Long Range School Facilities Master Plan Williamsburg, MA

**New England School
Development Council
20 Lord Road
Marlborough, MA 01752**

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LONG RANGE SCHOOL FACILITIES MASTER PLAN

WILLIAMSBURG, MASSACHUSETTS

FEBRUARY 1999

PROJECT TEAM

- Richard R. Dussault, Ed.D., NESDEC Associate

- Bernard J. Ellis, Ed.D., NESDEC Associate

- John R. Sullivan, Jr., Ed.D., NESDEC Executive Director

- William G. Zimmerman, Jr., Ed.D., NESDEC Senior Associate and Team Leader

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INTRODUCTION

In December 1998, NESDEC entered into an agreement with the Williamsburg School Committee to develop a Long-range School Facilities Master Plan for the Williamsburg School District.

The scope of the work included an analysis of the present and projected future needs in relation to school facilities in Williamsburg. The NESDEC Project Team visited and observed all of the schools while in session, conferred with a number of school and Town officials, conferred with real estate and development people, and collected and analyzed a substantial amount of school and municipal data.

This report contains:

1. Demographic Analysis and Enrollment Forecasts
2. Analyses of School Facilities and Planned Operating Capacities
3. A Statement of the Problem
4. Alternative Solutions with Cost Estimates
5. Suggested Criteria for Evaluating the Options
6. Special Considerations
    A) Full-Day Kindergarten/Early Childhood Education
    B) Site Selection
    C) Technology Needs
    D) Closing a School Building
7. Summary

In brief, the NESDEC Project Team identified the following major problem areas based on current and projected program needs and enrollments and the Planned Operating Capacities of the buildings:

There is a significant deficit of pupil stations when building capacities are adjusted to provide the necessary and sufficient space for conducting an up-to-date instructional program. The James building is functionally obsolete and the Dunphy building needs a major upgrade and an addition. Both school buildings are on undersized, sub-standard sites. Over the next ten-year period, enrollments are projected to decline. It should be noted that NESDEC's enrollment

projections, while based on present-day known conditions and assumptions, could change should these conditions and assumptions change. For example, should there be a significant upturn in new housing developments, or live births to Williamsburg residents, this would likely result in increased enrollments. The NESDEC enrollment projections should be updated annually to pick up any changes in the underlying assumptions. There is, in our judgment, little likelihood that the current projections will vary a great deal but if there is any variation, enrollments are more likely to increase slightly over these projections

Both the core facilities and the instructional facilities in the schools are in need of substantial re-design and upgrading. This is not a matter of maintenance. Rather it is a matter of building systems and components wearing out in school buildings of the age of these two buildings as well as functional obsolescence. In the 50-85 years since these buildings were originally designed and built, there have been a number of significant changes in programs, functions and instructional strategies with little or no adaptation or re-design at the facilities. Thus, there is a long-overdue need to re-design a number of the interior spaces and to provide more adequate site facilities to provide better alignment with modern-day programs.

The NESDEC Team has advanced three options for resolving these problems. Two of the options would require the securing of additional school land and we have included "Site Selection Criteria" in Chapter VI to assist the Town in that regard. One option will require renovation and some re-design of the Dunphy School. Each option assumes the discontinuation of the James School building. All options assume major construction of new school facilities.

Within each option, the NESDEC Team has included a description of the options, preliminary cost estimates, as well as some advantages and disadvantages...all designed to serve as a catalyst for further analysis and discussion by the Administration and School Committee as well as by other Town officials and the citizens of Williamsburg. Thus, this document should be considered not as an end product but, rather, as a beginning point for discussion, planning, and ultimate decision-making by school administrators, officials, and citizens of Williamsburg.

I. DEMOGRAPHY

1. DEMOGRAPHY AND ENROLLMENT PROJECTIONS

A.   TOWN-RELATED FACTORS

The preparation of enrollment forecasts is an integral part of the planning process for future school facility needs. Some of the factors to be considered in this effort pertain to the Town of Williamsburg, specifically; its population size, housing unit growth, age composition, and number of live births to residents.

Population Size

As Table 1A indicates, Williamsburg's population decreased by 4.5% between 1970 and 1980 and increased by 12.4% between 1980 and 1990. It is interesting to note that during that same time period, the population in the State of Massachusetts as a whole grew by only 8% and 4.9% respectively. The Massachusetts Institute for Social and Economic Research (MISER) projects Williamsburg's 2000 population at 2,593 and the population in the year 2010 to be 2,629. The Town Clerk estimates the population in 1997 was 2,601. Based on the population estimate of the Town Clerk for 1997, the MISER estimates for 2000 and 2010 maybe lower than the actual population will be during those years.

Table 1B indicates that the number of residents under the age of eighteen decreased from 829 in 1970 to 524 in 1990. Although the general population increased, the under eighteen population in 1990 decreased both in numbers and as a percentage of the population. The median age (Table 1B) increased over this same period from a low of 30.0 in 1970 to a high of 35.8 in 1990.

Table 1C shows that the K-6 enrollment remained stable over the sixteen-year period (1980-1996) in numbers but decreased as a percentage of the total population. School enrollment in 1980 was 194 and the enrollment increased to 203 in 1990. Since 1990, public school enrollment has remained stable in numbers but has decreased as a percentage of the total population.

Housing Growth

Table 2A shows the growth pattern in terms of numbers of dwelling units Williamsburg. The numbers include all single family dwelling units, duplexes, apartments, and condominiums. While the population of the town increased by 9% between 1970 and 1990, the number of dwelling units increased by 30% over the twenty -year period, 1970-1990. Since 1990 the number of dwelling units have only increased by 3%. The persons per dwelling unit (Table 2B) declined over the twenty-year period, 1970-1990 from a high of 3.2 to a low of 2.6. The number of students per dwelling unit (Table 2C) remained stable during the seventeen-year period, 1980-1997. There were .23 students in grades K-6 in 1980 and .20 students in grades K-6 in 1997.

School records show school population between 1988 and 1997 has increased moderately with 751 students enrolled in 1988 and 851 students enrolled in 1997. School enrollment declined between 1997 and 1998 from 851 students to 807 students. The number of grade K-6 students per dwelling unit in 1997, .20, is about the same as in 1990, but slightly lower than in 1980.

Williamsburg experienced housing growth (Table 3A) in the middle to late eighti where more than ten new homes were being built each year. In 1986 there were eighteen new homes constructed and in 1987 there were twenty-five new homes. In the early nineties, housing growth declined to a range of 0-5 new homes per year. During the past three years housing growth increased to a range of 5-7 new homes per year.

The Town Planning Board and the Building Inspector estimate the number of single family dwelling units to be constructed annually over the next five-year period will be between 5-7 which is consistent with the past three year period. Most of the new construction of single-family dwellings will be on individual lots throughout the town. Town officials do not anticipate significant growth at this time but project the construction of additional single family homes when new home construction in Northhampton reaches its peak and people look for another area to build.

A single additional dwelling unit may impact on school population at three different points in time:

1. School age children may move into the new unit which has immediate impact and/or;

2. Preschoolers may move in whereby the impact is felt within 1-5 years, and/or;

3. Additional children may be born to the family moving in whereby the impact is not felt for several years.

This report will consider all three of these growth factors in the discussion that follows regarding births and public school enrollment history.

Age Composition

Table 4A shows Williamsburg's population in terms of various age groups, or cohorts, from 1970-1990. The age cohort 5-17, which is the equivalent of school-attending children, comprised 28% of the population in 1970, a significant factor in determining the lower median age of all residents in that year. By 1990, that cohort was at 17% of the population. By contrast, the number of people in the age group 18-64 increased over the 20 years, and went from 53% to 63% of the total population. The over 65 age cohort increased from 12% of the population in 1970 to 13% of the population in 1990. Table 4B provides the percentage increase of each cohort between 1980 and 1990. Although the population increased by 12%, the age 5-17 cohort increased by only 1%. The over age 65 cohort increased by 16%.

Births

Table 5A shows the impact on the number of births to Williamsburg residents. The number of births to residents remained stable between 1978 and 1991. Births during the five-year period 1978-1982 averaged 34 annually. The average decreased slightly to 33 during the 1983-1987 period and decreased to 30 during the 1988-1992 period. The decrease in the average during this five-year period is a result of a low birth rate of 19 in 1992. During the past five-year period, births have declined to an average of 27 annual births. The decline in births since 1992 will contribute to a gradual decline in school enrollment during the next ten years. Elementary enrollments have been impacted and will continue to be impacted as a result of the smaller birth rate to town residents. It is assumed that births will be in the 24-28 range over the next five-year period. Table 5B is a graphical illustration showing the births from 1978 to 1997.

B. HISTORICAL ENROLLMENT

Migration Impact

The relationship between live births and the corresponding kindergarten enrollments has fluctuated during the past ten years. Most years the kindergarten enrollment was lower than the birth cohort five years previous except in 1997 when the kindergarten enrollment was slightly higher than the birth cohort five years previous. During the past seven years the kindergarten enrollment has averaged about 16% lower than the birth cohort from five years previous. The enrollment between kindergarten and grade 1 has increased each year during the past seven years with enrollment in first grade increasing by approximately 10% each year. During the past two years, first grade enrollment has increased by 20% and 15% respectively.

New housing is not a significant factor affecting school enrollment in Williamsburg because the town has experienced limited new housing construction during the past five years. Enrollment in Williamsburg has increased moderately during the past ten years as illustrated in Table 6, which charts, in the data set labeled K=1992, the grade-by-grade historical enrollment of one cohort of Williamsburg students from 1992-93 to 1998-99 (from birth to grade 6). Table 6 shows that there was a significant decrease in enrollment between kindergarten and first grade and there were fluctuations in enrollment from first grade to grade 6 as a result of migration at various grade levels during the six-year period. These increases and decreases are the result of Williamsburg families enrolling their children in schools in other communities and parents in other communities enrolling their children in elementary schools in Williamsburg.

Table 6 also depicts, in the data set labeled K=1998, how the K-class in 1998-99 is projected to increase/decrease as the cohort moves through the grades to grade 6 in the year 2004. The movement is different than that of K=1992 except between birth and kindergarten. The enrollment in kindergarten will continue to be less than the births from five years previous and enrollments will increase gradually from grade 1 to grade 6 as these students move through the grades.

Historical Enrollment

The historical enrollment for Williamsburg Public Schools is shown in Table 7A and Table 7B. The grade-by-grade enrollment, as well as enrollment in various grade combinations is presented. One can observe that the total enrollment remained stable between 1988 and 1998.

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Enrollment in grades K-6 was 207 in 1988. Enrollment increased to 218 in 1991 and declined to 199 in 1996. Enrollment increased to 204 in 1997 and declined to 195 in 1998. The number of births ranged from 32-37 during the period from 1978-88. The number of births decreased to a range of 19-30 between 1989 and 1992. Enrollment at the elementary school increased and decreased consistent with the number of births in the cohort born five years previous. The total public school K-6 enrollment was 207 in 1988 and is 195 in 1998.

C.   PROJECTED ENROLLMENT

Methodology

The cohort survival technique is the most frequently used method of preparing school enrollment forecasts. NESDEC, indeed, uses that technique, but modifies it in order to move away from forecasts that are wholly computer or formula driven. Such modification permits the incorporation of important, current town-specific information into the generation of the enrollment forecasts. Basically, percentages are calculated from the historical enrollment data to determine a reliable percentage of increase or decrease in enrollment between any two grades. For example, if 100 students enrolled in grade 1 in 1997-98, increased to 104 students in grade 2 in 1998-99, the percentage of survival would have been 104%, or a ratio of 1.04. Such ratios are calculated between each pair of grades or years in school over several recent years.

The ratios used are the key factors in the reliability of the projections, given the validity of the data at the starting point. The strength of the ratios lies in the fact that each ratio encompasses collectively the variables that could possibly account for an increase or decrease in the size of a grade enrollment as it moves on to the next grade. Each ratio, then, represents the cumulative effect of the following factors:

1.   Migration, in or out, of the schools
2.   Retention in the same grade
3.   Changes in school program
4.   Dropouts, transfers, etc.
5.   Births and deaths
6.   Housing growth

Based upon a reasonable set of assumptions in regard to each of these factors, ratios most indicative of present/future trends are determined for each pair of grades or years. To project for

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the future, the ratios thus selected are applied to the present enrollment statistics for a predetermined number of years. In the case of Williamsburg, the assumptions are these:

1. That births to residents will be within the 24-28 range for the next five years.
2. That enrollment in kindergarten will be approximately 16% lower than the births 5 years before and that enrollment in grade 1 will be 10% higher than kindergarten enrollment.
3. That there will be net migration between −5% to +12% as a class moves from grades 2-6.
4. That housing growth will be similar to that of the last 3 years (5-7 new homes per year).

If any of these assumptions needs to be altered in the future, so, too, will the projections. It is important to note that NESDEC annually updates projections for affiliated school districts at no cost. This provides an opportunity for the District to plan adequately for any changes that might occur.

Reliability

While the reliability of the projections, in general, is based on the soundness of the assumptions, there are degrees of reliability over the grades and ten-year period. The enrollment projections by grade presented in Table 8A are divided by diagonal lines into three sections. The top and largest section represents the projections based on students who are already enrolled in the Williamsburg Public Schools. They have the highest reliability. The middle section has somewhat less reliability in that the projections are based on children who have been born, but are not yet in school. The bottom section contains the projections for students who are not yet born and, thus, they are based on projected births. This section has the least reliable projections.

Projections (1998-2008)

Table 8A displays the grade-by-grade projections and Table 8B displays the projections arranged in various grade combinations. In the grade combination chart, enrollment in each of the grade combinations is projected to decline during the next ten years.

Elementary enrollment (K-6) is projected to decline by 17 students over the next ten years. Table 8A indicates the present total enrollment to be 195 students and the enrollment in 2008-2009 to be 178 students, a decrease of 9%.

Table 9 displays, graphically, both the historical and projected enrollment for grades K-6. As shown on the table, the K-6 enrollment will decline gradually during the next ten years.

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WILLIAMSBURG POPULATION DATA

YEAR	POPULATION	NO. CHANGE	% CHANGE
1970	2,342		
1980	2,237	(105)	-4.5%
1990	2,515	278	12.4%
1997 est.	2,601 (MISER)	86	3.4%
2000 proj.	2,593 (MISER)	-8	0%
2010 proj.	2,629 (MISER)	36	1%

Source: U.S. Bureau of the Census/MISER

TABLE 1A

POPULATION UNDER 18 YEARS OF AGE

YEAR	NO. UNDER 18	% UNDER 18	MEDIAN AGE
1970	829	35.4%	30
1980	566	25.3%	31.5
1990	524	20.8%	35.8

Source: U.S. Bureau of the Census

TABLE 1B

POPULATION & K-12 STUDENT ENROLLMENT

YEAR	POPULATION	PUBLIC* K-6 ENROLLMENT	% K-6 ENR. IN POPULATION	% CHANGE
1970	2,342	n/a	n/a	
1980	2,237	194	8.7%	n/a
1990	2,515	203	8.1%	-6.9%
1996	2,601	199	7.7%	-5.2%

* Office of the Superintendent

TABLE 1C

GROWTH IN NUMBERS OF DWELLING UNITS

YEAR	NUMBER OF DWELLING UNITS	NUMBER INCREASE	PERCENT INCREASE
1970	737		
1980	842	105	14%
1990	973	131	16%
1997	1,000 (EST.)	27	3%

Source: U.S. Bureau of the Census/Assessor

TABLE 2A

PERSONS PER DWELLING UNIT

YEAR	NUMBER OF DWELLING UNITS	PERSONS PER DWELLING UNIT
1970	737	3.2
1980	842	2.7
1990	973	2.6

Source: U.S. Bureau of the Census

TABLE 2B

CHANGE IN NUMBER OF STUDENTS PER DWELLING UNITS

YEAR	NUMBER OF HOUSING UNITS	PUBLIC* K-6 ENROLLMENT	K-6 STUDENTS PER UNIT
1970	737	n/a	n/a
1980	842	194	0.23
1990	973	203	0.21
1997	1,000	199	0.20

Source: U.S. Bureau of the Census and Office of the Superintendent of Schools

TABLE 2C

BUILDING PERMITS ISSUED

YEARS	SINGLE FAMILY DWELLINGS
1983	9
1984	8
1985	15
1986	18
1987	25
1988	11
1989	10
1990	9
1991	5
1992	6
1993	6
1994	12
1995	5
1996	7
1997	5

TABLE 3A
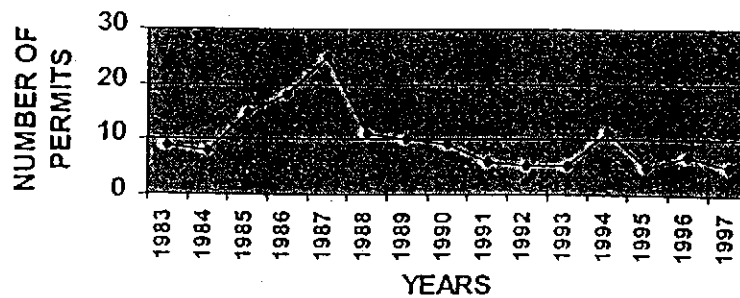
TABLE 3B

COMPARISON OF AGE COHORT SIZES

AGES	1970		1980		1990	
	NUMBER	PERCENT OF TOTAL	NUMBER	PERCENT OF TOTAL	NUMBER	PERCENT OF TOTAL
0-4	164	7%	141	6%	172	7%
5-17	665	28%	426	19%	431	17%
18-64	1,239	53%	1,395	62%	1,593	63%
65+	274	12%	275	12%	319	13%
TOTAL	2,342	100%	2,237	100%	2,515	100%
MEDIAN AGE	30		31.5		35.8	

TABLE 4A

PERCENTAGE CHANGE, 1980 TO 1990

TOTAL	=	12%
Under 5's	=	22%
5-17	=	1%
18-64		14%
65+	=	16%

TABLE 4B

LIVE BIRTHS TO RESIDENTS

YEAR	BIRTHS	AVERAGE
1978	3 2	
1979	3 3	
1980	3 5	3 4
1981	3 3	
1982	3 7	
1983	3 2	
1984	3 2	
1985	3 5	3 3
1986	3 5	
1987	3 2	
1988	3 4	
1989	3 0	
1990	3 1	3 0
1991	3 4	
1992	1 9	
1993	2 9	
1994	3 0	
1995	3 3	2 7
1996	1 8	
1997	2 7 est.	

Source: Massachusetts Dept. of Public Health/Town Clerk

TABLE 5A

TABLE 5B

COHORT ANALYSIS
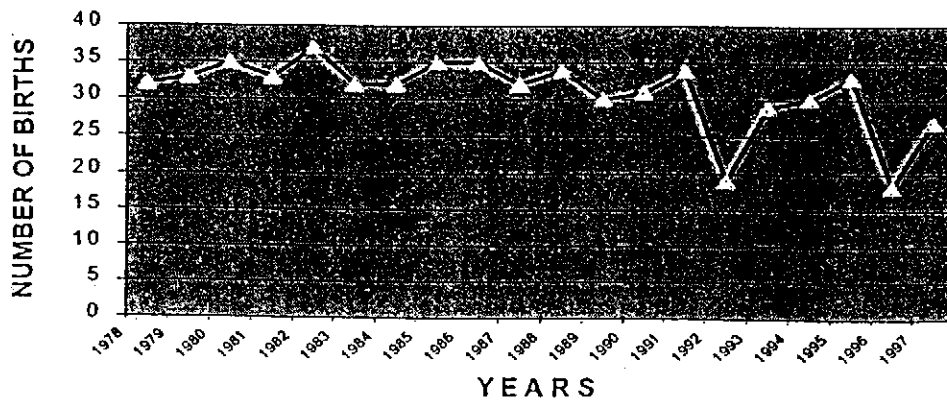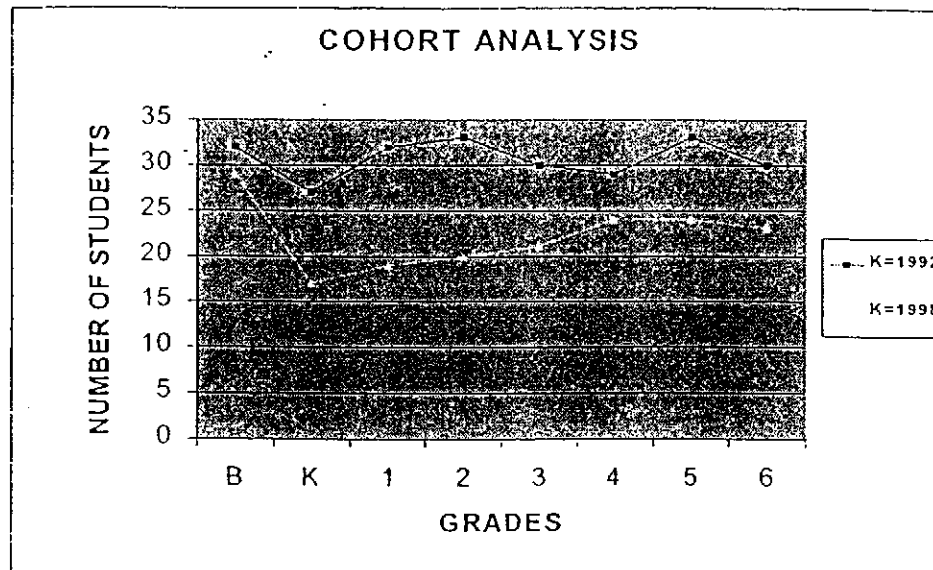
TABLE 6

WILLIAMSBURG HISTORICAL ENROLLMENTS BY GRADE

YEAR	BIRTHS	SCHOOL YEAR	K	1	2	3	4	5	6	TOTAL
1983	32	1988-89	22	31	36	34	17	28	39	207
1984	32	1989-90	34	24	26	35	39	18	28	204
1985	35	1990-91	29	33	30	23	36	33	19	203
1986	35	1991-92	34	30	33	27	22	40	32	218
1987	32	1992-93	27	35	28	29	26	22	36	203
1988	34	1993-94	28	32	36	27	32	25	22	202
1989	30	1994-95	25	30	33	31	31	30	27	207
1990	31	1995-96	24	26	27	30	35	32	25	199
1991	34	1996-97	30	24	28	28	29	31	29	199
1992	19	1997-98	20	36	25	29	31	33	30	204
1993	29	1998-99	17	23	38	25	33	29	30	195

TABLE 7A

HISTORICAL ENROLLMENTS IN GRADE COMBINATIONS

YEAR	K-2	K-3	K-4	K-5	4-6
1988-89	89	123	140	168	84
1989-90	84	119	158	176	85
1990-91	92	115	151	184	88
1991-92	97	124	146	186	94
1992-93	90	119	145	167	84
1993-94	96	123	155	180	79
1994-95	88	119	150	180	88
1995-96	77	107	142	174	92
1996-97	82	110	139	170	89
1997-98	81	110	141	174	94
1998-99	78	103	136	165	92

TABLE 7B

WILLIAMSBURG ENROLLMENT PROJECTIONS BY GRADE

YEAR	BIRTHS		SCHOOL YEAR	K	1	2	3	4	5	6	TOTAL
1993	29		1998-99	17	23	38	25	33	29	30	195
1994	30		1999-00	25	19	24	39	28	33	28	196
1995	33		2000-01	28	28	20	25	44	28	31	204
1996	18		2001-02	15	31	30	21	28	44	27	196
1997	27	est.	2002-03	23	17	33	31	24	28	42	198
1998	26	est.	2003-04	22	25	18	34	35	24	27	185
1999	24	est.	2004-05	20	24	27	18	38	35	23	185
2000	26	est.	2005-06	21	22	25	28	20	38	33	187
2001	25	est.	2006-07	21	23	23	26	31	20	36	180
2002	25	est.	2007-08	21	23	24	24	29	31	19	171
2003	25	est.	2008-09	21	23	24	25	27	29	29	178

TABLE 8A

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PROJECTED ENROLLMENTS IN GRADE COMBINATIONS

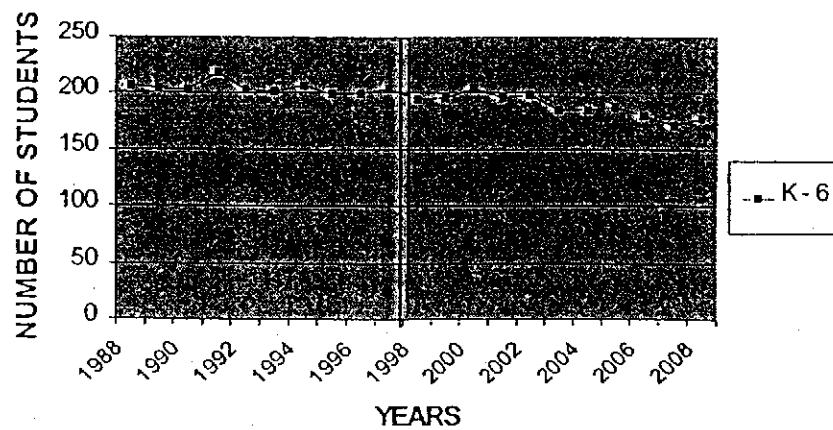| YEAR	K-2	K-3	K-4	K-5	4-6
1998-99	78	103	136	165	92
1999-00	68	107	135	168	89
2000-01	76	101	145	173	103
2001-02	76	97	125	169	99
2002-03	73	104	128	156	94
2003-04	65	99	134	158	86
2004-05	71	89	127	162	96
2005-06	68	96	116	154	91
2006-07	67	93	124	144	87
2007-08	68	92	121	152	79
2008-09	68	93	120	149	85

TABLE 8B

TABLE 9

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II. SCHOOL CAPACITIES

II. SCHOOL CAPACITIES

As part of the Long-Range School Facility Master Plan, the Current Operating Capacity (COC) and the Planned Operating Capacity (POC) were determined for each school. The Current Operating Capacity is based on current usage of the building including "portables" and each space for appropriate core and specialized areas. The Planned Operating Capacity is based on recommended class size policy, the elimination of "portable" classrooms and the inclusion of appropriate core and special use areas for art, music, instructional specialists, etc. A site survey and interviews with staff are part of the process used in the determination of school capacities.

A.   **Elementary Schools Capacity**

To determine the operating capacity of an elementary school, it is necessary to consider the following three factors:

1. <u>Physical Space</u>. -- The volume and extent of space available.

2. <u>Pupil/Teacher Ratios</u>. -- School practice on grouping students for instruction has a direct bearing on the classroom space that will be required. In Williamsburg, NESDEC used 18 pupils per kindergarten section, 18 pupils for grade 1-3 and 22 pupils for grades 4-6 in determining school capacities. NESDEC used these capacities in light of the size and configuration of many of the regular classrooms, current trends in teaching/learning styles, and the impact on usable space of both computers and the inclusion programs.

3. <u>School Programs</u>. -- The allocation of space for present and planned educational programs offered outside of the regular classroom setting must also be considered. In an elementary school, rooms used for such programs as special education, physical education, computer education, art and music instruction, developmental and remedial services are <u>not</u> counted in the capacity determination, since they serve as "pull-out" programs. That is, when a 4th grade class has, for example, physical education instruction, the students are "pulled-out" of their regular classroom, which then remains empty during this instructional period. Therefore, both the gym <u>and</u> the regular classroom should not be counted when determining capacity. Moreover, portable (temporary) classrooms are not counted when determining capacity and any use of such structures should be discontinued as soon as permanent school facilities can be provided.

Helen E. James School

This building provides a program for 111 students in kindergarten through grade three. The 85-year-old building is a multi-level wood framed structure with brick veneer. A stair tower and elevator have been added to provide handicapped accessibility. The overall condition of the building reflects its age and years of service to the school district. The school was originally built as a secondary school and does not have the amenities of an elementary building. If the school is to continue, thought should be given to a major renovation including lavatories, heating/ventilation, electrical, and interior painting.

The staff and administration have done an excellent job in utilizing space in this building. Every possible area has been used to augment the educational program. This building is inadequate to house the types of programs that are required to provide a comprehensive, modern educational experience. The classrooms are small and do not provide the space necessary for young children. There is not sufficient space in the building for the storage of classroom supplies and materials. The art/music classroom is located in the basement and there is neither the space nor equipment for sound art and music programs. These programs require large spaces for gross motor activities. The art program must not only have the proper media, but the space and facilities to work with the media. For example, primary students need large paper and large surfaces upon which to work. The music program, designed to meet the needs of primary students, must have a large open area. There is also the need to provide sufficient storage for such musical instruments as the "recorder", rhythm band instruments, and the like. There are times when a quiet space is needed to listen to and appreciate music.

The school does not provide the type of space needed for such auxiliary services as speech, occupational therapy, nurse's office, guidance or testing. There is a need for a library/ media center in the school. This facility should be available to the students and staff on a daily basis. There are times when a teacher needs a media center to augment her daily lesson plan. There is also a need for small group instruction areas. Research has shown that there are times in the school day when primary students need to work with a teacher in a one-on-one relationship. It is important that small quiet places be available to the teacher. In brief, this facility is totally inadequate to provide a state of the art environment for an up-to-date early childhood education program.

In arriving at a planned operating capacity for this building, it was determined that one

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classroom should be re-allocated for the media center/computer, one classroom for art/music expansion, and one classroom for auxiliary services. Classrooms were assigned eighteen students. With the modifications mentioned above, the planned operating capacity was determined to be seventy-two students, plus one pre-school classroom.

FACILITY PROFILE - ELEMENTARY SCHOOL

Name: Helen James School		Grades: PK-3	Reg. enr.: 111	Spec.Ed. enr.:
Age of School: 85	Age of Additions: 62		sq.ft.:	Acres: 2.7
Optimum number of pupils per K classroom: 18 Other grades: 1-3 @ 18		Number of interchangeable general classrooms: 6 plus pre-school classroom		

In addition, does the School have dedicated space for: (indicate number of rooms in the appropriate box)

	Full- size room	Conference -size room	Space shared with:	Comments (if desired)
Art	1		music	700 sq.ft. – undesirable
Computer				
Health				
Music	1		art	700 sq.ft – undesirable
Reading		2		in hallway
Science				
Auditorium				
Cafeteria	1			multi-purpose
Gym				
Library				
Special Needs Classrooms		1		
Resource Rooms				
Psychologist				
Social Worker				
Chap.1/Remedial Math				
Guidance/Testing		1		former storage area
Speech		1		very small area
Nurse's Office				
Administrative Offices				
Teacher's Room				
Teacher's Workroom				
Extended day	1			small area

Current Operating Capacity   126
1 K   =   18
6 @ 18 =   108
plus pre-school classroom

Planned Operating Capacity   72
plus pre-school classroom
reduce 1 classroom for art/music
reduce 1 classroom for auxiliary service
reduce 1 classroom for computer and media center

Ann T. Dunphy School

This forty-six year old building houses all the district's students in grades four through six. The design is typical of the 1950's school buildings with double-loaded corridors and limited core and lack of proper space for specialized services. The cafeteria is used as a multi-purpose area. The gymnasium is full size and provides an excellent setting for the physical education program. This area is also used for community activities.

The classrooms used for music and art are sub-standard in size and lack some amenities needed for these programs. The most noticeable is the lack of proper storage. The art area should provide storage for equipment and supplies as well as the storage of unfinished student projects. It is suggested that additional storage units be purchased for these areas. Also, provisions should be made to provide space for the ceramic kiln in the art area.

Computers are currently placed in the classrooms. It is recommended that a separate computer laboratory be provided for computer instruction. It is important that the teachers have an area for large group instruction in computer education and research. This laboratory is also important for teacher education. The district is to be complimented on the strides it has made with respect to technology currently available to the students.

The administration and staff are to be commended on the effective use of every possible space in the building. Former storage and supply closets are currently being used for auxiliary services. However, this creates shortages with respect to storage space. It is recommended that classrooms be reduced to provide adequate space for auxiliary services. This will allow the storage areas to be used for the storage of supplies and equipment.

The district has provided adequate maintenance for the school, but the overall condition of the building reflects its age and intensity of use. The building is in need of renovations/upgrades. These renovations should include painting, lighting, improved electrical service to the classroom and an intercom system. There is also a need to evaluate the heating and ventilation system of the building. There is major need to address the exterior traffic and parking situation.

In arriving at a planned operating capacity for this building, it was determined that one classroom should be reallocated as a library/media center, one classroom for art and music expansion, and one classroom for auxiliary services and a computer laboratory. With these modifications, the planned operating capacity was determined to be seventy students.

FACILITY PROFILE - ELEMENTARY SCHOOL

Name: Ann Dunphy School		Grades: 4-6	Reg. enr.: 106	Spec.Ed. enr.:
Age of School: 46	Age of Additions:		sq.ft.:	Acres: 7.48
Optimum number of pupils per class: 22		Number of interchangeable general classrooms: 6		

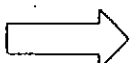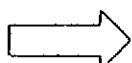In addition, does the School have dedicated space for: (indicate number of rooms in the appropriate box)

	Full-size room	Conference-size room	Space shared with:	Comments (if desired)
Art	1			small room 600 sq.ft.
Computer	1			small room 300 sq.ft.
Health				
Music	1			small room 600 sq.ft.
Reading		1		former storage room
Science				
Auditorium	1		cafeteria	multi-purpose
Cafeteria				
Gym	1			
Library				
Special Needs Classrooms		1		
Resource Rooms				
Psychologist				
Social Worker				
Chap.I/Remedial Math				
Guidance/Testing		1		adjustment counselor
Speech				
Nurse's Office		1		
Administrative Offices		1		
Teacher's Room		1		
Teacher's Workroom				

Current Operating Capacity   132
6 @ 22 =   132

Planned Operating Capacity   66
reduce 1 classroom for art/music
reduce 1 classroom for auxiliary service
reduce 1 classroom for library/media

III. STATEMENT OF THE PROBLEM

III. STATEMENT OF THE PROBLEM

School/Grade	Current Operating Capacity	Planned Operating Capacity	Enrollment		
			98/99	03/04	08/09
James Dunphy	126 ⟶ 258 132	72 ⟶ 138 66 (+ pre-k class)	195 (+ Prek)	185 (+ Prek)	178 (+ Prek)

1. Major problem with "travelling" between buildings; disrupts flow of school day and absorbs major instructional time.

2. Lack of core instructional/media center militates against proper programmatic integration of instructional resources with curricular needs.

3. Both facilities should have computer lab in addition to computers in the classrooms.

4. Art and music in sub-standard spaces, both buildings.

5. Inadequate space for auxiliary services in both buildings (Special Therapy; OT/P$_1$, Psychologist-testing; Reading Recovery; Conference Room; Teacher Workroom).

6. Problems with program/curriculum coordination and articulation due to two separated buildings.

7. Major site problems with sub-standard site – vehicular traffic; parking; playground spaces; pedestrian and bicycle traffic.

8. Lack of book storage and general school-supply storage.

9. Major need for renovation/upgrades of all buildings (redesign of spaces and building sub-systems upgrades.

10. Need ADA compliance and code/life-safety upgrades.

11. Need space for after-school programming, possible expansion of pre-k program or full-day kindergarten.

IV. ALTERNATIVE SOLUTIONS

Option I
• **Build New State-of-the-Art Elementary School on New Site.** • **Convert Existing Buildings to Other Town Uses**

A.   Grade Configuration: PK-6

B.   Facilities:

Facility	Planned Operating Capacity	Enrollments		
		1998/99	¾	08/09
New Elementary School	250	195 (+ Pre K)	185 (+ Pre K)	178 (+ Pre K)

* 1998/99 additional 23 choice students are enrolled.

C.   **Estimated Costs:**

• **New School for 250 pupils (inc. Full-day Kindergarten and Pre-K)**

Est.   35,400 sq.ft.   X $ 156/sq.ft. = $ 5.5 mil.

Notes: 1. Need 15 acre site (<u>not</u> state reimbursed)
2. State reimbursement on school project costs is 69%. Thus, Williamsburg pays 31% ($1.7 mil.) over 20-year bond issue or app. $85,000 per year.

$$250 \times 155 = 38,750$$

$$38,750 + 6,000 \ comm = 44,750 \times 161 = 7,204,75$$

61.53% BASE

D.   Comments:

This is a bold move that would establish a new, technologically advanced, state-of-the-art elementary school for the Town...one that, in all likelihood, will resolve the Town's elementary school needs for the next 30-50 years. This assumes the acquisition of an over-sized site that could accommodate a sizeable future addition or a second elementary building should future growth/enrollments so warrant.

A new school on a new site would solve all the program-facility-site problems simultaneously...and for many years to come. It would eliminate the continuing attempts to "patch up" or make minimal upgrades to functionally obsolete (James) or inadequate buildings (Dunphy) while providing modern educational facilities for the pupils and staff, increase the efficiency of the school day and "time-on-task" for both pupils and staff, eliminate walking – vehicular traffic – parking problems/hazards and minimize maintenance costs (during the first 10 or so years of operation).

Vacating the existing buildings might prove helpful in providing housing for other community resources that might add to the overall quality of life in the community. For example, while functional obsolescence as a present-day school building militates against its continued use as an active school, the building may be used as a municipal office building, a community recreation building, a senior citizen center, converted to low-moderate income elderly housing, or other similar uses. Any of these uses would retain the concept of the "village center". Alternatively, the building/land could be sold to private interests to partially offset the cost of new school site acquisition/new construction.

Educational needs and conditions change over time. At some point in time, functionally obsolete school buildings need to be "retired" and new, modern-day facilities need to be provided for the pupils and staff. A serious consideration needs to be given to this option at this juncture in time...before additional resources are expended in the existing buildings.

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E. Advantages

- Provides a state-of-the-art, technologically advanced elementary school.
- Solves site problems and provides proper playground, parking and traffic patterns.
- Enhances current educational program and provides opportunities for further development.
- Improves coordination/articulation of the curriculum.
- Allows room for future growth.
- Consolidates all grade levels and all programs and services under one roof and maximizes instructional time while minimizing disruptions.
- Can construct new school without disruption to on-going program.
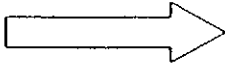- Provides spaces for Town use and community use in current buildings.

F. Disadvantages

- Cost

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┌─────────────────────────────────────────────┐
│                  Option II                   │
│  • Discontinue James as a School Building    │
│  • Addition/Renovation to Dunphy             │
└─────────────────────────────────────────────┘
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A.   Grade Configuration: PK-6

B.   Facilities:

Facility	Planned Operating Capacity	Enrollments		
		1998/99	03/04	08/09
Dunphy School (PK-6)	66 ⟹ 196	195	185	178
Addition to Dunphy Sch. (PK-6)	130			

C.   Cost:

• **Renovate/Upgrade Dunphy**

    =   20,700 sq.ft.   X $ 80/sq.ft. = $ 1.7 mil.

• **Addition to Dunphy**
  130 pupils X 115 sq.ft.   =   14,950 sq.ft.   X $156/sq.ft. = $ 2.3 mil.

    Total Estimated Costs Option II   = $ 4.0 mil.

Note: State site standards require minimum of <u>13 acres</u> (7.5 acres existing site).   If approved, state reimbursement at 69% and cost to Williamsburg of $1.4 over 20 years.   Also, Town will need to determine that there are no wetland/river protection impediments to constructing an addition on this site.

D.   Comments

If construction of a new elementary school is not deemed feasible, this option would improve substantially the educational program by providing for a major renovation/upgrade of the existing Dunphy School and an addition to include:

- 9 classrooms (at 900-1,000 sq.ft. each)
- Computer Lab
- Media Center
- Art Room
- Special Education Suite
- Guidance/Psych. Services room
- Staff room and work room

We hasten to point out that a major impediment to this option is the sub-standard site size. Indeed, the state might not approve the project because of the sub-standard site size. In this instance, the James School might have to be razed and that entire site incorporated as a part of the Dunphy School site. But, even this would result in a separated site of only 10.2 acres...and the minimum state standards call for at least 12-13 acres. In any event, if this option were to be favored, early communication with the Department of Education's School Building Assistance program would be advised prior to making a decision. Another potential site problem could be the existence of a wetland-river area on the site and this matter would need to be clarified prior to adoption of this option.

E.   Advantages

- Provides state-of-the-art, technologically advanced elementary school.

- Enhances current educational program and provides opportunities for further development. Improves coordination/articulation of the curriculum, PK-6.

- Consolidates all grade levels and all programs and services under one roof and maximizes instructional time while minimizing disruptions.

- Provides spaces for Town uses or community uses in the James building or, the James building might be razed to create a larger overall site for the school.

- Upgrades an existing building and maintains its presence in the village center.

- Lower cost option.

F.   Disadvantages

- Continues use of an inadequate and cramped site.

- Exacerbates and adds to the congestion on this site.

- Minimizes future flexibility...no expansion room.

- Disruption to students/staff during construction period.

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┌─────────────────────────────────────────────┐
│                 Hypothetical                 │
│                  Option III                  │
│  •  Establish a Grade 5-8 Regional Middle School │
│  •  Close the James Building                 │
│  •  Operate Dunphy School for grades PK-4    │
│  •  Renovate/Upgrade Dunphy                  │
│  •  Smaller-Addition to Dunphy               │
└─────────────────────────────────────────────┘
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A.　　Grade Configuration: PK-4 (in Williamsburg); 5-8 (Regional Middle School)

B.　　Facilities:

Facility	Planned Operating Capacity	Enrollments		
		1998/99	03/04	08/09
Dunphy School (PK-4)	135	136	134	120
New Middle School	?*	?	?	?

* capacity/enrollment data would depend on other communities involved

C.　　Cost:

• **Renovate/Upgrade Dunphy as a PK-4 Facility**

　　　　　　　　　20,700 sq.ft.　X　　　$ 80/sq.ft. =　$ 1.7 mil.

• **New Regional Middle School (5-8)**
  Note: Costs would depend on the number of pupils involved. For example, if the school were constructed for 500 pupils in grades 5-8:
  500 pupils X　　　135 sq.ft.　　=　　　67,500 sq.ft.　X　　　$166/sq.ft. =　$11.2 mil.
  (less state reimbursement and then allocate costs among Towns involved)

For example, if Williamsburg's "share" of this hypothetical school were 1/3　　= $ 3.7 mil.

Totals:　　　Renovate/upgrade Dunphy　　　= $ 1.7 mil.
　　　　　　　Share of Regional Middle School　= $ 3.7 mil.
　　　　　　　　　　　　　　　　Total　　= $ 5.4 mil.

(less state aid and the balance spread out over 20 year bond debt service)

D.   Comments

This should be considered a hypothetical option at this point in time insomuch as developing the option further would depend on the current and projected status of the regional secondary school; a desire to separate the 7th and 8th grades from the current facility and establish a four-year high school; a desire to establish a middle school for grades 5-8; the condition of and willingness of the other communities in the Region to participate, etc.

If this did prove to be a viable option, it would negate the need for an addition on Dunphy, place far less pressure on the Dunphy Site, and enable the Town to utilize the James building for other purposes.

E.   Advantages

- Major improvement in educational programming for the "middle grades"...grades 5-6-7-8.
- Establishment of a four-year high school.
- Retains a primary school in Williamsburg without having to secure a new site.
- Allows the Town to "retire" the James School or use it for other purposes.
- May prove to be an opportune long-range plan for the entire PK-12 programs of all the communities in the Regional School District area.

F.   Disadvantages

- Will necessitate a regional study.
- Will take more time to develop plans and secure the necessary approvals in all of the communities.
- Some people in some of the communities may resist additional regionalization and regional development of the schools.

Summary of the Options

Option	Description	Preliminary Estimated Costs
I	New PK-6 Elementary School on New Site	$5.5 million
II	Addition/Renovation to PK-6 Dunphy	$4.0 million
III	Hypothetical New Regional 5-8 Middle plus Dunphy upgrade for PK-4	$5.4 million

Note #1: State reimbursement entitlement = 69% (Williamsburg pays 31%. Thus, Williamsburg's share of Option I is $5.5 mil. X 31% or $1.7 mil. Over a 20-year bond issue, this averages to approximately $85,000 per year).

Note #2: Site acquisition costs will need to be added to the cost estimates and is not state-reimbursable.

Note #3: Preliminary cost estimates are for planning purposes and comparison purposes among the four options. They do not include potential adjustments to square footage allowances that Williamsburg may request and the State Department of Education subsequently allow. Also, these cost estimates are 1998/99 state-approved data and are not adjusted for inflation for any construction that might take place several years hence, nor are they adjusted for regional differences in the construction trades. A reasonable inflation adjustment factor might be 3-4% per year, for planning purposes. Also, construction costs might prove to be lower in this area than in other parts of the state.

V.   CRITERIA FOR EVALUATION OF THE OPTIONS

CRITERIA FOR EVALUATION OF OPTIONS

To assist the District in making decisions as to the best way for Williamsburg to proceed in developing a Master Plan for school facilities, the NESDEC Project Team suggests the application of the following criteria to the options presented (or to any other options which the administration and School Committee might want to consider):

Evaluation Criteria for Long-Range Planning Options

1.   *Solves the Problem As Defined*

How well does the option solve the problems as defined? Does it solve the problems for the long-term, or is it merely a quick-fix or "band aid" approach?

2.   *Provides Long-Term Flexibility*

Does the option provide long-term flexibility? Enrollment projections are just that -- projections; they are not guarantees. Whatever the School Committee chooses to do, it should take into account the possibility of a 10% swing either way in terms of enrollment at all levels. In other words, the School Committee should be prepared to respond to the questions: "How will the space be used if 10% fewer students materialize?," and "How will the space be provided if 10% more students materialize?"

3.   *Provides for Program Improvement*

Does the option improve program (or is it at least program-neutral)? It is not acceptable to provide additional program spaces for one group of students at the expense of the program of another. Does it assure equity for all students with respect to program and curriculum consistency? What is the "disruption factor" in the options?

4.   *Is Financially Responsible*

Is the option financially responsible? Does it provide the "most for the least?" The best approach need not be either the most expensive or the least expensive option. The key word is "responsible." While a less expensive option may have immediate appeal, it may end up costing the district more money over the long term.

5. *Is Consistent with School Committee Policy/Guidelines*

The option should support and enhance the community's educational programs as defined by School Committee guidelines and policy. For example, if the option were to call for raising basic class sizes to 45 pupils, it would create a major change and disruption in educational programming and School Committee policy/guidelines.

VI. SPECIAL CONSIDERATIONS
   a. Full-Day Kindergarten/Early Childhood Education
   b. Site Selection
   c. Technology Needs
   d. Closing a School Building
   e. Selected Mass. Elementary School Program Standards

A.   Full-Day Kindergarten and Early Childhood Education

In advising and assisting Williamsburg in planning its educational facilities for the next decade and beyond, NESDEC would be remiss should it fail to point out the need to plan and build with the current and emerging developments in Early Childhood Education firmly in mind.

It has been well documented in a series of in-depth research studies that early identification and early intervention with respect to cognitive, developmental, physical and emotional problems in very young children, birth to six or seven years of age, works wonders in remedying or significantly reducing the severity of most identified problems and provides substantial long-term positive impact on the overall development of children.

More recently, a number of studies have demonstrated conclusively that even children without problems benefit substantially from sound early childhood, developmentally-based educational programs.

In short, formal school-based early childhood programs enhance the development of all children, and significantly reduce the incidences of cognitive/developmental psycho-emotional difficulties through the pre-adolescent and adolescent years. Obviously, there is an economic advantage to the school district, as well, in terms of cost-avoidance and the distress that problems of this nature create. For example, the most recent evaluation of the highly regarded Perry Preschool Study (which documents the participants lives at age 27 compared with a control group that did not attend preschool) shows that for every dollar invested in high quality pre-school programs, seven dollars are saved in later remedial education services, criminal justice spending, and welfare costs (Schweinhart et al, 1993). The long-term economic savings of providing early childhood programs is certainly a convincing argument for investing in accessible, comprehensive early care and education for all families.

The administration and School Committee might wish to review two relatively recent policy publications in this area, one national in scope and the other a Massachusetts-based report.

The National Committee for Economic Development, a group of 250 distinguished leaders in business, industry, and education concerned with the continued and long-term development of the nation's economy, published a book in late 1991 entitled: *"The Unfinished Agenda: A New Vision for Child Development and Education"*, the Committee for Economic Development, 477 Madison Avenue, New York, New York, 10022. More recently, in December

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of 1995, the Special Massachusetts Commission on Early Childhood, chaired by Senator David Magnani and Marie Galvin, published: *"Children First: A Plan for an Early Care and Education System for Massachusetts."* This policy statement strongly recommends the establishment of full-day kindergarten and the development of additional early childhood, pre-kindergarten programs. Legislation will be formulated around the findings and conclusions of this report.

This past legislative session saw at least one major bill introduced into the Massachusetts Legislature to mandate full-day kindergarten programs. Although unsuccessful, this type of legislation will be reintroduced and it seems quite clear that full-day kindergarten will be required as a matter of law in the not too distant future.

A number of school districts are not waiting for a legislative mandate, however. Scores of school systems have already initiated full-day kindergarten or are in the process of doing so.

In light of this body of research and the current developments in the field, it seems prudent for Williamsburg to seriously consider in its long-range educational planning, provisions for full-day kindergarten and expansion of school-based pre-kindergarten educational programs. Those matters have substantial space implications and should be included in long-range facility planning.

B. SITE SELECTION

If Option I or III is selected, the Town will, in all likelihood, need to secure a new site. Therefore, the NESDEC Project Team urges the Town to appoint a special School Site Selection Committee with a view toward purchasing an additional school site (or sites) as soon as is feasible.

GENERAL SITE SELECTION CRITERIA

Adopted from Standards and Site Standards developed by
The Council of Educational Facility Planners, International (CEFPI)

I. Size -- The site should be of sufficient size to accommodate the ultimate (maximum) building capacity and any special features or requirements. Minimum standards:

Mass. School Bldg. Assistance Bureau		CEFPI
Elementary	10 Acres + 1 A for each 100 pupils	10 Acres + 1 A/100
Middle	15 Acres + 1 A for each 100 pupils	20 Acres + 1 A/100
High School	20 Acres + 1 A for each 100 pupils	30 Acres + 1 A/100

(**Note:** Conservation and environmental approvals must be obtained and filed with the appropriate state agencies as part of the application process.)

II. **Location/Shape**
   - Easily accessible/located for present and future population.
   - Walking distance: 1 mile elementary; 2 miles secondary.
   - Bus riding time: 30 minutes elementary; 60 minutes secondary.
   - Removed from undesirable business/industry/heavy traffic . . . safe/healthful; no toxic waste/pollution.
   - Check zoning to avoid future commercial/industrial development near the school.
   - Elementary schools located off main roadways; secondary, especially high schools, located near main roadways.
   - Site should be square or round, but not a long oblong one or a chopped-up and divided site.

III. **Topography**
   - Elevation and contours to insure good drainage.
   - Avoid rock outcroppings and ledge.
   - Avoid extensive wetlands and sub-surface water conditions.
   - Is site landscaped or is it capable of supporting a wide variety of tree/plant life?
   - Will the site support a sizeable septic system if not serviced by municipal sewers?

IV. Instructional Needs
- Sufficient space for outdoor physical education classes.
- Sufficient space for informal play fields (before/after school and recess).
- Some (at least minimal) outdoor science teaching stations and/or nature trails.
- Sufficient area for one or more formally equipped playground area(s) for elementary schools.

V. Utilities
- Located on-site or on the roadway leading to the site.
- Estimate costs of bringing utilities on-site if the site does not presently have them (be especially aware of the need and costs for blasting through existing ledge to bring utilities onto a site, or extensive distances from the nearest utilities to the site).
- Identify location of existing storm/sanitary sewers on or contiguous to the site.

VI. Road/Sidewalks/Parking
- Site should be able to accommodate reasonable separation of networks for vehicles and pedestrians.
- Service vehicles and buses should be separated from parent drop-off/pick-up roads and areas. Staff parking should be separated from all other vehicular traffic and located near staff entrance.
- Pedestrian and bicycle walkways/bikeways should be separate from and avoid hazardous crossings of any vehicular traffic.
- There should be one parking space for each anticipated staff member; approximately 40 - 50% of 11th and 12th grade pupils will probably drive cars; additional space for parent/public parking as determined necessary for elementary, middle, high school.
- Each parking space should be approximately 300 sq. ft.; 2% should be for handicapped parking with curb cuts/ramps for handicapped access.
- Playgrounds/athletic fields separated from roads for safety reasons.

VII. Acquisition and Costs
- Site is owned by the community and can be transferred to the school/system.
- Site can be purchased at or below market value cost.
- Site can be purchased with the cooperation of owner and abutters, without eminent domain proceedings.

C. Technology Needs

Williamsburg has made initial efforts to integrate technology into the school programs. NESDEC recommends that the school view the computer and technology primarily as instructional instruments or tools whose proper place is in the classroom with pupils and staff, but with a somewhat more limited use in labs. As new schools are designed and existing buildings are renovated, detailed attention should be given to the planning for the technological systems.

Staffing the Technology Program

Perhaps the most essential element for an effective technology program in the school setting is a sufficient technological support staff. The school system should have an effective technology director (or supervisor) who understands the instructional and research applications and how they interface with the curriculum and the administrative needs of the system. Preferably, this person would have both teaching background and extensive preparation/experience with all facets of technology and be able to provide sound leadership and management of the program. In addition, the school system should have one or more technical assistants (who need not be certified teachers) who function as technicians and technical support staff to provide in-service education to the staff, individual assistance to teachers/administrators and who would be available, daily, "on call", in the schools to assist with network, programming and all individual p.c. issues/problems. In Williamsburg, this might best be handled on a regional basis.

An ongoing Technology Committee, representative of each user area, should meet regularly to identify needs and research, evaluate and recommend effective networking technologies, software, equipment and staff training to the administration. No business or industrial application of technology would attempt to operate without a proper technical support staff; the schools, with complex curriculum and teacher-learner issues, should be very well staffed in this area. Simply installing equipment and software will not result in a viable program; a well-staffed technical support staff to manage the technology, conduct staff training, and provide technical assistance at the operational level daily will deliver an effective program.

Support for Instruction/Learning

Now, and even more so in the future, the teaching/learning process will involve the acquisition of information utilizing a variety of technologies, using this information in problem-solving activities, and with judgments continually made on this information. Students will do less "reading and reflecting" and more "researching and connecting." The data from their research will be utilized to analyze and synthesize issues and they will use technology to create models, spreadsheets, and other data-analysis instruments. When finished, they will be expected to present their conclusions in multi-media presentations that will require skills in reading, speaking, visual and audio commands, graphic presentations, and the like.

Voice/Telephone/Communications Network and Classroom Applications

The school should be technologically advanced, with one or more instructional computer labs in each building, a computer center (3-5 computers) in each classroom, plus a computer for the teacher, cable T.V., and multi-media capability in each classroom with the system networked within the school and externally to the school system, as well as to a statewide network and satellite conversion. The importance of the teacher's computer station should be self-evident in helping teachers "work smarter," maintain records and analysis of pupil work, prepare for lessons and classes, and communicate with one another and on the network.

There is a need to install a comprehensive technological system in each classroom . . . computer network, television, satellite, laser disc, and CD ROM technologies. The library should be fully automated with respect to its collection and with major on-line computer capabilities for significant staff and student curriculum research. The importance of networking, both within the school and system-wide throughout the school district cannot be over-emphasized. The school's network should also be connected to the Internet, with capability for accessing all the major databases, especially the more research/academic databases. This is not a future-based concept. It is the present, and it is here now.

Following are some principles or general guidelines for the planning and implementation of the technology system:

1. The entire school should be networked internally, connected to the other schools and to the Internet, with capability for accessing all of the major databases, especially the more

academic/research databases and the technical databases for the respective career programs.

2. Install a comprehensive technological system in each classroom: computer network, television, and satellite, laser disc, and CD ROM technologies. Each classroom should contain a minimum of 3-5 computer work stations for pupil use, plus a computer with modem for teacher use . . . with cable T.V. and a multi-media capability, networked within the school, and adapted for satellite conversion.

3. Every staff member should have access to telephone, voice mail, e-mail, and computer with local and Internet networking at their work desk and at teaching stations or other locations at which they perform work. Telephone and Internet access for staff-initiated assignments and messages should be available to students, parents/guardians.

4. Student should have access to an e-mail box for information and messages, within policies established by the school.

5. Public address and emergency announcements should be audible in every room in the school and accessible to authorized staff, but limit the use of this system to reduce interruptions to instruction. A local area video system should be integrated in the telecommunications system and be capable of broadcasting announcements and special events to all or a selected audience.

6. The system should be an open system, totally integrated (Apple/IBM compatible) and capable of running video, voice, and digital on the same system. Careful attention in the development of the technology specifications should also be given to the cabling requirements, the electrical circuitry load factors, and HVAC requirements (5 computers raise HVAC cooling requirements by 20-25%!).

7. The school might also have one or more telecommunications labs for both pupil and staff use (in-service education and inter-school discourse).

8. Separate servers are recommended for administration and student data and for academic instruction.

9. Lack of access to connected telecommunications drops, insufficient power supply for equipment, and adequate HVAC considerations have been shortfalls in some recently constructed educational facilities.

10. Continual staff development time and resources are needed to maintain and effectively

utilize the technologies included in the school.

Classroom Instructional Computer Access Drops

The telecommunications networking system and its connecting drops to all classrooms and instructional areas should have capacity to support administrative and instructional databases, teaching stations for instruction, and learning stations for students (and for adult learners at other times). Each user should have managed access to the computer with appropriate support applications, including the Internet. Debate continues regarding wiring or wireless communication.

Instructional/Teacher Stations should include access to the following: telephone, local area network, Internet, local cable, satellite, laser discs, DVD/CD ROM technologies and plug in expansion capacity for state of the art technologies existing or planned at the time of equipping the school. Many teaching stations may be using scanners or video imaging at the station or on the Internet. It may be wise to have these specifications developed and bid last to take advantage of technological advances and best pricing. (Cost generally decreases rapidly for proven technology over time.)

Each classroom should have a wall mounted 35" (or equal) monitor connected to the teacher station. In some classrooms, other projection or display units that support instructional activity and learning may be installed. Teachers must also have connected access to the learning activities of all students performing learning tasks on computers in their classroom. One or more high-speed printers should be immediately available in each instructional area, thus allowing students and staff to obtain hard copy of the product of their work.

Instructional Support Areas offer alternative venues for instructional activity and therefore should be equipped to serve in that capacity. Such areas include:

1. **Library/Media Center Core:** In addition to day and evening instructional resource use, the library should serve as a professional development and community center. Provisions are needed for one (1) or more instructional/teacher stations in the library. Attention must be given to light and sound control in this and all instructional areas. The Library area also includes a (research-oriented) computer laboratory, media center, and center for much of the school's telecommunications network management. Here, and in computer laboratories, it is likely video conferencing/video imaging on

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the Internet will be used by individuals and class groups. Such technology allows interactive and "virtual reality" learning experiences for students, staff, and adult users. Connecting this technology to distant sites and activities can bring the real world of applied skills and knowledge to the classroom participants.

2. **Auditorium:** The stage should have the capacity for multiple simultaneous technological connections and also be an instructional station for lectures/large group instruction. Similar access should be attainable in the front well, midway, and at the rear of the auditorium. Special attention should be given to the lighting, sound and projection equipment, and their design, placement and control. A Theatre Arts consultant should develop or review detailed plans for this area. Community use of this facility and equipment must be considered for easy access, use and security.

3. **Cafeteria, Fieldhouse (Gym):** In these areas, each wall should be viewed as a potential instructional station for school and community use and, therefore, should be so connected. Portable equipment could be brought to these areas as needed.

Finally, the technology plan needs to be updated almost annually due to the rapidity of change in this area. Every effort should be made to upgrade the technology capability of the school during the planning and construction of a new school or the renovation/upgrading of an existing school building.

D. Suggestions on Closing (Discontinuing) a School

I. Introductory Statement

It is never easy to close a school building. There is a great deal of nostalgia and many memories associated with a school building. Several generations of families have spent years of their lives attending the school. The building is often a dominant physical feature in the community and, indeed, an entire section of the community may be known as "The Jones School Area". As people pass the school building daily with its flag flying proudly, they can not help but feel a sense of stability and continuity in a world around them that is undergoing constant evolution and change. Moreover, for generations, the school building has probably been one of the social centers of the surrounding area.

Thus, it is difficult for people to accept the fact that the building has outlived its useful life as an active school building and either needs to be converted to some use other than instruction or razed.

There are usually a number of reasons why educational authorities determine that a school building should be retired out of service as an active instructional facility. Chief among these are:

- **Functional Obsolescence.--** instructional spaces (especially classrooms) are too small to house a modern program. Interior load-bearing walls or other structural impediments make enlarging the classrooms impossible or impractical. Or, the building itself is too small to be a cost-effective operation.

- **Physical Obsolescence.--** major sub-systems are antiquated, worn out and need replacement and replacement cost is prohibitive.

- **Lack of or Inadequacy of Core Facilities.--** Cafeteria; Gymnasium; Auditorium; Administrative/Guidance office; Library/Media, etc.

- **Lack of Special Facilities.--** Art Station; Music Station; Teaching station in several Special Education subjects, and the like.

- **Limited Site.--** Sub-standard site and insufficient space for playing fields; hard-surface play area; parking; vehicular traffic, etc.

- **Building Structure.--** Often, a wood-frame building with brick veneer; often interior load-bearing walls; usually, totally non-conforming to present day health and safety codes, handicapped access, and the like.

- **Economic Feasibility.**-- Even if it were possible to renovate or add to the building, the costs are often prohibitive and might have to be done totally at local expense (without state reimbursement due to inability to meet state guidelines and standards). It is often less expensive to raze the building and build a brand new, state-of-the-art school building.

The administration and school committee will need to consider all aspects concerning a potential school closing. The following Criteria might be helpful:

Criteria

- **Age of the building.**-- The rule-of-thumb for life expectancy of a school building with respect to adequacy to house current educational program is 75 years.

- **Site.**-- 10 acres plus one additional acre for every 100 pupils for an elementary school; 15 acres plus one additional acre per 100 pupils for a middle school; 20 acres plus one additional acre per 100 pupils for a high school.

- **Cost to Renovate/Add vs. Cost of New Building**

    A. Size of Classrooms.-- Can rooms be expanded? 900-1,000 Sq.Ft. for a 1-6 elementary classroom and other current space standards.

    B. Special Facilities.-- Space for art; music; special education?

    C. Core Facilities.-- Gym; Library; Cafeteria; Auditorium?

If the committee decides to close the school building for instructional purposes, consider using it for:

- Office Space-- (low cost conversion)
- Alternative School Programs (there are non-traditional programs that do not require a full-service school building).
- Curriculum and Staff Development Center
- Centralized School Storage and Distribution
- Other Municipal Offices

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Process for Closing a School

1. We strongly recommend that the school board appoint a Citizens Advisory Committee on the future use of the "X" school building. This provides a thoughtful study for the future use of the building, including cost data.

2. We recommend that the principal and other interested parties plan and implement a special event to commemorate the closing of the school

   - When we retire, there is often a celebrating event honoring us and the service we have provided an organization.
   - When the school building is "retired", there should be a similar celebration and tribute to the many years of faithful service the building has given to the community and to several generations of children and parents.

3. A sub-committee should develop a "Years Book" on the school.

   - Select an editor and an advertising manager.
   - Have the entire community search attics and closets for old school photos and other memorabilia.
   - Print a chronological history in a photo album "Years Book" of the school from its very first year to the present.
   - List each principal, each teacher, and as many of the class lists as can be located.

4. Hold a special "Old Home Day" or a reunion to which all living retired staff members are invited as well all former students who can be located.

   - Especially invite all former principals who are able to attend.
   - Invite all former teachers, cooks, custodians, secretaries, and aides.
   - Make it a gala event, with music, food, balloons, photo-ops...but minimize speeches!
   - Display memorabilia from the earliest days. Sell the "Years Book"; have a lot of old photos on display.
   - Have a culminating event toward the close of the day officially recognizing the "last day of duty" for the school.

In summary, people can close the chapter on the old school building if it is done with reverence and respect and gratitude for all the school building has provided for so many people through the years. The building needs to be "thanked" and retired with dignity. It closes the chapter. And everyone will feel better about it and look forward to its replacement by a more suitable structure for housing tomorrow's educational programs.

E. Selected Massachusetts Elementary School Program Standards

Regular Classrooms   900-1000 sq. ft.

PreK and Kindergarten   1200-1300 sq. ft.
(with Lavatory)

Art Room   1000-1200 sq. ft.

Music Room   1000-1200 sq. ft.
                                                          (plus 500 for instruments)

Media Center / Library Reading Room   1800-2300 sq. ft.

Computer Labs / Work Stations   30 sq. ft. per work station

Administration   up to 800 sq. ft.

Health Services   300-750 sq. ft.

Small Group / Seminar   up to 500 sq. ft. each

Note: Several classrooms in the James building are in the 700 sq. ft. range and in the Dunphy building they are much closer to the standards in the 800 sq. ft. range. Most other spaces are below the state standards and some spaces simply do not exist.

SUMMARY

SUMMARY

The NESDEC Project Team developed enrollment projections, ascertained the operating capacities of the schools relative to current and projected program needs, assessed the condition of existing schools, and concluded that there is a major need to modernize and upgrade the PK-6 educational facilities.

Enrollments are projected to decline slightly over the next decade so this presents an opportunity to upgrade the facilities.

The James building is a functionally obsolete school and its use as a school should be discontinued at the earliest moment possible. The Dunphy building is in need of re-design, major renovation/upgrades and possibly an addition if it is to be continued in service as a school building.

NESDEC has presented in this report three options, one of which would construct a brand new future-oriented school on a new site; one would renovate and construct an addition on Dunphy; one is a hypothetical option that would construct a new 5-8 regional middle school while upgrading Dunphy for PK-4.

The need to incorporate space for future full-day kindergartens has been addressed in the report. We have also addressed several other matters discussing special considerations such as Technology Needs, Site Selection, and Closing a School Building.

Williamsburg does not appear to be a high growth community so it is in a very advantageous position to upgrade its school facilities now while providing maximum flexibility for potential future growth.
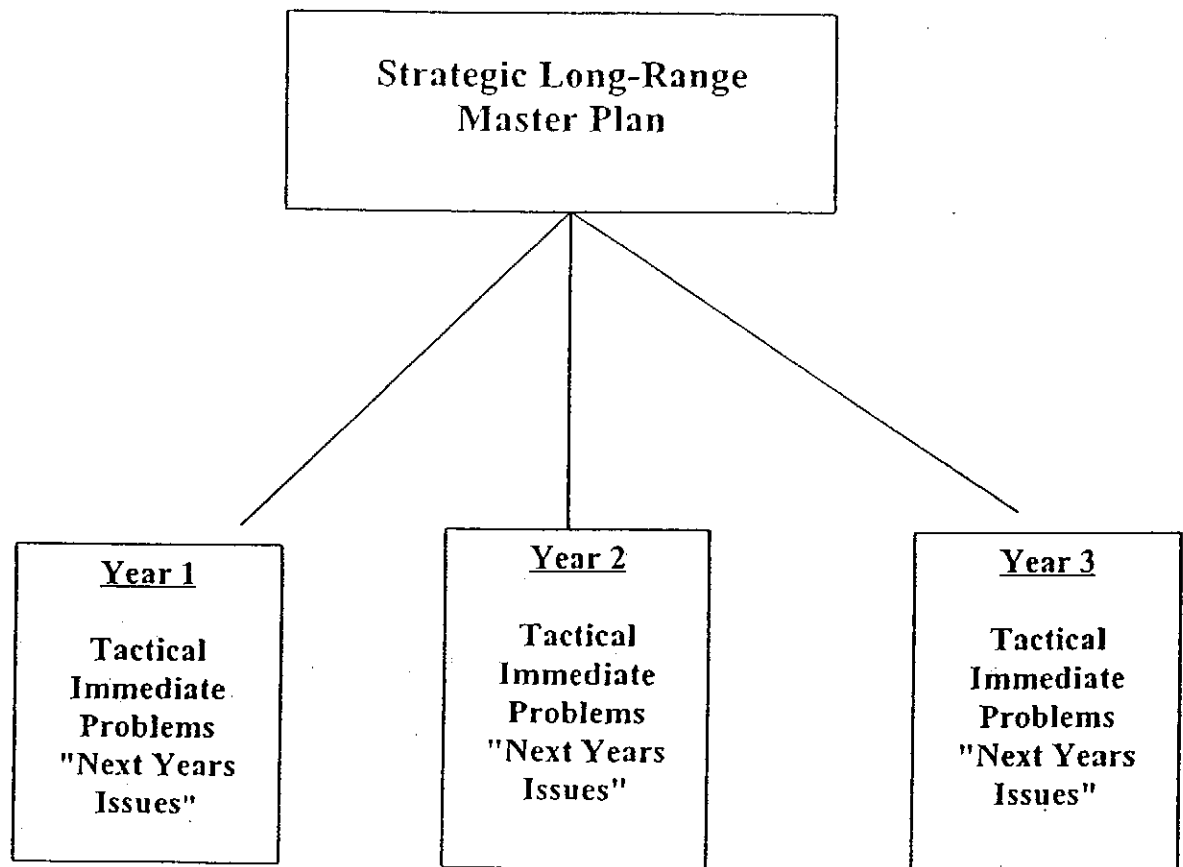
Any improvement in the school system will, in all likelihood, improve the overall quality of life in the Town. If a bold move, such as Option I or Option III, were to be consummated, the result could make Williamburg a very desirable residential community...one with a more attractive school system. Property values would probably increase. Hence, enrollment projections should be updated annually and long-range school facility planning should become an ongoing process and not a one-shot effort.

NESDEC wishes to commend Willimasburg for taking this first step to provide adequate space for the future pupil population and for the initiative to improve the school facilities for all the Town's children.

The next step is to adopt a Master Plan encompassing both the elementary and secondary school components, and then work diligently to implement the adopted plan.

A word of caution is in order here. We all have a very human tendency to focus on immediate issues and concerns. Failure to have a long-range strategic plan that encompasses the entire scope of the program over a decade or more often leads to decisions that may temporarily resolve an immediate problem while building in some significant longer-term problems.

The Administration and School Committee should think, plan, and act both strategically and tactically. Adopt a long-term Strategic Master Plan and then make year-to-year tactical decisions that aim toward the eventual attainment of the Master Plan Goals. As year-to-year decisions are made, care should be taken to ascertain that they are in concert with the Strategic Long Range Master Plan.

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                    │      Master Plan        │
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        │   Year 1     │  │   Year 2     │  │   Year 3     │
        │              │  │              │  │              │
        │   Tactical   │  │   Tactical   │  │   Tactical   │
        │  Immediate   │  │  Immediate   │  │  Immediate   │
        │  Problems    │  │  Problems    │  │  Problems    │
        │ "Next Years  │  │ "Next Years  │  │ "Next Years  │
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We trust NESDEC's analysis of the problems and the options presented will assist the School Committee, the School Administration, and the Town in resolving these issues in order to provide sound educational facilities for all of Williamsburg's pupils...for many years to come. We see this report as a beginning point for study and discussion. Ultimately, the School Committee should adopt a Master Plan for the Town's future educational system.

The NESDEC
Williamsburg Team