

A LONG-RANGE FACILITIES PLAN

FOR THE

BLOUNT COUNTY SCHOOL
DISTRICT

Maryville, Tennessee

by

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Darrell Spencer and Associates

June 1997

BLOUNT COUNTY BOARD OF EDUCATION
1996-97

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INTRODUCTION

In November 1996, the Blount County Board of Education issued a "Request for Proposals" seeking a firm to provide "Comprehensive School Facilities Consulting Services." The request indicated that the Education Improvement Act of 1991/Basic Education Program would require additional classrooms and that student growth will likely require an additional ten classrooms annually. Also, the Blount County Board of Education recently proposed shifting from a K-8, 9-12 plan of organization to a K-5, 6-8, 9-12 plan of organization.

Darrell Spencer, Ed. D., Educational Planner, submitted a proposal to provide the educational planning services. The proposal indicated that the planner would"conduct a thorough needs assessment of school facilities to determine the necessary improvements required for establishing quality, educational facilities."

As a part of this study, the planner would make recommendations regarding the fundamental questions of school organization:

- How many schools are needed?
- Which grades will they serve?
- How many students will they serve?
- Where will they be located?

The plan would include, if appropriate, recommendations for constructing new schools; renovating, replacing, or adding to existing schools; reopening previously closed schools; or altering the use of schools. Finally, the plan would include general cost estimates.

On January 27, 1997, Dr. Spencer was interviewed by the board and on February 7th, Mr. Moser notified the planner that he had been selected to conduct the study.

Darrell Spencer has visited all of the district's school facilities, interviewed the principals, driven the major roads in the county, met with school administrators and local officials, and studied various local and state documents. This long-range facilities plan is submitted to the Blount County Board of Education as a means of improving school facilities and, consequently, the quality of education in Blount County.

SIGNIFICANT FINDINGS

This chapter includes a brief description of Blount County and the Blount County school district and a review of present school organization, student population projections, facility evaluations, and the planner's observations. These significant findings were directly or indirectly influential in the final recommendations.

The Community

Blount County has a rich history. The county, named after territorial Governor William Blount, was established in 1795, a year before Tennessee became the 16th state. Maryville was designated as the county seat and was named for Mary Grainger Blount, wife of William Blount. (20)

The State of Tennessee is divided into three natural, geographical areas: East Tennessee, Middle Tennessee, and West Tennessee. Blount County is located in central, East Tennessee and includes one-fifth of the Great Smoky Mountains National Park. Cades Cove, a very popular park within the Smokies, lies within Blount County. In 1996, approximately 1.5 million visitors to the Great Smoky Mountains park entered through Townsend. Tourism is estimated to be a \$132 million per year industry for Blount County. (15,20)

Blount County is an area of diverse topography and great beauty. The northern area is bounded by the Tennessee River and Fort Loudoun Lake. The southern area is bounded by the Great Smoky Mountains National Park, the Little Tennessee River, Lake Chilhowee and Lake Tellico. Knox County lies to the North, Sevier County to the East, Loudon County to the West, and Monroe County and North Carolina to the South.

A topographical map of the county provides pictorial evidence of how the mountains and valleys cut across the county on a northeast/southwest diagonal, running parallel to the Chilhowee Mountain Range. This unique topographical feature adds immense interest and beauty to the county, but also places some constraints on building highways and transporting school children.

Blount County has grown consistently in the last two decades. In 1950 the population was 54,691; in 1980, the population had grown to 85,969. The Blount County Planning Department projects an increase to 106,615 by the year 2000 and to 124,799 by 2010. (8, page 16) Other sources project similar increases. (4) The U. S. Bureau of Census projects a slightly lower rate of growth, but places Blount County's percentage of growth, from 1990 to 2000, at 17.7%; this percentage of growth is higher than any of the surrounding counties except Sevier County and higher than the State of Tennessee, which is projected at 12%. (24)

Growth never occurs uniformly within a county. For Blount, much of the commercial development has occurred along highway 129/115 between Alcoa and the Knox County line. This growth is stimulated by the airport and the significant number of commuters traveling between Knox County and Blount County.

John Lamb, County Planner, has done an extensive study of growth areas within the county. He indicates that 80% of the growth is occurring outside of Maryville and Alcoa and 40% of the growth is occurring outside of the two city's planning regions. In general, the high growth areas are in a broad band running diagonally across the county from the community of Seymour, in a southwesterly direction, to Lanier Elementary School. This includes significant growth south of Maryville and between Montvale Elementary School and William Blount High School.

The four-laning of highway 411/33 South is expected to generate additional residential growth in the southwest. In the northeast, growth is expected in the Seymour/Nails Creek Road area as an extension of growth in Sevier County.

The Pellissippi Parkway is expected to generate additional commercial and residential growth north of the airport. The long-range transportation plan includes extending the parkway in a southeastern direction through the Rockford, Eagleton, Porter, and Hubbard/Walland elementary school districts, connecting with highways #73/321 west of Heritage High School. Given the desire for workers in Knox County to live in Blount County, the parkway could have a significant impact on growth.

Blount has a strong economic base, diversified among tourism, mining, construction, manufacturing, transportation, trade, financial services, and consumer services. The city of Alcoa was established in 1919 by the Aluminum Company of America (ALCOA). ALCOA has a modern, aluminum smelting and rolling plant, producing sheet aluminum for beverage cans. (20)

It is interesting to note that the Aluminum Company of America had 4,500 employees in 1982; these employees represented 60% of the county's manufacturing employees. In 1996, ALCOA's number of employees had declined to 2,000, but Blount County's number of employees in manufacturing had increased due to diversification and industrial development. (12, page 10; 6)

The following list of Blount County's largest employers indicates the diversity of employment in the county:

Blount County's Ten Largest Employers
June 1996

	<u>Employees</u>
Aluminum Company of America	2,000
Denso Manufacturing Tennessee	1,592
Blount Memorial Hospital	984
Blount County Schools	889
BTR Sealing Systems, Tennessee	850
Air National Guard Airbase	500
Allied Signal Safety Restraints Sys.	475
Maryville City Schools	429
Proffitt's, Inc.	411
Clayton Homes, Inc.	390

Source: (6)

Blount County has traditionally had low unemployment rates. Since 1990, the percentage of unemployed in Blount County has been the same or lower than the State and the United States, except in 1994 when Blount's unemployment rate was .1% higher than the state. (24)

Without question, the economy in Blount County is tied to Knox County and Knoxville. This point, illustrated by the 1990 U. S. Census data regarding commuting patterns, shows that 2,796 persons commuted from Knox County to Blount County for employment, but 10,938 persons

commuted from Blount County to Knox County for employment. Blount County had a total of 4,735 in-commuters and a total of 13,358 out-commuters. (3) While the number of jobs in Blount County has increased since 1990, the number of commuters has likely increased.

The county has aggressively recruited quality industries through the Industrial Development Board of Blount County. Organized in 1969, this organization has established seven industrial parks and assisted prospective industries in locating single sites. For 1995, these parks and single sites produced approximately \$8 million in city and county property taxes. (14, page 9)

Blount County has six incorporated cities and towns. This 1990 Census data is useful in understanding these incorporated areas and their demographic changes.

Blount County Incorporated Cities and Towns
1990 Census *

	<u>1990 Population</u>	<u>Percent Change, 1980-90</u>
Alcoa	6,400	-6.8%
Friendsville City	792	14.1%
Maryville City	19,208	9.9%
Rockford Town	646	13.9%
Townsend City	329	-6.3%

Source: (12, page 21)

*Note: Louisville is now incorporated.

The Industrial Development Board lists several "Blount County Economic Indicators" which are noteworthy: (14, page 14)

- o The number of wage and salaried employees has increased from 32,380 in 1980 to 46,603 in 1995.
- o The income per household has increased from \$22,592 in 1980 to \$48,782 in 1995.
- o The retail sales have increased from over \$502.5 million in 1986 to over \$838 million in 1995.
- o The effective buying income has increased from over \$542 million in 1980 to over \$1.47 billion in 1995.
- o Construction permits have increased from over \$13 million in 1980 to over \$44 million in 1995.

In summary, Blount County is an exciting county with a bright future. Blount County has a diversity of topography ranging from lakes to mountaintops. Blount has proximity to metropolitan areas and to the Smoky Mountains National Park. Blount County has a moderate climate and four distinct seasons. Blount County has a major airport and easy access to Interstate 40. Blount County has a strong economic base and is located in a burgeoning, high-tech area. Blount County has been identified as a desirable place to retire and has attracted a significant number of retirees. Blount County, indeed, has a bright future.

The School System

Three School Systems - Blount County has three public school systems. The Blount County system has fifteen schools and serves 10,080 students (1995-96). Alcoa has three schools and serves 1,458 students. Maryville has six schools and serves 3,894 students. The high schools in the three school districts and the elementary schools in Maryville are accredited by the Southern Association of Colleges and Schools. Some of the elementary schools in Alcoa and the county district are accredited and the remainder are working toward accreditation. (21)

The attendance areas for the Alcoa and Maryville school districts are coterminous with the municipal districts. Consequently, when the municipalities annex new areas, the new citizens pay the school tax and the city school districts serve the students. Obviously, this has implications for long-range school facility planning, especially for the county system, as it has no control over annexation.

In recent years, the Blount County district and Maryville have grown in school membership while Alcoa has experienced a slight decline in membership. All three school districts allow students to transfer between school districts. Both Maryville and Alcoa charge a tuition fee as their per pupil expenditures are higher than the county district's expenditures due to their supplemental school levies.

The Tennessee Department of Education annually provides information regarding local expenditures for education. Alcoa and Maryville's local supplemental levies for education provide a higher per pupil expenditure than in the Blount County school system. The following illustrates this point:

Per Pupil Expenditures for Current Expense

	1993-94	1994-95	1995-96
Blount County School District	\$4,023	\$4,078	\$4,713
Percent of Statewide	93.3%	89.7%	93.1%
Alcoa School District	\$5,635	\$5,866	\$6,226
Percent of Statewide	130.6%	129.1%	132.1%
Maryville School District	\$4,930	\$5,321	\$5,529
Percent of Statewide	114.3%	117.1%	117.3%

Source: (21)

The Blount County school district has never had a significant number of transfers from Alcoa or Maryville; however, the numbers for Maryville and Alcoa are significant. Dr. Mike Dalton, Maryville's Director of Schools, indicates that Maryville has approximately 530 tuition students for 1996-97. This represents 13.3% of their school membership. Dr. Lester Beason, Alcoa's Director of Schools, indicates that Alcoa has 400 tuition students for 1996-97. This represents 27.9% of their school membership. It should be noted that many of Alcoa and Maryville's tuition students reside outside of Blount County.

1969 Study - In 1969, the Bureau of School Service, College of Education, University of Kentucky conducted a comprehensive study of the three school systems in Blount County. The study was "aimed at answering two questions":

1. "What rearrangements in physical facilities would be feasible and desirable toward improving the educational programs of the three districts?"
2. "How might the three districts coordinate their efforts (by cooperative projects, mutual agreements, shared resources, annexations, or mergers) and thereby improve educational services in the area?" (23, page 1)

In 1969, the Blount County school district had approximately 10,000 students and twenty-nine schools and was organized on a 1-8, 9-12 and 1-12 basis. The six high schools included Everett, Friendsville, Lanier, Porter, Townsend, and Walland. The schools ranged in size from Mt. View with 112 students (1-8) to Everett with 1,245 students (9-12). (23, page 47)

In 1963-64 the three districts had a total of 15,031 students and declined to 14,684 by 1966-67. The study projected a decline to 13,887 by 1972-73, with a decline for each of the districts. (23, pages 29-31)

The study did note the small size of some of the elementary schools and high schools and the impact which size has on pupil-teacher ratios and program offerings. The following statements are significant and useful today:

- o "The above data suggest that there are "holes" in the instructional programming. For example, art and music are absent in several of the county schools and the vocational education and industrial arts offerings are minimum in most of the high schools of all three districts. Generally, as would be expected, the larger the high school enrollment the broader and more comprehensive the curriculum."
- o "Perhaps elementary schools should enroll 400-600 pupils and secondary schools 1,000-1,200 to effect such economy and comprehensive program offerings."

The study recommended: "The Alcoa, Blount County, Maryville school systems should merge eventually." The study did, however, recommend that the three systems immediately establish an administrative council, establish curriculum councils in the major curriculum fields, and establish a communications council to communicate with the public.

The 1969 study recommended that the three administrative units plan together before constructing new schools, but a major focus of the study was on the need for the county district to construct consolidated high schools. (23, pages 51-54)

The study recommended alternative high school plans for the county district, either for three high schools or four high schools, but did not express a preference. (23, pages 59 and 60)

o Three-high school plan

Walland	500 students
West Campus	1,225 students
East Campus	1,250 students

o Four-high school plan

West Campus	1,225 students
Friendsville	500 students
Porter	675 students
Walland	600 students

The study also considered recommending junior high schools serving grades 7-9 but, given the investment in the 1-8 schools, concluded that the district should strive toward a 1-8, 9-12 plan of organization. Also, the study was not specific, but suggested that consideration be given to consolidating the smaller elementary schools.

The county district constructed Heritage High School in 1977 and William Blount High School in 1979, similar to the three-high school plan, but not including Walland as a high school.

At present, the merger of school administrative units does not appear to be an issue in Blount County. All three systems are healthy and effective in their missions. There is a need, however, as recommended in the 1969 study, for cooperative planning among the three units.

The Blount County Schools - For the 1996-97 school year, the Blount County school district has 10,280 students. The district is generally organized on a K-8, 9-12 basis with some exceptions. Eight schools serve grades K-8, two schools serve grades 9-12, one school serves K-3, one school serves 4-8, and two schools serve K-5. Everett serves as an alternative school.

The two high schools are nearly the same size, serving approximately 1,500 students each. The smallest elementary school has 148 students while two elementary schools have over 1,000 students.

The district has an interest in expanding the pre-K program for three and four-year-olds; however, at present only three pre-K programs are offered, and these are for "at-risk" children.

Approximately 22.3% of the district's students are served by programs for exceptional children. These programs are as follows:

CDC - Comprehensive Developmental Classroom - a self-contained classroom for children with special needs.

LRE/CDC - Least Restrictive Environment/Comprehensive Developmental Classroom - a self-contained classroom for children who are functioning at a lower level than the CDC classroom. Emphasis is on life skills and community education. A special classroom is needed.

Resource - Children are assigned to regular classrooms but are scheduled for the resource classroom for special assistance and instruction. In terms of school capacity, the resource classroom cannot be counted as students are "pulled out" from other classrooms. A second type of resource program (inclusion) is available for students with physical handicaps or those with moderate or mild mental handicaps. The inclusion resource teacher accompanies the student in regular classes. The inclusion resource teachers require an office, workspace, or a small classroom, but not necessarily a regular classroom.

ABC - Alternative Behavior Classroom - This is a self-contained classroom.

AG - Academically Gifted - This is a resource program. Each elementary school has an AG teacher one day per week.

Speech - Each elementary school has a speech teacher; Lanier and Rockford schools have two. Speech teachers need a room, but a room smaller than a regular classroom is appropriate.

Obviously, the special programs have an impact on the number of students that a school can accommodate. This point will be discussed later in the section on school capacity. The chart on the following page indicates the exceptional children teachers assigned to each elementary school.

While the elementary schools offer strong academic programs and students are achieving above the state and national average, the cultural arts and physical education programs appear to be underfunded.

Seven system-wide music teachers serve grades K-8. Two physical education teachers are assigned county-wide to the elementary schools, but serve students in grades K-5 only. There are no special art teachers, but art instruction is the responsibility of classroom teachers.

For grades 6-8 there are no special art or physical education teachers assigned county-wide; however, these areas are included in the curriculum. In grades 6-8 there is generally some departmentalization, with teachers teaching selected areas such as math, science, language arts, social studies, physical education, and art. Some of these teachers have special certification in physical education and art, but this is not a requirement.

The district's goal is to have a full-time music teacher at each of the elementary schools (except perhaps Hubbard and Townsend). After this is accomplished, the district plans to initiate a county-wide art program and expand the physical education program and staffing.

All students in grades 6-8 have the option of taking band. The band teachers from the high schools teach in the respective feeder schools.

Most of the elementary schools lack rooms with appropriate utilities, space, and storage for art or music; generally a regular classroom or portable classroom is used. The auditorium stage is often used for band instruction.

BLOUNT COUNTY SCHOOLS
 Exceptional Children Teachers - Grades K-5

		<u>CDC</u>	<u>LRE/CDC</u>	<u>RESOURCE</u>	<u>ABC</u>	<u>AG</u>	<u>SPEECH</u>
Middlesettle. El.	K-8	0	0	2	0	.2	1
Friendsville El.	K-8	0	0	2 (1 inc.)*	0	.2	1
Mary Blount El.	K-8	2	0	3 (1 inc.)	1	.2	1
Fairview El.	K-8	0	0	2 (1 inc.)	0	.2	1
Lanier El.	K-8	1	0	3 (1 inc.)	0	.2	1
Rockford El.	K-5	4**	0	2 (1 inc.)	0	.2	1
Eagleton El.	[K-8	2	2	3	1	.2	1
Porter El.	K-8	1	0	2 (1 inc.)	0	.2	1
Hubbard El.	K-3	0	0	1	0	.2	1
Walland MS	[4-8	0	0	2	0	.2	1
Townsend El.	[K-5	0	0	1	0	.2	1
Montvale El.	K-8	0	0	2	0	.2	1

* Inclusion teachers

** Three of the four CDC teachers at Rockford serve the Pre-K program for at-risk children.

With the exception of Hubbard Elementary, all elementary schools have a gymnasium for physical education.

The educational programs for students in grades 6-8 are an extension of the K-5 program. Middle grades exploratory programs, including occupational information, business exploration, environmental exploration, industrial exploration, and home arts/service exploration, are not available. Likewise, the physical education programs are limited by the lack of physical education specialists and small number of students in grades 6-8.

The district has acknowledged the weakness of the middle grades programs and the constraints created by the K-8, 9-12 organization. Funds have been requested to construct middle schools. Also, the district has a system-wide middle schools committee studying this problem in an effort to strengthen the existing programs and prepare for future middle schools.

Blount County's two high schools each have approximately 1,500 students. The facilities have some shortcomings, but are generally excellent. Facilities and school size are not a constraint to adequate high school programs, and the district should be proud of the range of course offerings available to students in grades 9-12.

Each high school offers over one hundred courses. In addition to the traditional English, mathematics, social studies, and science offerings, the schools have a broad range of fine arts courses, including art, band, concert choir, drama, and chorus.

French and Spanish are offered at both schools; William Blount offers Latin. Each school offers several levels of English, including honors English. Each school offers calculus, geometry, advanced algebra, chemistry, and physics. Each school offers ROTC/military science. Over 50% of the high school graduates continue their education beyond high school.

In the area of business/computer technology, the schools offer programs including accounting, computer information systems, office technology, and word processing/desktop publishing. These programs are for vocational and college preparatory students. Likewise, the consumer and homemaking programs are comprehensive and available to all students.

Particularly impressive is the list of technology education programs which are offered. These programs include agricultural mechanics and maintenance, animal and crop production, greenhouse management, collision repair, auto mechanics, child care, commercial foods, nursing/health services, physical therapy/exercise science, metals and welding, drafting, cosmetology, marketing, fashion merchandising, and residential construction. The facilities for these programs were generally adequate. There is a separate classroom available for each of the heavy shop-type programs.

Programs for exceptional children are available at the high school. The LRE/CDC programs have special classrooms and facilities for teaching family living and consumer skills.

Like most school systems, Blount County is implementing a technology (computers) program as funds are available. A staff of three, working out of the central office, purchase software and equipment, assist schools with technical problems, and train teachers. Individual schools do not have computer specialists without other duties.

The State of Tennessee, like many other states, has provided funds for technology. State funds are providing computers for classrooms beginning in grade one and moving up through the grades. At present, all first and second grade classrooms have four computers, printer, and laser disc player. The district plans to complete grades 3-5 by the end of the 1997-98 school year. Because computers are being installed in the classrooms, there are no computer labs in grades K-5. Some schools have computer labs for 6-8 students.

The classrooms with computers are networked within the school. Most libraries have computerized card catalog retrieval which will soon be networked to the classrooms. Also, all school libraries are on the internet.

The high schools have computer labs and courses for all students; however, computers are not available in all classrooms.

The district is working toward a student management system for student records. Eventually each school's student management system will be networked with the central office.

School Facilities

A brief history of school facility construction will be helpful in understanding the school facilities in the Blount County school district.

In the 1920's, most school buildings were constructed of wood, with a brick veneer. Small schools were one story, but larger schools were often two or three stories. These schools, constructed of combustible materials, often had dead-end corridors, wooden stairwells, residential hardware and lacked doors to separate sections of the building in case of fire. The foundations were frequently inadequate. Lack of routine maintenance often led to structural problems. It should be noted that only the recently abandoned, two-story building at Townsend is typical of schools built during this era. The board of education and citizens of Blount County are to be commended for replacing buildings of this type.

When discussing the 1920's buildings, it must be said that some fire-resistive, expensive, excellent school buildings were built in the major cities. Many of these buildings are worthy of being renovated and, with additions, serve adequately today.

After World War II, the United States experienced a baby boom and severe overcrowding in schools. While there was only limited school construction between 1940 and 1949, there was a dramatic increase in the number of classrooms constructed from 1950 to 1959.

The type of construction for schools also changed dramatically after World War II. Very few wood-framed schools were built; instead, architects specified concrete modular units (concrete blocks). Typical school construction in the 1950's included slab-on-grade, concrete floors with concrete block/brick veneer exterior walls and concrete block interior partition walls. These concrete block walls were load-bearing. Steel or concrete structural members were seldom used; consequently, the interior spaces are difficult to alter. The more expensive construction during this period used bar joist or concrete, flat roof systems; less expensive construction used a residential "A" roof design with shingles.

One wall of the typical 1950's classroom was a "window wall" of glass, with inexpensive steel or aluminum windows. Plumbing, electrical service, and lighting were minimal; insulation and air conditioning were not considered; ceilings were low, and finished ceilings were often omitted, exposing the roof structural system or underside of the roof deck.

Classrooms were minimal in size; administrative, secretarial, guidance, and storage areas were totally inadequate by today's standards; rooms were not planned for art or music; early childhood classrooms lacked toilets, or even sinks; floors were often bare, painted concrete. Boards of education were desperate to find housing for students, and these inexpensive buildings were affordable.

Hubbard, Rockford, and the 1952 building at Fairview are fairly typical of this era. Improvements have been made through the years, but they are basic buildings that need significant renovations. Walland and the main building at Porter were constructed in the 1960's, but also need updating.

Perhaps the greatest change in the curriculum, since these buildings were built, is in the area of exceptional children's programs; today, it is not unusual for 25% of the classroom space in an elementary school to be used for these programs, yet they were not considered when these schools were planned and built. Using regular classrooms for these programs, plus the reduction in class size, has dramatically reduced the student capacity of the schools.

The administrative area in most 1950's and 1960's buildings is inadequate today. In 1950 the principal was typically a teaching principal with a part-time secretary. In most 1950's and 1960's schools, the administrative area has already been expanded to include a reception area and office area for secretary and bookkeeper. In many cases the expansion is still inadequate and poorly arranged.

While the typical 1950's school building was minimal, some districts did construct better schools, however, only somewhat better. From the 1960's to present, the quality of construction has improved. Today, most schools have steel or concrete structural systems which allow flexibility in moving partitions; all are insulated, all are air conditioned, the plumbing and electrical systems are far superior, the heating systems are more energy efficient, and the square footage per student is more generous. Likewise, space is available for exceptional children's programs, guidance/student support services, and administration; most new schools are equipped for a modern technology program.

There are two federal acts which require school districts to eliminate barriers to the physically handicapped. The first, Section 504 of the Rehabilitation Act of 1973, required a plan for making programs and services accessible. Later, the Americans with Disabilities Act (ADA) was enacted in 1990. The critical components/dates of this act are:

- o The act became effective in January 1993.
- o A self-evaluation plan must be completed.
- o Schools must be in compliance by January 1995.

The ADA requires that "individuals with disabilities are not excluded from services, programs, and activities because buildings are inaccessible." While school districts first think of students, this act would also apply to parents or citizens who want to participate in school activities or school programs.

The district has made significant progress in making the schools accessible. First, the district has made many modifications to meet the needs of individual students. Second, many of the schools were constructed after state and local building codes required buildings to be accessible.

In 1996, Fletcher Architects completed an ADA survey of the older schools and suggested a five-phase approach to compliance. Phase I was to provide access from the exterior (parking, drop-off areas) to the interior of each facility. This access included curb cuts, exterior ramps, etc. The district has spent approximately \$68,000 on Phase I, which is virtually complete. The district does not have a plan or estimates for Phases II through V.

All school districts are required to have a current asbestos management plan. The district has such a plan, which is maintained by Environmental Protection Systems. Plans are available in each school and at the central office.

The Blount County school district provides most of the maintenance for the schools. The staff includes a maintenance supervisor, maintenance foreman, HVAC mechanics, electricians, plumbers, carpenters, truck drivers/equipment operators, and helpers. The maintenance supervisor indicates that the greatest staff need is for helpers.

Major projects that are contracted include roofing, carpeting, and major HVAC renovations. The maintenance supervisor indicates that the greatest needs include renovating Hubbard, Fairview, Porter, Rockford, and some parts of Walland. Also, the district has a maintenance plan to replace carpet and roofs at several schools.

The following is a school-by-school description and analysis of Blount County's schools. This information is based primarily on the planner's observations, but includes a review of Maintenance Report of Facilities, 1996-97 and Projected Needs, 1996-97. (9, 10)

Permanent teaching stations were counted at each school. For K-8 schools, classrooms were counted, but support areas such as media centers and gyms were not counted. Computer rooms were counted and full-size resource rooms were counted. Blount County's typical K-8

school does not have rooms designed for music and art; consequently, rooms which are being used for this purpose were counted as regular classrooms.

For the high schools, classrooms and laboratories were counted (classrooms associated with the shop-type programs were not counted). The gyms were counted as teaching stations, as were music and art rooms, computer rooms, and full-size resource rooms.

Portable classrooms were also counted and identified separately from permanent teaching stations. The double, portable units were counted as two portable classrooms.

The permanent teaching stations count was converted to a school capacity; the methodology will be discussed in the recommendations section. Portable classrooms are indicated below, but were not included in the permanent capacity.

Eagleton Elementary School

1996-97 grade structure: K-8

1996-97 membership: 1,012

Construction dates: 1961, 1988

Acreage: 20.00

Permanent teaching stations: 45

Portable classrooms: 8

Attractive school. Adequate site. Residential area. Reception area inadequate for size of school. Media seats approximately 60. Good teacher workroom. Facilities designed for exceptional children. Cafeteria seats approximately 330 which is marginal for present membership. Guidance area small for school size and K-8. Inadequate number of faculty toilets. K-1 classrooms small (864 sq. ft.). Former industrial arts and homemaking facilities have been converted to classrooms. Dressing/shower rooms. Air conditioned gym. Stadium. TV/cable in every room. Band/music room.

Excellent facility. Minimal renovations needed. Significantly over capacity.

Fairview Elementary School

1996-97 grade structure: K-8

1996-97 membership: 567

Construction dates: 1952, 1972 classrooms, kindergarten, and gym

Acreage: 12.20

Permanent teaching stations: 17

Portable classrooms: 8

Urban site. Inadequate acreage and difficult topography. Drainage problems. Reception and administrative area inadequate. No conference room. Student toilets need upgrade. Inadequate staff toilets (1). Aluminum windows in some areas. Storage inadequate. Media seats 32. One kindergarten class in portable; two kindergarten classes on 6-8 hall, but adequate. Nice workroom in first/second grade pod. Cafeteria seats approximately 256. No music/band room.

Adequate gym. Will connect to city sewer in 1997. Congested traffic flow. Some window AC units, some electric heat units, and some through-wall heat and air conditioning units. No call-back on intercom. Significantly over capacity; portables place an extra burden on core and support facilities. Some portables have toilets.

Long-range building on a marginally inadequate site. In need of renovations and a reduction in membership.

Friendsville Elementary School

1996-97 grade structure: K-8

1996-97 membership: 581

Construction dates: 1956 aud., 1959 gym, 1983 main

Acreage: 19.00

Permanent teaching stations: 25

Portable classrooms: 2

Attractive school, residential area. Adequate site. Former high school. Media seats approximately 36. Basic auditorium seats 750. Three classrooms under the gym, but above grade. Cafeteria seats 260. Administrative area inadequate. On-site sewer. Gym with dressing rooms/showers. Adding two classrooms under auditorium (which will be adequate, but remote). Nice covered walks. Athletic fields used by parks and recreation. One portable used for after-school program. On-site sewage system.

Excellent, long-range facility. No significant renovations needed to 1983 building.

Hubbard Elementary School

1996-97 grade structure: K-3

1996-97 membership: 219

Construction date: 1952

Acreage: 6.00

Permanent teaching stations: 7 (one approximately 550 square feet)

Portable classrooms: 7

Site 50% of minimum requirements with difficult topography and irregular shape. Expansion of site unlikely. Typical 1950's building with some improvements. 50% of teaching stations in portables, overloading toilets and other support facilities. Classrooms small, especially for primary grades. Traffic flow inadequate/unsafe. Parking inadequate. Some incandescent lights. Window AC units. Coal boiler/ steam heat. Only school in district without gym. Kitchen inadequate. Basic dining room also used for storage and kitchen overflow; seats approximately 108. Restrooms inadequate and overburdened. Dropped ceiling needed in some areas. Storage inadequate. Interior stairs (sixteen steps); no elevator or lift. New doors on classrooms, but poor exterior doors. Hasp (non-code) locks on exterior doors. Floors poor.

A small school on a small, inadequate site. Expensive to operate because of size. Needs major renovation and gym if maintained for long-range use; however, site not suitable for a significant addition. Renovation questionable.

Lanier Elementary School

1996-97 grade structure: K-8
1996-97 membership: 736
Construction dates: 1983, 1987
Acreage: 21.60
Permanent teaching stations: 31
Portable classrooms: 1 not including Headstart

Adequate site in rural setting. Attractive school. Former high school. Administrative and reception area attractive and adequate. Lobby attractive. No band room (using lobby). Wide halls. Small workroom for staff. Toilets well-designed and adequate. No health room. Conference room used as classroom. Media seats approximately 38. Former industrial arts building converted to two, adequate classrooms. Cafeteria seats 340. Portable used by Headstart operated by community action agency. Parking marginal to inadequate. 1983 building has through wall heat and AC units. On-site sewage system. Stadium. Lockers need repair/paint.

Excellent facility. Minimal renovations needed.

Mary Blount Elementary School

1996-97 grade structure: K-8
1996-97 membership: 1,045
Construction date: 1989
Acreage: 140.22 shared with William Blount High School
Permanent teaching stations: 41
Portable classrooms: 5

Adequate site. Attractive school. Adequate administrative area. Adequate teacher work areas. Nice guidance suite. Media seats approximately 44. Cafeteria seats 320; inadequate for membership. Music room. Toilets well-designed. Kindergarten areas well-planned and include outside door. High ceilings provide pleasing atmosphere. Adequate gym. Worn carpet.

Excellent long-range facility. Minimal renovations needed.

Middlesettlements Elementary School

1996-97 grade structure: K-8
1996-97 membership: 568
Construction date: 1981
Acreage: 15.00
Permanent teaching stations: 23
Portable classrooms: 5

Attractive school on marginally adequate site. Like Montvale except fewer teaching stations. Media seats approximately 36. Administrative area marginal. Open commons/dining area could seat up to 300. Nice gym. Small teacher workroom/lounge. Kindergarten rooms have outside doors. Monitor cracks in gym wall. On-site sewage system.

Excellent facility. Significantly over capacity. Minimal renovations required.

Montvale Elementary School

1996-97 grade structure: K-8
1996-97 membership: 778
Construction date: 1984
Acreage: 22.00
Permanent teaching stations: 29
Portable classrooms: 9

Attractive school on adequate site. Like Middlesettlements except six additional teaching stations. Media seats approximately 36. Administrative area marginal. Open commons/dining area could seat up to 300. Nice gym. Portables place burden on toilets and other core facilities.

Excellent facility. Significantly over capacity. Minimal renovations required.

Porter Elementary School

1996-97 grade structure: K-8
1996-97 membership: 752
Construction dates: 1955 aud., 1961 gym, 1968 main, 1976 K/4, 1976 shop
Acreage: 20.00
Permanent teaching stations: 33
Portable classrooms: 0

Adequate site. Stadium. Former high school. Main, 1968 building is two-story without elevator. Administrative area inadequate. Guidance small. Media is long and narrow; seats 44. Small media work rooms and office. Instructional storage inadequate. Cafeteria storage and music room located under auditorium - inadequate. Nice kindergarten pod with good staff work/office area. Cafeteria seats 268. Basic auditorium seats 750. Old home economics and science rooms could be renovated for better use. Gym adequate, including dressing rooms. Former industrial shop said not to be suitable for renovation because of structural problems and inadequate plumbing/toilets. High school building heated with oil-fired steam boiler and cooled with window AC units. Elementary building has electric roof-top units. Gym has coal-fired steam boiler. On-site sewage system for gym and auditorium.

Long-range facility which is in need of replanning and renovations.

Rockford Elementary School

1996-97 grade structure: K-5
1996-97 membership: 541
Construction dates: 1953, 1975
Acreage: 12.00
Permanent teaching stations: 27
Portable classrooms: 2

Inadequate site with topographical problems; playground in flood plain; site located between highway and Little River - expansion difficult. Less usable site than acreage indicates. Administrative area inadequate. Cafeteria seats 200 with fabric divider, but would seat 300 if entire area used. Area behind fabric divider used for storage and occupational/physical therapy. Storage inadequate. Media center seats 35. Former dressing rooms used for offices and classrooms - exits questionable. Three Pre-K programs for at risk students located in regular classrooms without toilets and sinks. Nice kindergarten pod. Attractive amphitheater in courtyard. Pilot program providing aide in each classroom compounds parking problems. Additional double portable for 1997-98 will further crowd site. Rooftop HVAC units.

Long-range school on inadequate site. Renovations needed. Significant additions should be avoided. Consider membership reduction.

Townsend Elementary School

1996-97 grade structure: K-5
1996-97 membership: 148
Construction dates: 1954 gym, 1994 main
Acreage: 11.60
Permanent teaching stations: 10
Portable classrooms: 0

Attractive, functional 1994 addition to nice, renovated gym. Stadium and two softball fields. Latest "new school." Site marginal with topographical problems. Additions will be difficult. All rooms have sinks. Kindergarten rooms have toilets. Media seats 30. Elevator. On-site sewage system.

Former two-story abandoned school is non-fire resistive, wood-frame construction with open, wood stairwell. Windows rotted, roof bad, floors sagging. Totally unsuitable for renovation. Should be removed and site should be replanned/renovated for K-5 use.

Very nice school with some room for growth. Most significant need is removing old building and replanning/renovating site.

Walland Middle School

1996-97 grade structure: 4-8
1996-97 membership: 365
Construction date: 1963 main, 1973 gym
Acreage: 13.90 (divided by road and private drive)
Permanent teaching stations: 18
Portable classrooms: 1 on-site, being renovated

Former high school. Inadequate site (acreage marginally adequate, but divided by highway and private drive). Stadium. Potential auto drop-off area and primary playground in front yard. Two-story without elevator. Basic auditorium seats 425. Media seats approximately 40. Cafeteria seats 132 (marginally adequate in size). Some renovations,

especially on lower floor, by maintenance staff, but more needed, ie. science room without water. Propane gas-fired boiler, but window AC units. Six of eighteen classrooms are windowless. On-site sewage system.

System's only middle school. Some departmentalization. Lacks space and staff for exploratory programs. Full-time physical education teacher.

Long-range facility which needs some renovations. Limited, inadequate site. Avoid significant additions. Restrict membership.

Heritage High School

1996-97 grade structure: 9-12
1996-97 membership: 1,497
Construction date: 1977
Acreage: 99.559
Permanent teaching stations: 71
Portable classrooms: 0

Excellent, well-maintained school on generous site. Two-story with elevator. Second-floor media seats 104. Home economics has family living area. Good preparation rooms for science. Planetarium (presently inoperable). Good guidance/conference suite. Faculty toilets each wing. Dining room seats 525, but could seat 600. Outstanding theater seats 550. Gym seats 1,600. Auxiliary gym. Adequate band room, choral room, art room. Facilities for exceptional students, including industrial arts. Good vocational facilities; five classrooms available for shop-type programs. Vocational office areas. Play area outside child care classroom. Stadium. 250,000 sq. ft. Near capacity. Further growth will crowd core facilities.

Excellent, attractive, well-maintained, comprehensive facility. Minimal renovations needed.

William Bount High School

1996-97 grade structure: 9-12
1996-97 membership: 1,470
Construction dates: 1973 voc., 1979 main
Acreage: 140.22 shared with Mary Blount Elementary
Permanent teaching stations: 66
Portable classrooms: 4

Excellent, well-maintained school on a generous site. Two-story building with science rooms on second floor. Elevator. Media seats 96. Cafeteria seats 350-400 (inadequate). Good science rooms with preparation rooms. Office/workroom for each department. Office for one assistant principal upstairs. Outstanding theater seats 550. Gym and auxiliary gym. Art room, band room, choral room. Good vocational facilities. Classrooms for shop-type programs. 241,278 sq. ft. Less square footage than Heritage; core facilities more crowded with 1,500 students. Said to have been planned for 1,250 students.

Excellent, attractive, well-maintained, comprehensive facility. Minimal renovations needed.

Everett School

1996-97 programs: Alternative School and adult education programs
1996-97 membership: 13 (alternative school)
Construction date: 1950
Acreage: 13.00
Permanent teaching stations: 15
Portable classrooms: 0

Former junior high building. Two-story. Fire-resistive. Elevator. Long-range facility. Centrally located and appropriate for alternative school and similar programs. 22,052 sq. ft. Gas-fired boiler and window AC.

Central Office

Central administrative office for Blount County Schools. Constructed in 1954. Former Union Elementary School (K-8). Renovated and occupied for central office use in 1993. 4.8 acres. Single-story, fire-resistive construction. Paved parking in front. Some unpaved parking on side. Former cafeteria used as assembly/board room.

BLOUNT COUNTY SCHOOLS

Acreage and Construction Dates

		<u>Acreage</u>	<u>Construction Dates</u>
Wm. Blount HS	9-12	140.22*	1973 Voc., 1979 main
Middlesettle. El.	K-8	15.00	1981
Friendsville El.	K-8	19.00	1956 aud., 1959 gym, 1983 main
Mary Blount El.	K-8	140.22*	1989
Fairview El.	K-8	12.20	1952, 1972 gym, classrooms and kindergarten
Lanier El.	K-8	21.60	1983, 1987
Heritage HS	9-12	99.559	1977
Rockford El.	K-5	12.00	1953, 1975
Eagleton El.	[K-8	20.00	1961, 1988
Porter El.	K-8	20.00	1955 aud, 1961 gym, 1968 main, 1976 K/4, 1976 shop
Hubbard El.	K-3	6.00	1952
Walland MS	[4-8	13.90	1963 main, 1973 gym
Townsend El.	[K-5	11.60	1954 gym, 1994 main
Montvale El.	K-8	22.00	1984
Everett Alternative		13.00	1950
Central Office		4.80	1954, remodeled for central office in 1993

* William Blount High School and Mary Blount Elementary School share the 140.22 acre site.

BLOUNT COUNTY SCHOOLS

Membership, Permanent Teaching Stations, and Portable Classrooms
1996-97

		<u>Membership</u>	<u>Permanent Teaching stations</u>	<u>Portable Classrooms</u>
Wm. Blount HS	9-12	1,471	66	4
Middlesettle. El.	K-8	568	23	5
Friendsville El.	K-8	581	25	2
Mary Blount El.	K-8	1,045	41	5
Fairview El.	K-8	567	17	8
Lanier El.	K-8	736	31	1*
Heritage HS	9-12	1,497	71	-
Rockford El.	K-5	541**	27	2
Eagleton El.	[K-8	1,012	45	8
Porter El.	K-8	752	33	-
Hubbard El.	K-3	219	7	7
Walland MS	[4-8	365	18	1***
Townsend El.	[K-5	148	10	-
Montvale El.	K-8	778	29	9
total		10,280		

* Not including one Headstart portable

** Not including three pre-K classes

*** Being renovated for future use

Note: Portables classrooms will be added for 1997-98 as follows: two each at Middlesettlements, Fairview, Montvale, and Rockford; four at Lanier; four or six at Mary Blount Elementary School.

Class Size Requirements

The General Assembly has established specific class size requirements, which become effective in the year 2001. These requirements will have an impact on school facility needs, particularly at the elementary school level.

The class size requirements are as follows:

<u>Grade Level</u>	<u>Average</u>	<u>Maximum Class Size</u>
K-3	20	25
4-6	25	30
7-12	30	35
Vocational	20	25

A recent interpretation regarding the requirements indicates that all classes in K-3 or 4-6 or 7-12 or vocational education, in a school, can be averaged together to achieve the average class size; however, the maximum class size relates to individual classes. Furthermore, the class size requirements pertain to regular classroom teachers, excluding elementary art teachers, elementary music teachers, elementary physical education teachers, special education teachers, librarians, and counselors.

The Blount County staff has analyzed the impact on the schools and has estimated that twenty-two additional, regular classroom teachers will be required in grades K-8 and five additional teachers will be required for the vocational program at Heritage High School.

While educators are pleased to see state funding for the reduction in class size, additional classrooms will be required. This is a particular concern at the elementary level, where the schools already have forty-eight portables.

Pupil Population Projections

Pupil population projections are an essential tool in planning school facilities. These projections should, however, be updated periodically as the stimulants to student growth and decline are constantly changing.

It should be noted that the 1969 study indicated that the Blount County school district had approximately 10,000 students, the same as today. (23, page 47) Since that time, the district has experienced a decline and then an increase in membership.

Apparently Blount's school membership has generally mirrored that of the state and nation. In the early 1970's most districts were declining in response to the decline in the birth rate (number of births to women of child-bearing age).

In recent years, the membership in the district has been gradually and steadily increasing. The following illustrates this point:

Average Daily Membership, First Reporting Period						
<u>1990-91</u>	<u>1991-92</u>	<u>1992-93</u>	<u>1993-94</u>	<u>1994-95</u>	<u>1995-96</u>	<u>1996-97</u>
9,332	9,469	9,674	9,761	9,974	10,155	10,293

It is also interesting to note that grades 11 and 12 declined in membership during this period of time; the significant growth in the primary and elementary grades offset the decline in grades 11 and 12. For 1996-97 there are 140 more students in kindergarten than in the 8th grade. Obviously, this increased number of kindergarten and elementary students is marching steadily toward high school.

The number of students to be served is influenced by many factors, including number of births to residents of the district, in-migration, out-migration, private schools, dropouts and non-promotions. Generally, the most significant factor is the number of births to residents of the district.

The State of Tennessee, like other states, collects data regarding the number of live births to residents of each county. The births from other states and other counties are sent to the Tennessee Department of Health so that the data reflect "births to residents of the county," not births which occurred in the county. This is significant in Blount County. In 1994, for example, Blount's births totaled 1,148, but only 532 (46.3%) actually occurred in the county; 52% occurred in Knox County and the remainder occurred in eight other counties and four other states. (15, page 4)

Because of the process of collecting data from all counties and other states, there is a lag in this data. The number of births for 1995 is available, but the number of births for 1996 will not be available until September of 1997.

In 1970 Blount County had 1,098 live births but declined to a low of 838 in 1976. Beginning in 1977, there was a gradual increase through 1985 when there were 1,000 births; not until 1989 was there a return to the 1970 level. This decline, in part, explains the low number of 11th and 12th graders.

Since 1989, Blount County's births have fluctuated somewhat, but generally increased. For the years 1993, 1994, and 1995, the trend is unwavering. (See chart on following page.)

<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
1,092	1,142	1,130	1,158	1,107	1,148	1,175

Source: (22)

Since the number of births is critical to providing the pupil population projections, the planner is projecting the number of births for 1996 to be 1,200. This seems to be a reasonable and conservative number given the recent birth trend and the continued residential development.

Population projections are also essential for county and municipal planning. In a report released February 12, 1997, the Blount County Planning Department, using birth and other data, projected the total number of residents for the county, but also made projections for selected age groups; the 0-4 and 5-19 age groups have implications for school facility planning.

These projections include the totality of Blount County, including the three school districts, but are still valuable. The following summarizes this information:

Projections for Age Groups 0-4 and 5-19

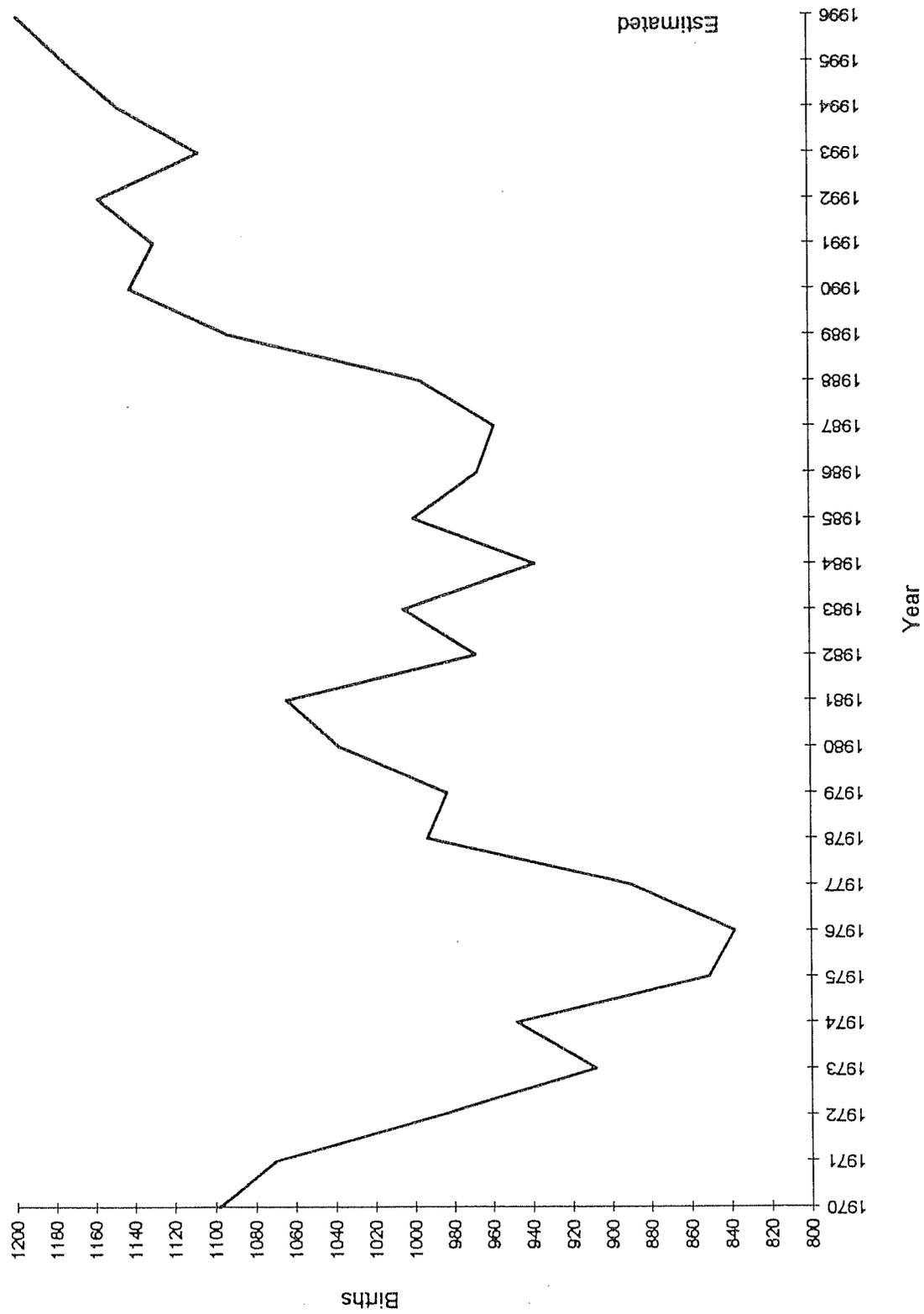
	<u>1990</u>	<u>2000</u>	<u>2010</u>
Ages 0-4	5,279	6,690	7,500
Ages 5-19	16,931	20,364	23,519

Source: (8, page 17)

There are several methods of making projections; however, the straight-line method is most often used in making personal and professional decisions. In the absence of a better system, the planner used a straight-line projection to estimate the number of births for 1996.

The straight-line method can lead to gross errors, however. A straight-line projection of births, in 1950, would have been totally misleading. In the 1930's, during the time of manual telephone switchboards, it was projected that by 1980, all employable females in the United States would be employed as switchboard operators.

Live Births to Residents of Blount County



There are several systems or processes for projecting school memberships. The most recognized and the most easily understood method is the Cohort Survival Ratio Method. The term "cohort" means group. In this methodology, the cohort or group is a grade or class. The methodology involves tracking each group, or class, from birth to kindergarten and upward through the grades to graduation, thereby the three terms, cohort, survival, and ratio. If a group grows, there are indications of in-migration and/or students returning from private schools. If the group declines, there are indications of out-migration, students leaving for private schools, and/or dropouts. Typically the group or cohort declines in grades 9-12 because of dropouts.

Students projections, using the Cohort Survival Ration Method, have been prepared for the Blount County school district. In addition to projections for the district, projections have also been prepared for the William Blount High School attendance area and the Heritage High School attendance area. The complete projections are included in the Appendix. The chart on the following page summarizes these projections.

The chart adequately summarizes the projected growth. The following are more subtle indicators found in the projections.

- o There is in-migration between birth and first grade. The number of students entering the first grade, in the three school districts, exceeds the number of births, six years previously.
- o There is in-migration indicated throughout most of the elementary grades. (see retention ratios above 1.0)
- o The high retention ratios between grades eight and nine likely reflect the high rate of non-promotions in grade nine, but could also indicate students returning from city or private schools.
- o The K-5 projections for the two high school attendance areas indicate about the same amount of growth; however, the William Blount High School Attendance area is projected to grow faster in grades 6-12.

The larger the school district, the more reliable the projections. In a study regarding the reliability of this method after four years, for school districts of 5,000 to 10,000 students, 72% of the projections had an error of less than +-5%; for school districts with over 15,000 students, 69% of the projections were less than +-3% and 100% were less than +-5%.

While there is no sure-fire method of projecting student membership, the planner believes that the Cohort Survival Method is the most reliable and understandable. These projections should, however, be updated periodically.

Student Population Projections

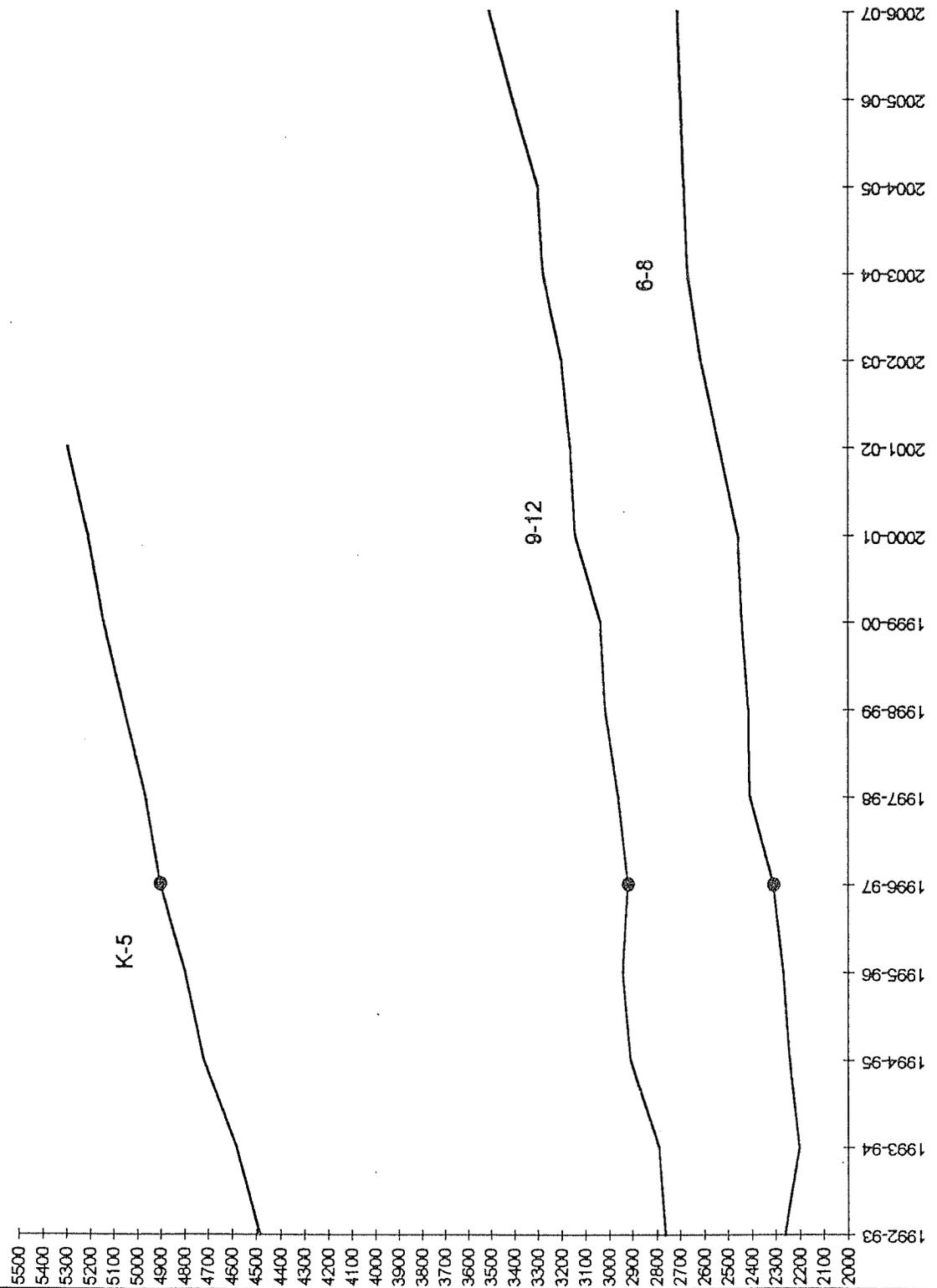
	(Actual) <u>1996-97</u>	<u>2001-02</u>	<u>2006-07</u>
Blount County Schools	10,292	11,167	
Grades K-5	4,904	5,305	
Grades 6-8	2,311	2,538	2,715
Grades 9-12	2,919	3,166	3,511
Wm. Blount Attendance	4,973	5,578	
Grades K-5	2,343	2,546	
Grades 6-8	1,116	1,329	1,402
Grades 9-12	1,440	1,629	1,876
Heritage Attendance	5,319	5,623	
Grades K-5	2,561	2,765	
Grades 6-8	1,195	1,223	1,327
Grades 9-12	1,479	1,551	1,664

Notes: Special education students are reflected only in the K-12 totals. The eleven alternative school students were divided between the two high schools.

The retention ratio between kindergarten and first grade is 1.02. The survival ratio between birth and first grade is .788 or 78.8%, indicating that some percentage of the births attend the two city school districts. Comparing the number of 1990 births to the number of 1996-97 first graders, for the three districts, indicates in-migration.

For the purposes of the projections, all of the Rockford Elementary students were included in the Heritage attendance area; this is appropriate as the Rockford students, west of Highway # 129, typically choose to attend Eagleton for grades 6-8 and Heritage High School. (Also, see chart on the following page and the complete projections in the Appendix.)

Actual and Projected Memberships



I BELIEVE

As an educational planner, I am aware that my recommendations will be based on my educational philosophy, my experience and beliefs regarding school organization, and what I have learned about the Blount County school system. For this reason, after the on-site visits, completion of the section, "Significant Findings," and discussions with the superintendent and his staff, principals, teachers, and public officials, I have summarized my beliefs:

- o That Blount is a beautiful county in a prosperous area, which offers a high quality of life; Blount County will continue to attract industry and retirees and continue to grow in total and school population.
- o That the citizens of Blount County want good schools, have high expectations for their children, are aware of the district's facility deficiencies, and are ready and willing to make improvements.
- o That there is a positive relationship between good school facilities and student achievement; this belief is supported by educational research.
- o That facility planning begins with the fundamental organizational questions: How many schools are needed? Which grades will they serve? How many students will they serve? Where will they be located?
- o That Blount County has two excellent high schools, with good facilities, and a comprehensive range of course offerings; that high school students are not educationally disadvantaged by the facilities at present, but may be so if growth continues.
- o That Blount County, generally, has excellent elementary school facilities; however, the elementary schools have a total of forty-eight portables, approximately 14% of the total number of elementary teaching stations. An additional eighteen portable classrooms will be added for 1997-98.
- o That the district must add an additional twenty-two elementary classrooms to meet the state class size requirements and approximately ten classrooms annually due to growth.

- o That schools with a significant percentage of children in portables, particularly Fairview, Hubbard, and Montvale, place constraints on the education of all children in the school.
- o That students in grades 6-8 are neither children or adults, but are in transition between childhood and adulthood.
- o That students in grades 6-8 are at a critical stage in their development and are best served by educational programs, and a school organization, which are appropriate for their maturity level.
- o That Blount County's middle school students are the most educationally disadvantaged in the system because of inadequate facilities and the K-8 organizational structure.
- o That the Blount County school system is working toward improving the technology program but will never "catch up" without a significant infusion of dollars. In the meantime, middle school and high school students are educationally disadvantaged by the present program. The need to improve the technology program ranks along with the need to improve school organization and facilities.
- o That physical education, art, and music programs are basic in grades K-8. The planner concurs with the staff's desire to strengthen these programs at the elementary and middle school levels.

RECOMMENDATIONS

The following recommendations are based on the Significant Findings; observations at the schools; and discussions with teachers, principals, local school officials, and community leaders.

School Organization

When a board of education adopts a plan for facility improvement, the issue of school organization is critical. If the school organization is not appropriate, mistakes will be made in constructing new schools, constructing additions to existing schools, and renovations.

The Blount County school district is presently organized on a K-8, 9-12 plan of organization. In the past, the staff and board have requested funds to build middle schools, thereby converting to a K-5, 6-8, 9-12 plan of organization.

In the 1950's, most rural school districts were organized on a 1-12 or 1-8, 9-12 basis; most urban school districts were organized on a 1-6, 7-9, 10-12 basis. The 1-6, 7-9, 10-12 pattern was known as a "junior high" plan of organization.

Typically the junior high schools were modeled after the high schools. Students changed classes each period; courses included industrial arts for boys, homemaking for girls, chorus, band, art, and physical education. Junior high schools had athletic teams in most sports and typically had semi-formal proms. The junior high school was truly a "junior" high school.

While some rural areas have retained a K-8, 9-12 organization, in the 1960's there was a movement toward a 1-5, 6-8, 9-12 or "middle school" plan of organization. This movement came about through a realization that children were reaching puberty approximately one year earlier than in the 1930's and were maturing socially at an earlier age due to travel, the media, better nutrition, and child rearing practices.

A 1968 study established 13.5 years as the average age of puberty for girls; a study released on April 8, 1997, from the University of North Carolina at Chapel Hill, by researcher Marcia Herman-Giddens, established 12.5 years as the average age of puberty. (19, page 1A)

The middle school movement held promise for school districts with junior high schools and those with a K-8, 9-12 organization. For districts with junior high schools, an important stimulant for the middle school concept was a rebellion against the sophistication level found in the junior high schools. For school districts organized on a K-8, 9-12 basis, the middle schools provided an opportunity to structure educational programs around the special needs of the "in between" students.

High Point, North Carolina was recognized for outstanding junior high schools in the 1940's. In the early 1980's the board adopted the middle school concept and converted the junior high schools (grades 7-9) to middle schools (grades 6-8). In preparing the community for the change, the board adopted the following definition:

"The middle school is a school for students making the transition from childhood to adolescence. These are students who, in a sense, have 'outgrown' the elementary school, but are not ready for high school. The middle school is neither elementary nor secondary in basic characteristics, but strives to make use of the most appropriate features of each for this unique age group."

The middle school is more than a facility and school organizational pattern - it is an educational concept and a philosophy. For districts with junior high schools, it represents a less sophisticated environment for students in grades 6-8. The curriculum recognizes that students are neither child or adult, that they are experiencing dramatic and frightening changes in their bodies, that they are experiencing changes in their interactions with the opposite sex, that they are now learning to deal with symbolic ideas and abstract concepts, that they have a very strong need for peer acceptance and approval, that they tend to be idealistic, that their interests are short-lived and change frequently, and they are developing personal values rather than adopting, without question, the values which they have been taught. The 1989 Carnegie Report stated, "Middle grade schools are potentially society's most powerful force to recapture millions of youth adrift."

The middle school, serving as a transition between the elementary school and the high school typically, uses "block scheduling" for grades 6-7 whereby students might have one teacher for math and science and another teacher for language arts and social studies. Students in grade eight might change classes each period, similar to high school students.

The curriculum includes many opportunities to explore interests. Required course offerings typically include music, art, and physical education, but also pre-vocational exploratory courses such as occupational information, business exploration, home arts/service exploration, and industrial exploration. Girls and boys take the same courses. Many opportunities for leadership development are available through student government, service clubs, and interest clubs.

Many middle schools have interscholastic athletic programs, but there is less emphasis on winning and more emphasis on participation. Intramural sports are very important in the middle schools. There may be fifty cheerleaders rather than six.

The philosophy statement, adopted by the Virginia Beach City Board of Education in 1989, relates the uniqueness of this age group to the middle school:

"Middle school education shall provide a positive and supportive environment dedicated to enhancing student self-esteem, to increase learning and achievement, and to facilitate the transition to further education and adulthood. The program will foster maximum development of the student's intellectual, physical, social, and emotional abilities by addressing the unique developmental characteristics and individual needs of young adolescents."

The National Middle School Association reports that in 1993-94 the number of middle schools had increased to 13,543. Many states, including Florida, North Carolina, South Carolina, and Georgia, provide leadership and incentives from the state level to implement middle schools. There is a National Middle School Association; many states, including Tennessee, have a middle school association. (16)

Blount County has a significant shortage of classroom space in the elementary schools. Rather than add to the existing elementary

schools or build new ones, the district has the opportunity to build middle schools.

The planner concurs with the staff and board's desire to implement a middle school plan of organization and recommends that the long-range facility plan provide for a K-5, 6-8, 9-12 organization throughout the county.

School Capacities

For the purposes of this study, different methodologies were used to determine the school capacities for the elementary schools and for the high schools.

The high schools, unlike the elementary schools, change classes and do not have a significant number of students who are "pulled out" of a class to attend another class. For this reason, all teaching stations, including the gyms, music rooms, art room, and theater can be counted and multiplied by some factor to obtain the capacity.

For grades 9-12, the state class size regulations allow a maximum average of 30 students for non-vocational classes and a maximum average of 20 for vocational classes. The staff has determined that William Blount has fewer students than the standard and that classes for non-vocational students at Heritage have fewer than the standard. An additional five vocational teachers may be required at Heritage, which has a larger percentage of students enrolled in vocational education.

From subjectively observing the two schools, William Blount appears to be slightly more crowded. Heritage and Blount have approximately the same number of students, but Blount is smaller by five teaching stations and approximately 8,722 sq. ft. Blount also has four portables which compensates for fewer teaching stations.

When the portables and permanent teaching stations at William Blount High School are summed and divided into the number of students, the students per teaching station is 20.01. When the same is calculated for Heritage High School, the students per teaching station is 20.08.

Given all of the above, it appears reasonable to multiply the number of permanent teaching stations at each high school by a factor of 20 to determine the high school's permanent capacity:

William Blount HS: 66 teaching stations x 20 = 1,320 capacity

Heritage HS: 71 teaching stations x 20 = 1,420 capacity

Determining the capacities for the elementary schools is more difficult because the number of exceptional children varies. For the self-contained classes, the class size ranges from five to twelve. For the resource classes, the classroom does not add to the building capacity because these children are assigned to regular classes and "pulled out" for resource.

The methodology which is employed is to reserve classrooms for the special programs and one classroom for music. Also, in anticipation that special art teachers will be assigned to each elementary school by the time the reorganization is implemented, a classroom is also reserved for art.

After the classrooms are reserved, the remaining teaching stations could be multiplied by some factor to establish permanent capacity.

When the maximum averages of twenty students for grades K-3 and twenty-five students for grades 4-5 are combined, the maximum average class size for a K-5 school is 21.66. This is not a realistic way to determine the number of teachers or classrooms required, however, as the number of teachers must be rounded up and cannot be rounded down. For example, if a school has 285 students in grades K-3, a total of 14.5 or 15 teachers would be required. Also, the state requires the maximum averages to be based on K-3 and 4-5, calculated separately.

The Blount County staff did a school-by-school and grade-by-grade analysis to determine that twenty-two additional elementary teachers would be needed under the state regulations. Using this data, it appears that an average of 20.4 students per regular classroom teacher is a realistic planning average for a K-5 school.

The chart on the following page indicates the capacities. Remember that space has been reserved for the exceptional children programs; consequently, all schools will have additional students.

It is recommended that the board adopt the capacity figures for the high schools and elementary schools for planning purposes.

BLOUNT COUNTY SCHOOLS

K-5 Elementary School Capacities

	<u>Permanent Teaching Stations</u>	<u>Teaching Stations Reserved</u>	<u>Net Teaching Stations</u>	<u>School Capacities</u>
Middlesettle. El.	23	4	19	388
Friendsville El.	25	3	22	449
Mary Blount El.	41	7	34	694
Fairview El.	17	3	14	286
Lanier El.	31	5	26	530
sub-total				2,347
Rockford El.	27	7	20	408
Eagleton El.	45	10	35	714
Porter El.	33	4	29	592
Hubbard El.	7	2	5	102
Walland MS	18	4	14	286
Townsend El.	10	2	8	163
Montvale El.	29	4	25	510
sub-total				2,775
total	306	53	253	5,122

Notes: This approach to determining school capacity assumes that programs for exceptional children will remain in the same schools as in 1996-97. Obviously, their locations can be changed when reorganization is accomplished. The indicated school capacities do not include exceptional children programs; however, space has been reserved in the schools for them (including the three pre-K programs).

Teaching stations are reserved as follows: one per school for art; one per school for music (except for a combination art/music room at Hubbard and Townsend). Also, one teaching station is reserved per CDC, LRE/CDC, ABC, pre-K, and resource teacher (except for inclusion teachers).

A school-by-school and grade-by-grade analysis indicates that BEP mandates will require an average class size, for a K-5 elementary school, of 20.4. This is the multiplier used to determine school capacity.

Projected Elementary School Memberships

The planner believes that the projected memberships in the Significant Findings are the most reliable that are available and recommends that the board accept these projections for planning purposes.

The Cohort Survival Ratio Method is an objective procedure for projecting student membership for a district. Projecting for a high school attendance area is useful, but less reliable; using the Cohort Survival Ratio Method for projecting individual elementary school memberships is unreliable.

For this study, it is not imperative to project memberships for the elementary schools, but this information will be helpful to the board. To establish these projections, the planner reviewed the membership history of the elementary schools and discussed the potential for growth with the school staff and the county planner. Based on this information, the planner subjectively established the following, projected memberships for the elementary schools.

Projected K-5 School Memberships

	Percent Projected Change 1996-97 to 2001-02	Projected Membership 2001-02
Middlesettle. El.	-	374
Friendsville El.	+ 12%	436
Mary Blount El.	+ 10%	742
Fairview El.	+ 2%	429
Lanier El.	+ 17%	565
sub-total		2,546
Rockford El.	+ 11%	593
Eagleton El.	+ 3%	521
Porter El.	+ 9%	544
Hubbard/Walland El.	+ 5%	368
Townsend El.	+ 3%	152
Montvale El.	+ 12%	587
sub-total		2,765
total		5,311

Note: Special education students are not included in the projected memberships, but space has been reserved for them.

While the projected memberships for individual elementary schools were derived in a rather subjective manner, the planner believes that they are useful and recommends that they be accepted by the board with the understanding that many factors can influence these numbers.

Number of Schools

The Blount County school district presently has two excellent high schools and high school facilities. These two facilities are presently over capacity, and further growth is projected. The following compares the capacities and projected memberships.

High School Capacities and Projected Memberships

	<u>Capacity</u>	<u>Membership 2001-02</u>	<u>Membership 2006-07</u>
William Blount HS	1,320	1,629	1,876
Heritage HS	1,420	1,551	1,664

Note: The membership figures do not include approximately twenty-three special education students at Heritage and thirty-four special education students at William Blount.

The board of education and the citizens of the Blount County school district must eventually grapple with several fundamental questions regarding high school organization. When is a high school large enough? When is a high school too large? Should permanent classrooms be added to the two high schools? Will doing so delay the need for a third high school? Is it better to plan for portables at the high schools until a third high school can be built?

These are critical questions. The planner believes that a high school with 1,200 students can offer a comprehensive program at a reasonable cost. Beyond that size, there is a duplication of programs and services and fewer opportunities, for individual students, for leadership development and expression. Many students are not intimidated by large schools, but some are.

The planner recommends that the two high schools be renovated, but not expanded. Accommodate overcrowding with portables; adjust the high school attendance line as required to balance memberships and capacities. Plan to eventually build a third high school, south of Maryville; the area in the vicinity of the Blockhouse/Carpenters Campground intersection has been mentioned and seems appropriate.

The board and community has long expressed an interest in middle schools. Schools serving grades 6-8 have already been recommended. Three questions remain. How many middle schools are needed? How many students will each school serve? Where should they be located?

The planner believes that middle schools should, ideally, serve between 600 and 800 students. There is little economy of scale in larger schools. Middle schools of this size, however, have enough students for a comprehensive program, but are small enough for students to be known by the staff and other students and small enough for students to participate in many activities and leadership roles. The district will have 2,538 students in grades 6-8 soon after the new middle schools are completed and 2,715 students within ten years.

The planner explored the question of whether Blount County should build three or four middle schools. **Given the present number of middle grade students and the projected growth, the planner recommends that the Blount County Board of Education plan for four middle schools.**

In the past, the board has suggested four middle schools located in the vicinity of Middlesettlements, William Blount High School, Heritage High School, and between Porter and Rockford elementary schools. Initially, the planner believed that the middle school proposed for the William Blount area should be located further south, closer to Lanier, and perhaps near the highways 129/411 South split. After completing the population projections and after realizing that the district will eventually need a fifth middle school, the planner concurs with the board's thinking.

The planner examined the potential for converting existing elementary schools to middle schools. First, all of the elementary capacity will be needed. Secondly, the elementary schools which are properly located (Eagleton and Mary Blount) are excellent elementary schools, would require modifications and/or additions to serve as middle schools and, given the higher student/teacher ratio for the middle grades, would have had a greater student capacity than is required. Porter was studied as a potential middle school. It is, however, appropriately located and needed as an elementary school. There also appears to be advantages in constructing four, almost identical, new middle schools. **Consequently, the planner recommends that the board construct four new middle schools.**

The Council of Educational Facility Planners, International has established minimum acreage requirements for schools; these standards have been adopted by many states. These standards would require a minimum of forty-five acres for a high school of 1,500 students; a minimum of twenty-seven acres for a middle school of 700 students, and a minimum of seventeen acres for an elementary school of 700 students. The William Blount site, which includes Mary Blount Elementary, presently has 140.22 acres; the Heritage site presently has 99.559 acres.

Fletcher Architects has prepared a study for the board regarding the feasibility of placing an additional school on the Heritage and William Blount high school sites. This study concluded that it was not only feasible but reasonable and cost-beneficial, saving on land costs and allowing some sharing of facilities. The planner, consequently, **recommends that the board place middle schools on each of the high school sites.** This recommendation is made on the condition that the upcoming traffic study is supportive and with the hope that the two high schools, two middle schools, and Mary Blount Elementary School will not be significantly expanded to accommodate additional students.

Specific locations will not be identified for the other two middle schools, but one should be located between Porter and Rockford elementary schools and one should be located in the Middlesettlements area. While the minimum acreage for these two schools would be twenty-seven usable acres, additional acreage would be desirable.

Preserving a "clean feeder school plan" and constructing four middle schools of identical size would be desirable, but the William Blount High School attendance area is projected to grow faster than the Heritage attendance area, in grades 6-8. Also, for safety reasons, it is important that the board work toward using the Alcoa Highway as a dividing line when new schools are planned and built. Since approximately 200 6-8 students from the Rockford/Eagleton area live west of this highway, this places an additional student burden on the west side of the county.

Using the Alcoa Highway as a dividing line, but otherwise generally preserving the elementary and high school attendance areas, the planner recommends the following attendance areas for the middle schools:

Middle School Attendance Areas and 2001-02 Memberships

Middlesettlements Middle School

Middlesettlements, including west Rockford	376
Friendsville	205
Mary Blount, 115/349	115
total	696

Mary Blount Middle School

Mary Blount, 234/349	234
Fairview	201
Lanier	265
total	700

Porter/Rockford Middle School

Rockford, east of Alcoa Highway	76
Porter	255
Eagleton	245
total	576

Heritage Middle School

Hubbard/Walland	173
Townsend	74
Montvale	276
total	523
county total	2,495

The membership for grades 6-8 is projected to increase an additional two hundred students by 2006-07; consequently, the planner recommends that the Middlesettlements and Mary Blount middle schools be constructed to serve 700 students and that the Porter/Rockford and Heritage middle schools be constructed to serve 650 students with core facilities for 700 students. (Since the difference in capacity for 650 and 700 students is only three classrooms, the board may choose to build all four middle schools for 700 students.) Within ten years, the Middlesettlements and Mary Blount middle schools will require portables, and the Porter/Rockford and Heritage middle schools will be at capacity. At that time the board should plan for a fifth middle school, probably near the suggested location for the third high school.

With many of the district's elementary schools presently serving grades K-8, the middle schools will relieve the overcrowding and eliminate the need for portables. An analysis shows this to be accurate; however, due to the reduction in class size and reserving rooms for music and art, little surplus space will be available by the 2001-02 school year. The following illustrates this point.

Projected K-5 School Capacities and Memberships

	<u>School Capacities</u>	<u>Projected Memberships 2001-02</u>
Middlesettle. El.	388	374
Friendsville El.	449	436
Mary Blount El.	694	742
Fairview El.	286	429
Lanier El.	530	565
sub-total	2,347	2,546
Rockford El.	408	593
Eagleton El.	714	521
Porter El.	592	544

Projected K-5 School Capacities and Memberships, Continued

	<u>School Capacities</u>	<u>Projected Memberships 2001-02</u>
Hubbard/Walland El.	102/286 (388)	368
Townsend El.	163	152
Montvale El.	510	587
sub-total	2,775	2,765
total	5,122	5,311

Note: Special education students are not included in the projected memberships, but space has been reserved for them.

With some exceptions, the projected elementary memberships and capacities are workable. An adjustment can be made in the attendance line between Rockford and Eagleton to accommodate all students. Fairview Elementary, however, is short on capacity and in need of renovations. Presently, the board has no place for the Fairview students while the building is being renovated. Also, due to the site limitations, the planner recommends that no more than four classrooms be added, bringing the capacity to 368 students.

To provide for the growth in the William Blount High School attendance area and to allow for the renovation of Fairview, the planner recommends that the board construct a new elementary school, south of Fairview, with a capacity for approximately 650 students, to relieve Mary Blount, Fairview, Lanier, and Montvale elementary schools. It appears that a location near Highway 129 South, south of Old Niles Ferry Road, would be appropriate.

As growth occurs, Middlesettlements, Friendsville, Lanier, Montvale, and Porter should be expanded to a capacity for approximately 650 students (5 sections x 20.4 students x 6 grades plus exceptional children). Because of site constraints, capacity expansion is not recommended for Rockford, Walland, and Hubbard; only limited expansion is recommended for Fairview.

Other Recommendations

Technology - Through local and state incentives, the district is making progress in installing computers for instruction, administration, and operations. It appears, however, that progress is slow and incremental; there does not appear to be a system-wide plan for K-12. Technology staff members are overwhelmed with the repair and maintenance of equipment, leaving little time for planning, visiting other school systems, and attending state and regional workshops.

Without a significant infusion of dollars, the district will be unable to implement a comprehensive technology program. One system-wide coordinator is needed for grades K-12; the high schools need a full-time technology trainer/coordinator; the middle schools and elementary schools need a minimum of half-time trainer/coordinators. Funds are needed for teachers and administrators to visit successful programs and attend conferences and workshops. Funds are also needed for replacement computers, computers, software, and training.

New schools are being built with integrated voice/video/data technology systems. An article in the Appendix describes and discusses this approach, which integrates telephone, cable television, and computer systems. An integrated system can also be installed in existing schools, but the most immediate need is to network each school so that students in the classrooms can access the library card catalog, the Internet, and file servers. Obviously, future installations should be in concert with the district's master technology plan.

Most school districts have a goal, at the elementary level, of installing 5-6 computers per classroom plus one or more keyboarding labs. Middle schools are typically built on a "house plan" with 5-6 computers per classroom and a computer lab in each house. High schools would typically have 5-6 computers per classroom and have departmental computer labs (math, science, language arts, and social studies).

The cost estimates for networking schools vary considerably. Until the district develops a master plan, it is recommended that a minimum of \$4,200,000 (an average of \$300,000 per school) be budgeted to network the schools. This figure does not include additional computers, file servers, printers, and software.

Educational Specifications - There is a wide variety of middle school programs across the state of Tennessee and the nation. This variety is especially evident in the middle grades exploratory programs.

Before an architect can design middle schools for the district, the district must define the educational program. It is recommended that the superintendent appoint a middle school task force/educational specifications committee to define the program and develop "ed specs." This committee needs the time and funds to visit successful programs, participate in workshops and conferences, meet as required, and prepare the necessary documents. This committee may want a broader perspective than Tennessee, as other states also have a variety of excellent, middle school programs.

Maintenance/warehouse facilities - The district has taken the position that new and renovated school facilities should have priority over new maintenance and warehouse facilities. This is a commendable position; however, both are important. It is recommended that the staff and board, as a minimum, evaluate the existing maintenance and warehouse facilities to determine if they should be improved or replaced.

Barriers to the Physically Handicapped - Federal law requires that barriers to the physically handicapped be eliminated by January 1995. It is recommended that the board complete the survey of barriers for Phases II - V and make the required modifications as soon as feasible.

Cost Estimates

Establishing cost estimates for construction projects is always a challenge as the variables include the expectations of the client, available resources, state requirements, geographic area, topography, climate, job market/workforce availability, bidding climate, and the lapsed time between the estimates and the bidding.

For the purposes of this study, based on conversations with local architects and school planners, a square footage cost of \$73 is being used. This cost has been escalated forward for three years at an annual increase of 3.5% to \$81 per square foot for the 1999-2000 school year. If the board can implement these projects earlier, the cost estimates should be reduced by 3.5% annually.

For this study, a school site cost of \$10,000 per acre has been used. This is based on conversations with local officials; however, this is likely a conservative figure. Also, the costs for water, sewer and other utilities are not included; the costs of roads to access the school property, if needed, are not included.

Finally, the cost estimates are based on typical schools as educational specifications will be prepared at a later date. The planner has, however, outlined the elements and procedures for establishing the cost estimates; this allows the board to evaluate the estimates and make adjustments, if necessary.

The largest expenditures are for the four middle schools. The average class ratio under the BEP for grades 6-8 is 28.33. The middle school model upon which the estimates are made provides for twenty-four regular classrooms, plus three exploratory labs, an art room, a vocal music room, an instrumental music room, computer room, five resource rooms (450 sq. ft.), keyboarding room, gymnasium, and two health/PE classrooms.

It is assumed that the schedule will include some class blocks such as language arts/social studies and math/science and that some of the arts, keyboarding, PE, and exploratory classes will be "pulled out" from the academic blocks. The classes which are "pulled out" allow regular classroom teachers to have planning periods, but also mean that all classrooms and labs cannot be multiplied by some factor such as 28.33 to determine capacity. For this model, the capacity is determined by multiplying the 24 academic classrooms by a factor of 28.33 (680) plus exceptional children.

Earlier, it was suggested that all four schools might be planned and built for 700 students and that a reduction to 650 would eliminate or delay only three classrooms. Typically, a middle school is planned on a "house plan" concept; there is a 6th grade house, a 7th grade house, and an 8th grade house. Eliminating three classrooms would mean eliminating one classroom per house - which would likely mean eliminating one classroom in each of three locations. Adding three classrooms, one in each of three locations, would likely be expensive. Without question, there is justification for building four identical middle schools for 700 students each.

Finally, it is recommended that the board accept the inevitability of portable units at the four middle schools, as a step toward building the fifth middle school. The educational specifications should include a location for the portables, convenient to each house, with consideration given to walkways, utilities, and access for firefighting equipment.

The following are cost estimates for the recommended projects.

New Middle Schools - 700 Student Capacity

700 students x 145 sq. ft. per student = 101,500 sq. ft.

101,500 sq. ft. x \$81	\$8,221,500
fees, permits, and related costs @ 10%	822,150
furniture and equipment @ 15%	<u>1,233,225</u>
total	\$10,276,875

Note: The cost for a 650 student capacity middle school with core facilities for 700 students would be approximately \$9,969,480.

<u>Middlesettlements Middle School - 700 capacity</u>	\$10,276,875
site - 30 acres @ \$10,000 per acre	300,000
site development, including PE fields, walks, parking, paved internal roads, landscaping, exterior lighting, and grading for a basic stadium.	<u>500,000</u>
total	\$11,076,875

<u>William Blount Middle School - 700 capacity</u>	10,276,875
Site -	---
site development, including PE fields, walks, parking, paved internal roads, landscaping, exterior lighting, and grading for a basic stadium.	<u>200,000</u>
total	\$10,476,875

<u>Rockford/Porter Middle School - 650 capacity</u>	\$9,969,480
Site - 30 acres @ \$10,000 per acre	300,000
site development, including PE fields, walks, parking, paved internal roads, landscaping, exterior lighting, and grading for a basic stadium.	<u>500,000</u>
total	\$10,769,480

<u>Heritage Middle School - 650 capacity</u>	\$9,969,480
site -	---
site development, including PE fields, walks, parking, paved internal roads, landscaping, exterior lighting, and grading for a basic stadium.	<u>200,000</u>
total	\$10,169,480

New Elementary School - 650 capacity

650 students x 129 sq. ft. per student = 83,850 sq. ft.

83,850 sq. ft. x \$81	\$6,791,850
fees, permits, and related costs @ 10%	679,185
Furniture and equipment @ 15%	1,018,777
Site - 20 acres x \$10,000 per acre	200,000
site development, including PE fields, walks, parking, paved internal roads, landscaping, and exterior lighting.	<u>400,000</u>
total	\$9,089,812

Renovations - Thorough cost estimates for renovations would require a detailed study of each facility regarding floors, roofs, HVAC systems, electrical services, plumbing services, and kitchen equipment, as well as the adequacy of educational spaces and the site; such a study is beyond the scope of this project. The planner did, however, examine all of the schools, in a general way, regarding the need for renovations; the staff also indicated that the district's plans include renovating Porter, Fairview, Rockford, and Hubbard, with less extensive renovations to Walland. No estimates are available for these projects with the exception of Fairview, where the renovation costs were projected at \$1.2 million.

The planner, after trying several accepted procedures for estimating renovation costs, chose to base the estimates on a percentage of new construction costs. For a moderate renovation of a 1950-70's building, a typical cost is one-third of the cost of new construction. Using this benchmark, a percentage was assigned to each of the schools. The cost of a new elementary school has been calculated above at \$11,500 per student. This cost was multiplied by the student capacity and by the assigned percentage.

Since Hubbard has only a six-acre site, has only seven classrooms, and lacks a gym, it is recommended that this facility be properly maintained, but renovated only for safety and appearances. Continue to pair this school with Walland; consider Hubbard/Walland as one school, perhaps with one administrator, and assign only grades K-1 here. Under these circumstances, Hubbard would continue to serve the community well until additional space is needed in this area, at which time a 650 student replacement school would be built.

The following are the recommended percentages and estimated costs of renovations:

Porter Elementary	@ 35%	x	592 capacity	=	\$2,382,800
Fairview Elementary	@ 35%	x	286 capacity	=	1,151,150
four classroom addition	@ \$103,000				412,000
Rockford	@ 25%	x	408 capacity	=	1,173,000
Walland	@ 25%	x	286 capacity	=	822,250
Hubbard	@ 15%	x	102 capacity	=	175,950

Technology - networking schools - \$4,200,000

total for new construction, renovations,
and technology networking, but not including
improvements to the maintenance facilities,
removing barriers to the handicapped, or
technology improvements beyond the basic
networking \$61,899,672

Priorities

Establishing priorities is always difficult; however, the planner believes that the greatest need is to construct the four middle schools and network all schools for technology.

Constructing the middle schools will relieve the elementary schools and, perhaps, provide some space for elementary children while their schools are being renovated.

The second priority is the renovation of the elementary schools; the third priority is the construction of the new elementary school. It may be necessary to delay the renovation of Fairview until the new elementary school can be occupied.

The following are the cost estimates, by priorities:

Summary of Cost Estimates and Priorities

Priority I	Construct four middle schools and network all schools for technology.	\$46,692,710
Priority II	Renovate Porter, Fairview, Rockford, Walland, and Hubbard. Add four classrooms at Fairview.	6,117,150
Priority III	Construct a new elementary school near Highway 129 South, south of Old Niles Ferry Road.	9,089,812
total		\$61,899,672

APPENDIX

Acknowledgements

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School Attendance Areas

Student Population Projections

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 William Blount High School Attendance Area

 Heritage High School Attendance Area

Educational Technology

Resume - Darrell Spencer, Ed. D.

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BLOUNT COUNTY SCHOOLS
1996-97

AVERAGE DAILY MEMBERSHIP
Reporting Period 1

SCHOOL	K	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	SE	TOTAL
ALT								2	2	4	1	4			13
EAG k-8	95	84	90	83	80	74	164	165	124					53	1012
FAJ k-8	64	63	77	73	67	77	48	52	46						567
FRI k-8	64	81	58	74	49	63	68	63	61						581
HUB k-3	64	61	52	42											219
LAN k-8	90	80	85	69	78	82	96	79	75					2	736
MBE k-8	123	124	86	130	111	101	110	111	111					38	1045
MES k-8	68	63	62	55	57	69	77	57	60						568
MTV k-8	91	87	98	68	86	94	91	73	90						778
PTR k-8	76	101	84	71	80	87	71	92	89					1	752
RKF k-5	108	93	93	76	69	95								7	541
** RKB															
TWN k-5	28	20	26	34	21	19									148
WAL 4-8					56	75	68	93	73						365
HHS 9-12										427	420	332	295	23	1497
WBH 9-12										410	393	320	313	34	1470
TOTAL	871	857	811	775	754	836	793	787	731	842	814	656	608	158	10293

** RKB was closed and the students moved to Hubbard (K-3) and Walland (4-5) for the 1996-97 school year.

BLOUNT COUNTY POPULATION PROJECTION

Birth Year	Births	SR	School Year	K	Average Daily Membership											
					1	RR	2	RR	3	RR	4	RR	5	RR	6	RR
1986	967	0.860	1992-93	742	832	0.917	722	1.012	742	1.013	732	1.016	715	1.001	755	0.984
1987	958	0.841	1993-94	785	806	0.935	763	1.045	731	1.016	752	1.015	744	1.023	716	1.042
1988	996	0.825	1994-95	840	822	0.956	754	0.993	797	1.025	743	1.036	763	1.029	761	1.012
1989	1092	0.763	1995-96	845	833	0.974	786	0.986	749	1.007	817	1.023	770	1.030	785	1.003
1990	1142	0.750	1996-97	871	857	0.946	811	1.009	775	1.015	754	1.023	836	1.021	793	1.010
				Projected Membership												
1991	1130	0.788	1997-98	893	890	0.946	810	1.009	818	1.015	787	1.023	771	1.021	853	1.010
1992	1158	0.788	1998-99	853	913	0.946	842	1.009	818	1.015	831	1.023	805	1.021	787	1.010
1993	1107	0.788	1999-00	885	872	0.946	863	1.009	850	1.015	830	1.023	850	1.021	821	1.010
1994	1148	0.788	2000-01	906	905	0.946	825	1.009	871	1.015	863	1.023	849	1.021	867	1.010
1995	1175	0.788	2001-02	925	926	0.946	855	1.009	832	1.015	884	1.023	882	1.021	867	1.010
1996*	1200		2002-03			0.946	876	1.009	863	1.015	845	1.023	904	1.021	901	1.010
			2003-04					1.009	883	1.015	876	1.023	864	1.021	923	1.010
			2004-05							1.015	897	1.023	896	1.021	882	1.010
			2005-06									1.023	917	1.021	915	1.010
			2006-07											1.021	936	1.010

* 1996 births are estimated
 ** Special students are included in K-12 total only

BLOUNT COUNTY POPULATION PROJECTION

7	RR	8	RR	9	RR	10	RR	11	RR	12	Spec.	Total	K-12	K-5	6-8	9-12
792	0.938	716	1.098	836	0.934	883	0.896	635	0.964	610	162	9674	9674	4485	2263	2764
743	0.989	743	1.172	786	0.961	781	0.895	612	0.953	612	177	9751	9751	4581	2202	2791
746	0.957	735	1.171	871	0.896	755	0.858	699	0.936	583	160	10029	10029	4719	2242	2908
770	0.949	714	1.178	861	0.945	780	0.841	648	0.938	654	144	10156	10156	4800	2269	2943
787	0.958	731	1.155	841	0.934	814	0.873	656	0.948	608	158	10292	10292	4904	2311	2919
801	0.958	754	1.155	844	0.934	785	0.873	710	0.948	622	158	10498	10498	4970	2409	2962
862	0.958	768	1.155	871	0.934	788	0.873	685	0.948	673	158	10654	10654	5061	2417	3018
795	0.958	826	1.155	887	0.934	814	0.873	688	0.948	649	158	10788	10788	5150	2443	3038
830	0.958	762	1.155	954	0.934	828	0.873	710	0.948	652	158	10979	10979	5218	2459	3144
876	0.958	795	1.155	880	0.934	891	0.873	723	0.948	673	158	11167	11167	5305	2538	3166
876	0.958	840	1.155	918	0.934	822	0.873	777	0.948	685	158				2616	3202
910	0.958	839	1.155	970	0.934	858	0.873	717	0.948	737	158				2672	3281
932	0.958	872	1.155	969	0.934	906	0.873	748	0.948	680	158				2686	3303
891	0.958	893	1.155	1007	0.934	905	0.873	790	0.948	709	158				2700	3411
924	0.958	854	1.155	1032	0.934	940	0.873	790	0.948	749	158				2715	3511

WM. BLOUNT HIGH SCHOOL

School(s) Middle settlements, Friendsville, Mary Blount, Fairview, Lanier and Wm. Blount HS

Birth Year	Births	SR	School Year	Average Daily Membership												
				K	1	RR	2	RR	3	RR	4	RR	5	RR	6	RR
1986	967	0.389	1992-93	360	376	0.926	336	1.048	336	1.024	333	1.012	329	1.009	342	1.029
1987	958	0.384	1993-94	365	368	0.948	348	1.055	352	1.020	344	1.015	337	1.077	332	1.057
1988	996	0.398	1994-95	375	396	0.997	349	0.997	367	1.000	359	1.047	349	1.032	363	0.986
1989	1092	0.342	1995-96	401	373	0.987	395	1.015	348	1.040	367	1.068	376	1.061	360	1.008
1990	1142	0.360	1996-97	409	411	0.964	368	1.029	401	1.021	362	1.036	392	1.045	399	1.020
				Projected Membership												
1991	1130	0.368	1997-98	419	416	0.964	396	1.029	379	1.021	409	1.036	375	1.045	410	1.020
1992	1158	0.368	1998-99	401	426	0.964	401	1.029	408	1.021	386	1.036	424	1.045	392	1.020
1993	1107	0.368	1999-00	416	407	0.964	411	1.029	413	1.021	416	1.036	400	1.045	443	1.020
1994	1148	0.368	2000-01	425	422	0.964	393	1.029	423	1.021	421	1.036	431	1.045	418	1.020
1995	1175	0.368	2001-02	434	432	0.964	407	1.029	404	1.021	432	1.036	436	1.045	450	1.020
1996*	1200		2002-03			0.964	417	1.029	419	1.021	413	1.036	447	1.045	456	1.020
			2003-04						429		428	1.036	427	1.045	467	1.020
			2004-05							1.021	438	1.036	443	1.045	446	1.020
			2005-06									1.036	454	1.045	463	1.020
			2006-07											1.045	474	1.020

* 1996 births are estimated

** Special students are included in K-12 total only

WM. BLOUNT HIGH SCHOOL

7	RR	8	RR	9	RR	10	RR	11	RR	12	Spec.	Total	K-12	K-5	6-8	9-12
371		345		429		355		294		302	54	4562	4562	2070	1058	1380
	0.978		1.200		0.909		0.862		1.003							
352		363		414		390		306		295	50	4616	4616	2114	1047	1405
	1.037		1.207		0.913		0.915		0.954							
351		365		438		378		357		292	41	4780	4780	2195	1079	1465
	0.997		1.132		0.868		0.862		0.944							
358		350		413		380		326		337	49	4833	4833	2260	1068	1456
	0.989		1.177		0.952		0.847		0.960							
363		354		412		393		322		313	74	4973	4973	2343	1116	1440
	1.000		1.179		0.910		0.872		0.965							
407		363		417		375		343		311	74	5094	5094	2394	1180	1446
	1.000		1.179		0.910		0.872		0.965							
418		407		428		380		327		331	74	5202	5202	2446	1217	1466
	1.000		1.179		0.910		0.872		0.965							
400		418		480		390		331		316	74	5314	5314	2463	1260	1517
	1.000		1.179		0.910		0.872		0.965							
452		400		493		437		340		320	74	5449	5449	2516	1270	1589
	1.000		1.179		0.910		0.872		0.965							
427		452		471		449		381		328	74	5578	5578	2546	1329	1629
	1.000		1.179		0.910		0.872		0.965							
460		427		533		429		391		368	74				1342	1721
	1.000		1.179		0.910		0.872		0.965							
465		460		503		485		374		378	74				1392	1740
	1.000		1.179		0.910		0.872		0.965							
476		465		542		458		423		361	74				1388	1784
	1.000		1.179		0.910		0.872		0.965							
455		477		548		493		399		408	74				1395	1849
	1.000		1.179		0.910		0.872		0.965							
472		456		562		499		430		385	74				1402	1876
	1.000		1.179		0.910		0.872		0.965							

HERITAGE HIGH SCHOOL

School(s) Rockford, Eagleton, Porter, Hubbard, Rocky Branch, Walland, Townsend, Montvale, and Heritage HS

Birth Year	Births	SR	School Year	Average Daily Membership												
				K	1	RR	2	RR	3	RR	4	RR	5	RR	6	RR
1986	967	0.472	1992-93	382	456	0.910	386	0.982	406	1.005	399	1.020	386	0.995	413	0.947
1987	958	0.457	1993-94	420	438	0.925	415	1.036	379	1.013	408	1.015	407	0.978	384	1.031
1988	996	0.428	1994-95	465	426	0.918	405	0.990	430	1.047	384	1.026	414	1.027	398	1.035
1989	1092	0.421	1995-96	444	460	0.963	391	0.957	401	0.978	450	0.987	394	1.000	425	0.998
1990	1142	0.391	1996-97	462	446	0.929	443	0.991	374	1.011	392	1.012	444	1.000	394	1.003
				Projected Membership												
1991	1130	0.421	1997-98	473	476	0.929	414	0.991	439	1.011	378	1.012	397	1.000	444	1.003
1992	1158	0.421	1998-99	453	488	0.929	442	0.991	411	1.011	444	1.012	382	1.000	397	1.003
1993	1107	0.421	1999-00	469	466	0.929	453	0.991	438	1.011	415	1.012	449	1.000	362	1.003
1994	1148	0.421	2000-01	480	483	0.929	433	0.991	449	1.011	443	1.012	420	1.000	449	1.003
1995	1175	0.421	2001-02	491	495	0.929	449	0.991	429	1.011	454	1.012	448	1.000	420	1.003
1996*	1200		2002-03			0.929	460	0.991	445	1.011	434	1.012	459	1.000	448	1.003
			2003-04						455	1.011	450	1.012	439	1.000	459	1.003
			2004-05								460	1.012	455	1.000	439	1.003
			2005-06									1.012	466	1.000	455	1.003
			2006-07											1.000	466	1.003

* 1996 births are estimated

** Special students are included in K-12 total only

HERITAGE HIGH SCHOOL

7	RR	8	RR	9	RR	10	RR	11	RR	12	Spec.	Total	K-12	K-5	6-8	9-12
421	0.905	371	1.003	407	0.958	328	0.933	341	0.930	308	108	5112	5112	2415	1205	1384
391	0.946	381	1.134	372	1.013	390	0.877	306	0.951	317	127	5135	5135	2467	1156	1385
396	0.919	370	1.211	432	0.926	377	0.857	342	0.924	291	119	5249	5249	2524	1164	1442
412	0.915	364	1.179	448	0.940	400	0.835	323	0.913	316	95	5323	5323	2540	1201	1487
424	0.921	377	1.131	429	0.959	421	0.875	334	0.929	295	84	5319	5319	2561	1195	1479
395	0.921	391	1.131	427	0.959	412	0.875	369	0.929	310	84	5408	5408	2577	1230	1517
445	0.921	364	1.131	442	0.959	409	0.875	360	0.929	343	84	5463	5463	2619	1206	1554
398	0.921	410	1.131	412	0.959	424	0.875	358	0.929	335	84	5493	5493	2690	1190	1529
383	0.921	366	1.131	464	0.959	395	0.875	371	0.929	333	84	5554	5554	2708	1199	1563
450	0.921	353	1.131	415	0.959	445	0.875	346	0.929	345	84	5623	5623	2765	1223	1551
421	0.921	415	1.131	400	0.959	398	0.875	390	0.929	321	84				1283	1509
449	0.921	388	1.131	469	0.959	383	0.875	348	0.929	362	84				1296	1563
460	0.921	414	1.131	439	0.959	450	0.875	336	0.929	324	84				1313	1548
440	0.921	424	1.131	468	0.959	421	0.875	394	0.929	312	84				1319	1595
456	0.921	405	1.131	480	0.959	449	0.875	369	0.929	366	84				1327	1664

EDUCATIONAL TECHNOLOGY

By Darrell Spencer, Ed.D.
Darrell Spencer and Associates

Technology or the use of computers is having a profound impact on public education. In the early 1970's, computers in classrooms were discussed as "futuristic." In the 1980's, as personal computers became affordable, many schools established computer labs, or provided a limited number of stand-alone computers for the media center or selected classrooms. Computerized card catalog and circulation systems were occasionally installed in new media centers. During this same period, most school districts placed computers in each school office for word processing and student records. New or upgraded heating, ventilating, and air conditioning (HVAC) systems were often computer-controlled.

Today, forward-thinking boards of education are planning for integrated, networked, voice/video/data telecommunications systems in new schools. Where a complete, integrated system cannot be installed initially, the infrastructure of the building and the electrical systems are being planned to accommodate integrated technology, when funds are available.

An integrated telecommunications system allows for the transmission of voice, video, and data among the various offices and classrooms in a school, among schools, with the district office, with schools in other school districts, with governmental agencies, and with public libraries. With optional equipment, the system can receive satellite transmissions and produce TV programs for in-house or external use.

The electronic sub-systems within an integrated voice/video/data system are as follows:

- o Voice - A telephone and public address system connecting classrooms, offices, media center, workrooms, central storage rooms, cafeteria, and bus loading area. Staff members can call within the building or outside the building. The system is also used for paging or announcements.

- o Video - A television-type distribution system which can receive signals from cable or antenna or distribute school-produced programs. Through multiple channels, the media center distributes signals from VCRs, cable, satellite, or local productions to classrooms on request.

Teachers use their telephone pad to start, stop, reverse, or replay VCR programs. The television distribution system in some schools has only one channel. A state-of-the-art system would have multiple channels.

- o Data - Networking or interconnecting the computers throughout the school (local area network or LAN) and to outside sources such as the district office, computer bulletin boards, home computers, other school libraries, governmental offices, and public libraries.

Networking data is used for instruction, administration, and management. For example, one instructional software program can be used throughout the school; students can work individually or on group activities, through the network. Attendance can be entered in the classroom and received in the school office or the district office. Likewise, library books, supplemental books and textbooks can be bar coded and inventoried by computer. Instructional supplies, custodial supplies, and foodstuffs can be ordered directly from their source. The heating, ventilating, and air conditioning systems, as well as the lighting system, can be monitored and controlled from the district office, with appropriate overrides. Student lunches can be recorded by computer, similar to the supermarket checkout.

As boards of education plan to construct new schools or renovate existing schools, two fundamental decisions must be made regarding the technology systems:

- o Should the infrastructure of the building and the electrical systems be planned to accommodate an integrated voice/video/data system? The answer should be an unqualified "Yes." It would be unfortunate if a new school is constructed without appropriate conduit, wall boxes, cableways/wireways/raceways, equipment rooms, wire closets, and sufficient electrical power to accommodate a modern technology program.

- o Should an integrated system be installed initially? The answer to this question depends on the availability of funds. If funds are available, the total system should be installed. If funds are not available, only the essential sub-systems should be installed. The essential sub-systems include the library automated card catalog and check-out system, the television distribution system, an energy management system, and the intercom system. Obviously, these elements should be compatible with the sub-systems which will be installed later. Installing the entire system initially is more cost-effective and insures compatibility.

There are two general approaches to planning and installing an integrated voice/video/data system. Several firms design and install the systems as a package. Also, many electrical engineering firms can design and specify an integrated system to be included in the electrical contract. If the package approach is selected, it is important that the design/installation firm be selected prior to the completion of working drawings. The designer/installer should assist the architect and electrical engineer in planning the building infrastructure to accommodate the system.

Darrell Spencer, Ed.D., Educational Planner

For more than twenty-seven years, Dr. Spencer has assisted boards of education in the areas of school organization, facilities, and finance. From 1970 to 1977 he was employed as an educational planner with the North Carolina Department of Public Instruction. In this role, he prepared organization, facility, and finance master plans for approximately forty school districts. In 1977, he was promoted to Associate Director of the Division of School Planning. In this position he continued to prepare master plans for local districts, but also supervised the preparation of approximately one hundred master plans and assisted numerous school districts with educational specifications for new or renovated facilities.

Darrell Spencer was appointed Director of the Division in 1984 and Assistant State Superintendent for School Facility Planning in 1987. During his tenure as Assistant State Superintendent, the North Carolina General Assembly enacted the "School Facilities Finance Act of 1987" which provided \$3.2 billion for school construction over a ten-year period. Under this legislation, school districts receive approximately \$300 per child, per year, for school renovations and construction.

Since 1988, Dr. Spencer has been in private practice as an educational planner. He prepared long-range facility plans for School District Five of Lexington and Richland Counties, Lee County, and McCormick County, South Carolina; Lee County and Tupelo, Mississippi; Bulloch County, Georgia; Asheville, North Carolina; and Blount County, Tennessee. He established pupil locator systems and pupil assignment plans for school districts in South Carolina including School District Five of Lexington and Richland Counties, Richland School District Two, and Greenwood Fifty; he served as a consultant to the school district Merger Task Force for Durham City and Durham County, North Carolina, and prepared educational specifications for a new elementary school and a new high school.

Darrell Spencer provided the facility master plan for Guilford County, North Carolina, where the county district merged with the High Point and Greensboro school districts. The merged school district had approximately 54,000 students and ninety-two schools.

Dr. Spencer has served as president of three national and regional school facility planning organizations. The Council of Educational Facility Planners, International named him "1993 Planner of the Year." He has authored numerous publications and is well known for his lectures on all aspects of school organization, school finance, and school facility planning.