

*R. Lotberg*

Report to the Lexington School Committee

on

Financial Implications of Closing Schools

from

Citizens Study Committee

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## I. Introduction

In February 1975 the Lexington School Committee established a Citizen's Study Committee to assess the financial implications of the School Facilities Study with particular attention to potential savings that might be realized by closing schools.

The charge to the study committee was

"to study the cost implications of the School Building Survey, specifically the savings to be made by closing schools and the possible increased costs at schools which would receive students from closed or reassigned schools, future per pupil costs for several alternative plans and the impact on the tax rate of a capital school improvement program."

The Committee has interpreted its primary responsibility to be the development of a framework for determining and comparing the financial implications of alternative plans for school closing that one might wish to examine. The Committee recommends that any proposal be assessed according to the procedure and considerations presented below but of course does not take a position on any particular plan for future utilization of school facilities. This report is endorsed by all members of the Committee.

In the course of the Committee's deliberations and collection of financial data it has benefited from the prompt and effective assistance from several town and school officials. Particular thanks are due to Frank DiGammarrino, Director of Planning; James MacInnes, Administrative Assistant; Richard Perry, Town Comptroller; Mitchell Spiris, Assistant Superintendent; and Richard Barnes, Director of Information.

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## II. Principal Findings

In this section the principal findings of the Committee are presented; a more extensive discussion of the basis for these findings is included in subsequent sections of the report. The principal conclusions of this Committee are:

1. The full financial consequences of closing schools on the town cannot be determined until a program is adopted for disposition of the buildings.

2. The savings which may be realized by closing schools are not sufficient to justify taking such action if the buildings are (a) left vacant, (b) employed for other school purposes, or (c) transferred to another town use. More substantial savings might be realized from closing schools if the buildings are (d) leased or sold, or (e) demolished.

Other conclusions of the Committee are:

3. If it is assumed that a discontinued school building will be used for some other worthy town purpose, it is important to consider the alternatives of utilizing newer as well as older school buildings. The selection of the particular building to be phased out of use for educational purposes should depend on the relative utility of the building for the new town function as well as the relative educational utility. The financial impact of the alternative transfers must consider both the school and town budgets.

4. For elementary schools the scale of operation has surprisingly little effect on building-related costs. The larger newer schools do not appear to be more efficient to run than the smaller, older schools.

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More precisely there is an increasing straight line relationship between building-related costs and number of classrooms (correlation coefficient 0.88).

5. There is a disparity in the pupil-related costs per pupil between elementary schools. Three of the elementary schools proposed for closing (Adams, Munroe, Parker) have significantly lower pupil-related costs per capita. In some cases, depending upon redistricting choices and upon an assumed continuity of educational program at the schools which remain open, there may be substantial (\$50-\$150) increase in the pupil-related costs for those transferred. In other, but fewer cases, there may be a decrease in the pupil-related costs associated with those transferred.

6. The renovation program proposed in the School Facility Study is an educational program not required or necessarily implied by a decision to close schools. Accordingly the Committee did not dwell on this or alternative capital improvement programs. Renovation costs should be included in considering the financial implication of closing schools only when the renovations are required to increase capacity at schools which are receiving pupils. Such renovation should be offset against anticipated savings.

For every \$240,000 of renovation expenditures the tax rate increases by \$1.00. While in prior years a school renovation program might have qualified for partial reimbursement by the state, at present there is a moratorium on the state reimbursement program.

7. The cost estimates for the particular renovation program presented in the School Facility Study are not sufficiently refined to serve as a

secure basis for making a decision on a capital improvement program.

8. The committee notes that Muzzey has substantially higher pupil-related costs than the other two junior high schools. Muzzey also has the highest building-related costs per pupil of all the elementary and junior high schools.

9. Transportation costs associated with alternative redistricting proposals are critical because elementary school pupils bussed between one and one and a half miles are not eligible for state reimbursement.

10. Finally the Committee expects that declining enrollment will not result in lower dollar amounts in future school budgets. There are three reasons for this: inflation, collective bargaining and the anticipation that teaching staff reductions will occur with the retention, on the average, of more experienced, highly paid, teachers. Thus reduced expenditures associated with falling enrollment will appear as a slower rate of growth in the school budget rather than in actual budget reductions. Furthermore the major 'savings' attributable to falling enrollment are realized through teaching staff reductions, an action that can be taken whether or not school buildings are closed.

### III. Financial Data

The Committee has chosen to work with data for 1974-75 appropriations rather than 74-75 or 75-76 budget data. The Committee has found no annual expenditure data on a school by school basis and urges the school committee to continue its efforts to gather such data.

The Committee has collected the following data pertinent for

assessing the financial implications of alternative school closing plans. Each budget category in the school program has been designated as a cost which is either 'building-related' or 'pupil-related'. Not all the 'building-related' costs are potential savings if the decision is made to close a building. Important adjustments as described below, must be made to these building-related costs before they may be interpreted as savings.

'Pupil-related' expenditures are considered to be proportional to the number of students in a school. Thus the Committee assumes that if enrollment decreases (increases) in a particular school pupil-related expenditures will be reduced (increased) in such a way that, on the average, there will be no net change in the resources devoted to each child. Thus closing a school captures savings associated with building-related costs but has no effect on the average 'pupil-related' expenditure per pupil in a school that remains open. However the total 'pupil-related' expenditures in the school which remains open will rise as students transfer from schools which are closed. This increase is offset by the reduced 'pupil-related' expenditures at the closed school. There is a net indirect effect on 'pupil-related' expenditures for the entire system only if a discrepancy exists between the 'pupil-related' per pupil expenditures at the school which is closed and the school which receives their students.

### III A. Building-Related Costs

Attachment I presents a detailed breakdown of the budget categories which the Committee judged to be building-related. The Attachment

includes the annual costs, by elementary school, according to the FY74-75 school appropriation for each category. All entries except for utilities may be reconciled with the school administration computer coded program data provided to the Committee. Utilities are an exception since these are carried as a Town Wide item, not normally allocated by school. The particular utility allocation employed is based on recent information supplied by the school administration and these numbers are surrounded by boxes to indicate that they are not in the computer codes. Time did not permit attention to telephones costs (assumed to be negligible) and food service costs. The elementary school building-related costs are summarized in the following Table I.

TABLE I

Elementary School Building-Related Costs FY74-75 Appropriation

<u>ADAMS</u>	<u>BOWMAN</u>	<u>BRIDGE</u>	<u>ESTABROOKE</u>	<u>FISKE</u>	<u>FRANKLIN</u>	<u>HANCOCK</u>	<u>HARRINGTON</u>
\$78,380	104,986	112,238	93,126	96,684	88,605	60,245	92,516
			<u>HASTINGS</u>	<u>MUNROE</u>	<u>PARKER</u>		
			86,922	55,864	63,394		

The annual 'building-related' costs for the three junior high schools are detailed in Attachment III and summarized below in Table II.

TABLE II

Junior High School Building-Related Costs Fy74-75 Appropriation

<u>CLARKE</u>	<u>DIAMOND</u>	<u>MUZZEY</u>
\$208,971	\$193,239	\$180,577

III B. Pupil-Related Costs

Attachment II presents a detailed breakdown of the budget categories which the Committee judged to be 'pupil-related'. The attachment includes the annual cost by elementary school, according to the FY74-75 school appropriation. Since only four schools have largely separate or self-contained special education classrooms, adjustments have been made for these four schools to arrive at comparable 'pupil-related' costs. All entries in this attachment may be reconciled with the school administration computer coded program data. The 'pupil-related' costs per pupil for the elementary schools are summarized in Table III and for the junior high schools in Table IV. The detailed breakdown for the junior high schools is presented in Attachment III.

TABLE III

Elementary School Pupil-Related Costs per Student FY74-75 Appropriation

<u>ADAMS</u>	<u>BOWMAN</u>	<u>BRIDGE</u>	<u>ESTABROOKE</u>	<u>FISKE</u>	<u>FRANKLIN</u>
\$858	935	849	976	908	908
<u>HANCOCK</u>	<u>HARRINGTON</u>	<u>HASTINGS</u>	<u>MUNROE</u>	<u>PARKER</u>	
987	1004	1034	874	908	

TABLE IV

Junior High School Pupil-Related Costs Per Student FY74-75 Appropriation

<u>CLARKE</u>	<u>DIAMOND</u>	<u>MUZZEY</u>
\$1098	1070	1461



### III C. Other Costs

The Committee notes that there are a variety of other consequences from closing schools that have important financial implications. Some of these consequences appear in the school budget, others in the town budget. Examples in the school budget are food service costs and transportation costs.

The Committee has not developed precise estimates of the additional transportation costs that would be borne if schools were closed. The busing costs to the town are likely to be substantial since the present school policy of busing elementary school children who live between one mile and one and a half miles from their school is not eligible for 70% state reimbursement. Estimates of transportation costs, which are an offset against 'confirmed savings' will be possible when a precise redistricting plan is put forward.

Other consequences which appear in the town budget concern traffic control and crossing guards. The Committee has made no determination of what the cost changes are likely to be.

### IV. Some Inferences From the Financial Data

These financial data have suggested the following conclusions to the Committee. First the data do not support the hypothesis that the smaller, older elementary schools are significantly more 'inefficient' to operate. With the exception of Hancock both the total cost (building-related and pupil-related) per student and the 'pupil-related' costs per student are lower for the older schools (Adams, Munroe, Parker)

than most of the newer schools.

Second, the data indicate surprisingly large 'building-related' costs for the newer, larger schools. The Committee expected that economics of scale would be more in evidence for this category of costs.

Third, the fact that pupil-related costs are on the low side for the smaller schools shows that it has been possible with small enrollments to allocate teaching staff in a manner similar to that found in the larger schools. If this had not been the case one would have encountered higher 'pupil-related' costs in the small schools reflecting large average pupil/teacher ratios. In fact pupil/teacher ratios are quite close throughout the elementary school system. The ratio is maintained in the smaller schools by combining classes; a practice now found in over 30% of the elementary school classrooms. Thus the Committee does not foresee that closing schools will result in appreciable reduction of teaching staff if the policy of a pupil/teacher ratio of 24/1 is maintained. Of course school closings may be accompanied by staff reductions that result in savings and a higher average pupil/teacher ratio. But such an action does not require school closings and hence it is not attributable as a 'savings' from closing schools. The large 'savings' presented in a recent Newton study\* are a result of treating all staff reductions at the closed schools as 'savings' without recognizing that staff reductions would occur throughout the system as enrollment falls even if no schools were closed.

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\* Declining Enrollment and School District Organization, V. Silluzio, Newton Public School Study, February, 1974.

V. Translating 'Building-Related' Costs Into Savings

The closing of a school building does not necessarily mean that all 'building-related' costs will be recoverable as savings to the town. The most important consideration in determining what portion of the building-related costs are recoverable as savings, concerns the disposition of the school building. The Committee strongly believes that the school committee should look beyond the financial consequences to the school budget and assess the financial consequences to the tax rate of the entire town.

If a school is closed, the building may be put to different uses. The building may be

- (1) left vacant in anticipation of future needs
- (2) employed for another school purpose
- (3) transferred to the town for use in another function
- (4) leased or sold
- (5) demolished

Clearly the future use of the building will have a major impact on the recoverable savings. Certain remarks should be made with regard to each of the five alternative uses mentioned above:

(1) Keeping the building empty will result in substantially higher insurance costs. According to Mr. Norman Stoltz\* for the five schools mentioned for closing in the School Facilities Study the insurance costs might be:

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\*Insurance consultant to the Town of Lexington.

	<u>Approximate Current Insurance Cost</u>	<u>Insurance Cost For Vacant Building Without Contents</u>
ADAMS	\$3,100	\$10,000
FRANKLIN*	2,000	6,400
HANCOCK*	900	3,500
MUNROE*	700	2,700
PARKER	2,800	10,000
MUZZEY*	3,200	12,000
<hr/> total	<hr/> \$12,700	<hr/> \$44,600

with a possibility of doubling of the rates if the vacant building does not qualify for the normal discount below manual given to the town because of good experience. Sprinkler systems in the four schools designated by (\*) are assumed to be kept in operation. In addition the Committee anticipates that the vacant buildings would require substantial maintenance and security protection.

(2) If the closed school building is employed for another school purpose e.g. administration building, there will be no contingent savings (see below).

(3) Transfer of the building to another town function will mean that a major portion of the 'building-related costs' e.g. custodial, maintenance, utilities will appear elsewhere in the town budget. To properly estimate the town wide impact of such a transfer requires investigation of the new town use. Furthermore it might prove more desirable and/or economical

to transfer a new building rather than an old building.

(4) If the school building is put up for lease or sale essentially all the 'building-related costs' would be averted. Furthermore the town would raise revenue by this course of action. However rezoning may be required and would be required to realize the full commercial value of the building. The Committee has not pursued this possibility.

(5) Demolition of the building would also result in the savings of essentially all 'building-related' costs. The cost of demolition has not been investigated by the Committee.

The Committee has attempted to determine if a consensus exists in town as to the disposition of closed schools. Apparently no plan exists for disposition of the buildings and little systematic thought has been given to the problem. Accordingly the Committee saw no purpose in speculating on possible future use of closed school buildings. Evidently a complete study of the financial impact of closing schools is not possible in the absence of a plan for disposition of the schools.

Under these circumstances the Committee has divided 'building-related' costs into two categories. The first category entitled 'confirmed savings' gathers together all items of building-related costs that the Committee feels confident would be a contribution to savings to the town regardless of the future use of the building.

The second category entitled 'contingent savings' are those items of building-related costs that may well [options (1) (2) or (3) above] not emerge as a savings to the town. The Committee urges that these two categories not be lumped together in future discussions of potential

savings from closing schools.

The breakdown into School Closing Savings for elementary schools is presented in Attachment IV. In addition to classification of the items of 'building-related' costs into 'confirmed' and 'contingent' savings two adjustments have been made. First the salary savings associated with reducing the position of a principal will not be that person's salary. Rather it is likely that the present principal will be reassigned to some other administrative or teaching duty within the system and a more junior, lower paid, individual severed. Thus the savings is the salary of this junior person which is estimated to be \$14,000. Second, the fringe benefits of non-certified personnel (secretaries, custodians, etc.) are not carried in the school budget but in the town budget. The Committee is informed that these fringe benefits may be estimated as 30% of the salary and accordingly the salaries in Attachment IV have been increased by this factor. The comparable School Closing Savings for the junior high schools are presented in Attachment V. The confirmed and contingent savings from closing elementary schools are summarized in Table V and from closing junior high schools in Table VI.

TABLE V

Savings From Closing Elementary Schools

	<u>ADAMS</u>	<u>BOWMAN</u>	<u>BRIDGE</u>	<u>ESTABROOKE</u>	<u>FISKE</u>		
Confirmed	\$45,681	43,760	44,657	42,443	52,792*		
Contingent	30,055	64,412	67,120	49,387	45,806		
	<u>FRANKLIN</u>	<u>HANCOCK</u>	<u>HARRINGTON</u>	<u>HASTINGS</u>	<u>MUNROE</u>	<u>PARKER</u>	
Confirmed	\$38,586	32,897	42,698	37,440	29,706	34,935	
Contingent	49,363	+ 24,784 or -	47,063	45,012	24,233	25,676	

TABLE VI

Savings From Closing Junior High Schools

	<u>CLARKE</u>	<u>DIAMOND</u>	<u>MUZZEY</u>
Confirmed	\$79,127	77,479	78,268
Contingent	124,195	116,221	96,746

The Committee emphasizes that 'confirmed savings' are not necessarily automatic upon closing of a school. To realize these savings, determined management is required. More generally determined management will be required to reduce teaching staff as enrollment drops, whether or not schools are closed, while keeping the pupil/teacher ratio at the present level.

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\* which includes \$10,500 non-recurring expenses for boiler replacement.

The Committee notes that the major portion of building up keep, general repairs, and maintenance are carried in the Town Wide School budget and not allocated by school. The Committee is concerned that the general level of these expenditures may not be adequate to maintain the physical plant in good working condition. Thus the reduction in Town wide expenses for salaries and expenses associated with maintenance is anticipated to be minimal. >

It should be noted that Tables V and VI do not include transportation costs. These costs would be off set against 'confirmed savings'.

#### IV. Illustrative Use of the Financial Data

In this section sample calculations are presented in order to illustrate how the financial data may be used by interested parties to estimate, under various assumptions, the financial consequences of certain courses of action. The Committee notes that there are important gaps in information e.g. transportation costs, school disposition so that no single method can presently be used with precision. Furthermore it is possible to adopt a variety of viewpoints toward the data e.g. either including or excluding consideration of differential pupil-related costs per student in various schools. The Committee does not insist that any single viewpoint be adopted, but rather urges that in future deliberations one clearly identifies the viewpoint and assumptions taken toward the financial implications of closing schools. The report permits one to adopt various points of view and the Committee hopes the report will help structure subsequent debate in a more productive way.

The first example presented in an estimate of the 'confirmed savings'



that would be realized from adopting the school phase-out schedule recommended in the School Facilities Study. The estimates are in current dollars, do not include off-setting transportation costs, and, of course, do not reflect additional 'contingent savings' or expenditures associated with future building use.

School Facilities Plan - Confirmed Savings  
Current dollars - no transportation costs

<u>School</u>	<u>Year of Closing</u>				
	<u>76/77</u>	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>	<u>80/81</u>
HANCOCK	32,897	32,897	32,897	32,897	32,897
MUNROE		29,706	29,706	29,706	29,706
ADAMS			45,681	45,681	45,681
FRANKLIN					38,586
PARKER				34,935	34,935
MUZZEY					78,268
TOTAL	32,897	62,603	108,284	143,219	260,073

The second example presented is an estimate of the 'confirmed savings' that would be realized from adopting the school phase-out schedule recommended by the committee to Study the Reassignment of Pupils. Again the estimate is given in current dollars and does not include off-setting transportation costs.

Reassignment Committee Plan - Confirmed Savings

Current dollars - no transportation costs.

<u>School</u>	<u>Year of Closing</u>		
	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>
HANCOCK	32,897	32,897	32,897
PARKER		34,935	34,935
ADAMS			45,681
MUNROE			29,706
MUZZEY			78,268
<u>TOTAL</u>	<u>\$32,879</u>	<u>\$67,832</u>	<u>\$221,487</u>

The third illustrative example considers the consequences of closing a particular school and reassigning pupils to other schools. The particular case examined is the closing of Hancock school in the 77/78 school year proposed by the Committee to Study the Reassignment of Pupils. Approximately 50 students (from sub district 1) would be reassigned to Fiske and approximately 100 students would be reassigned to Hastings. The maximum off-setting pupil related costs from this shift may be determined from the data in Table III.

$$\begin{array}{r}
 \text{FISKE [ \$908 - \$987 ] } \times 50 = - \$3950 \\
 \text{HASTINGS [ \$1034 - \$987 ] } \times 100 = + \$4700 \\
 \hline
 + 750
 \end{array}$$

In this case the net pupil-related offset is a relatively small amount. In the case of other school closings the offset may be a good deal larger;

for example in the case of Munroe a sample reassignment resulted in an offset of approximately \$7500.

If one further assumes that 1.5 additional buses will be required for transportation at a cost to the town of \$4500/bus (this figure assumes full 70% reimbursement), there will be an additional offset against savings of \$6750.

Thus under these assumptions the potential savings associated with closing Hancock and assigning the students as specified might be \$25,397 or less.

Confirmed Savings	\$32,897
differential pupil related expenditures	- 750
transportation costs	- 6,750
	<hr/>
	\$25,397

If one adds to this amount the total of 'contingent savings' for Hancock under the assumption that the disposition of the building took place in a manner that made these costs recoverable, the total reaches \$50,181.

This example of closing Hancock indicates the importance of considering both transportation costs and the impact of differential pupil related expenditures. In this case the differential acted to reduce savings in a minor way. In other example e.g. Munroe (Muzzey) the differential will act to decrease (increase) savings in a major way.

The final example demonstrates the range of financial impact that

results from various assumptions about the costs discussed in the body of the report. This example also illustrates a procedure for calculating the range financial impacts for other cases of interest. The example, presented in the following table, assumes that Munroe is closed with reassignment of pupils to Bowman, Fiske, and Franklin. A range of net savings are exhibited according to the assumptions made concerning (a) disposition of the building i.e. contingent savings, (b) transportation costs, and (c) offset in pupil-related costs. These costs provide bounds on the savings to be realized from closing schools.

Estimated Low and High Limits on Cost Savings  
From Closing Munroe School - 1974 Dollars

	<u>Disposition of Bldg.</u> <u>Options (1,2,3) p.10</u>		<u>Disposition of Bldg.</u> <u>Options (4,5) p.10</u>	
	<u>Transportation Costs</u> <sup>1)</sup>		<u>Transportation Costs</u>	
	<u>Low</u>	<u>High</u>	<u>Low</u>	<u>High</u>
<u>No pupil-related offset</u>				
Confirmed savings	\$29,706	\$29,706	\$29,706	\$29,706
Transportation costs	- 6,750	-22,500	- 6,750	-22,500
Contingent Savings	0	0	24,233	24,233
<u>TOTAL</u>	<u>22,956</u>	<u>7,206</u>	<u>47,189</u>	<u>31,439</u>
<u>Full pupil-related offset</u>				
Confirmed savings	29,706	29,706	29,706	29,706
Transportation costs	- 6,750	-22,500	- 6,750	-22,500
Pupil-related offset <sup>2)</sup>	- 7,470	- 7,470	- 7,470	- 7,470
Contingent savings	0	0	24,233	24,233
<u>TOTAL</u>	<u>\$ 15,486</u>	<u>\$ -264</u>	<u>\$ 34,719</u>	<u>\$ 23,969</u>

1) Assumes use of 1.5 buses. Low estimate assumes full reimbursement. High estimate assumes no state reimbursement.

2) Pupil related offset assumes 50 students reassigned to Bowman, 80 students to Fiske and 50 students to Franklin.