

RIR

INTERIM REPORT

FROM THE
COMMITTEE TO STUDY THE
REASSIGNMENT OF PUPILS

TO THE
SCHOOL COMMITTEE
LEXINGTON, MASSACHUSETTS

APRIL 15, 1975

REASSIGNMENT OF PUPILS

THE INTERIM REPORT OF THE
SUB-COMMITTEE TO STUDY THE REASSIGNMENT OF PUPILS

APRIL 1975

Respectfully submitted by:

Sam Nablo, Chairman
6 Brigham Road
862-6126

Paul and Nancy Rempfer
8 Stevens Road
861-8037

Gordon L. Brigham, Vice Chairman
311 Concord Avenue
861-1278

Donald M. Graham
4 Millbrook Road
862-4355

Cornelius P. Cronin, Secretary
14 Utica Street
862-5885

Paul F. Masoner
17 Edgewood Road
862-2100

Table of Contents: Interim Report of Committee to Study Reassignment of Pupils

- (i) Author Page
- (ii) Table of Contents
- 1. Mandate of the Committee
- 2. Criteria Established for the Study
- 3. Sequence of Analysis for the Elementary Schools
 - (i) Division of the Existing Districts
 - (ii) Census Data Reduction for Redistricting
 - (iii) Grade Structure Analysis. (a) Average Class Size
(b) Classroom Capacity
 - (iv) Conclusions
- 4. Analysis for the Junior High Schools
 - (i) Tabulated Data
 - (ii) The Redistricted Map
- 5. Recommendations
- Appendix: Detailed Analysis of the School Closing Sequence
 - (a) Census Data and Zone Map
 - (b) Sequence Analysis (Elementary)
 - (c) Sequence Analysis (Junior High)

1. Mandate of the Committee

The Committee to Study Reassignment of Pupils was established as one of three citizens' study committees. The objectives of the CSRП were defined in a directive from the Lexington School Committee, dated February 3, 1975:

" ... to study the reassignment of pupils, specifically, the modification of school district lines to absorb all streets serviced by closed schools, the determination of the distances to be travelled to new assignments by children living on streets serviced by closed schools, and to estimate the potential growth within each district."

2. CRITERIA FOR CSRP STUDY
(ELEMENTARY SCHOOLS)

- (1) All pupils in a natural neighborhood should be assigned to the same school. A natural neighborhood is defined by boundaries which are considered "unsafe" for pedestrians and are unlikely to be crossed unattended by elementary age children. Redistricting along these lines is unlikely to disturb peer relations which have already been established outside of school. Examples of such boundaries are major traffic arteries, the B&M railroad, Wilson's farm, etc.
- (2) All pupils within walking distance of a school should be assigned to that school. Where they cannot walk, they should be assigned to the nearest school.
- (3) The Reassignment Plan should result in a single townwide redistricting plan that will remain unchanged throughout the closing schedule.
- (4) Students in schools to be closed shall be redistricted in a single year and shall thereafter remain in the new district to which they are reassigned.
- (5) Pupils in schools remaining open should be unaffected by redistricting where possible.
- (6) Effort shall be made to minimize the division of school districts to be closed to preserve existing group identification where possible.
- (7) Design reassignment/closing schedule to provide uniform distribution of students against capacity at completion of closing.
- (8) The closing schedule should be designed with adequate margin to permit assignment options with regard to: Metco (approaching 10% of the elementary school population by 1980); new housing developments; errors in the projection data, etc.
- (9) Attempt to adhere to the closing schedule set forth in the Facilities Study.

10 90% (pb)

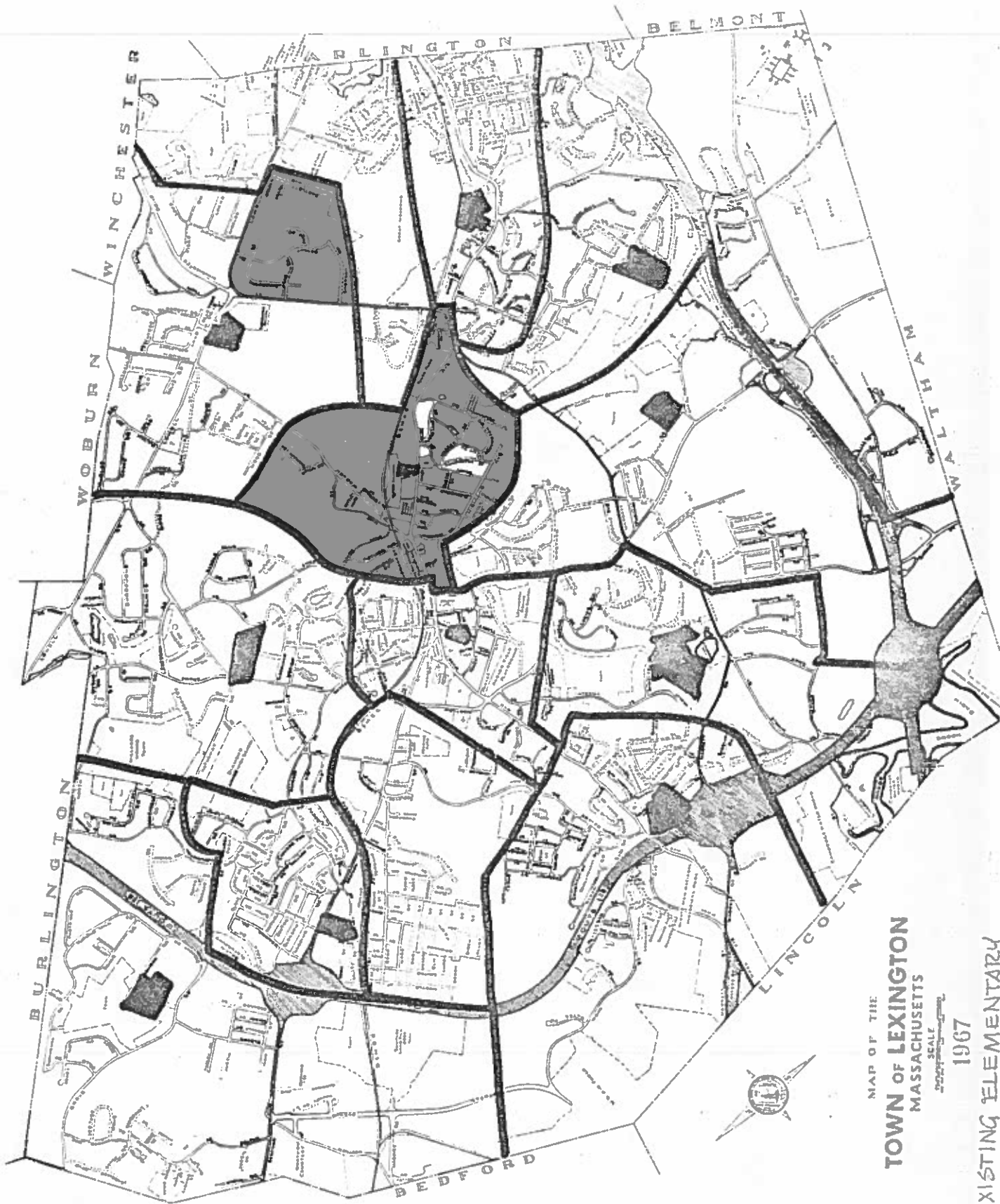
3. Sequence of Analysis for the Elementary Schools

(i) Division of the Existing Districts

A briefing on land use in Lexington was given to the committee by Mr. Briggs of the Planning Office on February 25, 1975. Attention was focused on neighborhood definition and "natural" boundaries within the town, in addition to major changes in land use patterns which could affect the school population distribution or density over the next decade. In this way the committee members became more familiar with the current elementary school districts (Map 1) and where they conformed with, or violated "neighborhood boundaries".

Based upon this information and data collected by members of the committee, the four elementary districts recommended for closure in the Facilities Study, namely Parker, Hancock, Munroe, and Adams, were divided into subdistricts as shown in Map 2. The following "boundaries" were used:

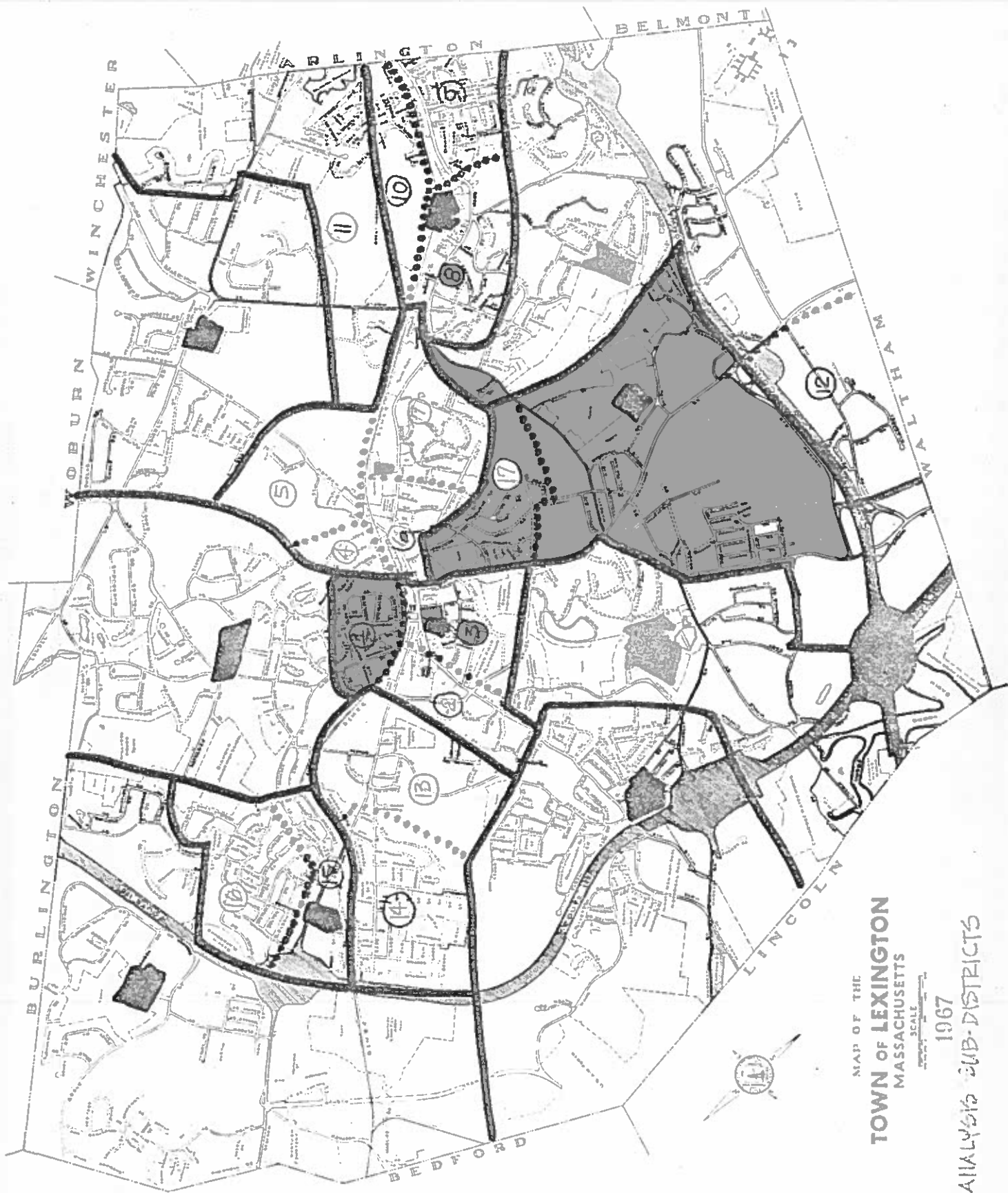
- (a) Hancock: Area 1 - east of the B & M RR tracks
 - Area 2 - west of the B & M and north of Mass. Avenue
 - Area 3 - west of the B & M and south of Mass. Avenue
- (b) Munroe: Area 4 - north of the B & M and east of Hayes Lane
 - Area 5 - the remainder north of the B & M tracks
 - Area 6 - south of the B & M and east to Bloomfield Street
 - Area 7 - the remainder south of the B & M (later amended with an eastern boundary at Pelham Road)
- (c) Adams: Area 8 - south of the B & M tracks and east to the town land
 - Area 9 - south of the B & M tracks from Oak Street to the Arlington line
 - Area 10 - north of the B & M tracks



MAP OF THE
TOWN OF LEXINGTON
 MASSACHUSETTS
 SCALE 1:25,000

1967

MAP 4: EXISTING ELEMENTARY



MAP OF THE
TOWN OF LEXINGTON
 MASSACHUSETTS
 SCALE

MAP 2: ANALYSIS SUB-DISTRICTS
 1967

- (d) Parker: Area 15 - south of Bedford Street and North Hancock Street
Area 16 - the remainder of the Parker District

In addition, four other sub-districts as shown in Map 2, were defined to assist in the options possible in the choice of reassignment scenarios:

- (e) Bridge: Area 13 and Area 14 with the division running west of the Public Works Building and south of Vaille Avenue
(f) Franklin: Area 17 - the portion of this district north of Worthen Road
(g) Bowman: Area 12 - west of Waltham Street, south of Route 2
Area 11 - the Bowman 2 district

(ii) Census Data Reduction and Redistricting

Using the school census data for the 73-74 school year, (the best available to us to date) the Committee, with the generous help of volunteers and the planning board, analyzed each of these districts so that accurate projections could be made through 1980. The data published by the enrollment projection subcommittee in the Appendix to that report in March of 1974, was used to guide our updated enrollment projections; in particular, district by district cohort survival ratios adapted by them were used in generating our projections based upon this 73-74 census data.

These tabulations are included in Appendix A for the seventeen sub-districts listed above, and cover the population with birth dates from 68-73, and Kindergarten through Grade 6 for the 1973-1974 school year.

Various closing sequences were then attempted with the following additional conditions:

- (1) Closing of a school would not be accomplished unless the schools to which the affected students are reassigned are at 90% capacity level or less.

- (2) Current capacity data were used in setting this criterion, predicated upon the assumptions shown in Table 1. Using these figures, rather than the "renovated" capacities reported in the facilities study, effectively decouples the two programs: namely renovation and closing. Furthermore, with the expected Metco increase which will approach 10% of Lexington's elementary school population in 1979-1980 (see Table 2) it was felt that the reduction in school capacity associated with the proposed renovations, might not be possible.
- (3) The sequence will not "force" an accommodating capacity in the recipient schools. That is, an attempt is made to schedule the reassignment in a manner harmonious with the declining enrollments in these schools.

Table 1

Capacities (Elementary School)

<u>School</u>	<u>Existing</u>			<u>Renovated</u>		
	<u>Class Rooms</u>	<u>Kinder gartens</u>	<u>Capacity</u>	<u>Class Rooms</u>	<u>Kinder gartens</u>	<u>Capacity</u>
Fiske	16	1	440	13	1	365
Bowman	20	2	560	21.5	1	577
Bridge	19	2	535	21.5	1	577
Estabrook	17	1	465	13	1	365
Harrington	12	1	<u>340*</u>	14	1	<u>390</u>
Hastings	16	2	460	15	1	415
Franklin	15	2	435	11	1	315

K=1; Capacity=25* Classrooms +40
 K=Z; " " " +60

Note: Harrington unusually low. Will use renovated capacity as design capacity.

Table 2
Estimated Metco Elementary School Population

<u>Year</u>	<u>Total</u>	<u>Elementary*</u>	<u>1-6 Total El.</u>	<u>Total %</u>
74-75	240	168	3700	4.5
75-76	280	(196)	3442	5.7
76-77	320	(224)	3247	6.9
77-78	360	(252)	2988	8.4
78-79	360 ⁴⁰⁰	(252)	2696	9.3
79-80	-	-	-	(10)

*Based upon the 74-75 ratio of 70% elementary

Handwritten signature

The sequence started (as recommended in the Facilities Study) with the closing of Hancock with redistricting to Fiske and Hastings. In the school year (76-77) recommended in the Facilities Study, this would have placed both recipient schools at 100% capacity (see pages B-1 and B-2). As shown there, the earliest this closing could be accomplished with adequate margin was in the 77-78 school year.

Next, Munroe was closed into Fiske and Franklin to see if it should precede Hancock. We found that the earliest that closure could take place with adequate margin was 1978-79 (see B-3 and B-4). Therefore, it was decided to recommend the closure of Hancock (first) in the 1977-78 school year.

The third sequence involved the closing of Munroe into Fiske after Hancock was closed. This is shown in the analysis of B-5 and indicate that Munroe cannot be closed until the 1979-80 year due to the addition of the Hancock students in Fiske. This sequence concludes the treatment of Hancock, Munroe, Fiske, Franklin and Hastings.

In accordance with the proposed closure sequence, Adams was next closed into Bowman and Harrington. As can be seen from the sub-districting Map 2, this involved the movement of Bowman 2 into Harrington (see page B-7), which was chosen as the preferred option when it was found that the Liberty Heights district (9) could not be accommodated by Harrington nor by Bowman, without the reassignment of the Bowman 2 sub-district. This assignment, although it violated criterion 5, did integrate the subdistricts north of Mass. Avenue (including Adams 10) while assigning the Bowman 2 students to a closer school.

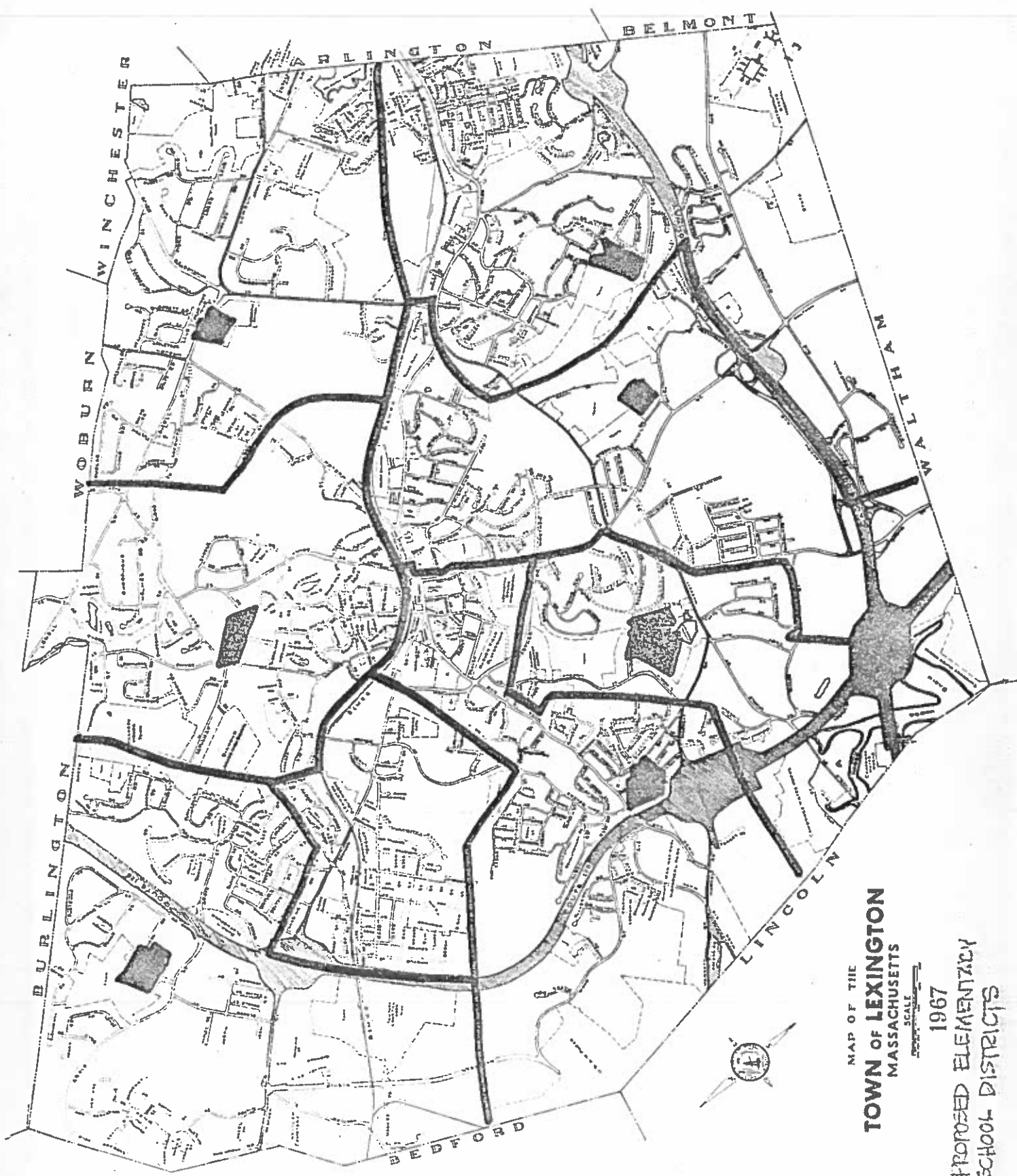
It was then found that the closing of Adams, the largest of the schools to be reassigned, could not be accommodated until 1979-1980. (see page B-8).

Finally, Parker was reassigned to the Estabrook and Bridge Schools. It was determined (see pages B-9 and B-10) that this reassignment permitted Parker

to close in 1978-1979, a year in advance of the time recommended in the Facilities Study.

A summary of these projections and of the reassignment sequence just outlined is shown in Table 3. As indicated in the last column of that table, this schedule results in a quite uniform distribution of the students vis à vis current capacity, i.e., an average of 82%. It should be printed out that the development path of Table 3 differs markedly from the somewhat unrealistic path adopted in the Facilities Study; i.e., in which students reassigned from a closed facility were rather broadly distributed among those facilities remaining open.

The redistricted map for the town of Lexington resulting from this proposed reassignment sequence is shown in Map 3.



MAP OF THE
TOWN OF LEXINGTON
 MASSACHUSETTS

SCALE

1967

MAP 3: PROPOSED ELEMENTARY
 SCHOOL DISTRICTS

(iii) Grade Structure Analysis

This analysis considers the effect of the school closings on average class size and the class size distribution at each school.

Average Class Size

First, the grade projections made in Appendix C of the 1974 Enrollment Projection Sub-committee Report were extrapolated through 1980 by using the average of the 76-77 and 77-78 Kindergarten classes as estimates of the 78-79 and 79-80 Kindergarten classes. This is the same technique as was employed in Appendix B of this report. The resulting class sizes are listed above the slash for each school in Table 4-A. Then, a simple class count was established by simply dividing classes to keep the maximum class size at 30 and maximum Kindergarten at 25. The number of classes for each grade is listed below the slash. The result is an indication of what might happen, in general, if there were no closures and a simple whole grade strategy was employed to limit class size. The total class average for grades 1-6 without Metco is 21.7. Metco would raise the average to 23.9, just about the current value. One hundred and eleven grade 1-6 classes (classroom teachers) would be required. This is 27% fewer than the current 153.

Next, the grade projections for the schools remaining open when closures take place (as set forth in Appendix B) are given in Table 4-B. Again, a simple whole grade strategy was employed. The result is a very large class size. With Metco the average class size would be 27.1.

TABLE 4

79-80 Grade Structure (Whole Grade Strategy)

Without Closures (TABLE 4-A)

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>1-6</u>
Adams	35/2	36/2	38/2	34/2	44/2	47/2	54/2	253/12 = 21
Bowman	31/2	33/2	35/2	31/2	53/2	54/2	59/2	236/12 = 21.
Bridge	47/2	52/2	39/2	65/3	66/3	69/3	63/3	354/16 = 22
Estabrook	31/2	33/2	34/2	30/1	59/2	48/2	34/2	249/11 = 22.
Fiske	27/2	30/1	21/1	38/2	53/2	41/2	52/2	235/10 = 23
Franklin	38/2	37/2	34/2	40/2	51/2	44/2	43/2	249/12 = 20.
Hancock	16/1	19/1	19/1	19/1	19/1	20/1	26/1	103/6 = 17.
Harrington	28/2	30/1	33/2	26/1	40/2	38/2	37/2	204/10 = 20
Hastings	22/1	22/1	12/1	36/2	45/2	50/2	60/2	225/10 = 22
Munroe	18/1	23/1	20/1	25/1	25/1	29/1	27/1	149/6 = 24
Parker	13/1	13/1	11/1	14/1	25/1	32/2	35/2	130/6 = 21
Totals	306/18 = 17.0							2407/111 = 21.7
	With 10% METCO = 23.9							

With Closures (TABLE 4-B)

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>1-6</u>
Bowman	52/3	55/2	52/2	58/2	72/3	82/3	78/3	397/15 = 26
Bridge	54/3	59/2	48/2	69/3	76/3	76/3	71/3	399/16 = 24
Estabrook	41/2	42/2	40/2	43/2	68/3	70/3	80/3	343/15 = 22
Fiske	41/2	47/2	38/2	56/2	66/3	51/2	80/3	338/14 = 24
Franklin	45/2	46/2	41/2	50/2	58/2	56/2	55/2	306/12 = 25.
Harrington	41/2	44/2	50/2	35/2	60/2	50/2	36/2	295/12 = 24.
Hastings	33/2	38/2	26/1	49/2	58/2	67/3	72/3	310/13 = 23.
Totals	307/16 = 19.1							2388/97 = 24.6
	With 10% METCO = 27.1							

Strategy

(1) Maximum allowable class size = 30

(2) Maximum kindergarten = 25
(14)

As a result of the large class size, the number of classrooms required is only 97, 14 less than without the closings. This would result in a 37% reduction in classrooms (classroom teachers) but at the price of exceedingly large class sizes.

From Table 4 two conclusions can be drawn. First, even if schools are not closed, substantial reductions in classroom teacher staff can be realized while maintaining the current average class size (approximately 24) due to the decreasing enrollment. Second, a simple whole grade strategy for establishing classroom counts leads to unrealistically large class sizes should the schools be closed. Current practice in Lexington elementary schools is to combine adjacent grades in one class to achieve desired class sizes. In fact, some schools create combined classes for educational advantages even when it is not required to balance class sizes. Over 30% of the elementary school classes are combined grades at the present time.

Table 5 shows the same class sizes but with classroom counts established by a simple combined class strategy. The strategy was designed to promote an average class size of 23.5, to increase the "without closure" average and decrease the "with closure" average. The results in either case are identical with 105 classrooms required. The slight difference (less than 1%) in the average class size is due to slight differences in the data sources between the '74 Enrollment Projection Sub-committee Report and this report.

TABLE 5

79-80 Grade Structures (Combined Grade Structure)

Without Closures (Table 5-A)

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>1-6</u>
Adams	35/2	(74/3)	34/2	44/2	47/2	54/2	253/11 = 23	
Bowman	31/2	(68/3)	31/2	53/2	54/2	50/2	256/11 = 23.	
Bridge	47/2	52/2	39/2	65/3	66/3	69/3	63/3	354/16 = 22.
Estabrook	31/2	(67/3)	30/1	50/2	48/2	54/2	249/10 = 24.	
Fiske	27/2	30/1	21/1	38/2	53/2	41/2	52/2	235/10 = 23.
Franklin	38/2	(71/3)	40/2	51/2	44/2	43/2	249/11 = 22.	
Hancock	16/1	(25/1)	(26/1)	(25/1)	20/1	26/1	122/5 = 24.	
Harrington	28/2	30/1	33/2	26/1	40/2	(75/3)	204/9 = 22.	
Hastings	22/1	22/1	(48/2)	45/2	50/2	60/3	225/10 = 22.5	
Munroe	18/1	23/1	20/1	25/1	25/1	29/1	27/1	149/6 = 24.8
Parker	13/1	(24/1)	14/1	25/1	(67/3)	130/6 = 21.7		
Totals	306/18 = 17.0						2407/105 = 22.9	

With METCO = 25.2

With Closures (Table 5-B)

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>1-6</u>
Bowman	52/3	55/2	52/2	58/3	72/3	82/3	78/3	397/16 = 24.8
Bridge	54/3	59/3	48/2	69/3	76/3	76/3	71/3	399/17 = 23.5
Estabrook	41/2	42/2	40/2	43/2	68/3	70/3	80/3	343/15 = 22.9
Fiske	41/2	47/2	38/2	56/3	66/3	51/2	80/3	333/15 = 22.5
Franklin	45/2	46/2	41/2	50/2	58/3	56/3	55/2	306/14 = 21.9
Harrington	41/2	44/2	50/2	35/2	60/3	50/2	56/3	295/14 = 21.1
Hastings	33/2	38/2	26/1	49/2	58/3	67/3	72/3	310/14 = 22.1
Totals	306/16 = 19.1						2388/105 = 22.8	

With METCO = 25.1

Criteria

- (1) Maximum allowable class size = 30
- (2) Maximum allowable average class size on divisible classes (i.e. same grade or adjacent grades) = 28(-)
- (3) Minimum allowable average class size on sumable classes (i.e. adjacent grades) = 19(+)
- (4) Maximum Kindergarten = 25

The table demonstrates the effectiveness of combined classes in arriving at desired class sizes and permitting reductions in classes (classroom teachers) whether or not school closings are made. The reduction in Grade 1-6 classrooms is about 30% in either case with a resultant average class size of about 25.

Classroom Capacity

The combined class scheme in Table 5-B places the most severe demands on the schools in terms of number of classrooms required. Consideration of these requirements in light of the current number of classrooms (see Table 1) indicates that there are currently adequate classrooms in all schools except Harrington. Harrington would require the renovated capacity of 14 classrooms.

However, if the renovated classroom counts in Table 1 are considered it can be seen that the renovations proposed for Fiske, Estabrook and Franklin would not be possible. Each of these schools renovation involves dropping 3 or 4 classrooms to use them for other purposes. Either larger classes would have to be accepted, Metco loads at those schools made lighter than 10%, or adjustments to the school districts made (e.g., movement of some Franklin students to Bridge). Time did not permit such school district adjustments to be studied further in this report.

(iv) Conclusions

Based upon the closing sequence proposed in Table 3, and the analyses which have followed from it, the following conclusions are possible.

(a) The four elementary schools can be closed in the 1977-1980 period in a manner which results in minimum disturbance of the student population. The schedule proposed by this committee differs from the rather unrealistic path outlined in the Facilities Study, in which students from the closed facility were reassigned with little regard for dislocation.

(b) With the anticipated increase in Metco student population, this sequence will result in an average enrollment at each school of 92% of current capacity. This may affect the renovation programs at some of the schools due to their concomitant reduction in capacity.

(c) It appears that these school closings have no impact on the number of classrooms (hence, on the teaching staff complement). With the projected decline in enrollment, reduction in teaching staff to maintain current pupil: teacher ratios can be accommodated whether or not this reassignment program is implemented.

NO OBS.
RMS & C.

4. Analysis for the Junior High Schools

In reassigning the students of Muzzey to Clarke and Diamond the committee felt that an attempt should be made to follow the new elementary school district boundaries shown in Map 3. This would permit the continuing relations of students through public school unlike the current district (e.g., Franklin division) as shown on Map 4. An attempt was made to redistrict as follows:

To Clarke

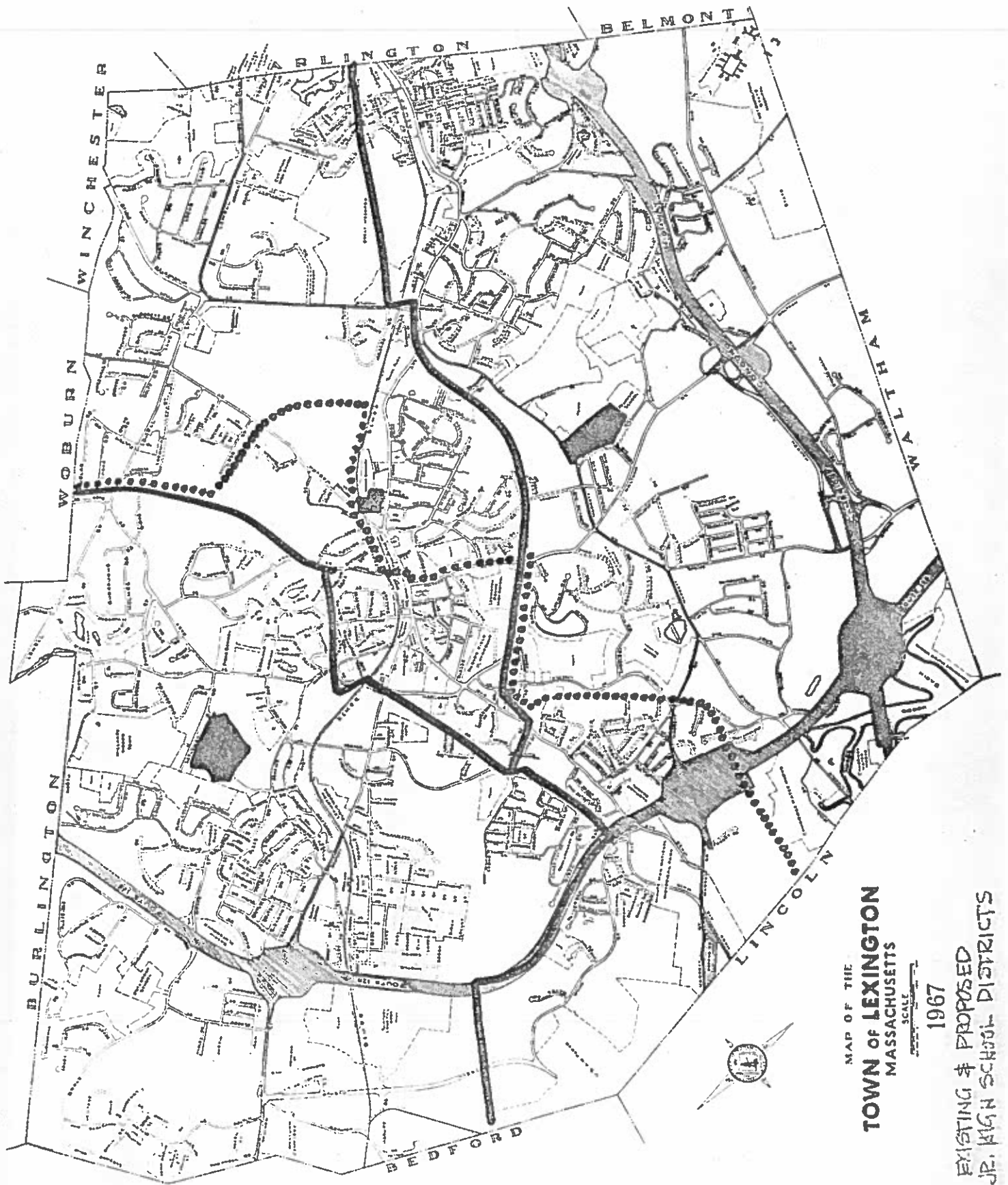
.New Bowman, Harrington and Franklin

To Diamond

.New Bridge, Fiske, Estabrook and Hastings

An enrollment projection was made for that plan and is presented in Appendix C, page C-3. The projection indicates too many students assigned to Diamond. The trial was not acceptable.

An attempt was then made to balance the student population by assigning Bridge 1 to Clarke. This would divide Bridge but along natural boundaries. A revised enrollment projection was made for the new plan and is presented in Appendix C, page C-5. The projection indicates nearly a perfect balance between the two remaining junior highs. Muzzey could be closed in the 79-80 school year as indicated in the Facilities Report with approximately 10% margin. The following year (80-81) the average junior high enrollments would be about 85% of capacity. The recommended redistricted lines are shown on Map 4.



MAP OF THE
TOWN OF LEXINGTON
 MASSACHUSETTS
 SCALE

1967

MAP 4: EXISTING & PROPOSED
 JR. HIGH SCHOOL DISTRICTS

5. Recommendations of CSRP Committee

- (1) Maintain an active enrollment committee and upgrade survival ratios annually on the basis of current census data. In this way, the committee can annually reevaluate whatever plan is adopted.
- (2) The committee believes that any attempt to adhere to the closing schedule recommended in the Facilities Study (beginning 76/77) will result in: unnecessary fragmentation of existing neighborhood/districts and violation of many of the other criteria listed. We therefore recommend that if the decision is made to implement a closing plan, it conform with the redistricting sequence detailed here. This plan satisfies practically all the criteria set forth, and provides the school committee with the opportunity to test the projections for two additional years before implementation, so that premature closings with their concomitant negative economic, educational and sociological impacts will not result.

Acknowledgements

The members of the sub-committee would like to acknowledge the cooperation of Ken Briggs, Planning Director, and the assistance of the other members of the Town Planning Office. The work of those citizens who volunteered to assist in the tabulation of the school census data was also very much appreciated.

APPENDIX A

School Census Data : Sub-District Analysis

(See Map 2)

1973-1974 SCHOOL CENSUS DATA TABULATION.

DISTRICT	SUBDISTRICT (see MAP 2)	YEAR OF BIRTH					SCHOOL GRADE						K-6 Total	
		73	72	71	70	69	K	1	2	3	4	5		6
HANCOCK	1	2	3	3	1	1	13	10	9	16	9	13	10	80
	2 AND 3	3	8	8	8	12	10	12	17	19	25	30	21	134
MONROE	4	3	5	6	1	5	5	9	5	3	5	1	3	31
	5	1	4	4	8	2	5	7	11	9	8	4	6	50
	6	2	3	5	4	6	5	8	10	8	16	6	13	66
	7	2	2	3	2	4	5	5	5	6	7	7	4	39
ADAMS	8	10	10	17	12	13	22	27	20	31	21	24	31	176
	9	8	17	13	22	23	20	27	23	25	23	27	24	169
	10	0	3	2	1	2	5	4	5	4	8	4	6	36
BOWMAN 2	11	4	13	7	19	10	14	26	20	19	19	25	28	151
BOWMAN 3	12	3	4	2	3	6	3	6	6	7	8	8	6	44
BRIDGE 2	13	5	4	6	8	11	11	13	10	13	12	14	17	90
	14	4	4	7	13	4	11	17	21	19	19	20	20	127
PARKER	15	6	7	4	9	7	8	7	9	10	14	11	12	71
	16	9	5	12	17	22	25	21	26	32	23	37	40	204
FRANKLIN	17	2	4	2	9	4	12	10	8	14	11	17	18	90

APPENDIX B

Elementary District Sequence Analyses

APPENDIX B

(B-1)

Hancock to Fiske

	<u>Hancock</u>			<u>Fiske</u>		
	<u>K</u>	<u>1</u>		<u>K</u>	<u>1</u>	<u>K-6</u>
73-74	13	10		47	67	454
74-75	1	16		37	52	415
75-76	1	1		48	41	398
76-77	4	2		34	53	371
77-78	4	5		19	38	333
78-79	(4)	5		(27)	21	299
79-80	(4)	(5)		(27)	(29)	261

Actual 73-74

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Fiske	47	67	63	61	66	69	81
Hancock	13	10	9	16	9	13	10
Total	60	77	72	77	75	82	91

Hancock + Fiske

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>K-6</u>	% Capacity
73-74	60	77	72	77	75	82	91	534	
74-75	38	68	77	72	77	75	82	489	
75-76	49	42	68	77	72	77	75	460	
76-77	38	55	42	68	77	72	77	429	98
77-78	23	43	55	42	68	77	72	380	86
78-79	(31)	26	43	55	42	68	77	342	78
79-80	(31)	(34)	26	43	55	42	68	299	68

* Capacity = 440; Proposed = 365

Hancock 2+3 to Hastings

Ratios	<u>Hancock 2+3</u>					<u>Hastings</u>			
	1.02	1.06	1.09	1.21	1.20	K	1	K-6	
73-74	<u>1</u> 8	<u>2</u> 8	<u>3</u> 8	<u>4</u> 12	<u>K</u> 10	<u>1</u> 12	<u>K</u> 53	<u>1</u> 57	<u>K-6</u> 431
74-75		8	8	9	15	12	44	60	408
75-76			9	9	11	17	40	50	390
76-77				9	11	13	32	45	356
77-78					11	13	11	36	326
78-79					(11)	14	(22)	12	282
79-80					(11)	(14)	(22)	(24)	250

Actual 73-74

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Hancock 2+3	10	12	17	19	25	30	21
Hastings	53	57	67	45	71	64	74
Total	63	69	84	64	96	94	95

Hancock 2+3 + Hastings

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>K-6</u>	% Capacity
73-74	63	69	84	64	96	94	95	565	
74-75	59	72	69	84	64	96	94	538	
75-76	51	67	72	69	84	64	96	503	109
76-77	43	58	67	72	69	84	64	457	99
77-78	22	49	58	67	72	69	84	421	92
78-79	(33)	26	49	58	67	72	69	374	81
79-80	(33)	(38)	26	49	58	67	72	343	75

* Capacity = 460 ; Proposed = 415

Munroe 4+5 to Fiske

Ratios	<u>Munroe 4+5</u>						<u>Fiske</u>		
	1.06	1.06	1.01	.98	1.24				
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>K</u>	<u>1</u>	<u>K</u>	<u>1</u>	<u>K-6</u>
73-74	9	10	9	7	10	16	47	67	454
74-75		10	11	9	7	12	37	52	415
75-76			10	11	9	9	48	41	398
76-77				10	10	11	34	53	371
77-78					10	13	19	38	333
78-79					(10)	12	(27)	21	299
79-80					(10)	(13)	(27)	(29)	261

Actual 73-74

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Munroe 4+5	10	16	16	12	13	5	9
Fiske	47	67	63	61	66	69	81
Total	57	83	79	73	79	74	90

Munroe 4+5 + Fiske

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>K-6</u>	% Capacity
73-74	57	83	79	73	79	74	80	525	
74-75	44	64	83	79	73	79	74	496	
75-76	57	50	64	83	79	73	79	485	
76-77	44	64	50	64	83	79	73	457	104
77-78	29	51	64	50	64	83	79	420	95
78-79	(37)	33	51	64	50	64	83	382	87
79-80	(37)	(42)	33	51	64	50	64	341	78

* Capacity = 440; Proposed = 365

MUNROE 6+7 to FRANKLIN

Ratios	<u>MUNROE 6+7</u>					<u>FRANKLIN</u>			
	1.06	1.06	1.01	.98	1.24				
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>K</u>	<u>1</u>	<u>K</u>	<u>1</u>	<u>K-6</u>
73-74	5	8	6	10	10	13	44	64	332
74-75		5	8	6	10	12	45	43	365
75-76			6	9	6	12	53	44	360
76-77				6	8	7	41	51	348
77-78					6	10	35	40	321
78-79					(7)	7	(38)	34	314
79-80					(7)	(7)	(38)	(37)	287

Actual 73-74

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Munroe 6+7	10	13	15	14	23	13	17
Franklin	44	64	44	61	51	57	61
Total	54	77	59	75	74	70	78

Munroe 6+7 + Franklin

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>K-6</u>	% Capacity
73-74	54	77	59	75	74	70	78	487	
74-75	55	55	77	59	75	74	70	465	
75-76	59	56	55	77	59	75	74	455	104
76-77	49	58	56	55	77	59	75	429	99
77-78	41	50	58	56	55	77	59	396	91
78-79	(45)	41	50	58	56	55	77	382	88
79-80	(45)	(46)	41	50	58	56	55	351	81

* Capacity = 435 ; Proposed = 315

MUNroe 4+5 to Fiske + Hancock

Ratios	<u>Hancock</u>					<u>Fiske + Munroe 4+5</u>				
	1.02	1.06	1.09	1.21	1.20					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>K</u>	<u>1</u>	<u>K</u>	<u>1</u>	<u>K-6</u>	
73-74	3	3	1	1	13	10	57	83	525	
74-75		3	3	1	1	16	44	64	496	
75-76			3	3	1	1	57	50	485	
76-77				4	4	2	44	64	457	
77-78					4	5	29	51	420	
78-79					(4)	5	(37)	33	382	
79-80					(4)	(5)	(37)	(42)	341	

Actual 73-74

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Fiske + Mun 4+5	57	83	79	73	79	74	80
Hancock 1	13	10	9	16	9	13	10
Total	70	93	88	89	88	87	90

Hancock 1 + Fiske + Munroe 4+5

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>K-6</u>	% Capacity
73-74	70	93	88	89	88	87	90	605	
74-75	45	80	93	88	89	88	87	570	
75-76	58	51	80	93	88	89	88	547	
76-77	48	66	51	80	93	88	89	515	
77-78	33	56	66	51	80	93	88	467	106
78-79	(41)	38	56	66	51	80	93	425	97
79-80	(41)	(47)	38	56	66	51	80	379	86

* Capacity = 440 ; Proposed = 365

BOWMAN MINUS BOWMAN 2 (INTERM RESULT)

Period	1.11	.98	1.04	.88	1.09								
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>K</u>	
73-74	19	26	35	47	32	51	53	65	71	78	75	42	
74-75		21	25	36	41	35	51	53	65	71	78	39	
75-76			21	26	32	45	35	51	53	65	71	35	
76-77				21	23	35	45	35	51	53	65	30	
77-78					19	25	35	45	35	51	53	26	
78-79					(21)	21	25	35	45	35	51	23	
79-80					(21)	(23)	21	25	35	45	35	20	

BOWMAN 2

Period	1.11	.98	1.04	.88	1.09		
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>K</u>	<u>1</u>	
73-74	13	7	19	10	14	26	
74-75		14	7	20	9	15	
75-76			14	7	17	10	
76-77				15	6	19	
77-78					13	7	
78-79					(10)	14	
79-80					(10)	(11)	

Adams 10 and Bowman 2 to Harrington

	<u>Adams 10</u>						<u>Harrington</u>		
Ratios	1.03	1.02	1.04	1.01	1.03		1.00		
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>K</u>	<u>1</u>	<u>K</u>	<u>1</u>	<u>K-6</u>
73-74	3	2	1	2	5	4	35	50	365
74-75		3	2	1	2	5	36	37	329
75-76			3	2	1	2	38	38	311
76-77				3	2	1	25	40	276
77-78					3	2	31	26	277
78-79					(3)	3	(28)	33	252
79-80					(3)	(3)	(28)	(30)	232

Actual 73-74

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Adams 10	5	4	5	4	8	4	6
Harrington	35	50	55	31	62	53	74
Bowman 2	14	26	20	19	19	25	28
Total	54	80	80	54	89	87	108

Adams 10 + Bowman 2 + Harrington

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>K-6</u>	% Capax
73-74	54	80	80	54	89	87	108	552	142
74-75	47	56	80	80	54	89	87	493	126
75-76	56	50	56	80	80	54	89	465	119
76-77	33	60	50	56	80	80	54	413	106
77-78	47	35	60	50	56	80	80	408	105
78-79	(41)	50	35	60	50	56	80	372	95
79-80	(41)	(44)	50	35	60	50	56	336	86

* Capacity = 390; Proposed = 390

Adams 8+9 + Bowman - Bowman 2

Ratios	<u>Adams 8+9</u>						<u>Bowman - Bowman 2</u>		
	1.03	1.02	1.04	1.01	1.03		K	1	K-6
<u>73-74</u>	<u>27</u>	<u>30</u>	<u>34</u>	<u>36</u>	<u>42</u>	<u>54</u>	<u>32</u>	<u>51</u>	<u>424</u>
74-75	28	31	35	36	43		41	35	394
75-76		28	32	36	37		32	45	352
76-77			30	32	37		23	35	307
77-78				30	33		19	25	263
78-79				(31)	31		(21)	21	233
79-80				(31)	(32)		(21)	(23)	205

Actual 73-74

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
<u>Adams 8+9</u>	<u>42</u>	<u>54</u>	<u>43</u>	<u>56</u>	<u>44</u>	<u>52</u>	<u>55</u>
<u>Bo - Bo 2</u>	<u>32</u>	<u>51</u>	<u>53</u>	<u>65</u>	<u>71</u>	<u>78</u>	<u>75</u>
Total	74	105	96	121	115	130	130

Bowman minus Bowman 2 + Adams 8+9

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>K-6</u>	<u>% Capacity</u>
<u>73-74</u>	<u>74</u>	<u>105</u>	<u>96</u>	<u>121</u>	<u>115</u>	<u>130</u>	<u>130</u>	<u>771</u>	<u>138</u>
74-75	77	78	105	96	121	115	130	722	129
75-76	68	82	78	105	96	121	115	665	119
76-77	55	72	82	78	105	96	121	609	109
77-78	49	58	72	82	78	105	96	540	96
78-79	(52)	52	58	72	82	78	105	499	89
79-80	(52)	(55)	52	58	72	82	78	449	80

* Capacity = 560; Proposed = 577

Parker 15 to Bridge

Ratios	<u>Parker 15</u>					<u>Bridge</u>			
	1.16	1.02	1.1	.95	1.03	K	1	K-6	
73-74	$\frac{1}{7}$	$\frac{2}{4}$	$\frac{3}{9}$	$\frac{4}{7}$	$\frac{K}{8}$	$\frac{1}{7}$	56	62	529
74-75		8	4	10	7	8	62	63	507
75-76			8	4	9	7	59	69	479
76-77				9	4	10	58	66	471
77-78					9	4	35	65	435
78-79					(7)	9	(47)	39	411
79-80					(7)	(7)	(47)	(52)	401

Actual 73-74

	$\frac{K}{8}$	$\frac{1}{7}$	$\frac{2}{9}$	$\frac{3}{10}$	$\frac{4}{14}$	$\frac{5}{11}$	$\frac{6}{12}$	
<u>Parker 15</u>	8	7	9	10	14	11	12	
<u>Bridge</u>	56	62	75	78	73	94	91	
<u>Total</u>	64	69	84	88	87	105	103	

Parker 15 + Bridge

	$\frac{K}{64}$	$\frac{1}{69}$	$\frac{2}{84}$	$\frac{3}{88}$	$\frac{4}{87}$	$\frac{5}{105}$	$\frac{6}{103}$	$\frac{K-6}{600}$	% Capacity
73-74	64	69	84	88	87	105	103	600	112
74-75	69	71	69	84	88	87	105	573	107
75-76	68	76	71	69	84	88	87	543	101
76-77	62	76	76	71	69	84	88	526	98
77-78	44	69	76	76	71	69	84	489	91
78-79	(54)	48	69	76	76	71	69	463	87
79-80	(54)	(59)	48	69	76	76	71	453	85

Capacity = 535; Proposed = 577

Parker 16 to Estabrook

	<u>Parker 16</u>						<u>Estabrook</u>		
Ratios	1.16	1.02	1.1	.95	1.03				
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>K</u>	<u>1</u>	<u>K</u>	<u>1</u>	<u>K-6</u>
73-74	5	12	17	22	25	21	51	50	448
74-75		6	12	19	21	26	46	54	417
75-76			6	13	18	22	48	48	394
76-77				7	13	18	29	50	354
77-78					6	13	32	30	323
78-79					(10)	6	(31)	34	297
79-80					(10)	(10)	(31)	(32)	279

Actual 73-74

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
Parker 16	25	21	26	32	23	37	40
Estabrook	51	50	60	64	71	73	79
Total	76	71	86	96	94	110	119

Parker 16 + Estabrook

	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>K-6</u>	% Capacity
73-74	76	71	86	96	94	110	119	652	-
74-75	67	80	71	86	96	94	110	604	-
75-76	66	70	80	71	86	96	94	563	121
76-77	42	68	70	80	71	86	96	513	110
77-78	38	43	68	70	80	71	86	456	98
78-79	(41)	40	43	68	70	80	71	413	89
79-80	(41)	(42)	40	43	68	70	80	384	83

* Capacity = 465 ; Proposed = 365

APPENDIX C

Junior High School Sequence Analysis

APPENDIX C

Townwide Ratios - Grades 6-9 *

	<u>6 → 7</u>	<u>7 → 8</u>	<u>8 → 9</u>
70/71-71/72	0.947	0.989	0.966
71/72-72/73	0.965	0.984	1.003
72/73-73/74	0.976	0.970	0.958
73/74-74/75	<u>0.996</u>	<u>0.967</u>	<u>0.907</u>
	0.970	0.98	0.96

Actual 74-75 Enrollments

	<u>7</u>	<u>8</u>	<u>9</u>		<u>7-9</u>
Clarke	275	246	253		774
Diamond	291	289	259		839
Muzzy	<u>172</u>	<u>167</u>	<u>152</u>		<u>491</u>
	738	702	664		2104

Jr. High Capacities *

Clarke	900
Diamond	900
Muzzy	<u>600</u>
+	2400

* From the Facilities Report

Grade 6 Projections

	<u>73/74</u>	<u>74/75</u>	<u>75/76</u>	<u>76/77</u>	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>
Hastings	95	94	96	64	84	69	72
Franklin	78	70	74	75	59	77	55
Fiske	90	87	88	89	88	93	80
Harrington	108	87	89	54	80	80	56
Bowman	130	130	115	121	96	105	78
Bridge	103	105	87	88	84	69	71
Estabrook	<u>119</u>	<u>110</u>	<u>94</u>	<u>96</u>	<u>86</u>	<u>71</u>	<u>80</u>
	723	683	643	587	577	564	492

Total Projections

Ratios	.97	.98	.96			
	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>7-9</u>	<u>7-9*</u>
74-75	683	738	702	664	2104	2077
75-76	643	663	723	674	2021	2033
76-77	587	624	649	694	1967	1946
77-78	577	569	611	623	1803	1829
78-79	564	560	558	587	1705	1730
79-80	492	547	548	536	1631	1683

*74 Enrollment Report.

Trial Redistrict #1*

Clarke (Capacity = 900)

Ratios	.97	.98	.96			
	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>7-9</u>	<u>% Capacity</u>
74-75	287					
75-76	278	278				
76-77	250	270	273			
77-78	235	243	264	262	769	85
78-79	262	228	238	254	720	80
79-80	189	254	223	228	705	78

Diamond (Capacity = 900)

Ratios	.97	.98	.96			
	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>7-9</u>	<u>% Capacity</u>
74-75	396					
75-76	365	384				
76-77	337	354	376			
77-78	342	327	347	361		
78-79	302	331	320	333		
79-80	303	293	325	308	926	103

*

Clarke

Bowman
Harrington
Franklin

Diamond

Estabrook
Hastings
Fiske
Bridge

NOTE: New elementary districts

Bridge 1 (Bridge - Bridge 2)

Ratios	1-12						
	<u>K</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
73-74 Total*1	56	62	75	78	73	94	91
73-74 Bridge 2*2	<u>22</u>	<u>30</u>	<u>31</u>	<u>32</u>	<u>31</u>	<u>34</u>	<u>37</u>
<u>73-74 Bridge 1</u>	<u>34</u>	<u>32</u>	<u>44</u>	<u>46</u>	<u>42</u>	<u>60</u>	<u>54</u>
74-75		38	32	44	46	42	60
75-76			38	32	44	46	42
76-77				38	32	44	46
77-78					38	32	44
78-79						38	32
79-80							38

*1 From 74 Enrollment Report

*2 From Appendix A.

Trial Redistrict #2⁴Clarke (Capacity = 900)

Ratios	.97	.98	.96			
	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>7-9</u>	<u>% Capacity</u>
74-75	347					
75-76	320	337				
76-77	296	310	330			
77-78	279	287	304	317	908	101
78-79	294	271	281	292	844	94
79-80	227	285	265	270	820	91
80-81		220	279	254	753	84

Diamond (Capacity = 900)

Ratios	.97	.98	.96			
	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>7-9</u>	<u>% Capacity</u>
74-75	336					
75-76	323	326				
76-77	291	313	319			
77-78	298	282	307	307	896	100
78-79	270	289	277	295	861	96
79-80	265	262	283	266	811	90
80-81		257	257	272	786	87

* Clarke

Bowman
 Harrington
 Franklin
 Bridge 1

Diamond

Estabrook
 Hastings
 Fiske
 Bridge 2.

NOTE: New elementary districts

9510