CITY OF JOHNSON CITY, TENNESSEE

Johnson City School Plan

2004 - 2014

COMPREHENSIVE PLAN

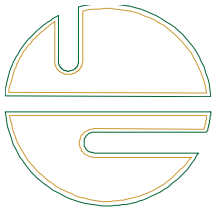
JOHNSON CITY SCHOOL PLAN
JOHNSON CITY COMPREHENSIVE PLAN

ADOPTED BY:

JOHNSON CITY BOARD OF COMMISSIONERS
NOVEMBER 18, 2004

JOHNSON CITY REGIONAL PLANNING COMMISSION
AUGUST 10, 2004

PREPARED BY: CITY OF JOHNSON CITY PLANNING DEPARTMENT



JOHNSON CITY TENNESSEE BOARD OF COMMISSIONERS

Pete Paduch, Mayor

C. H. Charlton, Vice-Mayor
Steve Darden
Dr. Ricky Mohon
Dr. Phil Roe

Pete Peterson, Acting City Manager

JOHNSON CITY REGIONAL PLANNING COMMISSION

David Lefemine, Chairman[1]
Patricia Oldham, Vice-Chairman
Kevin Cole [1] [2]
Mary Alexander[1]
Vernon Bradley
Joe Grandy
Bobby Jobe [2]
Dr. Michael Marchioni [1] [2]
Danny Matthews [2]
Bob Owens [2]
Wayne Robertson
Dr. Phil Roe[1]
Mark Sizemore
Walt Tittle, Jr. [2]
Robert White

JOHNSON CITY BOARD OF EDUCATION

Vice-Chair, Sheila Cox

Prepared By

The Johnson City Planning Department

601 East Main Street, PO Box 2150, Johnson City, Tennessee 37605-2150

Staff Responsible

James D. Moody, Planning Director
Steve Neilson, Long-Range Planning Coordinator
Stuart Helbus, Planner

[1] Member of the School Plan Committee
[2] Former Planning Commission member

Acknowledgements

Special thanks goes to the following Johnson City School System staff members who participated on School Plan Committee. Their knowledge and expertise were invaluable in the development of the School Plan.

Dr. Robbie Anderson, Curriculum Director
Dr. Debra Bentley, Principal, Mountain View Elementary
John Phillips, Principal, Lake Ridge Elementary

Table of Contents

LIST OF TABLES

Page

LIST OF FIGURES

LIST OF MAPS

During the 1980s and 1990s, Johnson City experienced significant population and economic growth. New and better paying jobs, an increasing tax base, a high quality education system, and the improving quality of life reflect the advantages of growth in Johnson City. However, there are also disadvantages to growth, such as haphazard urban growth, also known as urban sprawl, increased traffic congestion, and increased demands on public facilities and services. As growth continues and more homes are built, the increasing number of residents will generate a greater demand for public facilities and services.

The quality of the city's school system is a major factor in this growth and quality of life. A high-quality education contributes to a more skilled, knowledgeable, and diversified labor force; provides a source of community pride; and fosters new investment. This new growth and investment promotes additional prosperity, which in turn supports further educational progress.

PURPOSE OF THE PLAN

In this study, the emphasis is on physical facilities (land and buildings), with particular attention to elementary schools, the Liberty Bell campus, and the Science Hill High School campus. Analyses of the school system's curriculum and administration are outside the scope of the study.

Upon adoption, the School Plan will be the official statement of the Johnson City Regional Planning Commission and the Board of Commissioners concerning school facilities during the 2005-2015 period. The report is intended to provide the City Commission with the information necessary to make decisions concerning the need for and the general location, extent, and timing of new or expanded schools.

The purposes of this study are as follows:

- To provide current information on growth trends, including population, development, and annexations;
- To assess the adequacy of existing physical facilities and identify existing and future deficiencies;
- To maintain a clear understanding of existing and projected student populations and the resulting need for school facilities;
- To provide a basis for comprehensive short-range and long-range action by the city in the development of school facilities;

PREVIOUS PLANNING EFFORTS

Frequent study and deliberation of Johnson City's schools has been ongoing since 1980, when the Planning Department began work on a comprehensive schools plan. That effort culminated in the 1988 *School Facilities Plan*. The Board of Education later modified

the plan and it was adopted as part the General Plan in February 1990. In 1991, the Joint School Facilities Committee was formed to prepare a comprehensive plan for elementary schools in Johnson City. The committee consisted of two City Commissioners, two School Board members, the City Manager, and two Planning Commissioners.

Together with the 1988 *School Facilities Plan*, the plan provided the framework for the city's school building and renovation program during the 1990s. During this period, four new elementary schools and the Indian Trail Middle School were constructed, along with renovations and upgrades to older, existing facilities.

ASSUMPTIONS

In any school plan, certain assumptions are necessary. The following assumptions were formulated in this study:

- The city of Johnson City and Washington County school systems will not consolidate during the 2004-2014 planning period;
- Population growth will continue at a moderate rate (about 1.3 percent per year) during the planning period; and
- The city will continue a moderate annexation policy at approximately the same rate as in the recent past.

GOAL

By definition, the School Facilities Plan is a guide to achieve certain goals and objectives. The overall goal to be achieved with this Plan is:

> To provide high-quality educational facilities in Johnson City which are sufficient to meet enrollment and program needs in an efficient, economical, and equitable manner.

OBJECTIVES

More specific objectives related to this overall goal are to:

- TO PROVIDE HIGH-QUALITY SCHOOL FACILITIES WHICH MEET OR EXCEED STATE EDUCATION STANDARDS.
- TO ENSURE THAT ALL STUDENTS GRADUATE FROM HIGH SCHOOL.
- TO ENHANCE PARENT AND COMMUNITY INVOLVEMENT.
- TO PROVIDE A SAFE AND SECURE SCHOOL ENVIRONMENT.
- TO PROVIDE SCHOOL FACILITIES AND SERVICES THAT WILL MEET THE NEEDS OF THE CITY'S PRESENT AND FUTURE RESIDENTS.
- TO PROVIDE PROPERLY LOCATED, HIGH QUALITY SCHOOLS THAT SERVE AS COMMUNITY CENTERS AND SUPPORT THE DESIRED LAND USE PATTERN IN JOHNSON CITY.
- TO ACHIEVE THE MAXIMUM USE AND BENEFIT FROM EXISTING AND FUTURE FACILITIES THROUGH COOPERATIVE RELATIONSHIPS BETWEEN PUBLIC, PRIVATE, AND COMMUNITY ORGANIZATIONS.

Population change, especially changes in school age (5-19) and childbearing age (20-44) cohorts, is one of the most important considerations in planning for schools. A school plan, more than any other phase of the Comprehensive Plan, must be related to the population it serves. This chapter examines past demographic trends and projections (population change and age), as well as past and projected development patterns, both of which greatly influence the demand and location of schools.

POPULATION AND DWELLING UNITS

Johnson City's population increased during the 1960-2000 period from 29,892 to 55,469 residents, an 85.6 percent increase. The greatest rate of increase occurred between 1980 and 1990, when the population increased by 9,628 people, or 24.2 percent (Table 1). During this time, Johnson City grew at a faster rate than the State of Tennessee, the SMSA, and Washington County. The city's growth has resulted from: 1) natural increase (births minus deaths); 2) in-migration (people moving into the city); and 3) annexation. The majority of this growth is attributed to the city's continued annexation of developing areas. The rate of population growth slowed during the 1990s to 12.3 percent, with an increase of only 3,773 residents, substantially less than the growth rates of both the state and Washington County. This decrease in population growth reflects the reduced emphasis on annexation.

Table 1. Population Trends of Selected Areas
1960-2000

Area	1960	1970	1980	1990	2000	Percent Change 1990-2000
United States	179,323,175	203,235,298	226,504,825	248,709,873	281,421,906	13.20%
Tennessee	3,567,089	3,926,018	4,591,120	4,877,185	5,689,283	16.70%
SMSA	347,132	373,591	433,638	436,047	480,091	10.10%
Washington County	64,832	73,924	88,755	92,315	107,198	16.10%
Johnson City	29,892	33,770	39,753	49,381	55,469	12.30%

Source: 1960-2000, U.S. Bureau of the Census

The 2000 Census placed the number of dwelling units in Johnson City at 25,730. This represents an increase of 4,490 units or 21.1 percent over 1990 figures (Table 2). Between 1980-1990, 6,220 dwelling units were added to the city. Paralleling national trends, the overall number of persons per dwelling unit in Johnson City has continued to decline from 3.48 in 1960 to 2.16 in 2000.

Table 2. Dwelling Unit Trends, Johnson City
1960-2000

Year	No. of Dwelling Units	Persons per Dwelling Unit
1960	8,579	3.48
1970	10,877	3.1
1980	15,020	2.65
1990	21,240	2.32
2000	25,730	2.16
Change1990-2000	4,490	-0.17

Source: 1960-2000, U.S. Bureau of the Census

AGE COMPOSITION

Table 3 shows that there has been a continuing shift in the age distribution of the city's population. The number of childbearing adults (ages 20-44) and post-childbearing adults (ages 45 and older) has continued to increase from 1970 to 2000. At the same time, the numbers of preschool (under 5) and school age (5-19) population have also continued to increase. This has resulted in more children entering childcare facilities and schools. Although the numbers of children in each age cohort have increased since 1990, the proportions of each have remained consistent. The relative importance of these figures to school planning lies in the trends of change in pre-school, school age, and especially childbearing populations (see Figure 1).

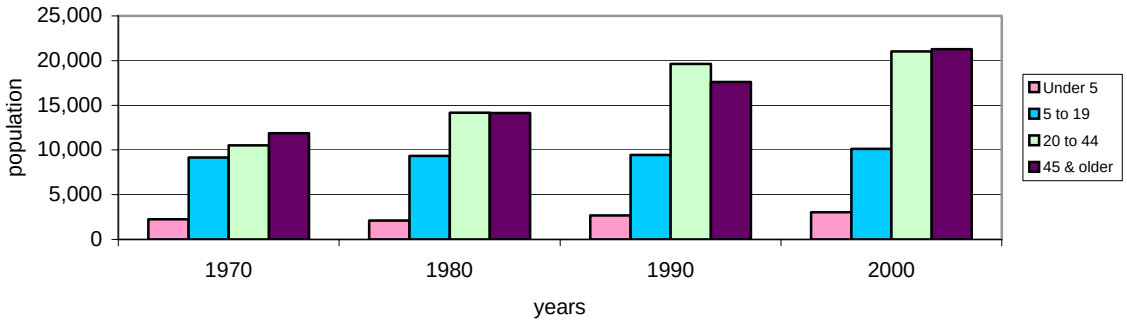
Table 3. Population by Age, Johnson City
1980-2000

	1980		1990		2000	
Age Group	Population	Percent of Total	Population	Percent of Total	Population	Percent of Total
Under 5	2,113	5.30%	2,685	5.40%	3,047	5.50%
5 to 9	2,367	6.00%	2,763	5.60%	3,060	5.50%
10 to 14	2,695	6.80%	2,714	5.50%	3,022	5.40%
15 to 19	4,286	10.80%	3,973	8.00%	4,024	7.30%
20 to 24	4,881	12.30%	5,229	10.60%	5,441	9.80%
25 to 34	5,298	13.30%	7,713	15.60%	7,690	13.90%
35 to 44	3,984	10.00%	6,706	13.60%	7,890	14.20%
45 to 54	4,291	10.80%	4,912	9.90%	7,331	13.20%
55 to 64	4,412	11.10%	4,836	9.80%	5,164	9.30%
65 to 74	3,224	8.10%	4,395	8.90%	4,366	7.90%
75 & older	2,202	5.50%	3,455	7.00%	4,434	8.00%
Total	39,753	100.00%	49,381	100.00%	55,469	100.00%
Median Age	31.3		34.5		36.9	

Source: U.S. Bureau of the Census
Johnson City Planning Department, Vision 2020

The childbearing and post-childbearing age cohorts continue to comprise more than two-thirds of the city's population. This aging trend is reflected in the median age in the city, which increased from 30.4 in 1970 to 36.9 in 2000. The fastest growing segment of the city's population, those between the ages of 25-64, can be attributed to Johnson City's role in the Tri-Cities region as a major medical, education, employment, and retail center.

Figure 1. Population by Age, Johnson City 1970-2000



Source: U.S. Bureau of the Census

The major impact of the city's age composition is the distribution and expected number of school-age children and the impacts they will have on school needs. Table 4 shows that the total number of school age persons in the city decreased significantly between 1970 and 1980 after 20 years of steady increase. This decrease was most pronounced in the youngest school-age group (5-13). During the following decade (1980-1990) the school age population began to increase again. However, the oldest school-age groups (14-17) did experience a slight decline.

Table 4. Distribution of School-Age Population, Johnson City 1950-2000

Age	1950	1960	1970	1980	1990	2000	% Percent 1990-2000
5	435	541	484	413	581	632	8.80%
6	434	494	552	457	525	556	5.90%
7 to 9	1,223	1,511	1,589	1,497	1,657	1,872	13.00%
10 to 13	1,427	2,085	2,256	2,144	2,171	2,389	10.00%
14	358	394	578	551	543	633	16.60%
15	322	413	564	582	569	589	3.50%
16	*	439	575	673	546	621	13.70%
17	746*	436	593	653	539	663	23.00%
Totals	4,945	6,313	7,191	6,970	7,131	7,955	11.60%
Percent of Population	17.70%	21.10%	21.30%	17.50%	24.30%	14.30%	-71.30%

*Ages 16 and 17 were combined for that one census year
Source: U.S. Bureau of the Census

Johnson City Planning Department, Vision 2020

Between 1990 and 2000, an increase in all age groups occurred; however, as a percentage of the total population the number of school-age population decreased. This increase in absolute numbers suggests that school enrollments will likely increase during the next 10 years. Likewise, the decrease as a percentage of the total population reflects Johnson City's aging population.

POPULATION PROJECTIONS

Johnson City's population is expected to continue to grow during the next 20 years, at a rate of primarily dependent on annexation (see Table 5). For the purposes of this report, annexation is projected to occur at a moderate rate, and when combined with natural increase and in-migration, the city is projected to gain approximately 17,000 residents by the year 2020.

Table 5. Population Projections, Johnson City 2000-2020

Area	2000 (Actual)	2010	2020
United States	281,421,906	297,716,000	322,742,000
Tennessee	5,689,283	6,180,000	6,529,000
SMSA	480,091	491,170	517,810
Washington County	107,198	114,920	126,095
Johnson City Census Division	70,943	74,730	78,180
City of Johnson City	55,469		
a. slight annexation		60,790	66,540
b. moderate annexation		63,910	72,435
c. active annexation		66,250	76,650

Source: U.S. Bureau of the Census (2000)
Johnson City Planning Department, Vision 2020

Residential development in annexed areas, as well as population growth in general, will create the potential demand for new or expanded schools. As the city's older residential areas mature and newer, developing residential areas are annexed, changes to the student distribution pattern may also occur.

Projecting the future population by age group is essential to determine future demands for public facilities and services, particularly those serving specific segments of the population, such as schools. Between 2000 and 2020, the total city population is expected to experience an average increase of approximately 13 percent per decade (Table 6), with the greatest growth occurring in the age cohort of 55 and above.

The 0-54 segment of the population is expected to increase marginally in absolute numbers; however, it is expected to decrease as a percentage of the total population. Although the younger age groups decline as a percentage of the total population, they are expected to continue to increase in actual numbers. The projected growth in the school-aged population reflects the most recent growth trend experienced between 1990 and 2000. If this trend continues, redistricting, additions to existing schools, or the

construction of new schools may be necessary to accommodate the growth in student enrollment.

Table 6. Population Projection by Age, Johnson City 2000-2020

	2000		2010		2020	
Age	Population	Percent of Total	Population	Percent of Total	Population	Percent of Total
0 to 4	3,047	5.50%	3,050	4.80%	3,450	4.80%
5 to 14	6,082	10.90%	6,570	10.30%	7,355	10.20%
15 to 24	9,465	17.10%	11,500	18.00%	11,880	16.40%
25 to 34	7,690	13.90%	7,285	11.40%	8,485	11.70%
35 to 44	7,890	14.20%	7,320	11.50%	7,805	10.80%
45 to 54	7,331	13.20%	9,060	14.20%	8,125	11.20%
55 to 64	5,164	9.30%	8,610	13.50%	10,600	14.60%
65 to 74	4,366	7.90%	5,410	8.50%	8,425	11.60%
75 & over	4,434	8.00%	5,105	8.00%	6,310	8.70%
Totals	55,469	100.00%	63,910	100.00%	72,435	100.00%
Median Age	37.1		38.7		39.1	

Source: U.S. Bureau of the Census (2000)
Johnson City Planning Department, Vision 2020

ANNEXATION TRENDS

Annexation has played a major role in the growth of Johnson City. Prior to 1960, Johnson City expanded its corporate limits from the initial boundary encompassing seven-tenths of a square mile in 1869 to approximately six square miles in 1960. During the period of 1960-2000, the city completed 387 annexations, adding 32.9 square miles and 21,833 residents to the city. Table 7 summarizes annexations during that period in 10-year increments. The 1980s and 1990s experienced a total of 324 annexations, resulting in the addition of 19.5 square miles and 10,889 residents to the city. Interestingly, the 1990s experienced the greatest number of annexations and square miles added, but only 1,405 people were annexed. The 1990s reflected the city's policy of annexation by request, resulting in a large number of one-parcel requests. Many of the requests also involved larger vacant tracts that were ultimately developed into single-family subdivisions. The residents in these developments were counted in the 2000 Census.

Table 7. Annexations, Johnson City
1960-1999

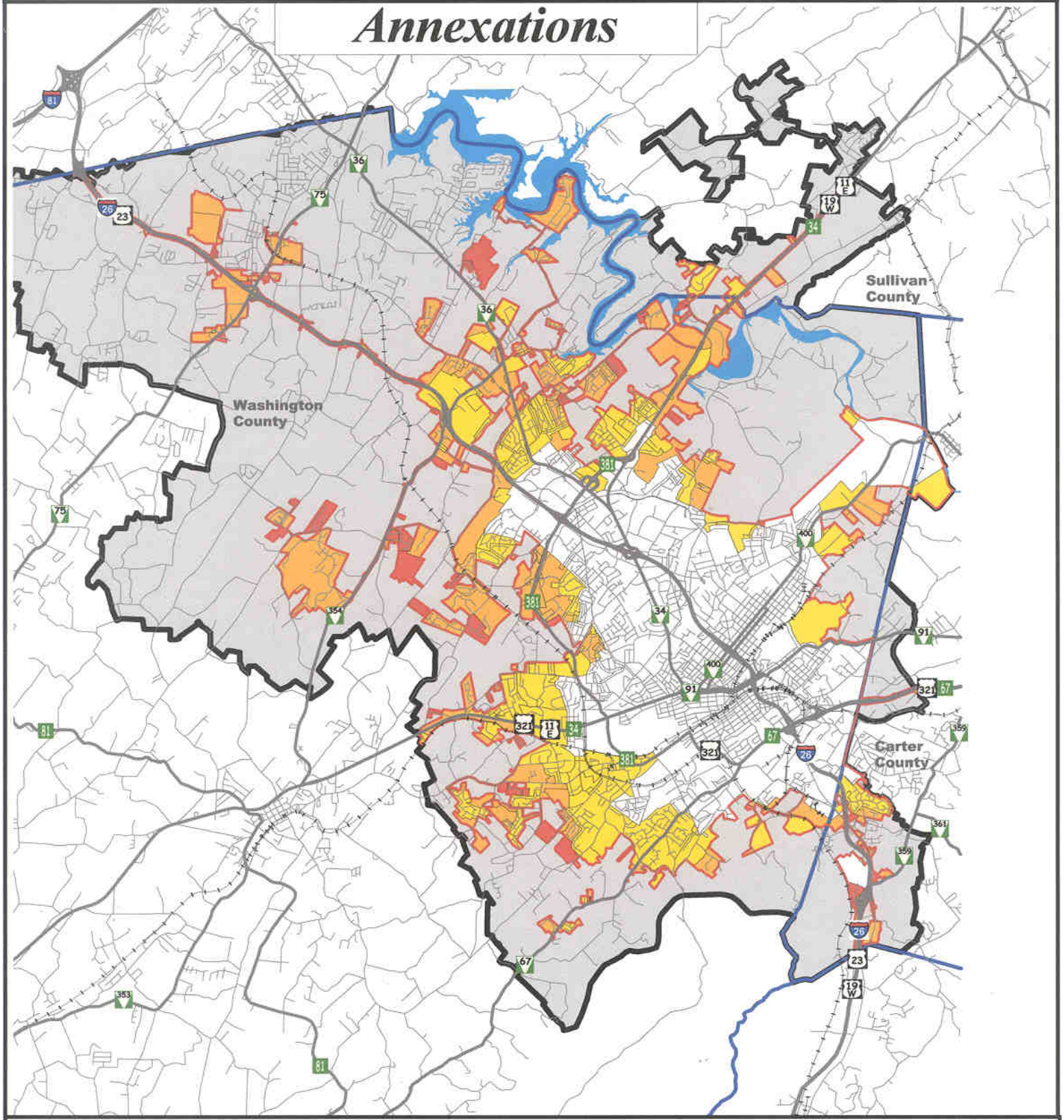
Time Period	Number of Annexations	Square Miles Added	Population Added
1960 – 1969	31	6.69	4,760
1970 – 1979	32	6.72	6,184
1980 – 1989	141	9.5	9,484
1990 – 1999	183	10	1,405
TOTAL	387	32.91	21,833

Source: Johnson City Planning Department

Map 1 illustrates the locations of recently annexed areas. Growth due to annexation of residential areas is expected to have the most impact on Lake Ridge and Woodland elementary schools, followed by Cherokee and Towne Acres. Annexation will have less impact on Fairmont, North Side, and South Side elementary schools which are located in central areas of the city that are experiencing minimal growth. If the pattern of new residential development and annexation now occurring in the Boones Creek area continues, increased enrollment can be expected in the northern school districts.

Johnson City Schools Plan

Annexations



Annexations
- Pre 1980
- 1980 to 1989
- 1990 to 1999
- 2000 to 2004

Map Features
- Routes
- Roads
- City Limits
- Boone Lake
- Urban Growth Boundary

Johnson City Geographic Information System

N

0 1 2 Miles

MAP 1

RESIDENTIAL DEVELOPMENT TRENDS

Residential building permits are a primary source of information in the forecasting of population growth and residential development trends. They indicate not only the total growth in the city but also the distribution of this growth among various neighborhoods. As Table 8 indicates, wide fluctuations in housing construction are common, with the overall trend increasing in recent years.

Table 8. Total Residential Building Activity, Johnson City 1970-1999

Time Period	Residential Permits	Highest Number - Year	Average Per Year
1970 – 1979	2,303	408 - 1978	230
1980 – 1989	2,125	307 - 1982	212
1990 – 1999	4,037	537 - 1997	403

Source: Johnson City Building Division

During the 1970s and 1980s, the city experienced a moderate rate of new residential growth, averaging approximately 230 new dwelling units (single family, multi-family, and condominiums) per year. During the 1990s, however, residential building activity accelerated to its highest levels ever, almost doubling the rate from the 1980s. The greatest growth came during the 1996-1998 period, which averaged 519 new residential units per year. In 1999, growth returned to moderate levels with the construction of 311 new residential dwelling units.

Table 9 shows the breakdown of the type of residential development that has been occurring since 1987. Over the ten-year period from 1993 through 2002, the city averaged 216 single-family and 222 multi-family building permits annually. Average annual growth has remained consistent over the last five years (1998-2002) with an average of 208 single-family and 190 multi-family building permits issued annually.

Table 9. Residential Building Activity by Type, Johnson City 1987-2003

Year	Single Family	Multi-Family	Total
Total Units	3,122	3,114	6,236
(1987-2003)			
High/Year	278/1996	294/1998	
5-yr Avg.	208	190	398
(1998-2003)			
10-yr Avg.	216	222	441
(1993-2003)			

Source: Johnson City Building Division

The type of residential development occurring is also an important factor in school planning. The number of school age children (ages 6-17) for single-family dwellings in Johnson City is 0.33 children per household. The number of school age children for multi-family dwellings is 0.21 children per household.

The predominant location for single-family residential development over the last five years has been in the north and northwest areas of the city, especially along the corridors of Boones Creek, Carroll Creek, and Mountain View Roads (Map 2). In general, the typical structures built in these areas are detached single-family residences containing 2,000 to 3,000 square feet on one quarter to one half-acre lots. The price range for these new homes typically runs from $175,000 to $250,000.[1]

Furthermore, the predominant locations for multi-family development has been in the areas adjacent to the university, especially along Greenwood Drive, Seminole Drive, Cherokee Road, and in the southwest portion of the city along Plymouth and Swadley Roads (Map 2).

FUTURE GROWTH AREAS

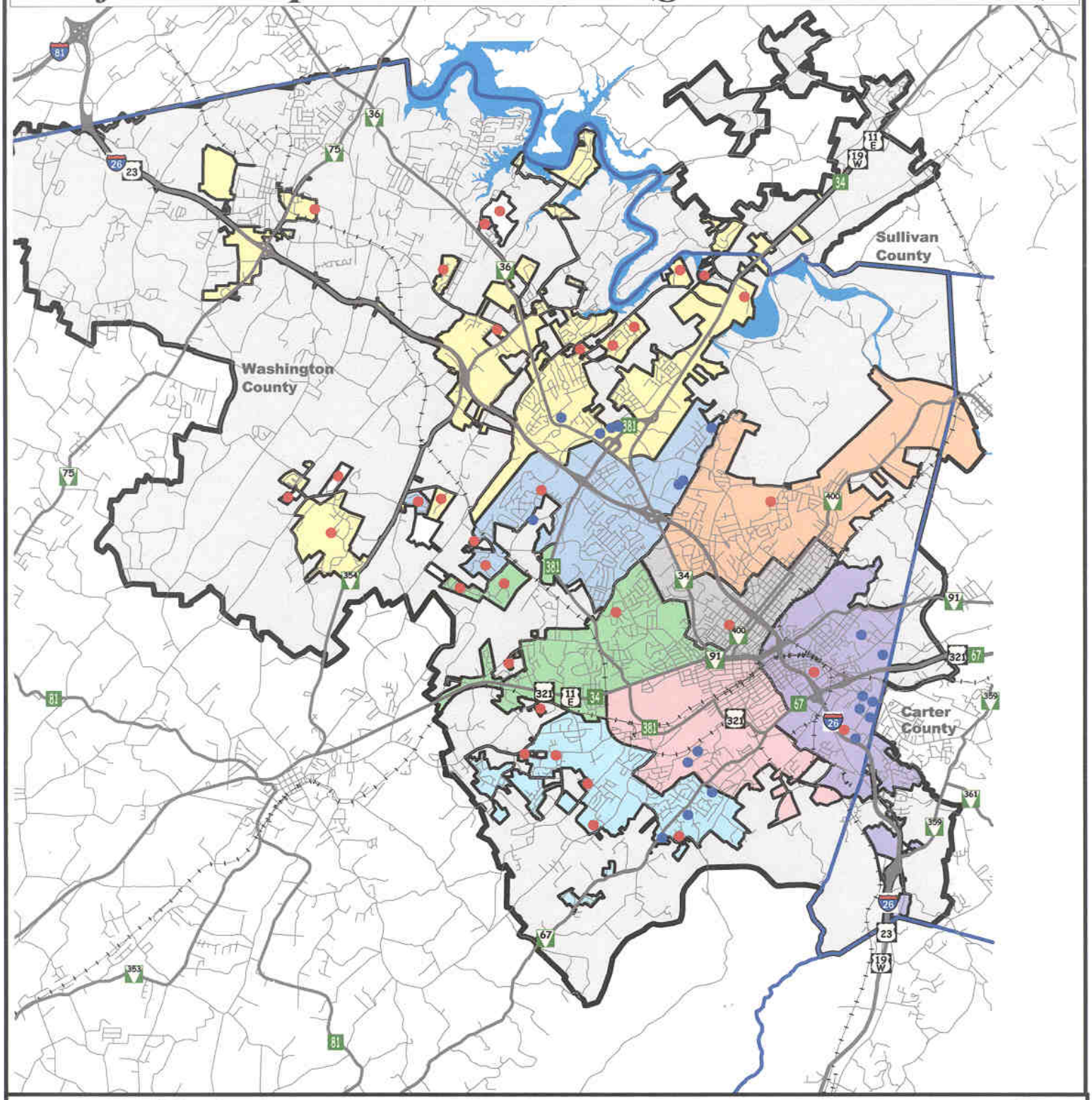
According to Zuchelli, Hunter, and Associates, Inc. (ZHA), it is projected that household growth in Johnson City will correspond with anticipated population growth. Over the next 20 years, it is projected that an additional 6,900 residential units will be constructed as a result of the projected growth in population (3,900 single-family and 3,000 multi-family). This equates to an average of 345 new residential units per year (224 single-family and 121 multi-family). Many of the new units projected to be built will consist of traditional, detached single-family homes, attached single-family homes (townhouses and duplexes), condominiums, and senior housing. These housing types are reflective of the shifting age composition and needs of Johnson City residents.

By combining the number of school-aged children produced by the various types of residential development and the projected number of residential units expected in Johnson City by 2020, the impact of that future development on the school system can be estimated. It is anticipated that the construction of an additional 3,900 single-family units can potentially produce approximately 1,300 additional school-aged children over the next twenty years. Similarly, the construction of 3,000 multi-family units can potentially produce approximately 630 additional school-aged children for an estimated total of 1,930 additional school-aged children. The grade levels of school-aged children include kindergarten through senior high-aged students.

[1] Source: Zuchelli, Hunter, and Associates, Inc., Real Estate Market Conditions and Outlooks, 2000.

Johnson City Schools Plan

Major Developments, Last 5 Yrs (greater than 10 units)



Map Features

- Routes
- Roads
- Boone Lake
- Urban Growth Boundary

Development Type
- Multi Family
- Single Family

Elementary School Zones

- Cherokee
- Fairmont
- Lake Ridge
- Mountain View
- North Side
- South Side
- Towne Acres
- Woodland
- Non-Assigned

Johnson City Geographic Information System

N

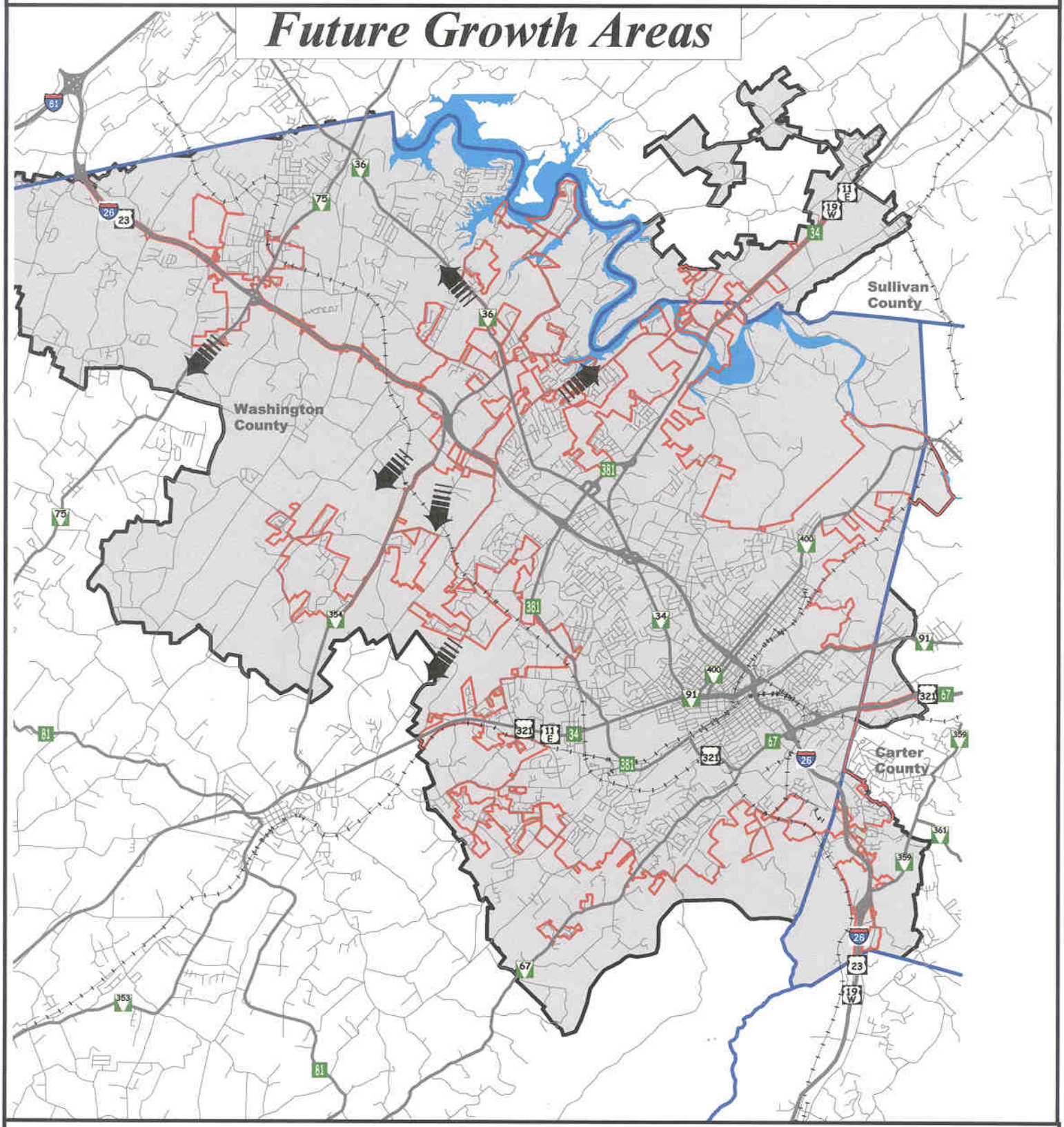
0 1 2 Miles

MAP 2

Factors influencing residential development over the next 20 years will include: the availability and competitive pricing of land, topography and site development costs, the city's policy on extending public utilities and services, proximity to employment centers, and proximity to services and amenities. As a result of these factors, new residential growth is expected to occur in the following areas: north along Boones Creek, Carroll Creek/Old Boones Creek, and Claude Simmons roads; to the north and west along Hairetown Road, Hales Chapel Road, and Sulphur Springs-Gray Station Road; and the undeveloped areas along the Kingsport Highway (SR 36) and Carroll Creek Road near Lake Ridge Elementary (Map 3). Ample vacant land zoned for residential purposes with limited topographic constraints exists in these areas.

Johnson City Schools Plan

Future Growth Areas



Map Features

- City Limits
- Boone Lake
- Urban Growth Boundary
- Routes
- Roads
- Direction of Future Residential Growth

Johnson City Geographic Information System

N

0 1 2 Miles

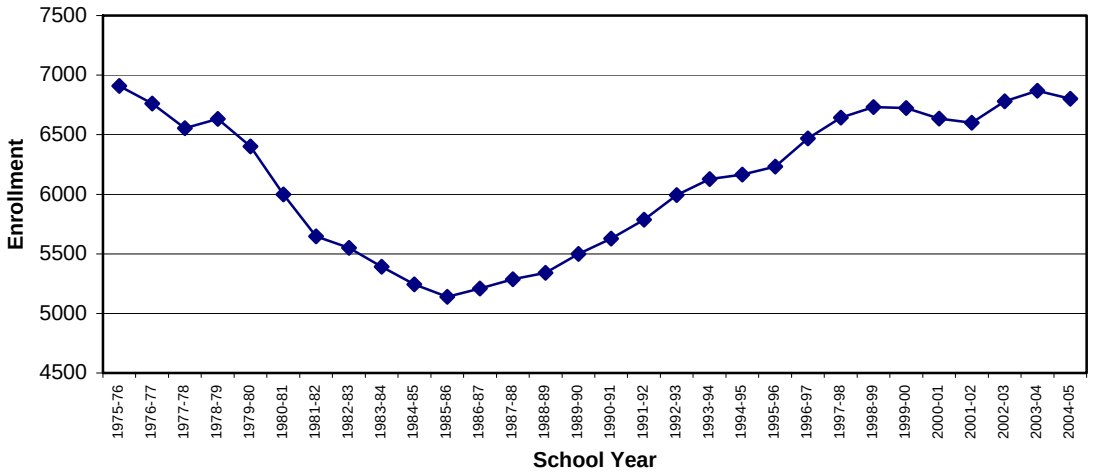
MAP 3

This chapter contains an analysis of past enrollment and live birth trends in Johnson City, as well as short- and long-range projections of future enrollments for grades K–12. Short-range projections are annual projections by grade grouping through the 2013-14 school year, whereas long-range projections occur in five-year increments starting with the 2014-15 school year and ending in 2023-24. The purpose of this analysis is to provide a basis for decisions on future needs.

ENROLLMENT TRENDS

School enrollment data have been compiled and analyzed for school years 1975-76 through 2004-05. Figure 2 depicts the total first month Average Daily Membership (ADM) enrollments for the last 30 years. From these data, adjusted multipliers were determined and used for projecting future enrollments (see Methodology and Assumptions on page 19).

Figure 2. School Enrollment, K-12, 1975-2004



Source: Johnson City School System and Planning Department

The most recent trend for Johnson City schools has been a slight decline followed by a moderate increase in total enrollment. From 1998-99 to 2001-02, total enrollment decreased by two percent, representing a loss of 131 students. This is minor when compared to the 25 percent loss in total enrollment experienced between the 1975-76 and 1985-86 school years, when student enrollment reached a 27-year low of 5,140 students. Since that time, school enrollment has increased by 28 percent, returning to enrollment levels reached in the 1976-77 school year.

Enrollment for 2004-05 was 6,869 students. This is a slight decrease from the 2003-04 enrollment of 6,801 students, a net loss of 68 students. Elementary enrollment (K–5) decreased 11 students and middle school enrollment (6–7) decreased 49 students (4.6 percent) over Fall 2003 enrollment figures. Enrollment in the 8-9 grades increased by 60 students (5.8 percent), while enrollment at Science Hill (10-12) decreased by 68 students (4.7 percent) to 1,375 (Table 10).

Table 10. First Month ADM, Grade Groupings
2003-2005

Grade Level	Enrollment 2004-05	Enrollment 2003-04	Difference
K–5	3,331	3,342	-11
6-7	2,009	1,058	-49
8-9	1,086	1,026	60
10-12	1,375	1,443	-68
Total	6,801	6,869	-68

Source: Johnson City School System

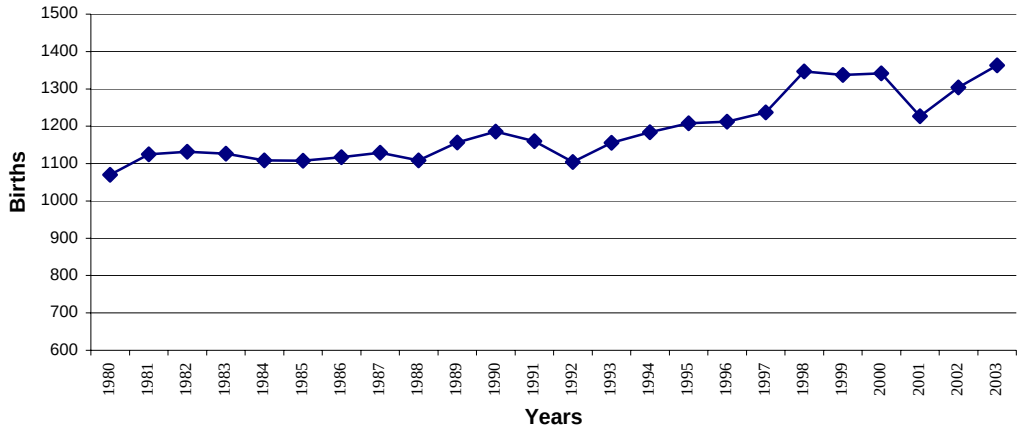
LIVE BIRTH TRENDS

This section is based on data collected (and estimated) by the Tennessee Bureau of Vital Statistics for Washington County. The state maintains annual figures and estimates of general population characteristics for all Tennessee counties. For this reason, county-based data is used rather than Johnson City-based data, which is not available.

The countywide births rate rose steadily from 1975 to 1997 with minor fluctuations. However, the birth rates over the past five years fluctuated from 1347 in 1998 down to 1227 in 2001 then back up to a high of 1,363 births in 2003 (Figure 3).

From these figures it can be concluded that in spite of year-to-year fluctuations, the overall birthrate is steadily increasing and will result in additional children entering the school system in the near future.

Figure 3. Washington County Births
1980-2003



Source: Tennessee Bureau of Vital Statistics, 2004

This irregular trend at the county level mirrors national trends, where periods of decline are followed by periods of substantial growth. For example, between 1998 and 1999, live births in the U.S decreased by 4,503 births. However, the following year, live births increased by 121,764 births, the highest level experienced during the five-year period. Live births at the state level experienced a prolonged increase, with the greatest increase occurring between 1997 and 1998, when live births increased by 2,918 or 3.9 percent.

Table 11. Live Birth Trends, Selected Areas
1996-2000

Area	1996	1997	1998	1999	2000	Percent Change 1996-2000
United States	3,891,494	3,880,894	3,941,553	3,937,050	4,058,814	4.10%
Tennessee	73,754	74,478	77,396	77,761	79,539	8.70%
Washington County	1,212	1,237	1,347	1,337	1,342	11.10%

Source: Centers for Disease Control and Prevention and Tennessee Bureau of Vital Statistics

SCHOOL ENROLLMENT PROJECTIONS

Short- and long-range enrollments by grade have been projected to estimate future school populations. This section presents enrollment projections for the 2004-05 to 2014-15 school years.

The Johnson City Planning Department updates enrollment projections annually with data from the new school year as provided by the Board of Education. This allows shifts in demographic and enrollment trends to be continually monitored.

The accuracy of any projection is presumed to decline the further into the future it is made, due to the increased number of unknowns and the possibility of unforeseen demographic changes. This is especially true after five years, because children who will begin enrolling in school in five years have not yet been born.

Methodology and Assumptions

The method used for projecting future school enrollments is the survival ratio method, which assumes that the pattern of promotion, or "survival," from one grade to the next will follow a predictable pattern over time. This method utilizes a series of multipliers (or survival ratios), which are the percentages of reenrollment in any given year for grade X that appear the next year in grade X+1. A weighted average of each grade's survival rate over the past five years was used as the multiplier to predict the number of students in that grade in future years.

Projections of school enrollment should be based on rational and clearly disclosed methodology and assumptions. For the most recent projections, the following assumptions were made:

- First-month average daily membership (ADM) has been the most accurate measure of the number of students to be accommodated during a typical reporting

period. Since ADM during the first month's reporting period has been used as the primary enrollment measure for the past 29 years, it was used to maintain year-to-year comparability.

- The projected enrollments beginning in 2007-08 were derived from the number of live births in Washington County for 2002 and 2003. After that, the number of births was estimated to increase by five (5) per five-year increments, based on previous birth trends. This method provides estimates of kindergarten enrollment for the 2007-08 to 2014-15 school years.

- The ratio of Johnson City kindergarten enrollment to Washington County resident live births has varied substantially over the last few years, but surprisingly, the kindergarten-to-live-births-to-Johnson-City-residents ratio is even more variable and has been even less reliable as a predictor. The kindergarten enrollment rate from Washington County live births has ranged from a low of 0.331 to a high of 0.485. In this study the average of the last five years was used, which is 0.456 Johnson City kindergarten student per live birth in Washington County.

- Because of changes in policy at the state level, the number of students who once were defined as and placed in special education classes has dropped dramatically over the past eight years, to the point where separate special education students now constitute a small percentage of the total enrollment. For purposes of this study, special education students were not included within each individual grade level.

Further documentation and explanation of the methods and assumptions used to project future school enrollments are available from the Johnson City Planning Department.

ENROLLMENT PROJECTIONS

Based on the assumptions described previously, total enrollment in the Johnson City School System is expected to increase steadily for the next 10 years, increasing by nearly 280 students between 2004-05 and 2014-15 (Table 12).

Table 12. Enrollment Projections, Johnson City Schools
2004-05 to 2014-15

		5-Year Projections					10-Year Projections				
Grade	*2004/05 (actual)	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
K to 5	3,331	3,358	3,306	3,353	3,398	3,437	3,425	3,464	3,468	3,448	3,448
6 to 7	1,009	1,026	1,072	1,035	1,001	1,037	1,067	1,046	1,032	1,088	1,091
8 to 9	1,086	1,101	1,035	1,052	1,098	1,025	1,057	1,063	1,093	1,075	1,057
10 to 12	1,375	1,382	1,460	1,463	1,466	1,479	1,451	1,444	1,423	1,449	1,484
Total	6,801	6,868	6,873	6,902	6,963	6,977	7,000	7,017	7,016	7,059	7,081

* Actual Average Daily Membership (ADM) for 1st month of the 2004-05 school year

Source: Johnson City Planning Department

The Board of Education's recently adopted Long-Range Growth Plan contains a recommendation for moving to a three-tier grade system (K-5, 6-8, 9-12). In 1988, the school system converted from a K-6, 7-9, and 10-12 grade structure to the proposed grade system. The primary reasons for the change were educational and security that allowed for better scheduling for high school credits and to separate pre-teens from the 9th graders. A secondary reason was to alleviate overcrowded conditions at several of the city's elementary schools and to provide capacity for the increasing enrollments due to annexation, particularly in north and southwest Johnson City. However, after the construction of the Indian Trail Middle School in 1998, the school system moved to its current configuration (K-5, 6-7, 8-9, and 10-12).

Table 13. Three-Tier System Enrollment Projections

		5-Year Projections					10-Year Projections				
Grade	2004/05 (actual)	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
K to 5	3,331	3,358	3,306	3,353	3,398	3,419	3,437	3,425	3,464	3,468	3,448
6 to 8	1,583	1,536	1,581	1,562	1,556	1,523	1,555	1,590	1,570	1,585	1,593
9 to 12	1,887	1,974	1,986	1,988	2,009	2,005	1,986	1,985	1,984	1,963	2,019
Total	6,801	6,868	6,873	6,902	6,963	6,947	6,977	7,000	7,017	7,016	7,059

* Actual Average Daily Membership (ADM) for 1st month of the 2004-05 school year

Source: Johnson City Planning Department

OVERVIEW

The Johnson City school system operates 10 facilities in grades K-12, including eight elementary schools serving grades K-5, one middle school serving grades 6 and 7, and one comprehensive high school (with 2 campuses) serving grades 8-12 (Map 4).

Other major facilities include the Central Administration Office in the former Columbus-Powell Elementary School, the Johnson City Vocational-Technical School on the Liberty Bell-Science Hill complex, the Alternative Education School in the former Henry Johnson Elementary School, and the Maintenance Building in the former Langston School. Johnson City's schools are accredited by the Southern Association of Colleges and Schools (SACS).

The curriculum of the Johnson City school system is designed to promote educational opportunities for all students residing in the city. Students residing outside the corporate limits may attend the city's schools by paying tuition. During the 2003-04 school year 308 tuition students attended Johnson City schools, with a majority (76%) of those students residing in Washington County (Table 14).

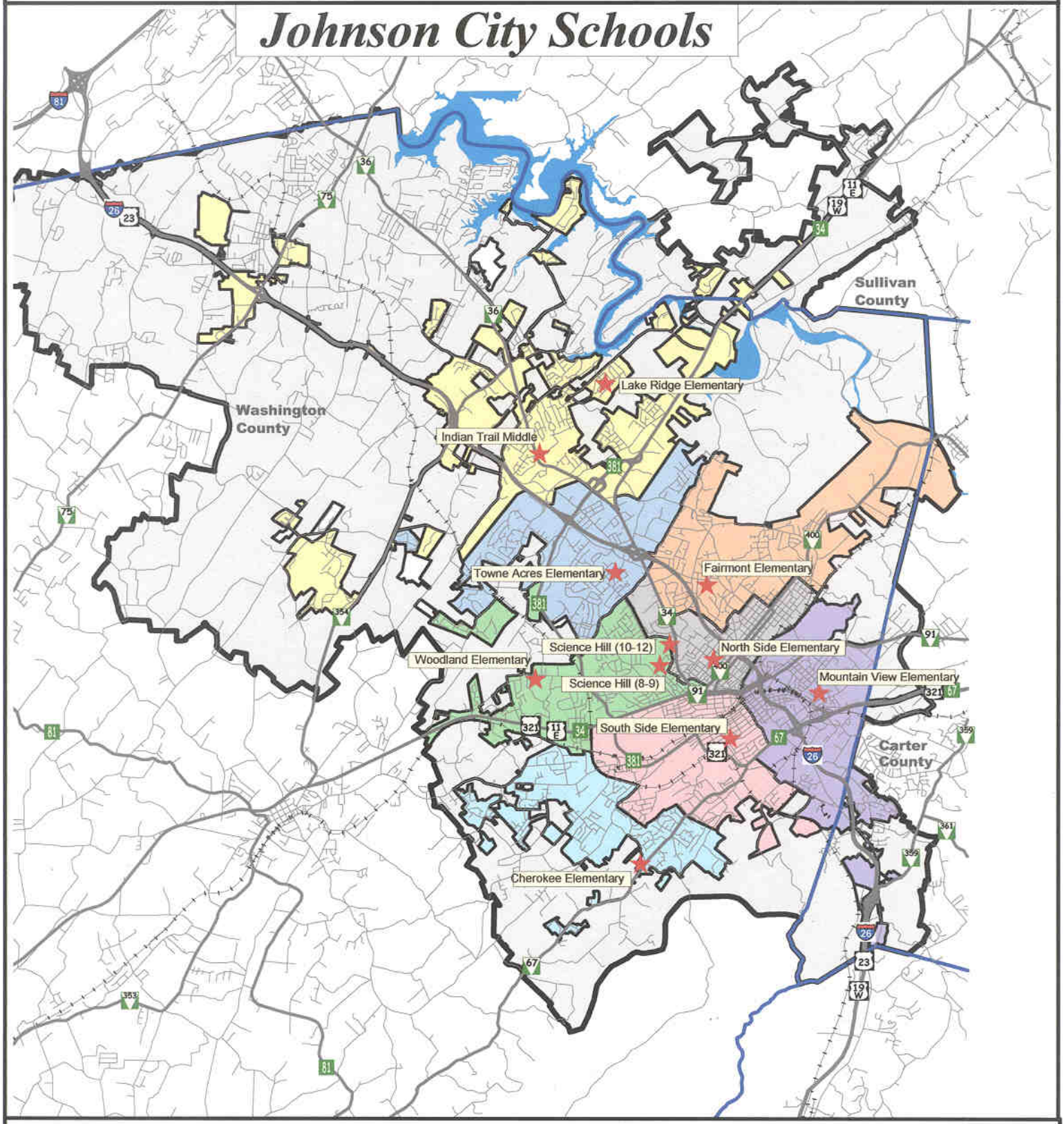
Table 14. Tuition Students, Johnson City Schools
2003-04

School	Inside Washington County	Outside Washington County	Total
Cherokee Elementary	34	18	52
Fairmont Elementary	13	3	16
Lake Ridge Elementary	2	3	5
Mountain View Elementary	3	2	5
North Side Elementary	3	3	6
South Side Elementary	21	10	31
Towne Acres Elementary	34	5	39
Woodland Elementary	34	9	43
Indian Trail Middle	34	7	41
Science Hill High	55	15	70
Total	**233**	**75**	**308**

Source: Johnson City Schools

Science Hill High School has the most tuition students with 70 students, followed by Cherokee Elementary School with 52 students, the most of any of the city's elementary schools. Lake Ridge, Mountain View, and North Side elementary schools have the fewest tuition students.

Johnson City Schools Plan



During the 2003-04 school year, tuition for non-resident students was $700/year for those students living within Washington County and $900/year for those outside Washington County. Over the next three years, tuition for students residing inside and outside of Washington County is anticipated to increase by $125/year inside the county and $200/year outside. By the 2004-05 school year, tuition for students living inside Washington County will be $1,075/year and $1,500/year for those living outside of the county. The tuition increases are necessary to decrease the deficits between local and state appropriations per tuition student.

Expenditures per student in the Johnson City school system for the 2001-02 school year were $6,437, 101.4 percent of the statewide average (Table 15). The calculation of expenditures per student includes expenditures from the various school systems' annual financial reports, expenditures by the state on behalf of school systems, and the value of commodities provided by the U.S. Department of Agriculture for food service programs. The figures in Table 15 are based upon Average Daily Attendance (ADA).

The Johnson City school system's expenditures per student decreased by $236 (3.5 percent) from 2000-01 to 2001-02. Both Washington County and Johnson City have decreased the amount of expenditures per pupil. Despite being above the state average, Johnson City's expenditures per student fall behind other school systems in the area.

Table 15. Expenditures Per Student
1999-2001

School System	2000-01	Percent of Statewide Average	2001-02	Percent of Statewide Average
Statewide	$6,055	100.00%	$6,349	100.00%
Washington County	$5,724	94.50%	$5,689	89.60%
Johnson City	$6,673	110.20%	$6,437	101.40%
Sullivan County	$7,072	116.80%	$7,287	114.80%
Bristol-City	$7,422	122.60%	$7,581	119.40%
Kingsport-City	$7,183	118.60%	$7,374	116.10%

Source: Tennessee Department of Education

Elementary schools (K-5) provide program emphasis in areas of communication skills, mathematics, science, social studies, cultural arts, health, and physical education. Schools incorporate special programs for students with special needs while offering a variety of learning strategies. Several schools also offer foreign languages as part of their curriculum.

Indian Trail Middle School serves grades 6 and 7 and offers a diverse curriculum tailored to the needs of varied achievement levels and learning styles as well as athletic and fine arts opportunities. The 8-9 grade high school provides instruction at various levels depending upon the ability and achievement level of the student. The 8-9 campus is centrally located within the city at the Liberty Bell section of the 130-acre Science Hill campus. Science Hill High School provides a comprehensive program of instruction for

students in grades 10-12. Classes range from technical preparation to advanced college placement courses.

ADMINISTRATION

The Johnson City school system is governed locally by a seven-member Board of Education elected to four-year overlapping terms. The Board formulates policies for the operation of the school system and is charged with the responsibility for its effective and efficient operation.

An appointed Director serves the Board as administrator of the school system. The Director is responsible for recommending policy, personnel action, budget, curriculum, teaching, building maintenance, etc. The Director also implements board action and, under board policy, delegates responsibility for the overall operation of the school system.

EXISTING FACILITIES INVENTORY

The inventory of existing school facilities in Johnson City formed the basis for determining the adequacy for high-quality learning environments and the ability to accommodate future growth. The inventory included examining the following: 1) historic overview of construction, renovations, and additions; 2) site location in regards to neighborhood served; 3) pedestrian and vehicular access; 4) current enrollment; and 5) potential for future expansion.

The major references used in the inventory of schools included: *A Study of Johnson City Public Schools: Physical Facility and Student Enrollment, 1984* and the *School Facilities Plan* prepared by 1988. Updated information was collected from site visits and the Johnson City school system staff. The following summarizes the inventory of all Johnson City schools. The 2004-05 enrollment figures are based on the first month's Average Daily Membership (ADM) provided by the school system.

Facility Inventory, Johnson City Schools
2003

STANDARDS

Standards are the translation of school policies and planning guidelines into explicit quantitative terms. Standards provide the measures to identify deficiencies in, or needed additions to, the school inventory. The quantitative standards used in the previous school study, *School Facilities Plan 1988-2000* prepared by the Planning Department in conjunction with the Johnson City School System, were part of the State Board of Education's *Rules, Regulations, and Minimum Standards for the Governance of Public Schools in the State of Tennessee, 1986*. In general, Johnson City schools were analyzed according to the following standards:

1. Site Considerations: Does the site meet minimum standards? Is there sufficient room for its proper function? Is there adequate room for expansion, if necessary?

2. Location Considerations: Is the facility's location convenient to the majority of the service area population? Are there detrimental environmental concerns? Is vehicular and pedestrian access acceptable?

3. Functional Considerations: Does the school function efficiently? Does the building design and layout permit safe and functional utilization? Are all programs being adequately provided for?

4. Structural Consideration: Is the facility structurally sound? Are the buildings safe?

In the early 1990s, the state's Basic Education Program (BEP) replaced the state minimum standards and allowed local school districts more flexibility in planning for new schools and improvements to existing schools. The BEP serves as the basis for calculating the level of funding for each school system throughout the State of Tennessee.

The BEP consists of two components, classroom and non-classroom, that are used to calculate both operating and capital outlay costs for local school systems. Classroom components determine personnel per school, average classroom size, materials and equipment, and instructors for special purpose programs, such as art, music, libraries, and physical education. Non-classroom components include secretarial support, technology coordinators, maintenance and operations, non-instructional equipment, and capital outlay.

COMPARISON OF EXISTING ENROLLMENT & CAPACITY

School capacity is the key component in determining facility needs. When enrollment meets or exceeds the capacity of existing schools, redistricting, expansion of existing schools, or construction of new schools will be required.

The Johnson City school system currently operates eight elementary schools, one middle school, and one comprehensive high school. Table 16 summarizes the current 2004-05 enrollment and capacities for each school.

Table 16. Summary of Enrollment and Capacity
2004-05

School	Net Available Classrooms	2004-05 Enrollment*	Max. Capacity (BEP)	Percent Capacity
Elementary				
Cherokee	23	450	495	90.10%
Fairmont	19	390	410	95.12%
Lake Ridge	25	527	540	97.60%
Mountain View	26	494	560	88.20%
North Side	17	274	365	75.10%
South Side	19	342	410	83.40%
Towne Acres	21	400	455	87.90%
Woodland	25	454	540	84.10%
Total	**175**	**3,331**	**3,775**	**88.20%**
Middle				
Indian Trail	47	1,009	1,020	98.90%
High				
Liberty Bell	70	1,086	1,358	79.90%
Science Hill	103	1,375	2,765	49.70%

*First month's average daily membership (ADM)

Source: Johnson City Schools

Classroom capacity for elementary schools was computed on a class student/teacher ratio of 20:1 in grades K-3 and 25:1 in grades 4-5 using only the number of regular classes. Classroom capacity at the middle school was computed on student/teacher ratio of 25:1 in grade 6 and 30:1 in grade 7, 8, and 9 with classrooms being occupied five periods of the six period day, or 83%. High school capacity was based upon 75% utilization of all rooms with block scheduling.

All of the elementary schools are currently operating under their total building capacities. Lake Ridge is the closest to maximum building capacity at 97.6% closely followed by Fairmont at 95.2 %. North Side, which recently expanded is only operating at 75.1% of capacity.

The recently expanded Indian Trail Middle School currently houses 1,009 students. This is very close to its maximum of capacity of 1,020 students.

Existing capacity for the 8-9 campus at Liberty Bell is 1,358 students based upon 83% utilization of all rooms. With a 2004-05 enrollment of 1,086 students, Liberty Bell is currently operating at 79.9% of its building capacity.

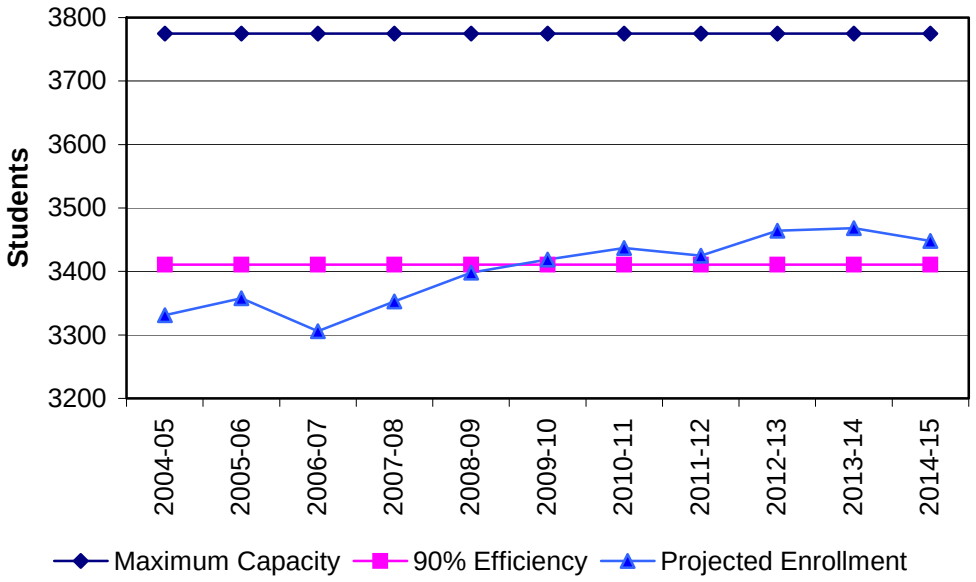
Existing capacity at Science Hill High School is 2,765 students, based upon 75% utilization of all rooms with block scheduling. Based on the current enrollment of 1,375 students, the school is currently operating at 49.7% of capacity.

COMPARISON OF PROJECTED ENROLLMENT & CAPACITY

Elementary

Projected enrollment at the elementary level is expected to increase steadily over the next ten years, peaking in 2013-14 at about 3,468 students. Based on these projections, elementary enrollment will not exceed the current system capacity of 3,775 students during this planning period. However, the system capacity of 3,775 students is based on 100% efficiency, which is unrealistic to reach and maintain. To achieve maximum efficiency, every classroom at every grade level at every school must be filled exactly to BEP standards, no more, no less. Due to the time frame necessary to construct a new school facility or school additions, it is a common practice to begin planning once a school system reaches 90% percent of its system capacity. Ninety percent of the K-5 system wide capacity is 3,411 students. Based on projected enrollment the school system will exceed this in the 2009-10 calendar year.

Figure 4. Elementary Enrollment Projections 2004-05 to 2014-15

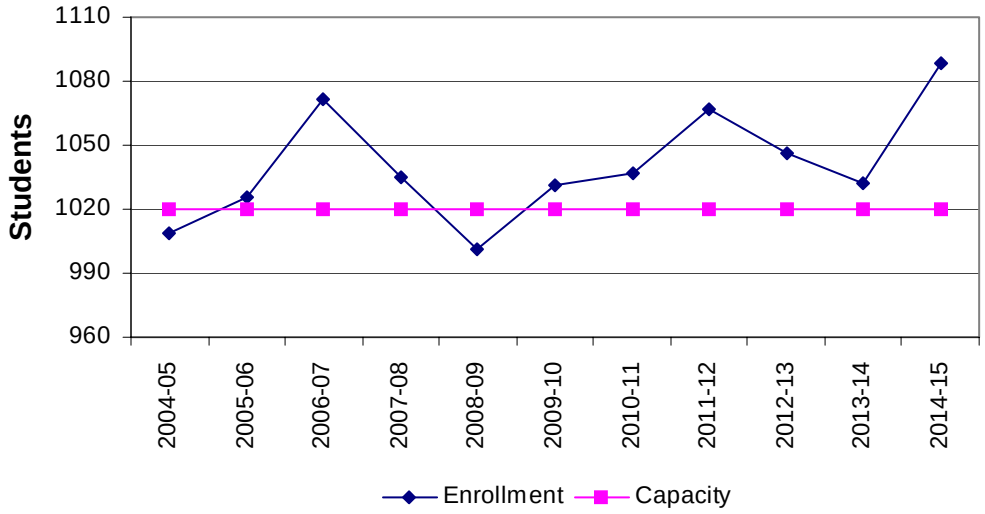


Source: Johnson City Planning Department

Middle School

Over the next ten years, the middle school enrollment is anticipated to increase to 1,088 students, an increase of approximately 7%. With a capacity of 1,020 students, enrollment at the middle school is already close to exceeding the building design capacity. It is anticipated that the middle school enrollment will exceed the building's current capacity in the 2005-06 school year and will climb to 1,088 students by 2014-15. This will exceed the building current capacity by approximately 7%.

Figure 5. Middle School Enrollment Projections
2004-05 to 2014-15



Source: Johnson City Planning Department

High School

For grades 8-9 at Liberty Bell, enrollment is projected to drop slight during the planning period. The 2014-15 projected enrollment is 1,075 students, a decrease of 1.5%. Student enrollment will remain well below the BEP maximum building capacity of 1,358 students.

The enrollment for grades 10-12 at Science Hill High School is anticipated to grow by approximately 9% over the next ten years. The 2014-15 enrollment is projected to increase to 1,449 students. This is still well below the BEP maximum building capacity of 2,765 students.

This chapter contains an analysis of the different options available to address anticipated overcrowding and handle the forecasted enrollment growth through the 2014-15 school year. The analysis will provide the Board of Education and the City Commission with information upon which to base policy decisions on future facilities, redistricting, and grade realignment.

EVALUATION OF PLAN ALTERNATIVES

Elementary Schools

Based on system-wide projected enrollment increases and the current overcrowding at the Lake Ridge Elementary School, some facility improvements are likely to be necessary. There are several alternatives or combination of alternatives available to address these enrollment issues. These include:

1. Redistricting
2. Construct new elementary school
3. Add on to existing facilities
4. Add portable classrooms
5. Reopen existing facilities (Henry Johnson School)
6. Eliminate or reduce the number of tuition students

1. Redistricting

Redistricting has a number of advantages. First, it allows the city to defer or avoid expanding capacity thus, eliminating or delaying capital improvement costs. It also provides an opportunity to improve the socio-economic balance and mix of students from different neighborhoods. In addition, it is immediate, providing relief in the shortest time. Redistricting could immediately relieve current overcrowding at Lake Ridge and projected overcrowding at other schools.

However, there are also a number of drawbacks to redistricting; (1) it is disruptive for students who would have to transfer to another school; (2) it is often unpopular with many affected parents; and (3) it provides only temporary relief to overcrowding (busing cost may also be increased).

There are a number of elementary schools with enrollments over 90% of maximum capacity. Lake Ridge is the closes to being at maximum capacity at 97.6%. Redistricting is an immediate step that could be taken to address this overcrowding. Several schools, including North Side, South Side, and Woodland, have excess capacity to accommodate additional students.

Table 17. Elementary Schools At or Above 90% Capacity

School	2004-05 Enrollment	Maximum Capacity	Capacity	Percent Capacity
Lake Ridge	527	540	-13	97.60%
Fairmont	390	410	-20	95.10%
Cherokee	450	495	-45	90.10%
Total			-78	

Source: Johnson City Schools

Table 18. Elementary Schools Below 90% Capacity

School	2004-05 Enrollment	Maximum Capacity	Capacity	Percent Capacity
Mountain View	494	560	-66	88.20%
Towne Acres	400	455	-55	87.90%
Woodland	454	540	-86	84.10%
South Side	342	410	-68	83.40%
North Side	274	365	-91	75.10%
Total			-366	

Source: Johnson City Schools

2. Construct New Elementary School

Building a new elementary school will provide sufficient capacity to meet the city's needs well beyond the school plan's 10-year forecast. A new school would increase the capacity system wide by approximately 450 students. Also, a new school could reduce long distance school bus trips, depending on how district lines are drawn. It would also provide an opportunity for a new park/open space for neighborhood use.

Table 19. Projected Capacity with New Elementary School

Grade	Current Maximum Capacity	Capacity of New Elementary School	New Maximum Capacity	At 90% Efficiency	Forecasted Enrollment 2014-15
K-5	3,775	*455	4,230	3,807	3,448

*Estimate based on 21 classrooms.
Sources: Johnson City Schools
Johnson City Planning Department

The estimated cost to construct a new elementary school is between $9,000,000 and $12,000,000.[1] Also, there will be the added cost of operating and maintaining a new school and paying support staff estimated at approximately $500,000 per year, not including teachers' salaries. Constructing a new school facility can also take a considerable amount of time. It is estimated that it would take at least three years to locate a site, design, and construct a new school. The overcrowding at Lake Ridge would therefore continue for at least three more years, unless the Board of Education decided to redistrict or take other actions to reduce enrollment. In addition,

[1] The American School & University, 29th Annual Official Construction Report, 2003.

constructing a new school would likely promote sprawl as residential development follows it to it new location.

3. Expand Existing Facilities

Expanding existing schools has a number of advantages. First, three schools have been designed to accommodate additional classrooms. Expanding existing schools is considerably less expensive than constructing a new school and takes significantly less time to construct. In addition, there are operating cost savings by using existing schools more efficiently. Large-scale redistricting might not be necessary with small additions versus constructing a new school.

Potential drawbacks to expansion include possible disruption of classes during construction. Noise levels and safety concerns may make it necessary to temporarily relocate some students during the construction. Second, the support spaces (cafeteria, kitchen, library, gymnasium, etc.) may not be designed to accommodate additional students and additional improvements may be necessary.

The three existing elementary schools that were constructed to accommodate future expansions include: South Side (4 classrooms); Woodland (4 classrooms); and Lake Ridge (12 classrooms). The support spaces at these schools were sized to accommodate these expansions. However, the Board of Education (BOE) has adopted a policy stating that the ideal maximum size of an elementary school should be 500 students, based on maximum operational, curricular, and financial efficiency. Although both Woodland and Lake Ridge schools were designed to accommodate additional classrooms, both schools being designed for 540 students. Of these three, South Side, which has a maximum design capacity of 410 students, can accommodate its designed expansion and remain below the 500-student threshold.

Four other elementary schools, Cherokee, Fairmont, North Side, and Towne Acres are also possible candidates for expansion.

Expansion Options

a. Expanding South Side Elementary School from 19 to 23 classrooms would increase capacity to 446 students at 90% capacity efficiency. The estimated cost of construction is $675,000 (Shaw and Shank Architects).

   Advantages

   - Adds capacity for 85 additional students at maximum capacity (77 at 90% efficiency)
   - Keeps enrollment under the desired 500-student limit.
   - The school was designed to accommodate this expansion. A portion of the construction is already in place.
   - Much of the structural work is already in place.

Disadvantages

- Located on a small 5 acre site (2nd smallest)
- Tight construction schedule; may have to pay a premium for short completion time.

b. Expanding Towne Acres Elementary School from 21 to 25 classrooms would increase capacity to 486 students at 90% efficiency. The estimated cost of construction is $360,000 (Dr. Wise's report to the BOE).

Advantages

- Adds capacity for 77 additional students, at 90% efficiency.
- Keeps enrollment under the desired 500-student limit.
- Located in northern part of city, closer to areas experiencing residential growth.
- Located on a large site (10.5 acres)
- Layout of school could allow expansion by adding a new pod, reducing impact on activities in existing building.

Disadvantages

- Possible geological constrains on site.
- Tight construction schedule; may have to pay a premium for short completion time.

c. Expanding Fairmont Elementary School from 19 to 23 classrooms increases capacity to 446 students at 90% efficiency. Estimated cost of construction $360,000 (Dr. Wise's report to the BOE).

Advantages

- Adds capacity for 77 additional students, at 90% efficiency.
- Located in northern part of city, closer to areas experiencing the most growth.
- Located on a larger site (13.2 acres)

Disadvantages

- Located in school district experiencing decline (-0.9 %)
- The school lacks an adequate auditorium to accommodate a larger student body.
- Tight construction schedule; may have to pay a premium for short completion time.

d. Expanding Cherokee Elementary School from 23 to 25 classrooms for a total of 486 students at 90% capacity efficiency. Estimated cost of construction is approximately $180,000.

Advantages

- Located in area of city experiencing some moderate growth.
- Located on 9.7 acres, but topography does impact the site.

Disadvantages

- Limitation of available space
- Tight construction schedule; may have to pay a premium for short completion time.

e. Expanding North Side Elementary School from 17 to 21 classrooms increases capacity to 401 students at 90% efficiency.

Advantages

- Adds capacity for 77 additional students, at 90% efficiency.
- Keeps enrollment well under the desired 500-student limit.

Disadvantages

- Located on a 4.8 acre site (smallest site) and would require the purchase of additional property, removing existing homes,
- Requires the abandonment of a portion of Welbourne Street reducing over all connectivity of the street network

4. Install Portable Classrooms

Installing portable classrooms is a quick and inexpensive means of addressing overcrowding. However, the Board of Education previously adopted a policy to eliminate portable classrooms system-wide (recommendation from Joint School Facilities Committee in 1992 *Recommended Plan for Elementary Schools in Johnson City*). At that time, portable classrooms were deemed unsafe under certain conditions and state standards imposed a ten-year maximum life span.

Advantages

- Less costly than constructing a new school or addition.
- Large-scale redistricting could be postponed.
- Provides additional classroom space without major disruptions during installation.
- Provides flexibility; can be done in conjunction with other options.

Disadvantages

- Is contrary to the School Board's adopted policy of eliminating portable classrooms system-wide.

- Portable classrooms were eliminated for several reasons: unsafe, age limitations, unattractive, inadequate learning environment, functional obsolescence, handicap accessibility, and inefficient in energy use.
- Will provide only temporary relief if enrollment continues to grow.
- Life span of structure is only ten years – reoccurring replacement costs.
- Children are separated from the main facility; have to go outside between classes and cafeteria, library, and gymnasium. However, at Towne Acres and Fairmont this already occurs.

5. Reuse/reopen old elementary facility (Henry Johnson)

The Henry Johnson School was constructed in 1928. This 40,000 square-foot, 17-classroom school facility is sited on approximately 3.4 acres. Renovating this facility would add capacity for 370 additional students to the system wide school system and provide sufficient capacity to meet the city's needs well beyond the school plan's 10-year forecast.

Table 20. System Wide Capacity adding Henry Johnson School

Grade	Current Maximum Capacity	Capacity of Henry Johnson	New Maximum Capacity (System Wide)	At 90% Efficiency	Forecasted Enrollment 2014-15
K-5	3,775	370	4,145	3,730	3,448

Sources: Johnson City Schools
Johnson City Planning Department

Currently, Henry Johnson School houses several alternative learning programs including in-school suspension, special education programs, GED+2, Frontier Health's youth program, and the Juvenile Education Authority. Returning the school to traditional classes would require relocating these programs to other facilities.

The school is in generally good condition; however, reestablishing an elementary school would require some major renovations, including: a new fire alarm and sprinkler system, an elevator and handicap ramps, updated kitchen, improvements to the rear parking lot and bus drop-off, and a new gym floor. It is estimated that the total cost of these renovations would between $2,000,000 and $3,000,000.

The advantages and disadvantages to reopening Henry Johnson School include:

Advantages

- Reestablishes a neighborhood school to allow more students to walk to school and serve as a community/neighborhood center.
- Less expensive to renovate an existing school than to construct a new school: no additional costs for extending water and sewer lines, student transportation, road improvements, or land acquisition.
- Reduces urban sprawl or *school sprawl*, where schools act as catalysts for new residential development on surrounding greenfield sites.

- Promotes infill development with better utilization of services.
- Henry Johnson is in good condition, having undergone recent renovations.

Disadvantages

- Accessibility and traffic: the school is on a major thoroughfare with high traffic where ingress/egress could be an issue
- It would be necessary to relocate existing programs and services: in-school suspension, special education, GED-2, Frontier Health's youth programs, and school district/school board administration, etc.
- School was closed for a reason (age, condition of structure, functional obsolescence, handicap accessibility).
- Redistricting would have to occur.

6. Eliminate or reduce the number of tuition students

At the beginning of the 2004-05 school year, 197 tuition students attended Johnson City schools in grades K-5. Eliminating tuition students would increase the capacity of the school system by approximately 200 students. Although this is not a great number, reducing tuition students along with other options such as redistricting would allow the city to postpone some major capital improvements.

When excess capacity in the school system is available, tuition students allow the city to more efficiently utilize this space and generate additional revenue. The city generated $950,333 in new revenue during the 2003-04 calendar year from tuition students.

Funds generated from tuition students:

	$147,796	Total Tuition Fees
	$667,440	County & State BEP Funds for Washington County tuition students
+	$135,097	State BEP Funds for non-Wash. Co. tuition students
	$950,333	Total

Removing tuition students has several advantages and disadvantages, including:

Advantages

- Relieves current and projected overcrowding and allows elementary schools to operate within building capacities; provides relief to overcrowding by eliminating approximately 200 students system-wide.
- Saves on capital costs as well as operating costs for educating tuition students.
- Provides flexibility; can be done at specific schools or system wide.
- Can be done in conjunction with other options.

Disadvantages

- Loss of approximately $1,000,000 annually from tuition and additional county and state funding.
- Will provide only temporary relief if enrollment continues to grow.
- The elimination of tuition students without redistricting will not relieve overcrowding at Lake Ridge and Mountain View schools.

Middle School

Although Indian Trail Middle School was constructed in 1998 and expanded in 2001, current student enrollment is at the facility's design capacity. Indian Trail currently has 47 classrooms for a building capacity of 1,020 students. Classroom capacity was computed on student/teacher ratio of 25:1 in grade 6 and 30:1 in grade 7, 8, and 9 with classrooms being occupied five periods of the six period day, or 83%. The 2004-05 enrollment was close to maximum building capacity with 1,009 students (98.9%). In addition, forecasts project enrollment will increase to 1,037 students by the 2010-11 calendar year.

Table 21. Indian Ridge Middle School Enrollment

Grade	Design Capacity	2004-05 Enrollment	Forecasted Enrollment 20010-11	Forecasted Enrollment 2014-15
6-7	1,020	1,009	1,037	1,088

Sources: Johnson City Schools
Johnson City Planning Department

Based on current enrollment and projected enrollment increases some action will be necessary. Several alternatives or combination of different alternatives are available to address this need, including:

1. Construct a second school;
2. Eliminate or reduce the number of tuition students; and
3. Revise the grade configuration system-wide to re-establish middle school as grades 6-8 and use Liberty Bell as a second middle school.

1. Construct Second Middle School

Building a new middle school will provide sufficient capacity to meet the city's needs well beyond the school plan's 10-year forecast and would increase capacity system-wide. Locating a new facility in the central or southern part of the city would reduce long distance school bus trips. In addition, it would allow the city to reduce enrollment at each middle school to fewer than 800 students. A new school would also provide an opportunity for a new park/open space for neighborhood use.

Table 22. Project Capacity with New Middle School

Grade	Current Maximum Capacity	Estimated Capacity Of New Middle School	New Maximum Capacity	Forecasted Enrollment 20010-11	Forecasted Enrollment 2014-15
6-7	1,020	700	1,720	1,037	1,088

Sources Johnson City Schools
Johnson City Planning Department

However, the estimated cost to construct a new middle school would between $12,000,000 and $15,000,000[2], in addition to the added cost of operating and maintaining a new school and paying support staff. Since constructing a new school would take approximately three to five years to locate a site, design, and construct a new building, it would not address the current overcrowding at Indian Trail in the short-term.

2. Eliminate Tuition Students

During the 2003-04 calendar year, only 50 tuition students were enrolled at the Indian Trail Middle School. Although eliminating them would put enrollment back under the school's maximum design capacity, it would only be temporary and would do little to address the school's forecasted growth.

Table 23. Indian Trail Tuition Students

Grade	Current Maximum Capacity	2004-05 Enrollment	Tuition Students	Enrollment Without Tuition Students	Forecasted Enrollment 2009-10	Forecasted Enrollment 2013-14
6-7	1,020	1,009	50	1,008	1,037	1,088

Source: Johnson City Schools
Johnson City Planning Department

3. Renovate Liberty Bell 8-9 Campus and convert to a second Middle School

The 2004-05 enrollment at Liberty Bell was 1,086 students. The projected growth rate is expected to flatten and remain the same (1,076) through the 2014-15 calendar year, well below the building design capacity of 1,358 students.

The Liberty Bell complex, which was constructed in 1973, is now in need of major renovations. The Johnson City Fire Marshal's Office has cited the school for numerous violations. In 2001, the Board of Education hired Shaw & Shanks Architects to evaluate the Liberty Bell campus. The architects estimated it would cost approximately $9,000,000 in order to address the Fire Marshal's citations, meet ADA

[2] Long Range Growth Plan for the Johnson City School District, Bill Wise, ED.D.

requirements, and to construct a new gymnasium, locker rooms, a new cafeteria and a kitchen.

Converting the Liberty Bell campus into a second middle school, the school system would have to convert back to a three-tier (K-5, 6-8, 9-12) grade structure used by the school system from 1988 to 1998. This was done primarily to allow for better scheduling for high school credits and separated pre-teens from the 9th graders. It remained in place until Indian Trail Middle School opened in 1998. With its opening, the grade structure changed to its current K-5, 6-7, 8-9, and 10-12 grade configuration.

The Liberty Bell campus has a design capacity of 1,358 students. With the proposed improvements (gymnasiums, cafeteria, kitchen) the school could be easily converted into a middle school for at least 800 students.

Adding the 9th grade students to the Science Hill campus allows the use of some of its excess capacity. In addition, this configuration would allow a reduction in the size of the middle school from the 1,058 students to approximately 750 students.

Table 24. Three-Tier Grade Configuration

Grades	1997/98* Enrollment	2005-06 Projections	Maximum Capacity	Capacity at 90% Efficiency	2014-15 Projections
K - 5	3,221	3,358	3,775	3,398	3,448
6 - 8	1,481	1,536	2,378**	2,140	1,593
9 - 12	1,960	1,974	2,765	2,488	2,019

* The last year the city had a three-tier system.

**combined Indian Trail and Liberty Bell Campuses
Sources: Johnson City Schools
Johnson City Planning Department

High School

Science Hill High School was constructed in 1961 and expanded in 1971, 1988, 1997, and 2001. The 2004-05 enrollment for grades 10-12 was 1,375 students. Enrollment is projected to grow to 1,449 students by the 2014-15 calendar year, well below the building's design capacity of 2,765 students.

The major issues facing the school are its age and the lack of adequate space for school-wide events. Currently, the school has to rent Freedom Hall for special school-wide (8-12) events because the school auditorium has a maximum capacity of only 670 students and the gymnasium can only accommodate a maximum of 1,600 students.

Table 25. Science Hill Projected Enrollment

Grades	2004-05 Enrollment	BEP Maximum Capacity	Capacity at 90% Efficiency	Forecasted Enrollment 2014-15
10-12	**1,375**	2,765	**2,489**	**1,449**
9-12	**1,887**	2,765	**2,489**	**2,019**

Sources: Johnson City Schools
Johnson City Planning Department

Two alternatives were identified to address the high school deficiencies and forecasted enrollment. The city can either construct a new school or renovate the existing one.

1. Construct new high school

Dr. Wise's report to the Board of Education recommends that the city construct a new 2,000-student high school. The school was originally built in 1961 and is now over 40 years old. Dr. Wise concludes that the school no longer meets the needs of the community. It lacks functional features needed for a contemporary high school curriculum, and some of the spaces used for school-wide activities are too small.

Although constructing a new high school would provide the community with a state-of-the-art facility that would meet the needs well into the future, Dr. Wise estimated that it would cost $29,000,000 to construct.

2. Renovate existing high school to accommodate grades 9-12.

Science Hill has a design capacity of 2,765 students. This is sufficient space to easily accommodate the forecasted enrollment through the 2013-14 school year. Although the building is 40 years old, Dr. Wise points out that the school is "safe, clean, and well maintained." The school does need a larger auditorium with sufficient seating capacity to accommodate school-wide events. However, constructing a new auditorium and providing other needed renovations would be far less expensive and less disruptive than building a new school.

The recommended School Plan is a combination of actions and policies that will produce high quality school buildings for high-quality educational programs. The recommended policies are listed first, followed by construction and program actions in chronological phases.

POLICIES

1. **Policy: It is a policy of the city to provide adequate school capacity for present and future enrollment.**

2. **Policy: It is a policy of the city to provide sufficient space at every elementary school for music, art, speech therapy, computer laboratories, resource services, and guidance.**

3. **Policy: It is a policy of the city to provide school facilities, sites, and programs that meet or exceed the minimum standards of the Tennessee Department of Education.**

4. **Policy: It is a policy of the city to ensure safety, economy, and efficiency in providing school facilities and programs.**

5. **Policy: It is a policy of the city to ensure equality and fairness in its educational facilities, services, and programs.**

6. **Policy: It is the policy of the city to locate new schools to promote infill development and discourage urban sprawl.**

7. **Policy: It is a policy of the city to provide new, properly located, high-quality educational facilities that serve as community centers and support the desired land use pattern in Johnson City.**

8. **Policy: It is a policy of the city that the optimum size of an elementary school for operational, curricular, and financial efficiency shall be 500 students.**

9. **Policy: It is a policy of the city to develop programs for joint acquisition, development, and use of facilities consistent with the Parks and Recreation Master Plan.**

JOHNSON CITY SCHOOL PLAN

(Adopted by the Board of Commissioners on November 18, 2004)

FIRST PHASE (2004-05)

A. Middle School

1. Initiate basic improvements to the Science Hill High School 8-9 campus (Liberty Bell) and consider a new cafeteria and gymnasium. If it is the intention of the Board of Education to move to a three-tier system, then these renovations should take into account the different physical needs of a 6-8 program, if any.

B. Elementary Schools

1. Expand one or more elementary school to accommodate expected enrollment.

2. Redistrict as appropriate to alleviate overcrowding in certain schools and allow for growth in districts with developable land.

3. Identify and acquire a site for a future elementary school within the Urban Service Area.

C. Three-Tier System

Implement the three-tier system (K-5, 6-8, 9-12).

SECOND PHASE (2006-09)

1. Evaluate the existing Science Hill High School for needed renovations to accommodate grades 9-12.

2. Update enrollment forecasts at all grade levels and amend the School Plan accordingly.

THIRD PHASE (2010-14)

1. Construct a new elementary school if warranted by enrollment growth. Redistrict as necessary. Evaluate existing elementary schools for adequacy.

2. Renovate both middle schools (grades 6-8), as needed based on growth, program needs, or wear.

3. Review the adequacy of Science Hill High School to determine whether it should be maintained (with possible renovations) or replaced with a new facility.

4. Update enrollment forecasts at all grade levels and amend the School Plan accordingly.

JOHNSON CITY SCHOOL PLAN

(Adopted by the Board of Commissioners on November 18, 2004)