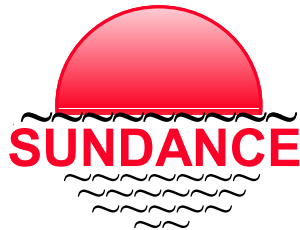




Demographic Study  
**Public School Enrollments**  
**and**  
**Future Residential Development**  
for the  
Board of Education  
of the  
**Sparta Public Schools**



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April, 21, 2006

## Table of Contents

	PAGE
Executive Summary	i
Township Profile	1
School District Profiles	4
General Population Trends	5
Population by Age Group	6
District Birth Rates	7
Cohort Survival Projections, the Methodology	8
Cohort Survival Projections, the Results using Standard Methodology <i><b>NOT</b> the final Projection</i>	9
Residential Permitting; Historic Levels	10
New Housing Developments / Schedule by Type	11
Summary of New Housing	12
Multipliers for Students from New Housing	13
Students from New Housing	14
Students from New Housing above the Benchmark	15
District Wide Enrollments: Historic and Projected Cohort Survival plus Impact of Accelerated Housing	16
District Wide Enrollments: Graphic Analysis	17
PreK SE to Grade 4 Enrollments	18
Grade 5 Enrollments	19
Grades 6 to 8 Enrollments	20
Grades 9 to 12 Enrollments: Standard and Survival Ratio Adjusted	21
District Wide Enrollments: Comparative Analysis	23
<b>Appendix:</b> Standard Cohort Survival Projections NJ DOE Format, NOT the Recommended Projections	



# Executive Summary

**The Methodology** used in projecting enrollments is the recommended method of the NJ Department of Education, known as Cohort Survival. The NJ DOE form of report, is in the Appendix.

**The School District** includes the 39.2 square mile Township of Sparta, in Sussex County, which has a year 2000 population of 18,080 people according to the US Census. The public school system has a student population of just over 4,000 students in 5 schools.

**Population Trends** The population of Sparta has experienced steady growth of 13.6% in the 80's and 19.2% in the 90's, higher than the growth rates in Sussex County or New Jersey.

**Population by Age Group** from 1990 to 2000, shows increasing Pre-school and School-age populations, up 27% and 33% respectively. Childbearing age population increased by only .6%, significant in light of the other strong gains.

**Birth Rates** have fluctuated between 189 and 270 per year over the 10 years for which data is available. A five year average rate of 230 births per year is used to project Live Births beyond 2004, the last year for which data is available.

**Housing Trends** in Sparta have averaged 88 single-family residential building permits per year in the last six years. A review of the Township Planners' COAH report provides a basis for future development of 125 units per year. These future units are a mix of 70% multi-family housing and 30% single family compared to all single family in the past. A large portion of the multi-family housing is Age-Restricted housing. The future level and mix of housing does justify adding students (up to 50) to several years of the standard projection.

**Historic Enrollments** in Sparta have increased over the last six years by 337 students or 9.1% from 3690 to 4027 students.

**Enrollment Projections** establish district-wide growth at only 88 students over the next 5 years. Elementary grades PKSE to 4 will increase by 60 students from a current level of 1519 to a year 2010 high of 1579. Grade 5 enrollment will increase from 308 to 350 students before declining to current levels. Grades 6 to 8 enrollments will peak at 1041 students in the projected period, 20 less than the historic period peak. High School enrollments will peak at 1257 students in year 2008, 85 students higher than the current level. An adjusted High School projection shows enrollment peaking at 1387 students in 2008

*Population in Sparta Township has increased to above 18,000, while the school enrollments increased to over 4,000.*

*The period from 1990 to 2000 saw a less than 1% increase in the Childbearing Age group and a 33% increase in the School Age population.*

*While the number of residential permits is anticipated to increase, the new mix of multifamily housing will lessen the impact on enrollments.*

*Enrollments which grew by 337 students in the last six years are projected to grow by 60 additional students in the next five years to a new district-wide high of 4157 students in year 2008.*

*An extended projection to year 2015, estimates enrollment at a new high of 4175 students.*





## Profile: Township

Sparta Township is located in Sussex County, in north western New Jersey. According to the United States Census Bureau, the township has a total area of 101.6 km<sup>2</sup> (39.2 mi<sup>2</sup>). 96.8 km<sup>2</sup> (37.4 mi<sup>2</sup>) of it is land and 4.7 km<sup>2</sup> (1.8 mi<sup>2</sup>) of it is water.

As of the United States 2000 Census, the township had a total population of 18,080. The township includes the communities of Ackerson, Edison, Hopewell, Houses Corner, Monroe, Sparta, Sparta Junction, Sussex Mills, Upper Mohawk, and Woodruffs Gap. Sparta Township is governed by a non-partisan form of government known as Council-Manager Plan B of the Faulkner Act. The five-member Council is elected at large for four-year terms and they choose a Mayor and Deputy Mayor from among themselves to serve one-year terms of office.

The Lenni Lenape Native Americans occupied the land at the time of its discovery by European colonists. No permanent settlers arrived until 1778, when Robert Ogden built his home and constructed an iron forge on lands he had acquired. The first public building in Sparta was the Presbyterian Church which was incorporated in 1786. Schools were established in Ogdensburg by 1806 and in Sparta by 1812. Sparta was organized as a township in 1845, and Ogdensburg Borough was incorporated in 1914 when it separated from Sparta Township.

Iron, zinc, and limestone supported a mining industry for over 100 years, but today the mining operations have ceased and the township is now a residential community served by retail, professional, and service businesses. According to the 2000 census, 65% of Sparta Township workers commute to jobs outside of the county.

The New Jersey Midland Railroad opened to Ogdensburg in 1872 for zinc ore traffic, but in 1882 the line was extended to Stroudsburg, Pennsylvania and a station was built at Sparta, giving tourists easy access to the many boarding houses that served summer residents from the cities. Passenger service ended in 1935, but by then Sparta was well established as a summer destination.



***Sparta was organized as a Township in 1845, and is a 39 square mile municipality with a year 2000 population of over 18,000.***



**SOURCES:** US Census 2000 and  
[http://en.wikipedia.org/wiki/Sparta,\\_New\\_Jersey](http://en.wikipedia.org/wiki/Sparta,_New_Jersey)



## Profile: Township

Continued

In 1926, the Arthur D. Crane Company constructed a 600-foot dam across the Wallkill River to form 300-acre Lake Mohawk in 1928. The private resort community created by the Crane Company consisted primarily of summer homes, but the homes began to be winterized in the 1940's and the current membership of 2,600 families are largely year-round residents.

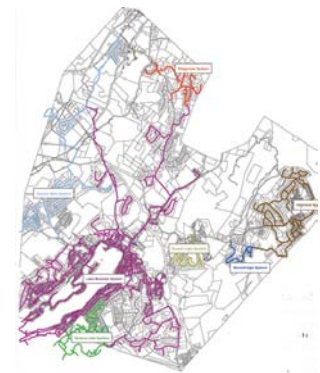
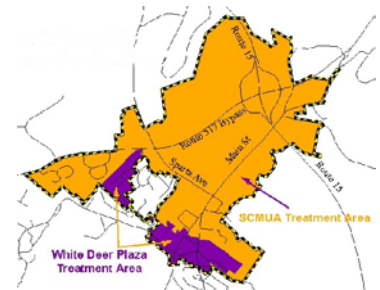
A portion of Sparta is serviced by a central sanitary sewer collection system and a state of the art wastewater treatment facility which is owned and operated by the Sparta Township Municipal Sewer Utility. The commercial area of the White Deer Plaza and Center Street, and the Knoll Heights Senior Citizen Complex are tributary to these facilities. The installation of a central sanitary collection system to service the Sparta "Town Center" has recently been completed and is currently operational. This area consists of portions of Main Street, lower Glen Road, Sparta Avenue and Woodport Road. Effluent from this system is sent to the Sussex County Municipal Utility Authority (SCMUA) plant in Hardyston for treatment.

The Water Utility Department manages, operates and maintains wells, storage tanks, distribution piping and fire hydrants within the Township.

Sparta lies on Route 15 and is 20 minutes north of I-80. Parsippany and Morristown can be reached in 30 and 40 minutes, respectively. New York City is just over an hour away. Commuting by train to New York City is easy on NJ Transit's service from the Dover station, just 25 minutes from Sparta. Newark International Airport is 60 minutes away.

The township has been and continues to be of interest to residential developers, however, recent events will slow development.

On August 10, 2004, the Highlands Water Protection and Planning Act was signed. This historic law protects drinking water for over 5.4 million people and helps preserve New Jersey's dwindling open space. Sparta Township is well within the protected Highlands area, with the western portion of the township in the "Planning Area" and the eastern portion in the "Preservation Area".



***The township, begun as a summer community, has modern water and sewer systems and remains of interest to housing Developers.***

## Profile: Township

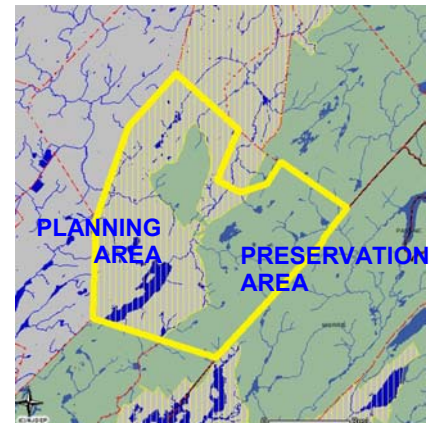
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The Highlands Planning Area is the portion of the Highlands Region that is not included in the Highlands Preservation Area. While the Act does not establish any new standards for the Highlands Planning Area, the Highlands regional master plan and Planning Council will provide an avenue for enhanced standards, TDR and smart growth in this portion of the Highlands Region.

On May 9, 2005 there was a Special Adoption of immediately effective rules to implement the enhanced environmental standards established in the Highlands Water Protection and Planning Act. The rules incorporate the requisite standards of various land use, water resource and environmental protection statutes and establish a consolidated Highlands permitting review and approval process for activities constituting major Highland development.

The Highlands Region is a vital source of drinking water for more than half of New Jersey's families, yielding approximately 379 million gallons of water daily. In addition to water resources, the Highlands Region contains exceptional natural resources such as contiguous forest lands, wetlands, pristine watersheds and plant and wildlife species habitats. The region contains many sites of historic significance and provides abundant recreational opportunities. Approximately 110,000 acres of agricultural lands are in active production in the Highlands region.

On March 6, 2006 A state appeals court upheld the State Planning Commission's designation of five development-friendly "town centers" in rural Sussex County but made clear they serve only as flexible guidelines that do not trump other environmental regulations. Sparta Township is one of those designated centers. "Smart Growth" will result in lower public service costs, more efficient use of infrastructure, greater community identity, and protection and reduced consumption of natural resources.



*While no one would doubt that this region will continue to grow, it will do so at a decreased rate.*

*The impact of the laws and regulations supporting the recent legislation is yet to be known and difficult to forecast.*





## Profile: School District

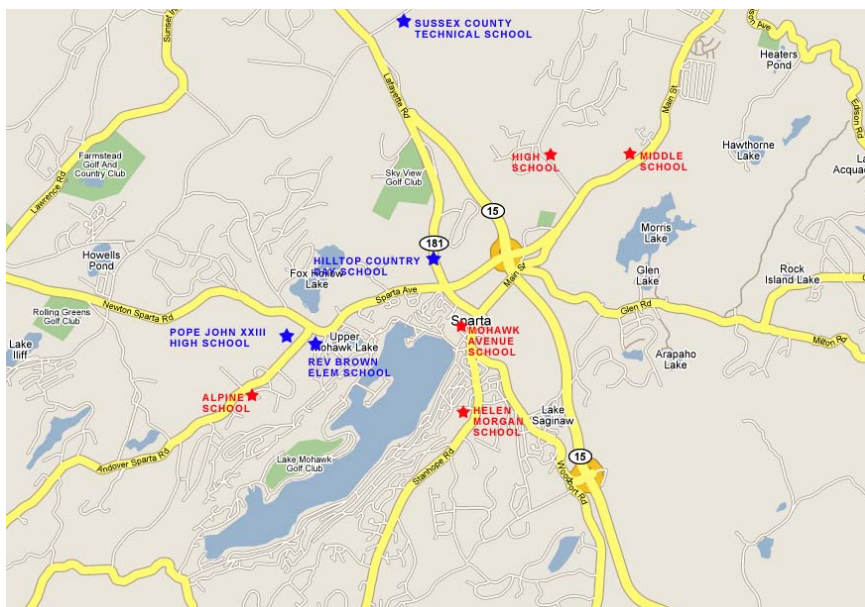
Sparta is home to a highly regarded public school system as well as private schools at all K-12 levels.

The Sparta Township Public School District operates a K-12 educational program for over 4,100 students. It is organized into two elementary schools (grades K-4), Alpine School and Helen Morgan School ; one elementary school (grade 5), Mohawk Avenue School ; one middle school (grades 6-8), Sparta Middle School ; and one senior high school (grades 9-12), Sparta High School. The Board of Education Offices are located in the Mohawk Avenue School Building.

*The Sparta Township Public School District operates a K-12 educational program for over 4,000 students in 5 schools.*

The Roman Catholic Diocese of Paterson is responsible for the Rev. George A. Brown Elementary (about 500 students) and Pope John XXIII High Schools (about 900 students, 20% from Sparta). Sparta is also home to Sussex County Technical School (about 970 students), as well as the Hilltop Country Day School, a private school for grades K-8 with 200+ students.

All the private schools report no significant plans that would impact on changing enrollments in their schools, or in the Sparta School system, by extension.



Sparta Alpine School (K-4)  
151 Andover Rd, Sparta, NJ 07871  
(973) 729-3107

Helen Morgan School (K-4)  
100 Stanhope Rd, Sparta, NJ 07871  
(973) 729-5770

Mohawk Avenue School (Gr. 5)  
18 Mohawk Ave, Sparta, NJ 07871  
(973) 729-1289

Sparta Middle School (Gr. 6-8)  
350 Main St, Sparta, NJ 07871  
(973) 729-3151

Sparta High School (Gr. 9-12)  
70 West Mountain Rd.  
Sparta, NJ 07871  
(973) 729-6191



## Demographics and Population Trends

As of the census 2000, there were 18,080 people, 6,225 households, and 5,029 families residing in the township. The population density was 186.7/km<sup>2</sup> (483.5/mi<sup>2</sup>). There were 6,590 housing units at an average density of 68.1/km<sup>2</sup> (176.2/mi<sup>2</sup>).

The racial makeup of the township was 96.69% White, 0.29% African American, 0.07% Native American, 1.39% Asian, 0.03% Pacific Islander, 0.45% from other races, and 1.09% from two or more races. 2.54% of the population were Hispanic or Latino of any race.

There were 6,225 households out of which 44.6% had children under the age of 18 living with them, 72.9% were married couples living together, 5.9% had a female householder with no husband present, and 19.2% were non-families. 16.1% of all households were made up of individuals and 7.2% had someone living alone who was 65 years of age or older. The average household size was 2.90 and the average family size was 3.28.

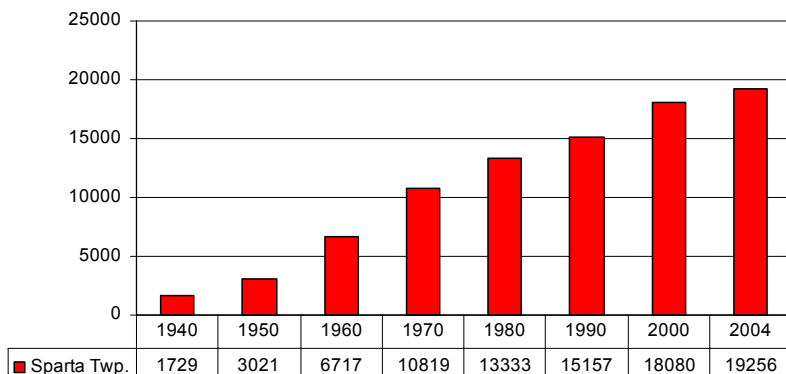
The median income for a household in the township was \$89,835, and the median income for a family was \$100,658. The per capita income for the township was \$36,910. 1.5% of the population and 1.0% of families were below the poverty line. 1.3% of those under the age of 18 and 2.1% of those 65 and older were living below the poverty line.

*Census 2000, reports ...*

*18,080 people,  
6,225 households, and  
5,029 families residing  
in the township*

	Population			Growth %	
	1980	1990	2000	80-90	90-00
<b>New Jersey</b>	7,365,011	7,730,188	8,414,350	4.96%	8.85%
<b>Sussex County</b>	116,119	130,943	144,166	12.77%	10.10%
<b>Sparta Township</b>	13,333	15,157	18,080	13.68%	19.28%

*Population has grown, at a  
faster rate than New Jersey  
or Sussex County, ...  
to a current level of  
near 20,000 persons*



SOURCE: *New Jersey Population Trends 1790 to 2000*, available at  
<http://www.wnjin.state.nj.us/OneStopCareerCenter/LaborMarketInformation/Imi25/pub/NJSDC-P3.pdf>





## Population by Age Group

Population by Age Group from 1990 to 2000 in the Township, reveals important findings. Population increased significantly in the Pre-School (27%) and School Age (33%) groups.

**Childbearing age population (ages 22-39) increased less than 1%, or an actual count of only 24 additional persons. This is significant as the general population grew by nearly 20%, and indicates decreases in growth of future school age populations.**

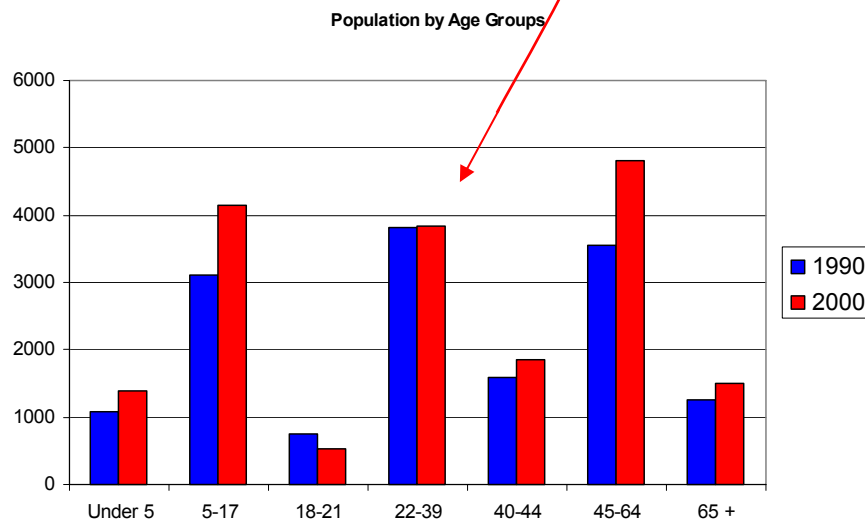
The College/Career population (ages 18-21), viewed as a pre-childbearing age group decreased by 216. This might be compared with the post-Childbearing age group (ages 40-45) which increased by 283 persons.

Adult ages 40-64 evidenced a very significant 30% increase, while ages 65+ increased by only 18%.

*The Childbearing age group, in the 10 year census period from 1990 to 2000, experienced a 24 person increase. This is less than 1% growth compared with 20% overall.*

*At the same time, the number of School age children increased by 1034.*

*Further analysis shows pre-childbearing age group of 18-21 as having declined by 216 persons, while an increasing number ages 40-44 are leaving the child-bearing ages.*



	Age	1990	%	2000	%	Change	% Change
Pre School	Under 5	1085	7.2%	1381	7.6%	296	27.3%
School Age	5-17	3121	20.6%	4155	23.0%	1034	33.1%
College/Career	18-21	750	4.9%	534	3.0%	-216	-28.8%
Childbearing	22-39	3815	25.2%	3839	21.2%	24	0.6%
Childbearing +	40-44	1579	10.4%	1862	10.3%	283	17.9%
Adult	45-64	3547	23.4%	4818	26.6%	1271	35.8%
Senior	65 +	1260	8.3%	1491	8.2%	231	18.3%
		<b>15,157</b>		<b>18,080</b>		<b>2923</b>	<b>19.3%</b>



## Birth Rates

The number of babies born to families who reside in the district is a significant factor effecting enrollment projections. Birth Rates from “5 years earlier” are used for the Birth to Kindergarten survival ratios on the standard method.

For example, the first school year in the historic data is 2000-01 and uses year 1995 for the Birth:K calculation of that survival ratio. With that understanding, actual and projected births are presented here for review.

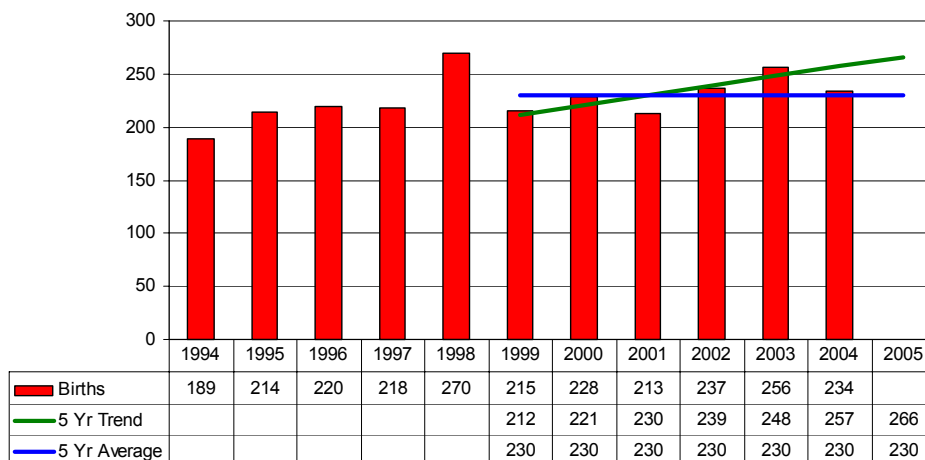
Birth rates have fluctuated between 189 and 270 per year over the last 10 years for which data is available. Over the 5 years 1999-03, the birth rate has been stable around an average of 230 births.

Trend analysis of the period 1999-03 indicates a possible increase of the birth rate as shown by the green line in the graphic below. However the recent release of the provisional 2004 birth rate by NJ DOH, of 234, supports use of the average over the trend.

Births data for years 2005 and 2006 are not yet available for use in the standard Cohort Survival projection. Enrollments are projected using the 5-year average for these unknown years of birth data. That includes the additional five years of data in the “extended” projection to school year 2015-16.

*Actual Live Births are used for years 1995-2004.*

*A 5-year average (1999-2003) is used to project Live Births for years beyond 2004 which data are not yet available, and which are the basis for future Kindergarten projections in the standard projection.*



SOURCE: NJ Department of Health, Bureau of Health Statistics





## Cohort Survival Methodology

Cohort Survival is the name given to the method of projecting enrollments which is most often recommended by the New Jersey Department of Education. Cohort Survival projections are based on historic enrollment and birth data in the individual school district and incorporate six years of demographic trends. They are considered very reliable in districts where trends are expected to continue, without significant change in housing or birth rates.

“Cohort” is the name given to the common groups of children originally born in a given year and progressing, together, through the school system, one grade level to the next. Survival ratios refer to the number of students from one year and grade level who “survive to” or enter the next grade level the following year.

For example, in the sample partial table in the side bar, historic enrollments show 301 students in a First Grade in year 2003-04, following a 246 student Kindergarten in year 2002-03. This yields a Kindergarten to First Grade survival ratio of 1.224 (or  $301 \div 246$ ).

Similar calculations are made for “survivors” from Births Five Years Earlier to Kindergarten, and for each and every grade level transition in each and every year of historical enrollments which are used. In general, six years of historic data will yield five Survival Ratios for each grade level change, Birth to K, K to 1, 1 to 2, etc. The **Average** Survival Ratio is then calculated for each grade level change.

Live Births data is also important. Official data is currently available from the NJ Department of Health only to year 2004. Birth data through year 2006 are utilized in the standard projection. Hence, years 2005-2006 are estimates using the average. These are used in the standard and extended projections.

The projections use the current school year 2005-06 enrollments as a base year. The Averaged Cohort Survival Ratios are applied to those base year enrollments and to the actual and estimated births, and projected into the next year, one grade level higher.

### Historic Enrollments

School Year	Births 5 Yrs. Ago	K	1st Gr.	2nd Gr.
<b>HISTORIC DATA</b>				
2000-01	214 1.073	231	287	319
		1.133	1.045	
2001-02	220 1.264	278	263	300
		1.155	1.137	
2002-03	218 1.128	246	321	299
		1.224	1.056	
2003-04	270 1.000	270	301	339
		1.152	0.377	
2004-05	215 1.116	240	311	294
		1.273	1.032	
2005-06	228 0.978	223	307	321
<b>Average Survival Rate</b>	<b>1.094</b>	<b>1.190</b>	<b>1.049</b>	

*Enrollment projections have been made using the Cohort Survival method... the recommended method of the NJ Department of Education.*

## Cohort Survival Enrollment Projections

Standard Methodology

Cohort Survival projections are the recommended method of projection and must be completed for all school districts. The full NJ Department of Education worksheet for this projection can be found in the Appendix. The results are as follows;

### K-12 General Education

		K	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6	Gr 7	Gr 8	Gr 9	Gr 10	Gr 11	Gr 12	Gen'l Ed
Historic	2000 - 01	231	287	319	297	321	307	314	280	298	267	234	229	201	3585
	2001 - 02	278	263	300	327	305	326	303	311	288	216	237	221	210	3585
	2002 - 03	246	321	299	317	347	327	340	309	315	246	214	239	223	3743
	2003 - 04	270	301	339	304	327	357	331	356	318	276	275	237	263	3954
	2004 - 05	240	311	294	345	308	330	362	343	355	281	288	276	237	3970
	2005 - 06	223	307	321	291	345	306	328	355	345	337	278	286	271	3993
Projected	2006 - 07	233	265	322	328	299	353	309	333	360	296	339	281	286	4005
	2007 - 08	259	277	278	329	337	306	357	314	338	309	298	343	282	4026
	2008 - 09	280	309	291	284	338	345	309	362	318	290	311	301	343	4080
	2009 - 10	252	333	324	297	292	346	348	314	367	273	291	314	302	4053
	2010 - 11	252	299	350	331	305	299	349	353	318	315	275	295	315	4055
	2011 - 12	252	299	314	357	339	312	302	354	358	273	317	278	295	4050
Extended	2012 - 13	252	299	314	321	367	347	315	306	360	307	274	321	278	4061
	2013 - 14	252	299	314	321	329	375	251	320	311	308	309	278	321	3988
	2014 - 15	252	299	314	321	329	337	379	356	325	267	310	313	278	4080
	2015 - 16	252	299	314	321	329	337	341	385	361	279	268	314	313	4113

### Self Contained Special Education

		Births 3 & 4 Yrs ago	Pre-K SCSE	Gr K-5 SCSE	Gr 6-8 SCSE	Gr 9-12 SCSE	SCSE Total
Historic	2000 - 01	434	0.0392	17	8	0	80
	2001 - 02	438	0.0434	19	14	0	103
	2002 - 03	488	0.0225	11	11	0	109
	2003 - 04	485	0.0412	20	11	0	31
	2004 - 05	443	0.0632	28	7	0	35
	2005 - 06	441	0.0476	21	13	0	34
Projected	2006 - 07	450	0.0429	19	11	0	30
	2007 - 08	472	0.0429	20	10	0	31
	2008 - 09	470	0.0429	20	11	0	31
	2009 - 10	469	0.0429	20	11	0	31
	2010 - 11	469	0.0429	20	11	0	31
Extended	2011 - 12			20	12	0	32
	2012 - 13			20	12	0	32
	2013 - 14			20	12	0	32
	2014 - 15			20	12	0	32
	2015 - 16			20	13	0	33

### District Summary

		Pre K Total	SCSE Total	Gen'l Educ	District Total
Historic	2000 - 01		105	3585	3690
	2001 - 02		136	3585	3721
	2002 - 03		131	3743	3874
	2003 - 04		31	3954	3985
	2004 - 05		35	3970	4005
	2005 - 06		34	3993	4027
Projected	2006 - 07		30	4005	4035
	2007 - 08		31	4026	4056
	2008 - 09		31	4080	4111
	2009 - 10		31	4053	4084
	2010 - 11		31	4055	4086
Extended	2011 - 12		32	4050	4082
	2012 - 13		32	4061	4093
	2013 - 14		32	3988	4020
	2014 - 15		32	4080	4112
	2015 - 16		33	4113	4146

Is the standard projection acceptable? Will trends stay the same? On the following pages we look at future residential development, the largest determinant that is susceptible to change.

*This standard Cohort Survival Enrollment Projections is the projection that is recommended by NJ DOE.*

*This standard projection indicates growth of about 60 students over the next five years, the standard projection period.*

*Additional growth, in an extended five year period, adds 62 more students*





## Residential Permitting Historic Levels

The six year average of building permits for the period 2001-05 is 88 units per year, and is a level used in further analysis of enrollments as we look at the future of residential development.

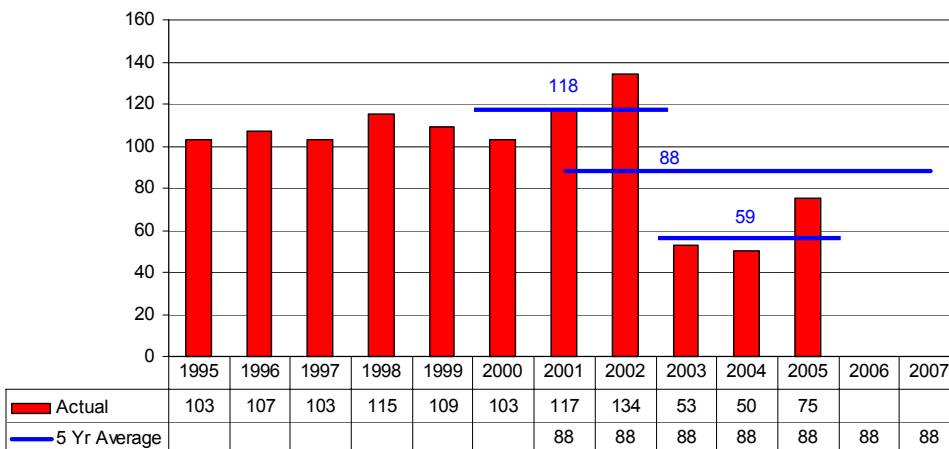
Nonetheless it is a questionable average for a period started in the  $\pm 120$  units per year range and ending in the 50-75 range.

In fact the last 3 years average is only 59 units per year as compared to the prior three-year average of 118. This is a significant difference and a probably indicator of slower growth as development in Sparta faces greater regulatory hurdles.

*Residential permitting in the last 5-year ranged from a high of 134 units to a low of 50 units per year.*

*A 6-year average coincides with the 6-year history of enrollments used in this study.*

*Therefore the 6-year average of 88 units per year is used in this report in the analysis of the impact of future residential development on school enrollments.*



**SOURCE:** NJ Department of Labor & Industry [www.wnjp.in.state.nj.us](http://www.wnjp.in.state.nj.us)



## New Housing Development Schedule By Type

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Single Family (all 4 Bdrm)</b>										
Triple Crown	7	7	7	8	8	6				
Eagles Nest	6	6	6	6	6	1				
Ashton Forest	5	5	5	5	5	2				
Roger Day		1	1							
Chapel Hill		5	5	6	6	6	6			
PCD Sawmill		1	1							
PCD Stanhope		2	2	2						
Lions Gate		8	7	4						
Denzer			1							
Smetana			1							
Misc.			5	5	10	15	15	10	10	10
	<b>18</b>	<b>35</b>	<b>41</b>	<b>36</b>	<b>35</b>	<b>30</b>	<b>21</b>	<b>10</b>	<b>10</b>	<b>10</b>
<b>Townhouses</b>										
<b>1 Bdrm</b>										
Millrace Village		1	2	1	1					
		<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>					
<b>2 Bedroom</b>										
Millrace Village		11	11	11	11					
		<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>					
<b>3 Bedroom</b>										
Millrace Village		1	1	2	1					
Sparta Meadows		4	4	4	4	1				
Sparta Village		3	4	5	2					
By Pass					12	12				
		<b>8</b>	<b>9</b>	<b>11</b>	<b>19</b>	<b>13</b>				
<b>4 Bedroom</b>										
Sparta Meadows		4	5	5	5	2				
Sparta Village		2	4	5	1					
By Pass					12	12				
		<b>6</b>	<b>9</b>	<b>10</b>	<b>18</b>	<b>14</b>				
<b>Apartments</b>										
<b>1 Bdrm</b>										
The Pointe	9									
The Twins			10	10						
	<b>9</b>		<b>10</b>	<b>10</b>						
<b>2 Bdrm</b>										
The Pointe	2									
Round Top		15	25	20						
Sparta Village		3								
	<b>2</b>	<b>18</b>	<b>25</b>	<b>20</b>						
<b>3 Bedroom</b>										
Round Top		15	25	20						
Lions Gate COAH			3							
		<b>15</b>	<b>28</b>	<b>20</b>						
<b>Age Restricted</b>										
Blue & Gold			20	20	20	20	20	20	20	20
Sparta 84 LLC	15									
Hamlet at Sparta			10	20	25					
	<b>15</b>		<b>30</b>	<b>40</b>	<b>45</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>20</b>
<b>TOTAL ALL</b>	<b>44</b>	<b>94</b>	<b>165</b>	<b>159</b>	<b>129</b>	<b>77</b>	<b>41</b>	<b>30</b>	<b>30</b>	<b>30</b>
	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>

In meetings with the subcommittee of the Board of Education, it was decided to utilize the schedule of future development anticipated in Sparta as it was diligently analyzed and presented, by the Township Planner, in the required Round 3 submission to the Council on Affordable Housing. It is a 10-year projection starting in 2005.

In consultation with the Township Planner, that schedule was further detailed to include additional characteristics such as the housing type (single-family, apartment, townhouse, age-restricted), for-sale or rental, and the number of bedrooms.

The resulting table in its greater detail is presented here, with summaries by year in each significant housing type.



## Summary of New Housing

A recapitulation of the project-based data from the previous page is restated below as a summary of the housing type by year. Projections for the initial years are considered highly reliable, while the latter years are probably under estimated due to an inability to identify residential development in that longer range..

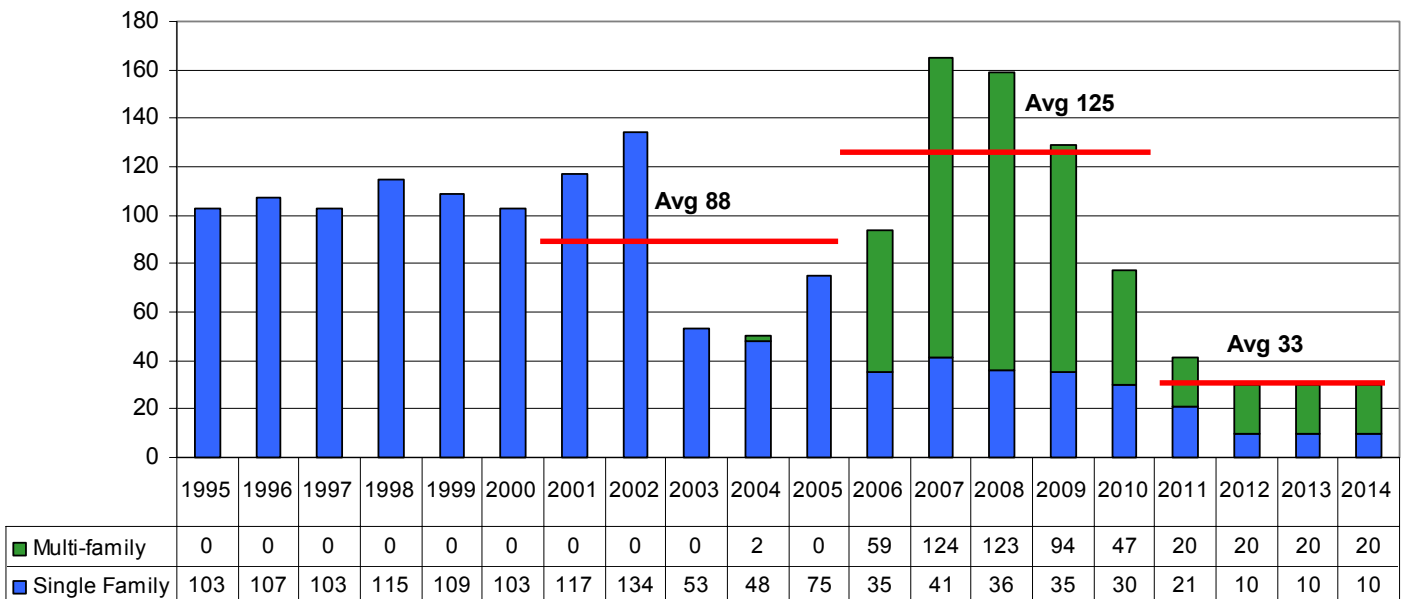
*A reliable average of 125 units per year of new construction are anticipated for the period 2006-10, with a less reliable projection of only 33 units per year anticipated thereafter.*

Units per Year by Type											
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Single Family - 4 Bdrm	18	35	41	36	35	30	21	10	10	10	228
Townhouse- 1 Bdrm	0	1	2	1	1	0	0	0	0	0	5
Townhouse- 2 Bdrm	0	11	11	11	11	0	0	0	0	0	44
Townhouse- 3 Bdrm	0	8	9	11	19	13	0	0	0	0	60
Townhouse- 4 Bdrm	0	6	9	10	18	14	0	0	0	0	57
Apartment - 1 Bdrm	9	0	10	10	0	0	0	0	0	0	20
Apartment - 2 Bdrm	2	18	25	20	0	0	0	0	0	0	63
Apartment - 3 Bdrm	0	15	28	20	0	0	0	0	0	0	63
Age Restricted	15	0	30	40	45	20	20	20	20	20	215
	44	94	165	159	129	77	41	30	30	30	755

*Review of the housing types indicates that ... 29% is Age-Restricted and 41% is Multifamily.*

*This is a significant difference from the history of only 2 multi-family units over 10 years.*

An estimated 215 of the nearly 755 units anticipated over the 10 years, or nearly **30%, are Age-Restricted** units, which will have a reduced impact on school enrollments as compared to the history of primarily single-family development. And 323 units, or over **40%, are Multi-family** units which by type and number of bedrooms also generate less children than single-family housing.



## Multipliers

Students from New Housing  
and from Resale Housing

A most important question is that of the multipliers to use for “School Age Children from New Housing”.

This study utilizes the as yet unpublished multipliers from a Rutgers University monograph which is based on US Census 2000, and which when complete will replace their earlier and definitive “*Practicioners’ Guide to Fiscal Impact Analysis*”, which was based on the 1980 Census. The Multipliers have changed over the last 20 years.

Their multipliers, while more detailed in analysis of market value (sale or rental price), confirm the authors’ multipliers extrapolated in 2002 from the 2000 U. S. Census 5% Public Use Microdata Sample for New Jersey.

The Rutger’s multipliers are shown in the adjacent table.

	Multiplier
Single Family -4 Bdrm	1.01
Townhouse- 1 Bdrm	0.10
Townhouse- 2 Bdrm	0.16
Townhouse- 3 Bdrm	0.45
Townhouse- 4 Bdrm	0.93
Apartment - 1 Bdrm	0.11
Apartment - 2 Bdrm	0.42
Apartment - 3 Bdrm	1.08
Age Restricted 1.49 at 33%	0.49

*This study uses Multipliers from Rutgers University and the US Census.*

The Multiplier for Age Restricted housing is based on the RESALE of existing housing in Sparta. For this study, data from the 2000 Census for Sparta Township was again used.

The Number of Occupied Houses of 6,225 was divided by the Number of Children Age 5-17 of 4,155 to generate a Sparta Twp Multiplier for Existing Housing of 1.498 Children per Occupied Housing Unit.

It is assumed that approximately 1/3rd of the purchasers of Age-Restricted housing in Sparta will already reside there. Their purchase of an age-restricted unit will free-up a higher than average number of existing houses for resale and needs to be factored into our analysis. Therefore, a Multiplier of 33% of 1.498 or **0.49** is used.

On the following page, these multipliers will be applied to the mix of housing units.

## Students from New Housing

The single, most important question remains for analysis. That is, How many children will be generated from this additional housing.

In the analysis shown below, the impact of students per year from each new housing type is projected using the appropriate multipliers and then summed in that year.

The year 2005 projection, included in the Township Planner's COAH report is not included since it is now historic data.

The analysis indicates 520 new students will be generated by the 755 units. 429 students will be generated in the first five years

The yearly cumulative impact is exhibited on the bottom line.

Students from New Housing by Year & Type											06 +
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
Single Family -4 Bdrm	18	35	41	36	35	30	21	10	10	10	230
Townhouse- 1 Bdrm	0	0	0	0	0	0	0	0	0	0	1
Townhouse- 2 Bdrm	0	2	2	2	2	0	0	0	0	0	7
Townhouse- 3 Bdrm	0	4	4	5	9	6	0	0	0	0	27
Townhouse- 4 Bdrm	0	6	8	9	17	13	0	0	0	0	53
Apartment - 1 Bdrm	1	0	1	1	0	0	0	0	0	0	2
Apartment - 2 Bdrm	1	8	11	8	0	0	0	0	0	0	26
Apartment - 3 Bdrm	0	16	30	22	0	0	0	0	0	0	68
Age Restricted	7	0	15	20	22	10	10	10	10	10	105
	27	70	112	103	85	59	31	20	20	20	520
Cumulative Impact		70	182	286	370	429	460	480	500	520	

*429 students will come from New Housing by the fifth year of the projection.*

However we cannot simply add this level of additional students to the standard projection. The impact of the previous five-year level is "built into" the standard cohort survival projection.

The accepted standard of practice is to reduce future levels by the average of the recent level before adding students to a standard projection.

## Children from New Housing above the Average Benchmark

To establish the level of children from prior New Housing, we recall that the last six-years of new housing development included 530 units or an average of 88 units per year. During that same period, enrollments increased by 428 students or an average of 71 students per year. That is the difference between the 2005 enrollment of 4027 students and the 1999 enrollment of 3599 students.

All but two units were single family housing indicating one duplex was built in that period. For purposes of analysis, it is assumed that all 530 units are single family, and that they were constructed in a mix of 25% 3-Bedroom units and 75% 4-Bedroom units. The anticipated children from this level and mix of housing would be as follows;

	# Units	Mult	Child
3 Bedroom	132	0.58	77
4 Bedroom	398	1.01	402
	<u>530</u>		<u>479</u> Projected
			<u>428</u> Actual Increase
			<b>51 Difference</b>

According to the Multipliers, 479 children were generated by the New Housing, but enrollments were increase by only 428 children. This difference is attributed to other factors in the projection such as the relatively flat Child-bearing Age population. Restated, enrollments would have decreased moderately without the new housing.

The historic level of Children from New Housing is established at 479 over 6 years or 80 students per year. This is the benchmark by which future impacts will be adjusted. 80 children per year for a standard five year projection yields 400 children. The cumulative impact of Children from the New Housing over the next five years is projected at 429 students. A year to year analysis is as follows:

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Projected Cumulative Impact	70	182	286	370	429	460	480	500	520
Benchmark Cumulative	80	160	240	320	400	480	560	640	720
Difference	-10	22	46	50	29	-20	-80	-140	-200
Study Assumption	0	22	46	50	29	26	26	26	26

Since years 2-5 of the standard projection period do generate students above the average, each of those years will be increased by that number of students. Fifty students at a maximum, when distributed over 13 grade levels, is only 4 students per grade level.

For the extended period, the growth was assumed to stabilize at an additional 26 students, or 2 per grade level. This is consistent with the position that the longer range projections are underestimated simply due to a lack of possible foreknowledge..

*Analysis of future housing developments reveal a level of Students from New Housing, above the prior benchmark level.*

*The standard projection will be increased by 2-4 students per grade level over the periods of the projection.*

*The district-wide difference of "additional" students ranges from 22 to 50 students depending on the year.*



## Cohort Survival Enrollment Projections Plus Impact of Accelerated Housing

In this modified projection, 22 additional students were added to year 2007-08 standard projections. Two students were added to grades K-8 and one to grades 9-12. Similarly, 46 were added to year 08-09, 50 to year 09-10, etc., in accordance to the schedule presented on the previous page. All additional students are added to the general Education grades. No students are added to Special Education.

Standard Cohort Survival plus Impact of New Housing  
K-12 General Education

		K	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6	Gr 7	Gr 8	Gr 9	Gr 10	Gr 11	Gr 12	Gen'l Ed
<b>Historic</b>	2000 - 01	231	287	319	297	321	307	314	280	298	267	234	229	201	3585
	2001 - 02	278	263	300	327	305	326	303	311	288	216	237	221	210	3585
	2002 - 03	246	321	299	317	347	327	340	309	315	246	214	239	223	3743
	2003 - 04	270	301	339	304	327	357	331	356	318	276	275	237	263	3954
	2004 - 05	240	311	294	345	308	330	362	343	355	281	288	276	237	3970
	2005 - 06	223	307	321	291	345	306	328	355	345	337	278	286	271	3993
<b>Projected</b>	2006 - 07	233	265	322	328	299	353	309	333	360	296	339	281	286	4005
	2007 - 08	261	279	280	331	339	308	359	316	340	310	299	344	283	4048
	2008 - 09	284	313	295	288	342	349	313	365	321	293	314	304	346	4126
	2009 - 10	256	337	328	301	296	350	352	318	371	277	295	317	305	4103
	2010 - 11	255	302	353	333	307	301	351	355	320	317	277	297	317	4084
	2011 - 12	255	302	317	359	341	314	304	356	360	275	319	280	297	4079
<b>Extended</b>	2012 - 13	255	302	317	323	369	349	317	308	362	309	276	323	280	4090
	2013 - 14	255	302	317	323	331	377	253	322	313	310	311	280	323	4017
	2014 - 15	255	302	317	323	331	339	381	358	327	269	312	315	280	4109
	2015 - 16	255	302	317	323	331	339	343	387	363	281	270	316	315	4142

*This is the recommended projection substantiating growth of 88 students in the Projected period and 60 students in the Extended period.*

Self Contained Special Education

		Births 3 & 4 Yrs ago		Pre-K SCSE	Gr K-5 SCSE	Gr 6-8 SCSE	Gr 9-12 SCSE	SCSE Total
Historic	2000 - 01	434	0.0392	17	8	0	80	105
	2001 - 02	438	0.0434	19	14	0	103	136
	2002 - 03	488	0.0225	11	11	0	109	131
	2003 - 04	485	0.0412	20	11	0	0	31
	2004 - 05	443	0.0632	28	7	0	0	35
	2005 - 06	441	0.0476	21	13	0	0	34
Projected	2006 - 07	450	0.0429	19	11	0	0	30
	2007 - 08	472	0.0429	20	10	0	0	31
	2008 - 09	470	0.0429	20	11	0	0	31
	2009 - 10	469	0.0429	20	11	0	0	31
	2010 - 11	469	0.0429	20	11	0	0	31
Extended	2011 - 12			20	12	0	0	32
	2012 - 13			20	12	0	0	32
	2013 - 14			20	12	0	0	32
	2014 - 15			20	12	0	0	32
	2015 - 16			20	13	0	0	33

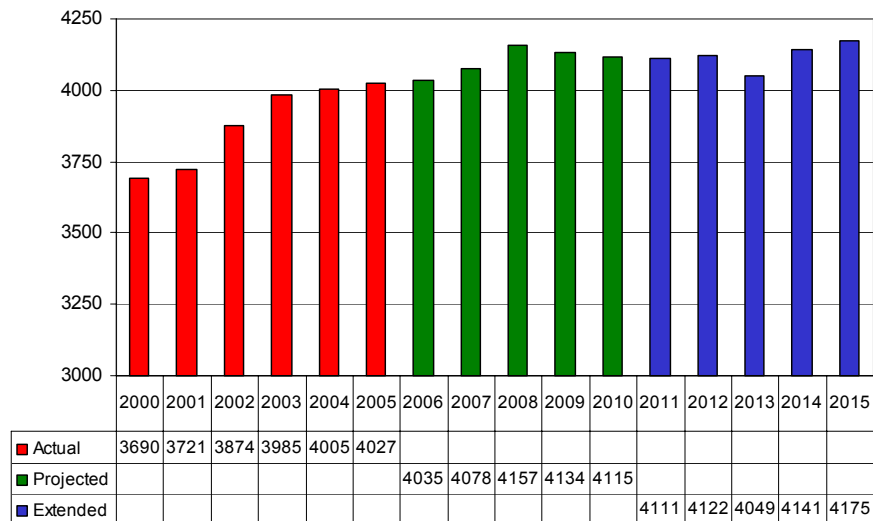
District Summary

		Pre K Total	SCSE Total	Gen'l Educ	District Total
<b>Historic</b>	2000 - 01		105	3585	3690
	2001 - 02		136	3585	3721
	2002 - 03		131	3743	3874
	2003 - 04		31	3954	3985
	2004 - 05		35	3970	4005
	2005 - 06		34	3993	4027
<b>Projected</b>	2006 - 07		30	4005	4035
	2007 - 08		31	4048	4078
	2008 - 09		31	4126	4157
	2009 - 10		31	4103	4134
	2010 - 11		31	4084	4115
	2011 - 12		32	4079	4111
<b>Extended</b>	2012 - 13		32	4090	4122
	2013 - 14		32	4017	4049
	2014 - 15		32	4109	4141
	2015 - 16		33	4142	4175



## District Wide Enrollment Projections

Growth in the school district will decrease from a five-year historic average of 67 students per year (1.8% per year) to a projected average of 17.6 students per year (0.4%) in the near-term, and to 12 students per year (0.3%) in the five-year period of the extended projection



*Sparta Township school enrollments will increase from a current level of 4027 students to a projected year 2010 level of 4115 students and to an estimated year 2015 level of 4175 students.*



## Pre K to Grade 4 Enrollment Projections

Elementary School enrollments in the historic period grew by 91 students before decreasing by 51 students to the current level of 1519 students.

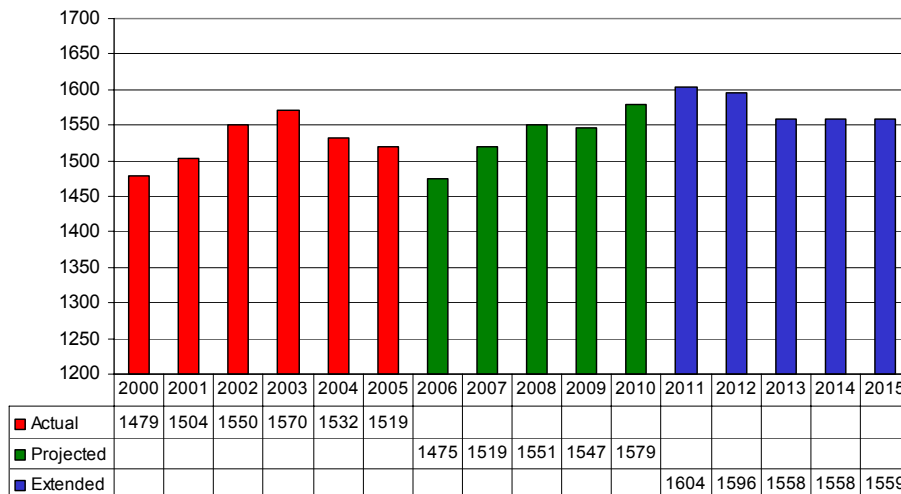
Following a 2006-07 decline, enrollments are projected to continue to grow by 50 students to 1579 students in 2010 and to 1604 students in 2011, before declining to 1559 students in year 2015.

Of these, 20 will be PreK Special Education students and 13 will be K-4 Self-Contained Special Education students.

*Grades PreKSE to 5 combined enrollments will increase from a current level of 1,519 to a projection period high of 1579 students in 2010-11.*

*The extended projection increases to a new high of 1604 at the beginning of the period before declining to 1559 in year 2015-16.*

Grades K - 4



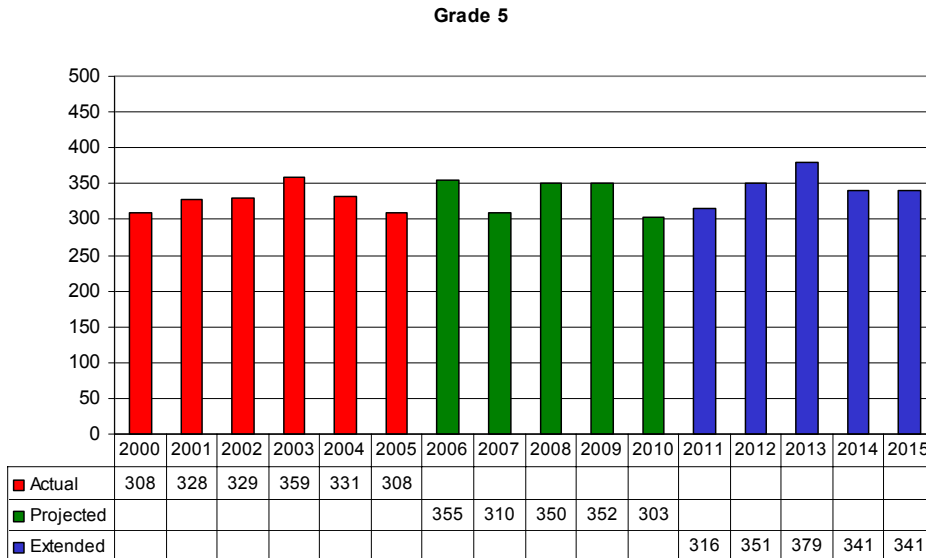
A year-by-year summary of findings is as follows;

		Students							PK-Gr 4	
		K	Gr 1	Gr 2	Gr 3	Gr 4	SCSE	Total		
Historic	2000 - 01	231	287	319	297	321	24	1479		
	2001 - 02	278	263	300	327	305	31	1504		
	2002 - 03	246	321	299	317	347	20	1550		
	2003 - 04	270	301	339	304	327	29	1570		
	2004 - 05	240	311	294	345	308	34	1532		
	2005 - 06	223	307	321	291	345	32	1519		
Projected	2006 - 07	233	265	322	328	299	28	1475		
	2007 - 08	261	279	280	331	339	29	1519		
	2008 - 09	284	313	295	288	342	29	1551		
	2009 - 10	256	337	328	301	296	29	1547		
	2010 - 11	255	302	353	333	307	29	1579		
Extended	2011 - 12	255	302	317	359	341	30	1604		
	2012 - 13	255	302	317	323	369	30	1596		
	2013 - 14	255	302	317	323	331	30	1558		
	2014 - 15	255	302	317	323	331	30	1558		
	2015 - 16	255	302	317	323	331	31	1559		



## Grade 5 Enrollment Projections

Grade 5 enrollments fluctuated between 300 and 359 during the historic period and are projected to repeat at those fluctuating levels for the next five years before maximizing at 379 in the extended projection.



*Grades 5 enrollments which peaked at 359 students in the historic period, will peak at 359 in the projected period, and at 379 students in the extended period.*

A year-by-year summary of findings is as follows;

Students				
		Gr 5 SCSE	Total	
Historic	2000 - 01	307	1	308
	2001 - 02	326	2	328
	2002 - 03	327	2	329
	2003 - 04	357	2	359
	2004 - 05	330	1	331
	2005 - 06	306	2	308
Projected	2006 - 07	353	2	355
	2007 - 08	308	2	310
	2008 - 09	349	2	350
	2009 - 10	350	2	352
	2010 - 11	301	2	303
Extended	2011 - 12	314	2	316
	2012 - 13	349	2	351
	2013 - 14	377	2	379
	2014 - 15	339	2	341
	2015 - 16	339	2	341



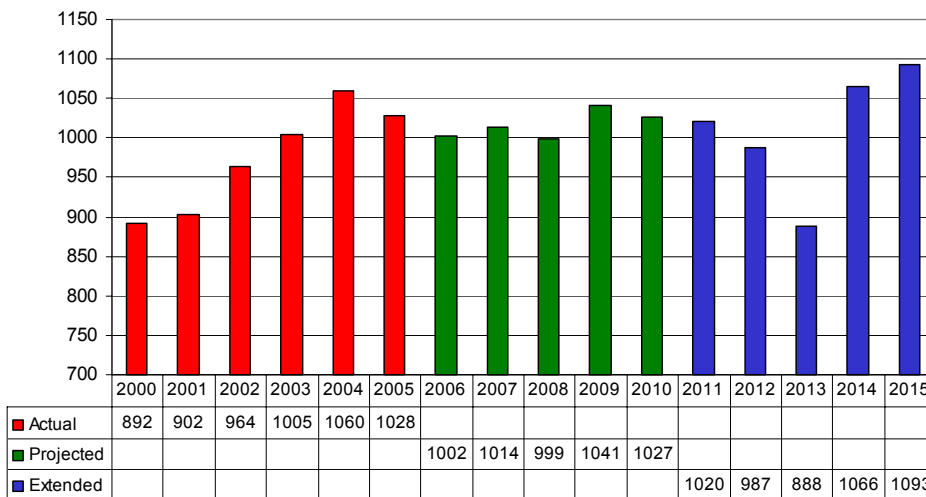
## Grade 6- 8

### Enrollment Projections

Grades 6-8 enrollments grew by 168 students before declining by 32 students over the last six years.

Enrollments are projected to stabilize around 1000 students before increasing to 1041 in year 2009, which is 19 less than the high of the historic period. Further declines lead to an abrupt increase in the extended period which closes at a new high of 1093 students.

Grades 6 - 8



*Grades 6-8 enrollments which peaked at 1060 students in the historic period, will peak at 1041 in the projected period, and at 1093 students in the extended period.*

A year-by-year summary of findings is as follows;

		Students			Gr 6-8 SCSE	Total
		Gr 6	Gr 7	Gr 8		
Historic	2000 - 01	314	280	298	0	892
	2001 - 02	303	311	288	0	902
	2002 - 03	340	309	315	0	964
	2003 - 04	331	356	318	0	1005
	2004 - 05	362	343	355	0	1060
	2005 - 06	328	355	345	0	1028
Projected	2006 - 07	309	333	360	0	1002
	2007 - 08	359	316	340	0	1014
	2008 - 09	313	365	321	0	999
	2009 - 10	352	318	371	0	1041
	2010 - 11	351	355	320	0	1027
	2011 - 12	304	356	360	0	1020
Extended	2012 - 13	317	308	362	0	987
	2013 - 14	253	322	313	0	888
	2014 - 15	381	358	327	0	1066
	2015 - 16	343	387	363	0	1093



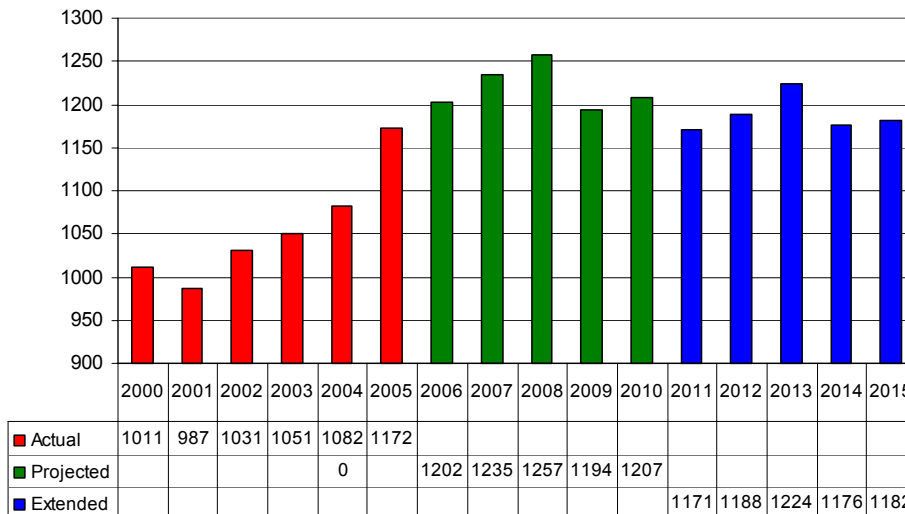
## Grade 9-12 Enrollment Projections

High School enrollments grew by 161 students over the last six years to a high of 1172 students.

Enrollments are projected to continue to grow by an additional 85 students over the next three years to 1257 students before decreasing to 1207 students.

The extended projection is at a maximum of 1224 students in year 2013.

Grades 9 - 12



*Grades 9-12 enrollments, which peaked at 1082 students in the historic period, will peak at 1257 in the projected period, and at 1224 students in the extended period.*

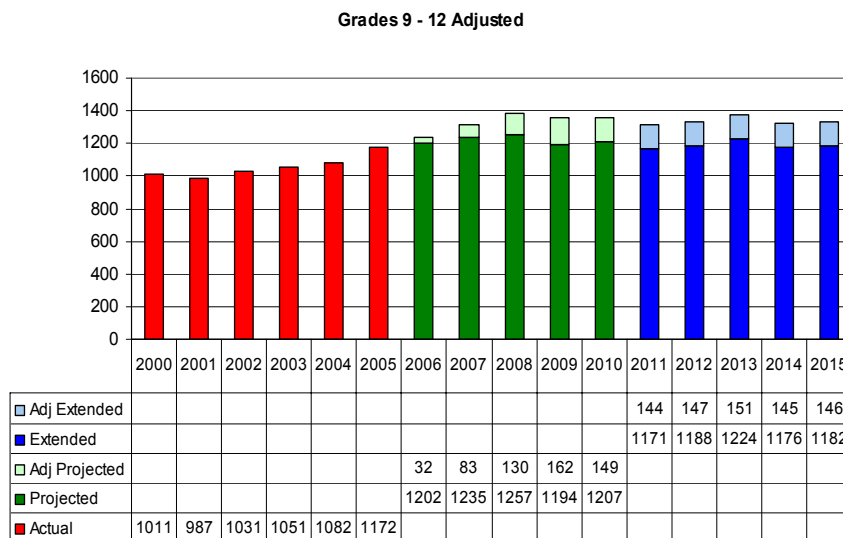
A year-by-year summary of findings is as follows;

Students		Gr 9-12					Total
		Gr 9	Gr 10	Gr 11	Gr 12	SCSE	
Historic	2000 - 01	267	234	229	201	80	1011
	2001 - 02	216	237	221	210	103	987
	2002 - 03	246	214	239	223	109	1031
	2003 - 04	276	275	237	263	0	1051
	2004 - 05	281	288	276	237	0	1082
	2005 - 06	337	278	286	271	0	1172
Projected	2006 - 07	296	339	281	286	0	1202
	2007 - 08	310	299	344	283	0	1235
	2008 - 09	293	314	304	346	0	1257
	2009 - 10	277	295	317	305	0	1194
	2010 - 11	317	277	297	317	0	1207
Extended	2011 - 12	275	319	280	297	0	1171
	2012 - 13	309	276	323	280	0	1188
	2013 - 14	310	311	280	323	0	1224
	2014 - 15	269	312	315	280	0	1176
	2015 - 16	281	270	316	315	0	1182



## Adjusted Grade 9-12 Enrollment Projections

Examination of the standard Cohort Survival ratios from Grade 8 to Grade 9 reveal that it is the only ratio that has increased every year of the historic data. In fact, that ratio has increased from .724 to .949. Reasons for this increased survival have been suggested relative to new administration, fewer transfers to private school and the prospect of new facilities. While the reason may not be specified the impact of the ratio staying at the .944 “current high” level rather than the .858 “average” may be assessed. As with the projection on the previous page, standard projections were made, with the singular adjustment of the 8:9 ratio, and to that was added the impact from proposed new housing. The results are below.



*Using a Grade 8 to 9 Survival Ratio of .944, the current high (rather than the .858 average) yields an adjusted projection.*

*Under that scenario, grades 9-12 enrollments, which peaked at 1082 students in the historic period, will peak at 1387 in the projected period, and at 1375 students in the extended period.*

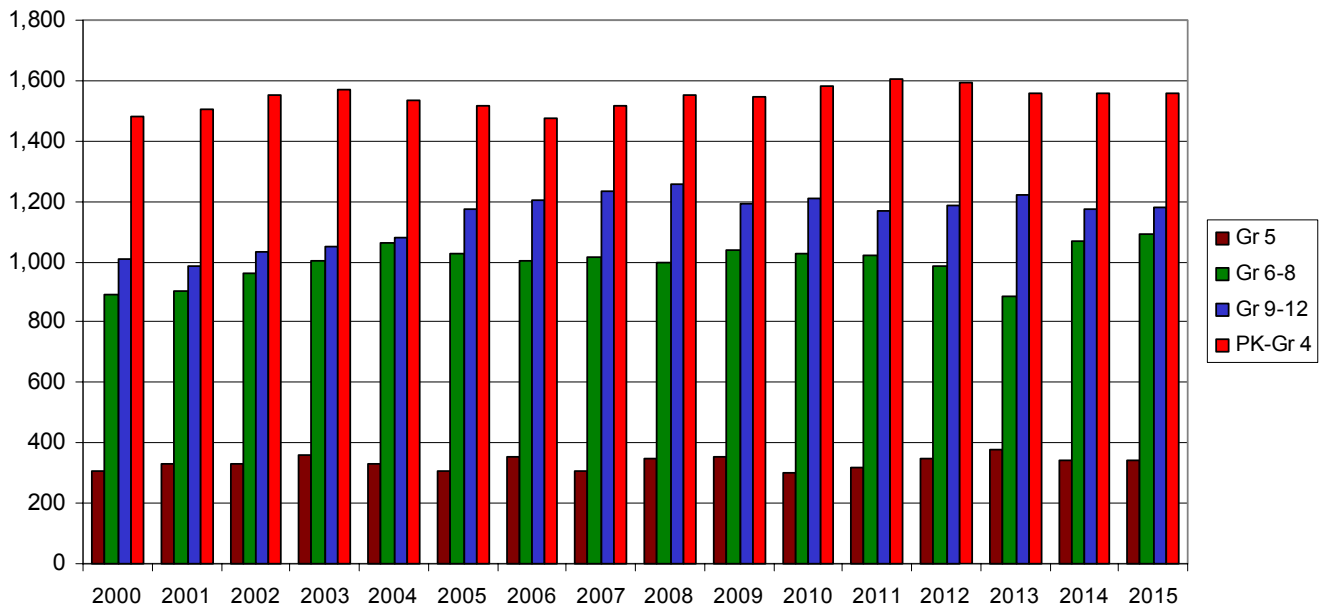
A year-by-year grade-level summary of findings is as follows:

		Gr 9-12					Total
		Gr 9	Gr 10	Gr 11	Gr 12	SCSE	
Historic	2000 - 01	267	234	229	201	80	1011
	2001 - 02	216	237	221	210	103	987
	2002 - 03	246	214	239	223	109	1031
	2003 - 04	276	275	237	263	0	1051
	2004 - 05	281	288	276	237	0	1082
	2005 - 06	337	278	286	271	0	1172
Projected	2006 - 07	327	339	281	286	0	1234
	2007 - 08	347	334	349	288	0	1318
	2008 - 09	332	355	345	355	0	1387
	2009 - 10	314	334	361	347	0	1356
	2010 - 11	356	311	333	356	0	1356
Extended	2011 - 12	309	358	314	335	0	1315
	2012 - 13	347	311	362	316	0	1335
	2013 - 14	348	349	314	363	0	1375
	2014 - 15	302	350	353	316	0	1321
	2015 - 16	315	304	354	355	0	1328



## Comparative Grade Level Organization Enrollment Projections

A comparative analysis of enrollments by grade level organization is exhibited below and evidences the ebb and flow of the grade levels independent of each other.



Varying growth patterns are perhaps more evident in the table below in which the maximum enrollment in each grade level organization is highlighted in each of the five year periods.

		K-Gr 4	Gr 5	Gr 6-8	Gr 9-12	Total
Historic	2000 - 01	1479	308	892	1011	3690
	2001 - 02	1504	328	902	987	3721
	2002 - 03	1550	329	964	1031	3874
	2003 - 04	1570	359	1005	1051	3985
	2004 - 05	1532	331	1060	1082	4005
	2005 - 06	1519	308	1028	1172	4027
Projected	2006 - 07	1475	355	1002	1202	4035
	2007 - 08	1519	310	1014	1235	4078
	2008 - 09	1551	350	999	1257	4157
	2009 - 10	1547	352	1041	1194	4134
	2010 - 11	1579	303	1027	1207	4115
Extended	2011 - 12	1604	316	1020	1171	4111
	2012 - 13	1596	351	987	1188	4122
	2013 - 14	1558	379	888	1224	4049
	2014 - 15	1558	341	1066	1176	4141
	2015 - 16	1559	341	1093	1182	4175



## Appendix: NJ DOE Cohort Survival Worksheet

Table 1 - **5 Year Standard and Extended Enrollment Projections  
by Grade Level and Year**

**Standard** Cohort Survival Methodology as recommended  
by the New Jersey Department of Education

Table 2 - **5 Year Standard and Extended Enrollment Projections  
by Grade Level and Year**

**Adjusted** Cohort Survival Methodology using the current  
level Survival Ratio for Grade 8 to 9 (not the average).

