership on the B & M did not change materially between February and March. At the end of the third experimental month, a levelling off at about 16 percent for peak traffic and a 56 percent increase in off-peak passenger volume over 1962 was evident. A further test of passenger volumes will occur throughout the spring when "foul weather friends" tend to desert mass transportation.

Weather and Other Factors

The winter of 1963 was extremely mild as compared to 1962. Only on a few occasions in the January-March months were B & M trains delayed because of storms. Despite the lack of snow in 1963, bad icing conditions occurred in the Boston area highways on eight days, thereby increasing the number of people using train service. In general, this bad weather results in a substantial increase in rail passenger volume. The fact that 1963 was a period of little snowfall tended to reduce B & M passenger levels as compared to 1962.

Two major causes of sudden changes in passenger volume in the winter months of both 1963 and 1962 were special events at the Boston Garden, and public school vacations. For example, during the week ending February 27, 1963, the B & M rail volume reached its highest point of 154,000

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passengers (Monday through Friday total), because of the coinciding of school vacations and the Ice Follies at the Boston Garden. In 1962, the same combination of stimuli to rail passenger volumes occurred so that the volumes of the two years can be compared without obtaining a distorted picture.

Results by Line: Eastern Route

To the northeast, the B & M Eastern Route serves Lynn and Salem to Beverly, (18 miles) and Cape Ann to Rockport (35 miles from Boston) and beyond Newburyport (37.3 miles) Portsmouth, New Hampshire. Service on this line was approximately doubled under the experiment; a regular half-hourly pattern is maintained to Beverly, and since trains continue alternately to Rockport and Newburyport, each line provides hourly service. In the rush hours, service was again doubled resulting in an approximate 15-minute headway to Beverly and half-hourly beyond.

Fares on this line have been reduced from 25 percent to 40 percent. The first and third stations on the Eastern Route are not only relatively far out (Lynn 12 miles and Salem 16 miles) but are cities in their own right with substantial demand for commuter service to and from the station beyond. Thus, there is an opportunity to provide a double passenger service for travelers from Boston to Lynn or Salem and to points beyond Lynn or Salem with the same crew and equipment.

The MTC experiment on the Eastern Route was designed to test the attractiveness of providing high frequency reduced

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fare service oft a long haul line which suffered a massive 85 percent decline in passenger volume between 1949 and 1962.

A steady increase in off-peak passenger volume occurred on the Eastern Route where total off-peak passenger volumes have more than doubled the 1962 figure and total ridership was increased by almost 40 percent. Data on passenger usage also indicates an increase in the number of riders between railroad stations, i.e., Beverly to Salem. Increases in off-peak travel are extremely significant to the financial picture of the railroad since it represents additional revenue from manpower and equipment which would otherwise be underutilized or idle.

Reading Line

To the north, the B & M Reading line (12 miles) serves six busy suburban stations in three towns. Service on this line was substantially doubled, resulting in half-hourly service increasing to a 15-minute headway in the rush hour. Rates were reduced some 20 percent to 25 percent.

Passenger volumes on the heavily travelled Reading line have proven least responsive to fare reductions and service increases. In March, the gain in 1963 ridership on this line as compared to 1962 was the smallest of the five B & M routes. Passenger volumes in February and March on the Reading line have not increased above the levels achieved in January.

The relatively minor rise in off-peak travel is particularly noteworthy. Possibly because of the shortness of the rail trip, and the comparative ease of off-peak automobile

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travel, the Reading line has attracted few new passengers.

Western Route and New Hampshire Division

Service on the Western and New Hampshire routes, connecting Boston with Lowell, Lawrence and Haverhill, manufacturing centers in the Merrimack Valley, was increased to an hourly basis in off-peak periods and approximately half-hour service in peak periods. Winchester, which is located at the junction of the Woburn branch, receives half-hour off-peak and 15-minute peak hour service. Fares on this route were reduced by approximately 30 percent.

Data on passenger volumes for these two major B & M routes are considered as a single entity because of trade-off of Wilmington passengers: under the experiment Wilmington, a heavily used station located at the junction of the New Hampshire Routes, became a stop for New Hampshire route trains instead of Western Route trains.

Overall, increases in the B & M routes to the Merrimack Valley have been moderate, running slightly behind the peak and off-peak gains in passenger volume for the five lines as a whole and well behind the eastern route.

The Fitchburg Division

The Fitchburg Division connects Boston to the out-of-region industrial center 50 miles from North Station. En route this line services a number of western and northwesterly suburbs in the Boston region. Fares were reduced from 25 percent to 35 percent on this division and service on the line was increased from 20 trains a day to 36 trains per day. Service on the

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two branches of the Fitchburg Division serving Lexington, Weston, Wayland, the Sudburys and Hudson was not increased although 21 percent to 48 percent fare reductions were offered. Operating results on the Fitchburg Division appear to underscore the importance of good service as compared to fare reductions in increasing patronage. In March 1963 passenger volume on the two fare-reduction only branches was only 2.5 percent above March 1962. On the other hand, the lightly travelled Fitchburg Division displayed the longest percentage increases in ridership of any of the B & M divisions; off-peak volume was double the 1962 level and peak volume was up by 45 percent.

Boston and Maine Railroad Parking Lots

During the week of April 1-5, during the hours of 10:00 AM to 3:00 PM., a week of generally sunny and mild weather, MTC personnel surveyed parking lots on all of the outlying B & M rail stations. Separate tabulations were made for lots at the stations and nearby lots. In most cases, parking was free of charge.

Table 2 summarizes the results of this survey. It will be noted that in only 11 of the 48 major B & M stations was there 100 percent utilization of parking spaces. Vacancies ranging from 25 percent to 97 percent were observed in the remaining lots.

A special tabulation was made of the relationship between available parking spaces at the lots and passenger volumes at the stations. It was found that total parking spaces

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PARKING SPACES AVAILABLE FOR BOSTON AND MAINE
COMMUTERS AT RAILROAD STATIONS

STATION	Station Lot	Spaces Occupied	Adjacent Lots	Spaces Occupied	Street	Spaces Occupied	Total Spaces Available	Total Spaces Occupied	Per Cent of Occupancy	No. of Riders per day (one-way)	Riders per Parking Space
West Medford	30	6	70	26	0	0	100	32		80	0.8
Wedgemere	158	158	0	0	0	0	158	158	100	300	1.8
Winchester[1]	75	35	150	135	0	0	225	170	75	645	2.9
Cross Street	13	12	0	0	0	0	13	12	92	100	7.7
Woburn	112	112	0	0	0	0	112	112	100	650	5.8
Wilmington[2]	30	11	0	0	0	0	30	11	37	345	11.5
North Billerica	38	32	0	0	15	6	53	38	72	80	1.5
Lowell	198	164	104	88	20	2	322	254	79	625	1.9
Ballardvale	0	0	0	0	10	5	10	5	50	15	1.5
Andover	22	12	10	10	10	6	42	28	67	290	6.9
Shawsheen	18	18	0	0	0	0	18	18	100	40	2.2
Lawrence	185	165	0	0	0	0	185	165	89	500	2.7
No. Andover	0	0	0	0	35	7	35	7	20	40	1.1
Bradford	70	52	0	0	11	11	81	63	78 (	320	3.0
Haverhill	0	0	0	0	24	17	24	17	71 (		
Wyoming	38	37	0	0	83	49	121	86	71	390	3.2
Melrose	94	93	0	0	0	0	94	93	99	580	6.2
Melrose Hlds.	81	75	0	0	0	0	81	75	93	550	6.8
Greenwood	0	0	0	0	0	0	0	0	--	130	---
Wakefield	0	0	0	0	159	154	159	154	97	900	5.7
Reading	121	113	0	0	134	126	255	239	94	900	3.5
Lynn[3]	0	0	190	150	0	0	190	150	79	425	2.2
Swampscott	130	125	0	0	30	24	160	149	93	410	2.6
Salem	60	60	150	100	50	4	260	164	63	470	1.8
Beverly	155	155	0	0	50	50	205	205	100	625	3.0
Montserrat	15	7	0	0	0	0	15	7	46	100	6.7
Prides	14	14	0	0	0	0	14	14	100	15	1.0
Beverly Farms	15	15	5	5	0	0	20	20	100	80	4.0
Manchester	40	35	20	20	0	0	60	55	92	145	2.4
West Gloucester	10	2	0	0	0	0	10	2	20	15	1.5
Gloucester	85	85	0	0	0	0	85	85	100	275	3.2
Rockport	150	37	0	0	0	0	150	37	25	110	0.7
No. Beverly	30	20	0	0	0	0	30	20	67	80	2.7
Hamilton&Wenham	60	30	0	0	0	0	60	30	50	125	2.1
Ipswich	14	14	600	300	0	0	614	314	51	125	0.2
Newburyport	0	0	0	0	75	75	75	75	100	190	2.5
Waltham	20	20	0	0	0	0	20	20	100	235	11.8
Kendall Green	56	47	0	0	0	0	56	47	84	75	1.3
Hastings	4	4	0	0	0	0	4	4	100	15	3.8
Lincoln	14	14	27	12	38	38	79	64	81	155	2.0
Concord	28	28	30	20	0	0	58	48	83	357	6.2
West Concord	40	29	0	0	0	0	40	29	73	80	2.0
So. Acton	40	40	12	3	0	0	52	43	83	110	2.1
West Acton	22	18	0	0	20	0	42	18	42	70	1.7
Littleton	0	0	0	0	34	18	34	18	53	40	1.2
Ayer	65	37	0	0	0	0	65	37	57	80	1.2
No. Leominster	15	15	0	0	20	0	35	15	43	40	1.1
Fitchburg	15	15	40	16	7	7	62	38	61	95	1.5
TOTAL (ALL STATIONS (	2380	1961	1408	885	825	599	4613	3445	7512	022	2.6

1. $2.00 per week parking charge at Winchester Station parking lots.

2. $1.50 per week parking charge at Wilmington Stationparking lot.

3. $1.25 per week (30¢ per day) parking charge at lots adjacent to Lynn Railroad Station.

Source: Mass Transportation Commission

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amounted to 38.4 percent of the total number of daily inbound passengers boarding trains at the stations. These figures indicate that in most stations the bulk of passengers arrive via car pools, are delivered in family cars, walk or use public transportation. Further surveys of parking and passenger habits to be conducted by MTC personnel and consultants will shed further light on the relationship between railroad parking spaces and station passenger volumes.

Revenues from Boston and Maine Experiment

Analysis of initial figures for the month of January appear to indicate that the increase in passenger volumes resulting from the MTC-HHFA experiment on the Boston and Maine has helped to reduce annual attrition in passenger revenues. In fact revenues for February and March may be within a few percentage points of comparable 1962 revenue levels.

In January 1963, McKinsey & Company, a widely known firm of management consultants, was retained by the MTC to assist the Commission in (1) evaluating the results of the railroad experiment in terms of gains and losses in commuter traffic and revenues and costs associated with varying levels of service and fare structure; (2) analyzing the costs assignable to commuter service and those costs that could be avoided if commuter service were discontinued; and (3) determining variability in commuter service costs as a guide to identifying incremental costs involved in providing various levels of service on specific routes.

January Revenue

As of January 1963, the increase in number of passengers

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was insufficient to offset the fare reduction offered in the experiment, but total revenues earned in January were only 7.4 percent below January 1962 revenues. The further increases in passenger volumes in February and March, particularly the gains in off-peak and long haul ridership, have undoubtedly brought 1963 revenues closer to the 1962, pre-fare reduction level. This is shown in Table 3 which compares 1963 revenue by line with 1962 on the same basis as the passenger data:

Table 3. Boston and Maine Experiment Program

Revenue Earned: January 1963 Compared with January 1962*
(000's)

Line	Revenue Earned 1963	Revenue Earned 1962	1963 over/ (under) 1962
Eastern Route	$ 75.4	$ 75.3	0.1%
Reading Line	57.5	62.7	(8.3)
Western Route	36.4	49.7	(26.8)
Lowell Line	31.2	30.0	4.0
Woburn Line	22.6	24.3	(7.0)
Fitchburg Division	29.7	29.8	(0.3)
Sub-Total	$ 252.8	$ 271.8	(7.0)%
Bedford and Hudson Lines	5.6	7.1	(21.1)
Total Boston Commuter Service	$ 258.4	$ 278.9	(7.4)%

* The data covers the experimental period in 1963 and a comparable period in 1962 and includes Saturdays and Sundays.

Source: Boston and Maine Railroad, McKinsey and Company

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Method of Obtaining Data

Beginning in January 1963, the Boston and Maine Railroad instituted a one-week-per-month audit of revenue-paying passengers and total revenue earned on each of its several main and branch lines, including those lines outside of the Boston commuter area. The audit procedures conform with standard practice of the railroad and are consistent with those used in the past. In addition, the trainmen take a count of riders on each train every day in the month.

The weekly audit data for each line were extrapolated to a monthly total in the same proportion that the trainmen's headcounts for the audit week bore to the total monthly head-count.

This method was used in January because there was a gradual weekly increase in the number of passengers riding the railroads and the weekly audits, which were taken late in January, did not accurately reflect the average weekly results during the month.

Variance between Audit Data and Headcounts

Historically headcounts have been higher than audit data taken for the same period. The variance is primarily due to non-paying passengers, including such people as railroad em-ployee pass holders and railroad contractors. In the past, it has been thought that the headcounts exceeded the audit counts by approximately 10 percent to 12 percent. During the month of January, however, the variation on various commuter lines ranged from a low of 11 percent to a high of 19 percent, as shown

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on the following table:

Table 4. Variance between Revenue Passengers and Headcounts

January 1963

Line	Headcounts over Audit Count
Eastern Route	13.6%
Reading Line	12.7
Western Route	13.1
Lowell Line	18.7
Woburn Line	11.3
Fitchburg Division	16.4
Bedford and Hudson Line	10.6
Average all Lines	14.0%

Source: Boston and Maine Railroad, McKinsey and Company

The increase in the variance between what was considered usual in the past (10-12 percent) and what was found in January 1963 (14 percent) may be explained by the fact that the method of making the calculation differs.

In past train audits, total revenue passengers, including local passengers who get on or off outside of Boston, were compared with the trainmen's headcounts which are taken as the trains enter or leave Boston. In 1963, however, only revenue paying passengers entering or leaving Boston were compared with the headcounts.

A special analysis of pass riders is being conducted to determine the extent to which they account for the difference between the audit and headcount data. This analysis will be based on selected 1962 audits which reported pass riders and on an analysis of the residential distribution of Boston and Maine Railroad employees.

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Table 5 BOSTON AND MAINE RAILROAD DEMONSTRATION PROJECT

Monthly Summary Figures 1962-1963

Route Figures Include Inbound & Outbound	January 1962	January 1963	January % Change	February 1962	February 1963	February % Change	March 1962	March 1963	March % Change
Eastern Route									
Peak	75594	86321	+14.2	77139	91403	+18.5	83827	99746	+19.0
Off Peak	19757	36999	+87.3	21096	42667	+102.3	20623	44282	+114.7
Total	95351	123320	+29.3	98235	134070	+36.5	104450	144028	+37.9
Reading Line									
Peak	101091	112267	+11.2	101364	113794	+12.3	110083	125335	+13.6
Off Peak	27572	35719	+29.5	31821	39875	+25.3	31993	42891	+34.1
Total	128663	147986	+15.0	133185	153669	+15.4	142076	168226	+18.4
Western Route									
Peak	34426	35110	+ 2.0	35456	37297	+ 5.2	39717	39862	+ 0.7
Off Peak	15714	18199	+15.8	15449	21037	+36.2	16736	21189	+26.6
Total	50140	53309	+ 6.3	50905	58334	+14.6	56453	61051	+ 8.2
N. H. Dist. -- Lowell-Woburn									
Peak	73784	87220	+18.2	75156	89170	+18.6	84357	98176	+16.4
Off Peak	28039	38114	+35.9	32143	43636	+35.8	30389	44123	+45.2
Total	101823	125334	+23.1	107299	132806	+23.9	114746	142299	+24.0
Fitchburg Division									
Peak	26525	34972	+31.8	26987	37212	+37.9	30385	40290	+32.6
Off Peak	5925	10966	+85.1	6769	14270	+110.8	7084	13899	+96.2
Total	32450	45938	+46.1	33756	51482	+52.5	37469	54189	+44.6
All Lines									
Peak	311420	355890	+14.3	316104	368876	+17.0	348369	403409	+15.8
Off Peak	97007	139997	+44.3	106568	161485	+51.5	106825	166384	+55.6
Total	408427	495887	+21.4	422672	530361	+25.5	455194	569793	+25.2

Source: Trainmen's Head Counts: Boston an Maine Railroad

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New Haven Commuter Test Off to Good Start

NHRR Joins Experiment To Lure Back Commuters

The New Haven Railroad has joined in the "Big Experiment" designed to lure commuters back to the railroad with increased service and lowered fares.

Details of a proposed contract between the Mass Transportation Commission and trustees of the railroad were announced by Gov. Peabody.

HOURLY SERVICE TO PROVIDENCE

Under the program, hourly service will be initiated about March 1 between Boston and Providence, R.I., with stops at Attleboro, Mansfield, Sharon, Canton Junction and Rte. 128. station.

The increased service will be accompanied with substantial fare reductions. Sixteen trains will be added to the 22 now running daily to take care of the new schedule.

The program also calls for increased service on the Needham line so that trains will run about every 50 minutes. Ten trains will be added to the 22 now in operation.

New Haven R.R. Steps Up Trains, Cuts Fares Today

The New Haven Railroad's mass demonstration program of stepped-up commuter service at reduced fares goes into operation today.

Under the test, being conducted by the Mass Transportation Commission, the New Haven will provide hourly passenger service on the Boston-Providence line, and trains every 50 minutes on the Needham route.

To meet this schedule, the New Haven will add 26 trains daily to its regular service. Fare reductions, though varying according to distance, will average 10 percent.

The 12-month experiment will be made possible through a $1.2 million payment from the U.S. Housing and Home Finance Agency.

PROVIDENCE TO BOSTON

5:58, 6:44, 7:34, 8:20, 8:47, 10:15 and 11:10 a.m.; 12:20, 1:10, 2:20, 3:05, 4:15, 5:20, 6:15, 9:00 and 9:35 p.m.

BOSTON TO PROVIDENCE

6:45, 8:35, 9:35, 10:35 and 11:25 a.m., 12:30, 1:40, 2:45, 3:28, 4:30, 5:08, 5:40, 6:45, 7:40, 9:00, 9:35, 10:40 and 11:50 p.m.

NEEDHAM TO BOSTON

6:51, 7:31, 7:47, 8:11, 9:16, 10:29, 11:35 a.m.; 12:25, 1:10, 2:04, 3:01, [illegible], 8:30 and 10:23 p.m. and 12:25 a.m.

BOSTON TO NEEDHAM

8:20, 9:51, 10:55 and 11:45 a.m.; 12:35, 1:17, 2:15, 3:15, 4:10, 4:55, 5:37, 6:05, 7:50, 9:43 and 11:49

(Herald Staff Photo by Francis McGee)

COMMUTER RUSH really looked like one at South Station last night as homebound travelers took advantage of Mass Transportation Commission subsidy making possible lower fares, more trains. These passengers were bound for Needham.

MAKING A BID — The Boston and Maine Railroad is making a strong bid to get back into financially sound commuter operations with the help of Federal and State subsidies. Commuters, left, free from rush hour traffic worries, have time for a few hands of cards on the way home. And picture at right shows something you can't do if you drive back and forth to Boston. But you can snooze when commuting on the Boston and Maine's Buddliners.

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Cost Increases

The increased costs incurred by the B & M in running the additional trains during the experiment is being calculated by comparing actual costs in 1963 with a comparable pre-experiment base period in 1962. These data are still in the process of being developed because the accounting allocations between freight and passenger service for January 1963 were not completed until late in March.

New Haven Railroad

On March 11, 1963, a $1.2 million reduced fare increased service Demonstration Project went into effect on the East End commuter operation of the New Haven Railroad. The East End commuter territory is made up of the main line Boston to Providence route, over which through New York trains operate, and five branch line operations which divert from the main line at various points. These branches consist of (1) a line to Needham Heights (13.6 miles from Boston), and (2) an extension of the Needham branch from Needham Junction to West Medway (26.0 miles from Boston), (3) a line to Blackstone (36.6 miles from Boston) and a short branch off the main line to Stoughton (18.9 miles from Boston).

Eight new round trips have been added between Boston and Providence, all during the off-peak hours. On the line to Needham service was improved with the addition of four off-peak round trips. Service on the remaining New Haven lines was not increased, but fare reductions are offered.

The fare reduction on all of the East End lines is about

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10 percent. Special reduced rate round trip tickets are now offered from all stations in addition to reduced fares on all commutation books. The reduced fares do not apply to any stop west of Attleboro on the Providence route as the Demonstration Program is effective only within Massachusetts. (The new trains go through to Providence, R. I. For operating convenience.)

Since only two weeks of data were available from the New Haven in mid-April, it was difficult to make any significant analysis or identify definite trends.

During the first and second weeks of the experiment, New Haven ridership was up over last year by more than 5 percent in each week. However, probably because of the advent of good spring weather, there was a slight decline in total riders in the second week compared to the first week.

There was little change in the amount of ridership in the peak (commuting) hours during the first two weeks, possibly because no new trains were added in this time period and because the moderate fare reduction may not be sufficiently attractive to generate new commuters. The increase in off-peak business was more substantial, possibly because of the fact that service improvements were combined with reduced rate round trip tickets. The Needham branch has shown the greatest increase in off-peak business of any of the lines as compared with 1962. This is understandable as the off-peak service on this line had deteriorated more than on the Providence route (the only other line with significant off-peak service). On the Providence route, prior to the experi-

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Table 6. New Haven Railroad Demonstration Project

Inbound and Outbound - (5-day average)

Line	Week Ending 3/16 1962	Week Ending 3/15 1963	% Change	Week Ending 3/23 1962	Week Ending 3/22 1963	% Change
Between Boston and:						
Providence						
Peak	2,835	2,868	+1.2	2,781	2,731	- 1.8
Off-peak	1,280	1,383	+8.0	1,211	1,422	+17.4
Total	4,115	4,251	+3.3	3,992	4,153	+ 4.0
Needham						
Peak	3,540	3,763	+6.3	3,608	3,797	+ 5.2
Off-Peak	625	736	+17.8	558	754	+35.0
Total	4,165	4,499	+ 8.0	4,166	4,551	+ 9.2
Blackstone						
Peak	1,523	1,613	5.9	1,518	1,580	+ 4.1
Off-Peak	445	436	-2.1	440	424	- 3.6
Total	1,968	2,049	+4.1	1,958	2,004	+ 2.4
Stoughton						
Peak	1,376	1,491	+8.4	1,405	1,414	+ 0.6
Off-Peak	- -	- -	- -	- -	- -	- -
Total	1,376	1,491	+8.4	1,405	1,414	+ 0.6
Dedham						
Peak	431	434	+0.7	426	442	+ 3.8
Off-Peak	- -	- -	- -	- -	- -	- -
Total	431	434	+0.7	426	442	+ 3.8
West Medway to Needham Jct.						
Peak	65	63	-3.1	61	62	+ 0.6
Off-Peak	- -	- -	- -	--	- -	- -
Total	65	63	-3.1	61	62	+ 0.6
Total - All Lines						
Peak	9,770	10,232	+4.7	9,799	10,026	+ 2.3
Off-Peak	2,350	2,555	+8.7	2,209	2,600	+17.7
Total	12,120	12,787	+5.5	12,008	12,626	+ 5.1

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ment, through trains from New York provided good service out of Providence, Route 128, and some intermediate stations.

The New Haven experiment will offer interesting comparisons with the demonstration experiment on the Boston and Maine Railroad. The early response on the New Haven does not appear to be out of line with the first two weeks experience on the B & M, considering the much smaller increase in service and fare reductions. In gauging this relative initial response, however, four factors should be borne in mind: (1) the milder near-spring weather (inducive to automobile usage) during the opening weeks of the New Haven experiment as compared to the winter weather in January when the Boston and Maine experiment began; (2) the comparatively limited amount of publicity for the New Haven experiment as compared to the great interest generated by its predecessor: (3) the New Haven railroad's lesser fare reductions and service increases as compared to the B & M experiment; (4) the absence of the once dominant Old Colony route from the New Haven experiment, and (5) the less attractive older equipment on the New Haven as compared to the B & M's modern Budd cars.

New York Central, Boston and Albany Branch

In order to compare trends in passenger volume between the Boston and Albany line with rail lines included in the experiment arrangements have been made with the New York Central to secure passenger data on a regular basis.

The initial figures supplied by the B & A comparing January, 1963 and January, 1962 passenger volumes indicated

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a continuation of year-to-year erosion in ridership. B & A figures for the first week in January, 1963 pointed to a 4.3 percent loss in passenger volume as compared to the same period in 1962. This may be compared to the 21.4 percent increase for the first week of January, the Boston and Maine Railroad experiment.

Bus Demonstration Experiments

Seven Mass Transportation Commission bus experiments have been initiated between early December and mid-April. Substantive data is now available for four experiments; the Lowell, the Johnson Bus Company, the Service Bus Line and Lynnfield Community, Inc.

Eastern Massachusetts Street Railway Company: Lowell

The off-peak fare reduction of the Eastern Massachusetts Street Railway Company at Lowell, the first and briefest of the MTC bus experiments, began on December 10th, 1962, and ended 13 weeks later on March 8, 1963.

The Eastern Massachusetts Street Railway Company operates 16 bus routes serving downtown Lowell, and centering on Kearney Square. The regular fare is 25¢. School children ride for 12½¢.

As in most transit operations, patronage declines on these routes during the middle of the day, between the morning and afternoon rush hour peaks. A test of the extent of peaking on seven of the 16 lines was made by checking revenue collection on Thursday, August 14, 1962. It was found that fares collected between 10:00 AM and 3:00 PM, five of the 12

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hours in which the buses operate represented only 35 percent of average daily revenue. The experiment was designed to determine if a drastic fare reduction would induce greatly increased off-peak patronage and thus help the bus company to achieve greater public use of its equipment.

The project established an experimental fare of 10¢ for rides beginning between the hours of 10:00 AM and 3:00 PM. In order to keep the administration and fare collection as simple as possible, no transfers were issued and through rides from one side of the square to the other required a second 10¢ fare. Thus, any ride between Kearney Square and points approximately 1½ miles out cost 10¢ if the passenger's trip began between 10:00 AM and 3:00 PM.

Runs previously operated in the center of Lowell were left entirely unchanged so that there was no additional vehicle-operating cost as a result of the experiment; vehicles and crews primarily needed for rush hour service would be available during the hours of the experiment (10:00 AM - 3:00 PM) at minimal incremental cost.

The fare reduction for the experiment was a substantial 60 percent, from 25¢ down to 10¢. The only complications in the fare schedules were pupil's fares (required by law to be set at half fare) and a very small number (less than 2 percent) of 10¢ transfers previously offered to passengers using two runs for their ride through the downtown area. Figures shown in the following table have been adjusted to eliminate both of these factors.

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Table 7. Eastern Mass. Street Railway Co.

Lowell 10¢ Fare Demonstration Program

Weekly comparison of 25¢ adult cash fares paid prior to and 10¢ adult cash fares paid during program

December 10, 1962 through March 8, 1963

Weekly Period	Estimated No. paying 25¢ prior to program	Actual No. paying 10¢ during prog.*	In-crease	% In-crease
12/10-12/14	5870	10,840	4970	84%
12/17-12/21	5870	11,323	5453	9.3
12/24-12/28 (4 days only)	4696	10,029	5333	114
12/31-1/4 (4 days only)	4696	8,287	3591	76
1/7 -1/11	5870	10,212	4342	73
1/14 -1/18	5870	9,496	3626	62
1/21 -1/25	5870	9,301	3431	58
1/28 -2/1	5870	10,186	4316	73
2/4 -2/8	5870	10,845	4975	84
2/11 -2/15	5870	10,136	4266	73
2/18 -2/22	5870	10,317	4447	76
2/25 -3/1	5870	10,803	4933	84
3/4 -3/8	5870	10,694	4824	82
13 Weeks Total	73962	132,469	58507	79%

* These figures are all five percent less than figures presented by Eastern Mass. This reduction represents estimated number of students paying 10¢ instead of presenting school tickets.

Source: Eastern Mass. Street Railway Co. daily count.

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With each passenger paying only 10¢, a 150 percent increase in the number of off-peak passengers was required to equal the revenue from the former 25¢ fare. However, the figures in Table 7 indicates that even in the busy pre-Christmas shopping season this 150 percent figure was never approached. During the last five weeks of the experiment the increase in passenger volume levelled off at between 75 percent to 80 percent. Overall, the experiment cost approximately $600 per week, a $150 decrease from the original cost estimate of $750 which was made at the time the contract was signed.

Off-peak volumes increased by over 800 passengers per day on the experiment buses. A special survey conducted by the MTC in late February and early March on the experiment routes indicated that most of this increase in off-peak patronage was derived from increased frequency of use of former bus riders.

MTC Lowell Bus Demonstration Passenger Survey

A passenger survey was conducted by MTC personnel on buses in Lowell on Tuesday, February 26th, and Friday, March 1, 1963.

The fare reduction attracted 14.9 percent more bus riders, most of whom previously had driven autos or walked and some who had used car pools or taxis. More significant was the fact that 63 percent of the regular-previous riders indicated that they rode more frequently during the experiment.

Characteristics and Habits of Riders

Three rider characteristics are significant: 69 percent of all

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riders were female; over 50 percent were shopping trips; and 70 percent of the riders were over 40 years old.

Most new riders had either walked or driven autos before the experiment. Of the regular riders, two-thirds rode at the same time and two-thirds also rode more often.

Over 50 percent of the riders used the bus daily, 26% percent weekly and almost 20 percent occasionally. While over 50 percent only walked one block to the bus, almost 90 percent of all riders lived within two blocks of the bus. Half were on shopping trips but one-fourth were going to work. Thus shopping and working are the reasons for riding the bus for over 75 percent of the riders. Medical, entertainment and (miscellaneous) other trips account for less than 10 percent of all trips.

A meeting conducted in Lowell with the city and Chamber of Commerce officials afforded further indications of the minimal impact of the program. Traffic officers reported no appreciable change in traffic congestion. Since 20,000 automobiles park in or pass through downtown Lowell on a typical business day, 400 bus passengers, most of them previous bus riders, did not materially reduce CBD traffic volumes in off-peak periods.

The effect on downtown retail trade was also minor. Some stores reported some indication that shopping hours were affected by the experiment, suggesting the possibility that the additional off-peak riders were to a great degree the same customers who formerly rode in the rush hour.

Since the MTC survey indicated that most of the increase

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MTC - LOWELL PASSENGER SURVEY FEBRUARY-MARCH 1963

Rider Characteristics

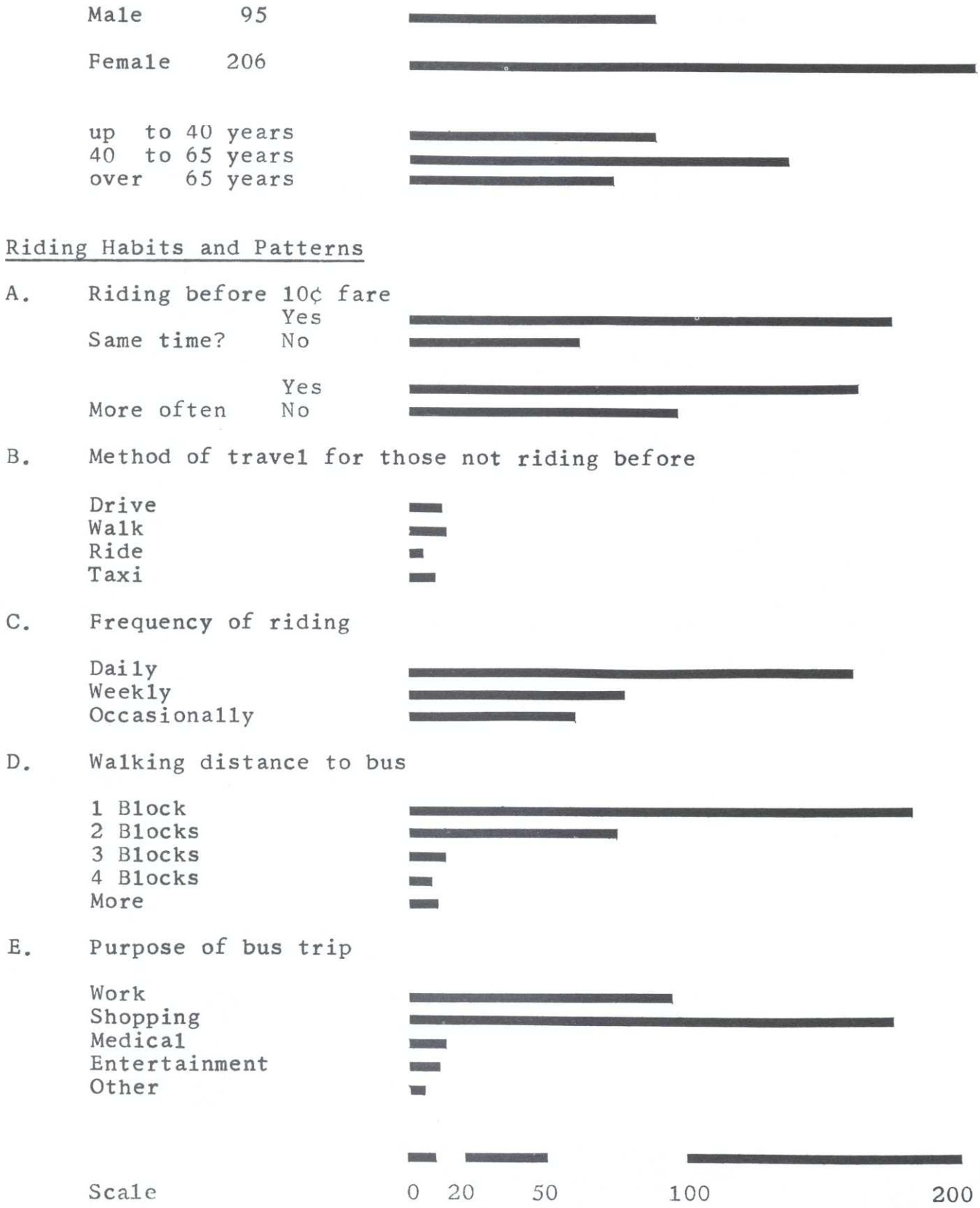

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Table 8. Eastern Massachusetts Street Railway Company
Lowell 10¢ Fare Demonstration Project Experiment
Passengers Carried and Revenue Collected by Weeks for Period from
December 10, 1962 through March 8, 1963

Week of	10¢ Adult Fares	5¢ Child Fares	5¢ Pupils Fares	12½¢ School Tickets	Total Passen-gers	Total Revenue	Base Period Revenue	Amount Paid Carrier by MTC
12/10-12/14	11,410	153	416		11,979	$1,169.	$1,777.	$ 608.
12/17-12/21	11,919	155	377		12,451	1,218.	1,777.	559.
12/24-12/28 (4 days only)	10,557	368	22		10,947	1,078	1,422.	334.
12/31-1/4 (4 days only)	8,723	136	134		8,993	885.	1,422.	536.
1/7-1/11	10,749	124	429		11,302	1,102.	1,777.	675.
1/14-1/18	9,996.	78	371		10,445	1,022.	1,777.	755.
1/22-1/25	9,791.	58	620		10,469	1,013.	1,777.	764.
1/28-2/1	10,722.	89	474	48	11,333	1,106.	1,777.	671.
2/4-2/8	11,416	97	540	185	12,238	1,196.	1,777.	581.
2/11-2/15	10,699	154	461		11,314	1,097.	1,777.	680.
2/18-2/22	10,860	470	21		11,351	1,110.	1,777.	667.
2/25-3/1	11,372	83	456		11,911	1,164.	1,777.	613.
3/4-3/8	11,257	184	527		11,968	1,161.	1,777.	616.
	139,471	2149	4,848	233	146,701	$14,321.	$22,391.	$8,069.

Source: Eastern Mass. Street Railway Co. and MTC.

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Table 9. Lowell Reduced Fare Demonstration Program Experiment
Bus Routes

25¢ adult fares prior to demonstration program and
10¢ adult fares during 13th week of program

Route	Miles	No.of Bus Trips 10AM-3PM	No.psgrs. prior to Program a	No.psgrs. during Program b	per-cent increase
Dracut Center	1.5	16	29	71	145%
St.,Billerica	1.6	35	88	188	114
Westford St.	1.8	24	126	248	97
South Lowell	1.7	21	58	109	89
Textile Ave.	1.8	20	130	242	86
Pawtucket Sq. Varnum and Pawtucketville	1.5	32	118	204	73
Chelmsford St. & Highlands	1.5	34	116	198	71
Broadway	1.6	21	88	144	64
Hovey Square	1.8	20	92	149	62
Christian Hill	1.6	15	59	95	61
Andover St. & Oaklands	1.6	29	81	130	60
No. Chelmsford	1.5	22	64	96	50
Lakeview	1.5	20	69	101	46
Shaw Street	1.6	20	41	56	37
Boston-Everett	1.6	11	10	12	207
Lawrence	1.6	11	5	5	
Totals		351	1174	2048	74%

a. Survey conducted week of Nov. 26-30, 1962
b. Week of Jan, 28-Feb. 1, 1963

Source: MTC - US Census

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in passenger volume was derived from increased frequency of use of bus riders rather than from former automobile riders, the experiment may have added a maximum of 100 to 150 shoppers to the estimated 12,000 shoppers in downtown Lowell on a typical shopping day, or a maximum possible increase in retail volume of little more than 1 percent. Since detailed reports of commercial activity in Lowell are not available, and downtown retail volume was adversely affected by the opening of a new suburban shopping center which opened just before Thanksgiving Day, it is difficult to determine the precise effect of this experiment on retail trade patterns but it was obviously quite small.

Table 10 shows the trend of commercial activity in Lowell during the period.

An analysis of the response of the various routes was made by the MTC. In general, the results are closely correlated with the highest residential population density. Approximately 90 percent of the bus riders on the experimental routes interviewed by the MTC walked two blocks or less to the bus.

Planning Environment for the Experiment

The Lowell area has been hard hit by severe losses in cotton textile employment, partially compensated by gains in electronics and non-manufacturing employment. The unemployment rate in the Lowell area has exceeded 9 percent for some years and in 1961 it was designated as a persistent labor surplus area by the Area Redevelopment Administration. Unemployment

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Table 10. Weekly Department Store Sales in the Lowell Area

Per Cent Change from Previous Year

By Week Week Ending	% Chance	Four Weeks Ending	% Change
Nov. 10, 1962	+9%		
17	-5		
24	+10		
Dec. 1, 1962[1]	-14	Dec. 1, 1962	-2%
8	-18	8	-10
15[2]	-5	15	- 9
22	-9	22	-11
29	+130[3]	29	- 3
Jan. 5, 1963	-3	Jan. 5, 1963	+ 3
12	-19	12	+ 3
19	-1	19	+20
26	-6	26	- 8
Feb. 2, 1963	+1	Feb. 2, 1963	+ 2
9	-8	9	- 4
16	-11	16	- 6

1 - Test week for bus demonstration standard revenue determination

2 - Bus demonstration project commenced

3 - Distorted by incidence of Christmas

Source: Federal Reserve Bank of Boston

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in February, 1963 stood at 10 percent. Trends in the Lowell economy are summarized in Table 11.

Table 11. Lowell SMA and City of Lowell Employment*, 1950-1961
(000's)

	Lowell SMA			City of Lowell		
	1961	1950	%Change	1961	1950	%Change
Total Manufacturing	20.7	27.7	-25.3	18.4	19.0	-5.2
Textiles	4.9	12.5	-60.8%	3.1	9.4	-67.0%
Electronics	4.5	0.4	+1025.0%	4.7	0.6	+583.3%
Other	11.3	9.8	+ 15.3%	10.6	9.0	+ 17.8%
Total Non-Mfg.	20.9	16.0	+ 30.6%	11.4	11.6	- 1.7%
Total Unemployed	4.6	6.9	- 33.3	N.A.	N.A.	N.A.

* Covered employment

Source: Mass. Division of Employment Security

The size of the Lowell area labor force remained unchanged in the 1950-1960 decade while total population increased by 18 percent. Thus, it is clear that a substantial amount of net migration of labor and considerable out-commuting to jobs in other areas has helped to alleviate the area's employment problems. Thanks to local job gains combined with net out commutation of and net out-migration of part of its labor force, the Lowell area was able to decrease its unemployment rate from a severe 13 percent in 1950 to 10 percent in February, 1963.

The changing employment structure of the metropolitan area has had a major impact on journey to work patterns and on the Central Business District. Most of the area's textile

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employment losses occurred in mills located near downtown Lowell while jobs in new electronics plants are located in outlying areas of Lowell and its suburbs or near Route 128.

In early 1963 it was estimated that total job losses in downtown Lowell textile mills since 1950 were between 8,000 and 10,000; this represents a loss of well over half the 1950 "captive market" of downtown employees who shop in the CBD before and after work and during lunch hours. Since 1930, 1.6 million square feet of textile mill space near downtown Lowell, a third of the 1930 total of nearly five million square feet of mill space has been razed for reuse as parking lots or for other purposes. Moreover, CBD job losses in textiles and other industries are still continuing; in the past three years downtown Lowell has experienced a loss of over 1,000 jobs in textiles and other manufacturing. Total employment in and near the downtown area is now probably less than 5,000.

Economic Change and Mass Transportation

The outward movement in the location of manufacturing employment helped to further reduce the already limited role of mass transportation in Lowell in the general transportation pattern. In 1960 only 8 percent (2,400) of Lowell's 35,000 employed residents journeyed-to-work via public transportation. However, in the census tracts traversed by experiment buses, a larger proportion of the population use mass transit since the percentage of households without cars runs at about half, considerably higher than the one-in-three ratio in the city

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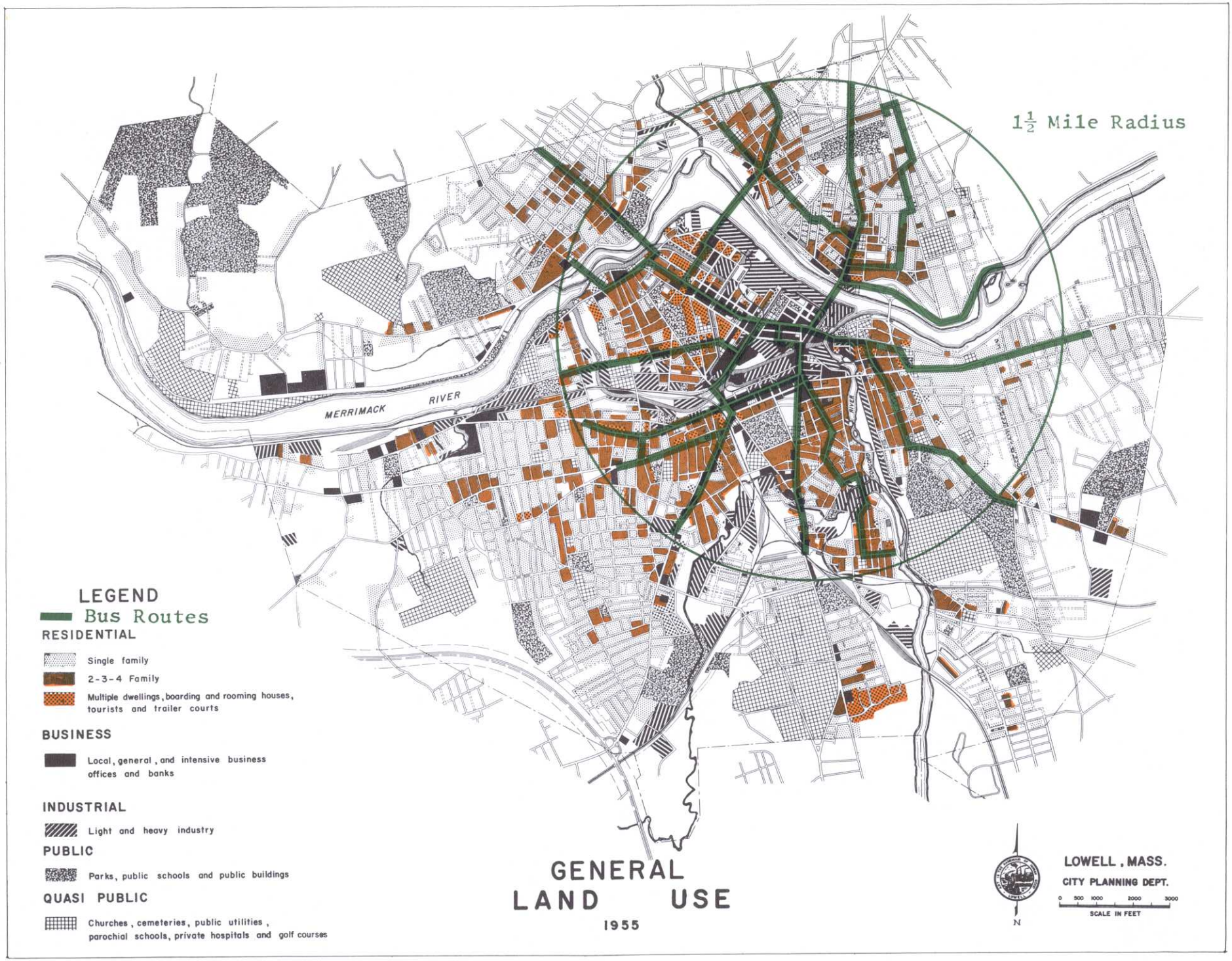

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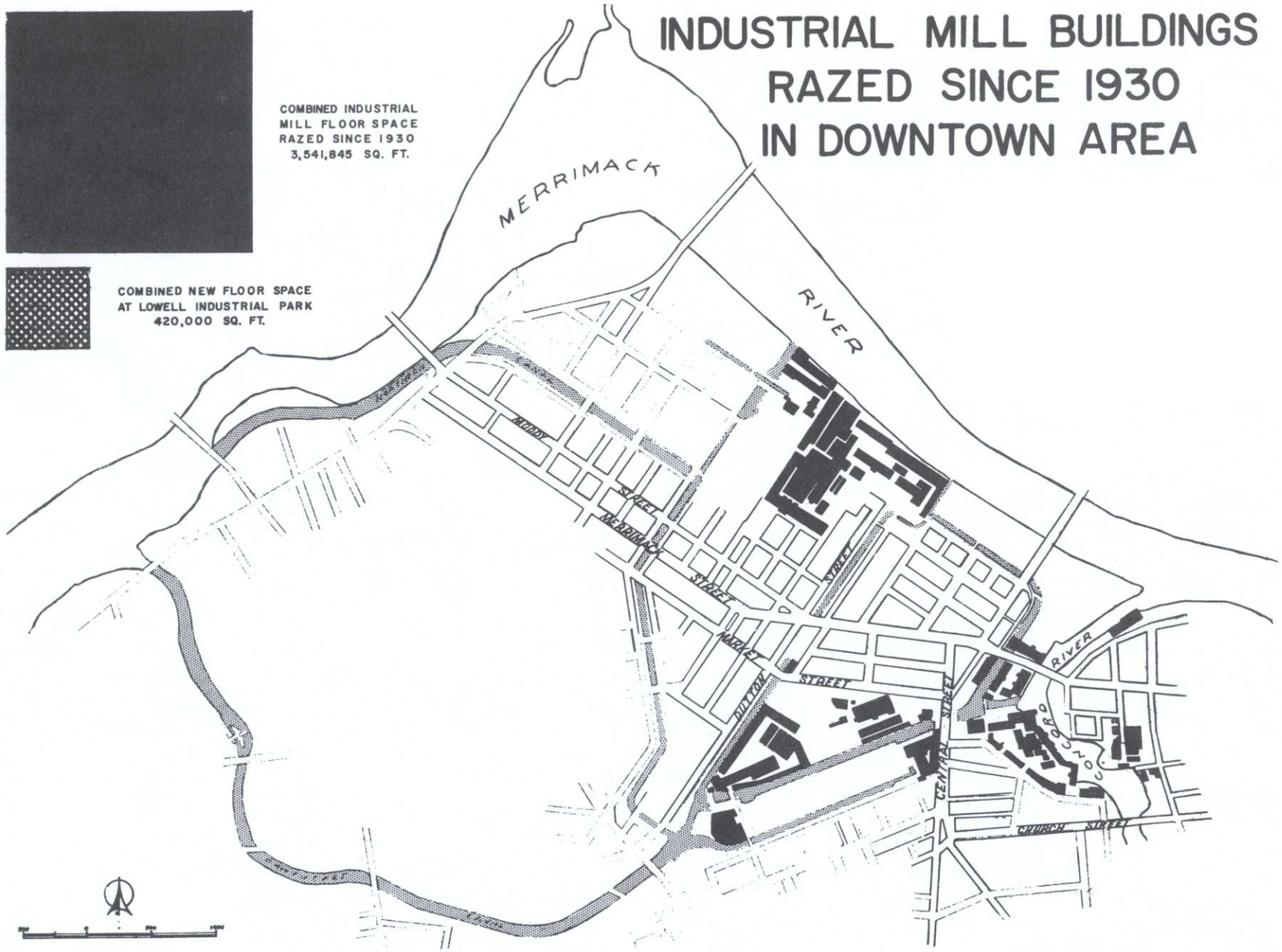

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as a whole.

Although figures on total off-peak volumes are not available, overall, the approximately 400 added riders on the bus experiment routes probably represented less than a 1 percent increase in Lowell's total mass transportation ridership volume. However, they were a substantially more important factor in the tracts traversed by experiment buses and the increase which resulted from the experiment was undoubtedly overshadowed by attrition in total bus ridership in the city due partly to continuing losses in CBD jobs and secondarily to suburban retail competition.

From the standpoint of retail trade volumes, the Lowell Central Business District, has retained considerable strength in the past two decades, partly by virtue of its insulation from direct competition. Up to late November, 1962 no major regional shopping center provided serious competition for downtown Lowell. Mill outlets, discount centers located in former textile factories, were a less significant factor in the Lowell area trade pattern than is the case with a number of other New England textile communities.

This situation changed radically just before the experiment was initiated with the opening of a large 15-acre shopping center containing a 120,000-square-foot department store approximately three miles from downtown Lowell. This new center clearly poses a serious threat to the CBD and undoubtedly diminished the impact of the experiment. Viewed against this backdrop of a recent, major alteration in the

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retail pattern, the addition of a maximum of 150 shoppers each day to downtown Lowell represents a peripheral input to the CBD economy.

In determining the future need for mass transportation to downtown Lowell, long range plans to increase the CBD parking space: retail space ratio from the current 1:4 to a future 1:1 should be noted. At present the ratio is virtually the reverse of the relationship found in many suburban shopping centers. If these long range plans are effectuated, a sizeable increase in parking space over and above the present 3,000 spaces (2,000 off-street, 1,000 on-street), may enhance the relative competitiveness of the CBD with suburban shopping centers but it will probably further weaken the market for public transportation.

Social and Demographic Patterns

One of the reasons for the design of the experiment was the special nature of the area traversed by the bus routes. Incomes in the Census Tracts in the central parts of Lowell are lower than the city as a whole. In 1959, median family income in the city was $5,900 as compared to $6,300 in the state and $6,600 in the city of Boston. In only one of the 17 census tracts included in the experiment area did the 1959 income level exceed $6,000.

Housing patterns in the Lowell experiment area reflect the relatively low income levels. Most of the city's substandard housing is located on or near the bus routes included in the experiment. Rental levels are low, averaging

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less than $44 per month per apartment in the census tracts traversed by the experimental routes. Most of the housing along the bus routes is multi-family, two and three story wooden tenements. Only about 36 percent of the dwellings are single family, owner occupied homes in the experiment area as compared to 65 percent in outlying census tracts.

As can be anticipated, population densities along the routes are high, running at about 15 people per gross acre as compared to only 7 people per gross acre in outlying census tracts. Because of this high density, 70 percent of the city's population live within the 1.5 mile radius covered by the experiment and fully 54 percent live within two blocks of the bus routes, the source of 90 percent of bus riders on the experiment routes.

Because of its traditional emphasis on female-employing industries and an accompanying net outmigration of working age males, females outnumber males in Lowell by a wide margin. In 1960 there were 5,000 more women than men in this city of 92,000.

All of this imbalance is found in the over 35 age brackets, and especially in the over 65 age group. This predominance of females in the employed population is particularly marked in the census tracts served by experiment buses. In theory, large numbers of working women and a disproportion of middle-aged and older females should provide a good market for mass transportation.

However, the outward movement of manufacturing has con-

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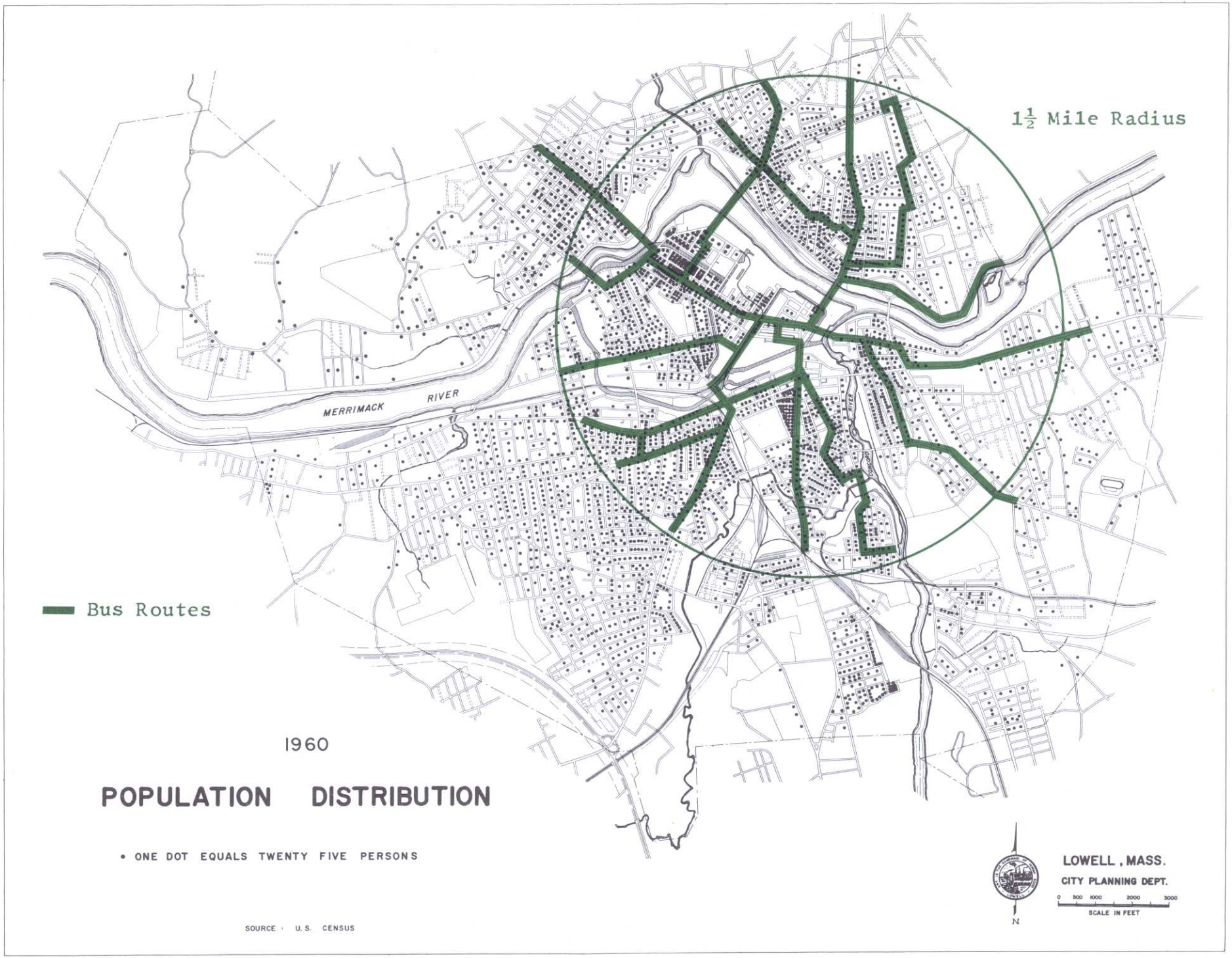

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verted many former female mass transit customers into automobile riders. It is known, for example, that the initial hesitations on the part of management of suburban electronics plants concerning the ability of female labor to commute in the absence of good mass transportation no longer exists. For the most part, the chartered buses and other company sponsored vehicles used to transport women to these plants have been discontinued. The question which Lowell faces is whether retail trade in the area will also be suburbanized; will female shoppers, as well as female employees, the bulk of the experiment bus riders, find their way to suburban shopping facilities now that these are rapidly developing in the area?

Other Bus Experiments

1. Lynnfield Community, Inc. (Hudson Bus Lines)

Lynnfield Community, Inc. provides connecting bus service to B & M commuter trains at the Wakefield station through Lynnfield to the B & M station in the Lynn CBD.

The revenue of Lynnfield Community increased from January 14th (the date of the inauguration of the demonstration project service) to January 31st by $171.65, approximately 10 percent higher than in 1962. For the month of February the increase over last year was only $13.30, or 5 percent. This is a disappointing response to an increase from 16 to 22 trips per day. The increase in passengers, amounting to some 30 per day, has had little impact on the areas transportation pattern. A cost study will be made in the

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near future and thereafter it can be determined how far short the incremental revenue is of meeting the incremental expense.

2. Berkshire Street Railway Company

Operation of the demonstration project service of the Berkshire Street Railway Company commenced on March 11th as scheduled. The experiment involves three bus routes within the city of Pittsfield to connect residential areas with the CBD and increased service in the North Adams area in northern Berkshire County. At this writing no reports of results have been received.

3. Massachusetts Northeastern Transportation Company

The Massachusetts Northeastern Transportation Company began its experiment on March 11th. Under this experiment the company provides five bus routes between industrial plants and downtown Haverhill (pop. 46,000), between Haverhill and Newburyport (pop. 14,000) and within the Newburyport area. Although it is too early for the receipt of official reports, the MTC staff personally inspected the operation some 10 days after it began. It was found that the operation is being conducted satisfactorily, but that the patronage so far is extremely light.

4. Fitchburg & Leominster Street Railway Company

The six experiments of the Fitchburg and Leominster Street Railway Company were inaugurated on March 11th. Although there has been no time as yet for official reports, a first unofficial comment of the first week's operation has been received; Project #1, new service to the Fitchgate

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shopping center produced $80 in revenue. This is probably no more than could be expected from this relatively small invasion into a field designed for and up to now monopolized by the automobile. Project #2, new service to Lunenburg and Townsend, and Project #3, new service to Ashby produced only $30.00 and $67.00 respectively, certainly no indication of an immediate strong response. Project #4, new service at the industrial plants yielded only $20.00 the first week. Clearly, workers at these plants have not yet been persuaded to use the new service in large numbers. Project #5, however, met with much more vigorous response. This test involved a virtual doubling of the frequency on the busiest main line of Fitchburg and Leominster's operations. The revenue on the new trips alone was $564.00 the first week, of which well under half was taken from existing trips. The number of additional passengers will probably be in the hundreds. Thus this experiment shows early promise of effecting a substantial increase in transit ridership.

5. Saugus Transit Company

The demonstration project of the Saugus Transit Company, which involves an extension of the Service Bus Line's Revere experiment, which connects local dormitory suburbs to an MTA station has been approved by the HHFA. Operation is expected to begin in late April.

6. Brush Hill Transportation Company

Approval of the demonstration project service of the Brush Hill Transportation Company, which will connect Stoughton,

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an outlying industrial and residential suburban community with the main line service of the New Haven Railroad at Route 128 station, has been received from HHFA. Service will begin soon after arrangements with the New Haven regarding operation at the station are complete. Since Brush Hill buses also provide efficient service to MTA rapid transit, this experiment tests commuter choice between two alternate public transportation combinations.

7. Eastern Massachusetts Street Railway

A experiment is under consideration with this company. It involves a new service from Topsfield to Salem. This will provide connecting bus-rail service from a growing community to a major railroad station which offers frequent service to Boston.

8. Barre Bus Company

Approval by the HHFA of the demonstration project service of the Barre Bus Company, which will link suburban communities to downtown Worcester, has not yet been received.

9. Worcester Bus Company

The proposed demonstration project with the Worcester Bus Company has been submitted to the HHFA and approval is awaited.

10. Johnson Bus Lines

This experiment covers a 33-mile route reaching from Milford into Boston. The route runs through lightly populated, slow growing moderate-to-upper income community areas. The low population density of this area does not warrant

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permanent transit facilities, but should theoretically offer a good area for bus service.

Since the start of this experiment, the (incremental) costs incurred by Johnson have been lower than the average for other bus companies because of greater utilization.

However, the increase in passenger revenues up to the present have been far less than the cost of the experiment. In the closing week of March the increase in revenues resulting from the +19.2 percent gain in ridership totalled $651 per week as compared to the gross weekly experiment cost of $1,325.

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Table 12. Passenger Trends, Johnson Bus Line Experiment

Fare count with comparable weeks in 1962

January 2, 1963 through March 14, 1963

Period	1962	1963	Increase	% Increase
January	$8,485.	$9,851.	$1,366.	+16
February	$7,269.	$8,999.	$1,730.	+24
March 1-14	$3,929.	$4,581.	$ 652.	+17
Total	$19,683.	$23,431.	$3,748.	

Overall Increase = +19%

Table 13. Passenger Trends, Lynnfield Community, Inc, Experiment

Fare count with comparable weeks in 1962

January 14, 1963 through March 31, 1963

Period	1962	1963	Increase	% Increase
January 14-31	$ 1,734.	$1,905.	$ 171.	+10
February 1-28	$ 2,666.	$2,801.	$ 135.	+5
March 1-31	$ 2,824.	$2,986.	$ 162.	+6
Total	$ 7,224.	$7,692.	$ 468.	

Overall Increase = +6%

Source: Lynnfield Community, Inc.

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11. Service Bus Lines

This company is providing new feeder bus service on a one-half hour frequency from Linden Square in Malden to rapid transit facilities in the city of Revere.

The area served by this experiment is in the midst of new home construction with a sharp increase in population having been noted during the past few years.

Considering that this is an entirely new bus route, the rate of growth as illustrated in Table 14 is extremely encouraging. If this rate of growth continues, the project has an excellent chance of reaching a break-even level of operation. After a slight decline in passengers in the month of February, passengers have returned to the line, in contrast to the usual springtime decline in patronage. This project may indicate the feasibility of providing good feeder bus service to linking with rapid transit lines in densely populated areas.

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Table 14. Passenger Trends, Service Bus Line, Inc. Experiment

December 17, 1962 through April 6, 1963

Week of	Total
12/17 - 12/22	1301½
12/24 - 12/29*	1151½
12/31 - 1/5*	1236
1/7 - 1/12	1738
1/14 - 1/19	1907½
1/21 - 1/26	2002½
1/28 - 2/2	2032
2/4 - 2/9	1915
2/11 - 2/16	1879
2/18 - 2/23*	1633½
2/25 - 3/2	1817½
3/4 - 3/9	2094
3/11 - 3/16	2182
3/18 - 3/23	2143
3/25 - 3/30	2130
4/1 - 4/6	2171

Weekly count-of passengers carried between Revere Beach Station and Linden Square both directions (new service)

* excluding holidays 12/25, 1/1 and 2/22

½ = ½ fare passenger (school child)

Source: Service Bus Company - daily counts taken from drivers' daily reports.

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1. Berkshire Street Railway

a. New Service to Francis Plaza Housing for the Elderly, Pittsfield
b. Increased Service to Wahconah and Wilson Park Housing Developments, Pittsfield
c. Increased Service to Green Ridge Park Housing Development, Pittsfield
d. Increased Service between Adams, North Adams and Williamstown

4. Pitchburg and Leominster Street Railway Company

a. New Service from downtown Pitchburg to the Pitchgate Shopping Center
b. New Service from the Pitchburg Railroad Station to Lunenburg and Townsend
c. New Service from the Pitchburg Railroad Station to Ashby Center
d. New Service to industrial plants
e. Increased Service between Pitchburg and Leominster
f. Extension of Pitchburg and Leominster route in Pitchburg

5. Massachusetts Northeastern Transportation Company

a. New Service from Haverhill to the Western Electric Plant in North Andover
b. New Service from Amesbury to the Western Electric Plant in North Andover
c. Route Extension to a new housing project in Newburyport
d. New Service on State Street, Newburyport
e. Increased Service from Amesburyto Newburyport

6. Eastern Massachusetts Street Railway Company

a. New Service from Topsfield to Salem
b. New Service from Randolph-Holbrook Depot to Park Square, Boston
c. Off-Peak Reduced Fare Experiment on all local routes within a 1½ mile radius of downtown Lowell

7. Lynnfield Community, Inc.

a. Increased Service from Wakefield to Lynn

8. Saugus Transit Company

a. Increased Service from Saugus to Linden Square

9. Service Bus Line, Inc.

a. New Service from Linden Square to Revere Beach M.T.A. Station

10. Johnson Bus Company

a. Increased Service - Milford to Boston

11. Brush Hill Transportation Company

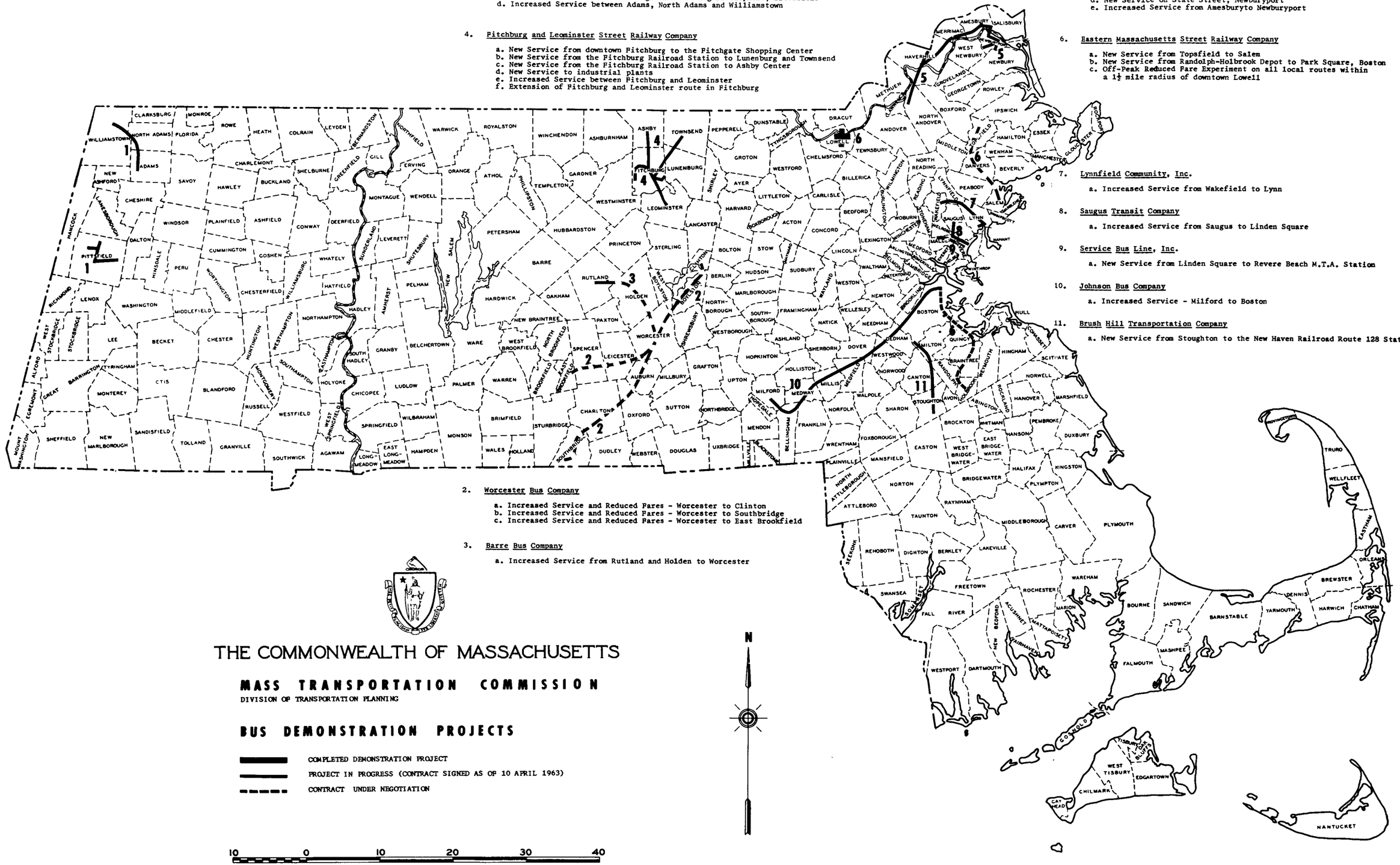
a. New Service from Stoughton to the New Haven Railroad Route 128 Station

2. Worcester Bus Company

a. Increased Service and Reduced Fares - Worcester to Clinton
b. Increased Service and Reduced Fares - Worcester to Southbridge
c. Increased Service and Reduced Fares - Worcester to East Brookfield

3. Barre Bus Company

a. Increased Service from Rutland and Holden to Worcester



THE COMMONWEALTH OF MASSACHUSETTS

MASS TRANSPORTATION COMMISSION

DIVISION OF TRANSPORTATION PLANNING

BUS DEMONSTRATION PROJECTS

COMPLETED DEMONSTRATION PROJECT

PROJECT IN PROGRESS (CONTRACT SIGNED AS OF 10 APRIL 1963)

CONTRACT UNDER NEGOTIATION

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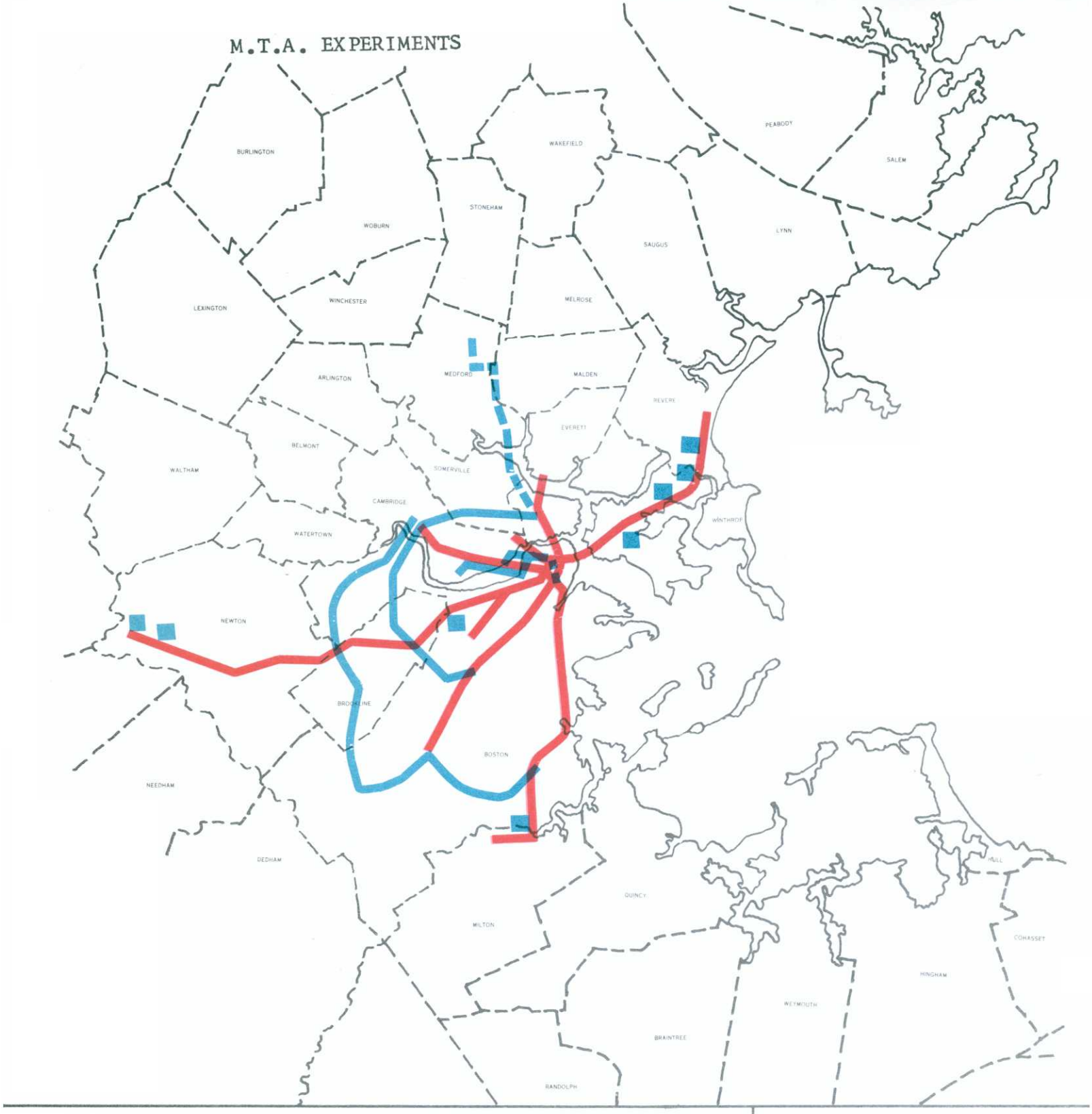
M.T.A. EXPERIMENTS



Rapid Transit Lines

New Bus Service

Increased Bus Service

Reduced Fee Parking Lots

NORTH

1 SQUARE MILE

0 MILES 5

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MTA Demonstration Experiments

Experiments involving MTA bus routings and schedulings have received final approval and will be initiated in late June.

Two experiments will provide circumferential bus routes which will make possible a substantial bus ride for a single 10¢ fare. Cross movement in outlying parts of Boston will be made easier without the necessity of travelling into the center of the city via transit or paying multiple bus fares.

In addition, the service on one existing MTA route, from the North Station to the South Station, will be increased and also a new route will be established from North Station to the research, educational and industrial complex in the M.I.T. area. Both of these routes will add to the attractiveness of the improved B & M and New Haven rail service.

An increased service is also planned for the bus route between Sullivan Square and the Medford-Stoneham line via a multi-lane highway. The headways will be reduced from eleven minutes to five minutes in midday (9:17 AM to 4:00 PM), from twenty minutes to ten minutes from 7:00 to 9:00 PM, and from thirty minutes to ten minutes after 9:00 PM. This line provides feeder service to rapid transit from a densely populated suburban area.

MTA Parking Lot Experiments

On April 1, 1963, parking fees at eight MTA rapid transit parking lots were reduced from 35¢ down to 10¢. After the initial week of results became available, it appeared that the experiment

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Table 15.

Comparison - Average Operating Results - 1962-1963 - 5 day week - MTA Parking Lot Experiment

Lot	MTA Fare	Capacity	Past Daily Aver.	Exper't Daily Aver.	No. Increase or Decr.	% Increase
Wood Island	20¢	340	163	301	+138	+ 83.9
Orient Heights	20¢	209	116	181	+ 65	+ 56.2
Butler Street	20¢	285	103	198	+ 95	+ 93.2
Suffolk Downs	20¢	185	42	85	+ 43	+102.4
Beachmont	40¢	150	73	146	+ 73	+100.0
Riverside	40¢	1600	467	417	- 50	- 10.7
Woodland	40¢	353	235	358	+123	+ 52.1
Brookline Village	30¢	130	98	138	+ 40	+ 40.0
		3252	1297	1834	+527	+ 40.6

Source: MTA, MTC

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Table 16. Daily Operating Results - MTA Parking Lot Experiment
April 1 - 5 , 1963

Lot		April 1	April 2	April 3	April 4	April 5	Tot.	% Incr.	% Decr.
Wood Island	'63	257	301	318	324	305	1505		
"	'62	168	158	166	170	156	818		
Increase		89	143	152	154	149	687	+83.9	
Orient Heights	'63	188	176	189	180	170	903		
"	'62	115	114	119	116	114	578		
Increase		73	62	70	64	56	325	+56.2	
Butler Street	'63	180	193	200	201	217	991		
"	'62	93	102	117	100	101	513		
Increase		87	91	83	101	116	478	+93.2	
Suffolk Downs	'63	90	77	88	83	87	425		
"	'62	39	38	45	45	43	210		
Increase		51	39	43	38	44	215	+102.4	
Beachmont	'63	135	141	155	148	151	730		
"	'62	70	75	75	75	70	365		
Increase		65	66	80	73	81	365	+100.0	
Riverside	'63	438	414	445	410	377	2084		
"	'62	427	483	471	492	460	2333		-10.7
Decrease		-11	-69	-26	-82	-83	-249		
Woodland	'63	360	370	360	360	340	1790		
"	'62	240	235	250	231	221	1177		
Increase		120	135	110	129	119	613	+52.1	
Brookline Village	'63	142	123	141	139	144	689		
"	'62	95	99	98	99	101	492		
Increase		47	24	43	40	43	197	+40.0	
							9117		
							6486		
Increase							2631	+40.6	

Source: MTA, MTC

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was a significant success. As is indicated in Table 15, the average daily increase for all eight lots was 527 automobiles during the first week.

Percentage gains in patronage varied from an increase of 40 percent at the Brookline Village lot to an impressive 102.4 percent increase at the Suffolk Downs lot. Because of its inaccessibility to motorists due to highway construction at the Riverside lot, a minor decrease was noted. The overall increase for the week for all eight lots was an encouraging 40 percent.

If the experiment results in full utilization of these parking lots, the entire MTA system could benefit to a substantial degree. In addition to the contribution to MTA revenues, maximum utilization of the lots would help to relieve some traffic congestion in roads leading to downtown Boston.

Table 17 indicates the number of available automobile parking spaces in parking lots included in the MTA-HHFA experiment along with their actual 1961 and 1962 utilization. The table compares maximum and minimum utilization figures with their actual usage to estimate the increased revenues which could become available to the MTA as a result of the new MTC-HHFA experiment.

Explanation is required for the statistics employed:

1. S X 200 refers to the number of spaces times the minimum number of usable, acceptable business days in a calendar year.

2. S X 300 refers to the number of normal transit revenue days in a calendar year (weighing Saturdays, Sundays and holidays) times the number of spaces.

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3. The ratio of 1.3 persons per automobile was used as a base in estimating the potential increase in passenger revenue. This figure, it should be noted, is conservative. Some analysts employ the figure of 1.5 or 1.8 both of which are well within established practice, but for the purposes of this projection, the more conservative figure of 1.3 is being utilized.

The maximum number of automobiles that could be taken off the highways leading into and out of the city of Boston in a single day as a result of this experiment would be 3252, a number roughly equal to three peak hour lanes of highway in each direction.

This experiment hopefully will result in maximum utilization of the eight MTA lots involved in this Demonstration Project experiment.

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Table 17. MTA-MTC Parking Lot Demonstration Project - Projected Increased Passenger Revenue Based Upon Maximum Parking Lot Utilization

	Fare to Boston (1 way)	No.of Park. Spa- ces at Lot	Maximum Capacity (S x 300)	Minimum Desirable (S x 200)	No. of Cars parked 1961	No. of Cars parked 1962	Number of Vacant Spaces Total (1962)	Increased Riders to MTA with all Spaces Occupied*	Round Trip (1962) Rev.Incr.
Wood Island Pk.	20¢	340	102,000	68,000	42,391	43,858	58,142	75,585	$30,234.
Orient Heights	20¢	209	62,700	41,800	29,569	31,126	31,574	41,046	16,418.
Butler Street	20¢	285	85,500	57,000	26,058	26,875	58,625	76,213	30,484.
Suffolk Downs	20¢	185	55,500	37,000	9,651	11,369	44,131	57,370	22,948.
Beachmont	20¢	150	45,000	30,000	17,894	17,470	27,530	34,789	14,314.
Riverside	40¢	1600	480,000	320,000	163,414	92,314	387,686	503,992	403,194.
Woodland	40¢	353	105,900	70,600	83,809	79,030	26,870	34,391	27,944.
Brookline Village	30¢	130	39,000	26,000	20,103	24,019	14,981	19,435	15,548.
		3252	975,600	650,400	392,889	326,061	649,539	842,821	$561,084.

	Gross Rev. 1962- 1/3 cap.@ 35¢	Gross Rev. 100% Max. @ 10¢	Gross Rev. Min. @ 10¢	Increased MTA Riders - Min. capacity	Round Trip 1962 Rev. Incr.
Wood Island Pk.	$15,350.	$10,200.	$6,800.	31,184	$12,554.
Orient Heights	10,894.	6,270.	4,180.	13,876	5,550.
Butler Street	9,406.	8,550.	5,700.	39,172	15,668.
Suffolk Downs	3,797.	5,550.	3,700.	34,620	13,848.
Beachmont	6,114.	4,500.	3,000.	16,289	6,515.
Riverside	32,309.	48,000.	32,000.	294,992	236,794.
Woodland	27,660.	10,590.	7,060.	-12,259	- 9,807.
Brookline Village	8,406.	3,900.	2,600.	25,753	15,452.
	$113,936.	$97,560.	$65,040.	443,627	$296,574.

MTA Maximum Cash Increase - (300 days) $544,624.
Highways Maximum Decrease in no. of automobiles - 1 day - 3,252
Minimum Decrease " " " " - 1 day - 2,168

*Increased number of riders with all vacant spaces filled based on 1.3 passengers per parked car.
Source: MTA, MTC

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M.T.A. Parking Lures Riders

ROBERT FARRELL
Beachmont
"It's more convenient."

JAMES STIRLING
Melrose
"This is a good deal."

EDWARD ZUK
Lynn
"No more driving to work."

EDWARD SOLHEIM
Danvers
"Easier to ride the M.T.A."

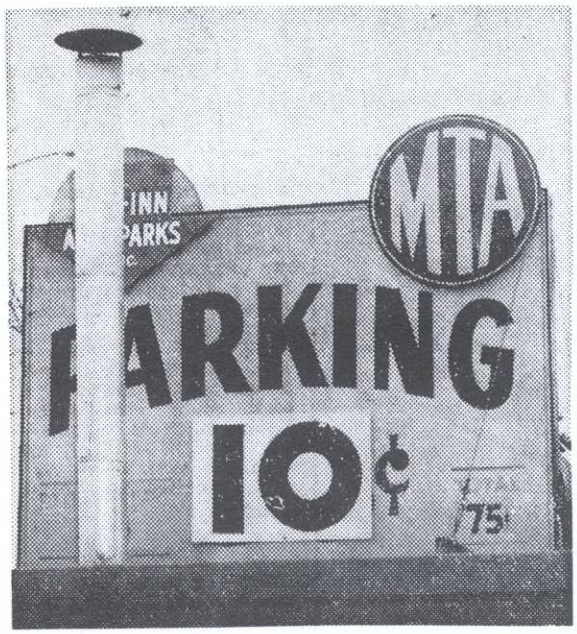
M.T.A. Patronage Up 56 Percent

Parking Fee Cut Is Big Success

By WILLIAM J. LEWIS

An experimental program to woo new patrons to the M.T.A. by drastically cutting the cost of parking in eight lots serviced by two rapid transit lines promises to be highly successful.

According to figures released today by the M.T.A. and the Mass Transportation Commission which is underwriting the demonstration program, patronage at the eight lots jumped by better than 56 percent on Monday, the first day of operation at reduced rates.



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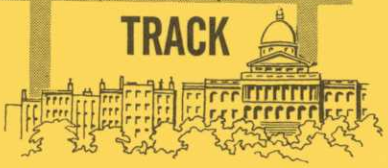
Boston is just 15 minutes and 35¢ from Melrose*
Boston is just 20 minutes and 39¢ from Wakefield*
Boston is just 24 minutes and 41¢ from Reading*
Boston is just 13 minutes and 36¢ from Winchester*
Boston is just 18 minutes and 39¢ from Woburn*
Boston is just 22 minutes and 44¢ from Wilmington*
Boston is just 35 minutes and 54¢ from Lowell*
Boston is just 30 minutes and 51¢ from Andover*
Boston is just 47 minutes and 58¢ from Haverhill*
Boston is just 36 minutes and 54¢ from Lawrence*
Boston is just 18 minutes and 41¢ from Lynn*
Boston is just 21 minutes and 42¢ from Swampscott*
Boston is just 27 minutes and 45¢ from Salem*
Boston is just 32 minutes and 47¢ from Beverly*
Boston is just 65 minutes and 61¢ from Newburyport*
Boston is just 60 minutes and 58¢ from Gloucester*
Boston is just 70 minutes and 59¢ from Rockport*
Boston is just 17 minutes and 39¢ from Waltham*
Boston is just 27 minutes and 45¢ from Lincoln*
Boston is just 32 minutes and 49¢ from Concord*
Boston is just 70 minutes and 78¢ from Fitchburg*

* Average time, 20-ride rate.

BOSTON & MAINE RAILROAD

In co-operation with the Housing and Home Finance Agency and the Mass. Transportation Commission

THE
SHORTEST
DISTANCE
BETWEEN
YOUR HOME
AND
BOSTON
IS A
NEW HAVEN
TRACK



THE NEW HAVEN AND THE MASS TRANSPORTATION COMMISSION JOIN HANDS TO MAKE IT EASIER FOR YOU TO BEAT HIGHWAY AND CITY TRAFFIC WITH NEW, LOWER FARES AND ADDITIONAL TRAINS ON SOME LINES.

RIDE AND RELAX BY TRAIN . . . AVOID
• DRIVING TENSION • PARKING FEES
• TRAFFIC CONGESTION • HIGHWAY HAZARDS

PICK UP A LOCAL TIMETABLE FOR ALL SCHEDULES AND NEW LOWER FARES.

NEW HAVEN RAILROAD

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