JEFFERSON CITY SCHOOL DISTRICT

UPDATED ENROLLMENT AND DEMOGRAPHICS STUDY WITH 2010 CENSUS DATA

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October 2011

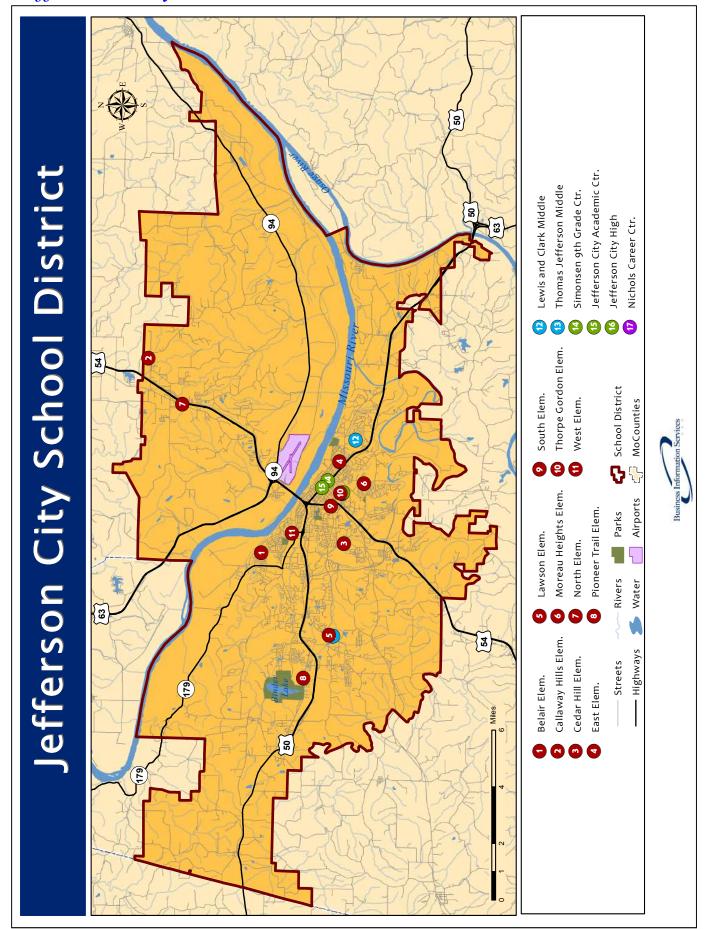


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Executive Summary

he Jefferson City School District realized a small enrollment increase in 2011-12—88 students. Even though enrollment has increased gradually since 2004, we do not believe the demographics in the area support a long-term or large enrollment growth trend, especially given the erratic enrollment patterns in the district for the last 25 years.

That said, we do not have an explanation for the enrollment growth during the last few school years, based on data given by the school district and obtained through many other sources. Under the most plausible enrollment model, we believe that during the next 10 years, the district enrollment could increase to as much as 9,919 students by 2021.

The big unknown factor in the Jefferson City School District is whether enrollment will continue strong in the parochial schools. If it does, then there is little reason to believe that the public school district enrollment will grow substantially. If the economy continues to weaken, and parochial tuitions become harder for families to afford, then the public schools could see an influx. But to this point, the parochial enrollments continue as strong as they have during the last 20 years.

Business Information Services, LLC has no financial interest in the Jefferson City School District. Special thanks go to Superintendent Dr. Brian Mitchell and the district's data processing staff who provided data upon request. Neither the school administration nor school board has attempted to influence the findings of this study in any way.

A draft was delivered to the district via email on September 26, 2011.

Preston Smith

Principal Owner

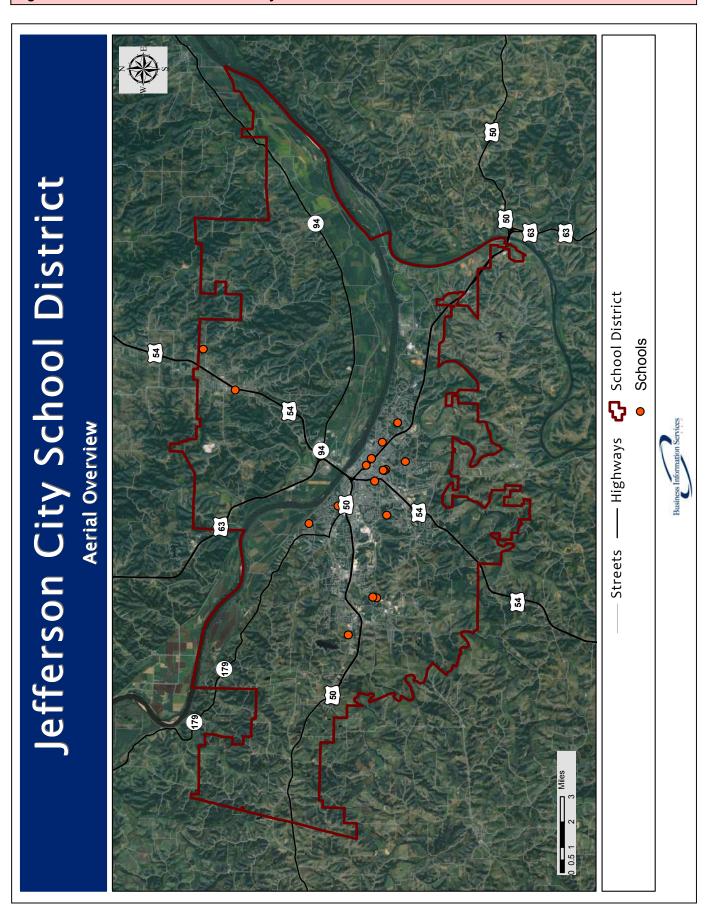
Business Information Services, LLC

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Key Findings

- Under three different statistical projections, the Jefferson City School District would have a total enrollment by 2021 of 8,931, about 300 more students than today's enrollment or as high as 9,919. While the models that show increased enrollment are statistically accurate, we have many concerns about recommending a high-end model of sustained enrollment growth. There are simply too many factors that point to flat or decreased enrollment in the district, such as the large decrease in the number of childbearing-age couples (p. 15) during the last decade, lower employment in the area (p. 21) and an extremely low percentage of school-age children attending the district's schools (p. 22). Most of the 2010 Census data points to age cohorts similar to those of the 2000 Census; throughout most of the 2000s, enrollment in the district's schools decreased. For those reasons and more, we are therefore emphasizing that we think the more reasonable enrollment scenarios would be the low– and medium-range (see p. 56-57).
- There are many puzzling facts in the data concerning the district. Between 2000 and 2010, the Jefferson City School District added 4,142 persons. The enrollment in the district schools in 1999-2000 was 8,395 and was 8,438 in 2009-10, a net change of only 38 students. That means that for every 109 people who moved to the school district during the 2000s, only one student was added to the enrollment. In 2009, only 66 new houses were built in the district. Between January 2008 and January 2010, 2,400 jobs left the Jefferson City area, yet enrollment in the district's schools increased. Even when more than a thousand new homes were built between 2003 and 2006, and employment remained stable—which should be a perfect formula for enrollment growth—the district realized only a net increase of 25 students.

Figure 1. Aerial view of the Jefferson City School District.



Reasons for the Study

he Jefferson City School District, at the center of the state and hosting the center of the state's government, has a diverse and highly changeable population. In February 2010, district administrators asked our firm to perform this analysis with an in-depth demographic study of the district's residents and student population. This study is a follow-up to that study, and includes updated enrollment data and the new 2010 Census data, released in August 2011.

In our 2010 study, we saw signs of overcrowding, especially in the Simonsen 9th Grade Center and Jefferson City High School. A national standard calculation shows that the Jefferson City High School has about 114 sq. ft. available per student and that a national standard of 160 sq. ft. per student should be available. Even though overall enrollment for 2011-12 is down almost a hundred students from a year earlier, we still see overcrowding at the Simonsen 9th Grade Center and the high school, along with preliminary overcrowding at the elementaries of East, Lawson, Moreau Heights and West.

Throughout the rest of this updated study, we look at how the present buildings can support the present enrollment and where the enrollment will be during the next decade. We also look at some of the factors that influence enrollment in the district.

Figure 2. Current building enrollment and room capacity levels for the Jefferson City School District.

School	Grades	2011-12 Enrollment	2011-12 Square Footage per Building	Gross Square Footage per Student	Square Footage Per Student Standard	Variance	Square Footage Advantage/ Disadvantage	
Belair Elem	K-5	429	47,530	111	110	1	0.72%	
Callaway Hills Elem	K-5	273	43,357	159	110	49	44.38%	
Cedar Hill Elem	K-5	390	46,583	119	110	9	8.59%	
East Elem	K-5	348	35,151	101	110	-9	-8.17%	
Lawson Elem	K-5	452	44,226	98	110	-12	-11.05%	
Moreau Heights Elem	K-5	399	41,374	104	110	-6	-5.73%	
North Elem	K-5	395	40,866	103	110	-7	-5.95%	
Pioneer Trail Elementary	K-5	523	65,000	124	110	14	12.98%	
South Elem	K-5	244	44,104	181	110	71	64.32%	
Thorpe Gordon Elem	K-5	315	40,598	129	110	19	17.17%	
West Elem	K-5	384	40,784	106	110	-4	-3.45%	
Lewis & Clark Middle School	6-8	899	140,000	156	130	26	19.79%	
Thomas Jefferson Middle School	6-8	929	140,000	151	130	21	15.92%	
Simonsen 9th Grade Center	9	687	80,020	116	160	-44	-27.20%	
Jefferson City High School	9-12	1,936	216,000	112	160	-48	-30.27%	
15		8,603	974,706					

Jefferson City School District

Figure 3. Elementary building enrollments and capacity levels for 2011-12.

School	Grades	2011-12 Enrollment	2011-12 Square Footage per Building	Gross Square Footage per Student	Square Footage Per Student Standard	Variance	Square Footage Advantage/ Disadvantage
Belair Elem	K-5	429	47,530	111	110	1	0.72%
Callaway Hills Elem	K-5	273	43,357	159	110	49	44.38%
Cedar Hill Elem	K-5	390	46,583	119	110	9	8.59%
East Elem	K-5	348	35,151	101	110	-9	-8.17%
Lawson Elem	K-5	452	44,226	98	110	-12	-11.05%
Moreau Heights Elem	K-5	399	41,374	104	110	-6	-5.73%
North Elem	K-5	395	40,866	103	110	-7	-5.95%
Pioneer Trail Elementary	K-5	523	65,000	124	110	14	12.98%
South Elem	K-5	244	44,104	181	110	71	64.32%
Thorpe Gordon Elem	K-5	315	40,598	129	110	19	17.17%
West Elem	K-5	384	40,784	106	110	-4	-3.45%
11		4,152	489,573	118	110	8	7.19%

Figure 4. Middle school building enrollments and capacity levels for 2011-12.

School	Grades	2011-12 Enrollment	2011-12 Square Footage per Building	Gross Square Footage per Student	Square Footage Per Student Standard	Variance	Square Footage Advantage/ Disadvantage
Lewis & Clark Middle School	6-8	899	140,000	156	130	26	19.79%
Thomas Jefferson Middle School	6-8	929	140,000	151	130	21	15.92%
2		1,828	280,000	153	130	23	17.83%

Figure 5. High school building enrollments and capacity levels for 2011-12.

School	Grades	2011-12 Enrollment	2011-12 Square Footage per Building	Gross Square Footage per Student	Square Footage Per Student Standard	Variance	Square Footage Advantage/ Disadvantage
Simonsen 9th Grade Center	9	687	80,020	116	160	-44	-27.20%
Jefferson City High School	9-12	1,936	216,000	112	160	-48	-30.27%
2		2,623	296,020	113	160	-47	-29.47%

In Figures 3, 4 and 5, we separate the building data by elementary, middle school and high school, to determine the sum-total of enrollment versus total square footage in the system. In Figure 3, we show that even the overall capacity of the elementary schools with redrawing attendance boundary lines, the entire elementary building capacity is 7.19 percent above the square footage standard. So while there are five elementary schools that are showing over-capacity, altering the attendance lines should fix this problem.

The middle schools are showing that 130 sq. ft. are needed for each student and a total of 153 sq. ft. is available, giving an excess capacity of 17.8 percent. No problems here.

But the Simonsen 9th grade center and the high school are severely overcrowded. With a standard of 160 sq. ft. per student needed, only 113 is available among those two campuses, a shortfall of 29 percent.

In Figure 6, we try to take advantage of some of the excess capacity in the middle schools by shifting the 9th grade, split evenly, into the two middle schools, and then move the 10th grade into the Simonsen Center. While this did ease the overcrowding in the high school, this didn't help in the Simonsen Center and just made the middle schools more crowded. So this isn't an option.

Figure 6. Current building enrollment and room capacity levels, shifting the 9th grade into the middle schools and the 10th grade into the Simonsen center.

School	Grades	2011-12 Enrollment	2011-12 Square Footage per Building	Gross Square Footage per Student	Square Footage Per Student Standard	Variance	Square Footage Advantage/ Disadvantage
Belair Elem	K-5	429	47,530	111	110	1	0.72%
Callaway Hills Elem	K-5	273	43,357	159	110	49	44.38%
Cedar Hill Elem	K-5	390	46,583	119	110	9	8.59%
East Elem	K-5	348	35,151	101	110	-9	-8.17%
Lawson Elem	K-5	452	44,226	98	110	-12	-11.05%
Moreau Heights Elem	K-5	399	41,374	104	110	-6	-5.73%
North Elem	K-5	395	40,866	103	110	-7	-5.95%
Pioneer Trail Elementary	K-5	523	65,000	124	110	14	12.98%
South Elem	K-5	244	44,104	181	110	71	64.32%
Thorpe Gordon Elem	K-5	315	40,598	129	100	29	28.88%
West Elem	K-5	384	40,784	106	100	6	6.21%
Lewis & Clark Middle School	6-9	1,243	140,000	113	130	-17	-13.33%
Thomas Jefferson Middle School	6-9	1,272	140,000	110	130	-20	-15.34%
Simonsen 10th Grade Center	10	730	80,020	110	160	-50	-31.49%
Jefferson City High School	11-12	1,206	216,000	179	160	19	11.94%
15		8,603	974,706				

Figure 7. Aerial view of the Jefferson City School District.

School	Enrollment		2011-12 Square Footage per Building	Gross Square Footage per Student	Square Footage Per Student Standard	Variance	Square Footage Advantage/ Disadvantage
Belair Elem	K-5	427	47,530	111	110	1	1.19%
Callaway Hills Elem	K-5	323	43,357	134	110	24	22.03%
Cedar Hill Elem	K-5	381	46,583	122	110	12	11.15%
East Elem	K-5	372	35,151	94	110	-16	-14.10%
Lawson Elem	K-5	474	44,226	93	110	-17	-15.18%
Moreau Heights Elem	K-5	392	41,374	106	110	-4	-4.05%
North Elem	K-5	374	40,866	109	110	-1	-0.67%
Pioneer Trail Elementary	K-5	565	65,000	115	110	5	4.59%
South Elem	K-5	296	44,104	149	110	39	35.45%
Thorpe Gordon Elem	K-5	333	40,598	122	110	12	10.83%
West Elem	K-5	396	40,784	103	110	-7	-6.37%
Lewis & Clark Middle School	6-8	954	140,000	147	130	17	12.89%
Thomas Jefferson Middle School	6-8	956	140,000	146	130	16	12.65%
Simonsen 9th Grade Center	9	658	80,020	122	160	-38	-23.99%
Jefferson City High School	9-12	1,987	216,000	109	160	-51	-32.06%
15		8,888	974,706				

Figure 8. Aerial view of the Jefferson City School District.

School	Grades	2015-16 Enrollment	2011-12 Square Footage per Building	Gross Square Footage per Student	Square Footage Per Student Standard	Variance	Square Footage Advantage/ Disadvantage	
Belair Elem	K-5	415	47,530	115	110	5	4.12%	
Callaway Hills Elem	K-5	363	43,357	119	110	9	8.58%	
Cedar Hill Elem	K-5	373	46,583	125	110	15	13.53%	
East Elem	K-5	380	35,151	93	110	-17	-15.91%	
Lawson Elem	K-5	484	44,226	91	110	-19	-16.93%	
Moreau Heights Elem	K-5	387	41,374	107	110	-3	-2.81%	
North Elem	K-5	361	40,866	113	110	3	2.91%	
Pioneer Trail Elementary	K-5	593	65,000	110	110	0	-0.35%	
South Elem	K-5	328	44,104	134	110	24	22.24%	
Thorpe Gordon Elem	K-5	347	40,598	117	110	7	6.36%	
West Elem	K-5	389	40,784	105	110	-5	-4.69%	
Lewis & Clark Middle School	6-8	1,018	140,000	138	130	8	5.79%	
Thomas Jefferson Middle School	6-8	1,070	140,000	131	130	1	0.65%	
Simonsen 9th Grade Center	9	696	80,020	115	160	-45	-28.14%	
Jefferson City High School	9-12	1,944	216,000	111	160	-49	-30.57%	
15		9.148	974,706					

Figure 9. Aerial view of the Jefferson City School District.

School	Grades	2021-22 Enrollment	2011-12 Square Footage per Building	Gross Square Footage per Student	Square Footage Per Student Standard	Variance	Square Footage Advantage/ Disadvantage
Belair Elem	K-5	411	47,530	116	110	6	5.13%
Callaway Hills Elem	K-5	392	43,357	111	110	1	0.55%
Cedar Hill Elem	K-5	380	46,583	123	110	13	11.44%
East Elem	K-5	392	35,151	90	110	-20	-18.48%
Lawson Elem	K-5	487	44,226	91	110	-19	-17.44%
Moreau Heights Elem	K-5	399	41,374	104	110	-6	-5.73%
North Elem	K-5	348	40,866	117	110	7	6.76%
Pioneer Trail Elementary	K-5	601	65,000	108	110	-2	-1.68%
South Elem	K-5	335	44,104	132	110	22	19.69%
Thorpe Gordon Elem	K-5	354	40,598	115	110	5	4.26%
West Elem	K-5	380	40,784	107	110	-3	-2.43%
Lewis & Clark Middle School	6-8	1,031	140,000	136	130	6	4.45%
Thomas Jefferson Middle School	6-8	1,155	140,000	121	130	-9	-6.76%
Simonsen 9th Grade Center	9	839	80,020	95	160	-65	-40.37%
Jefferson City High School	9-12	2,415	216,000	89	160	-71	-44.10%
15		9,919	974,706				

If we take the 10-year enrollment projections with the building capacities, and take multiple-year snapshots, one can get an idea of how the present buildings will not support the enrollment. The tables on p. 10 show enrollments for 2013-14, 2015-16, and 2021-22 using the high-end projection model.

Figure 10, below, shows that 256,715 sq. ft. of additional building space will be needed by the 2021-22 school year to adequately support the district's enrollment. A column has been added to the table to show how many additional square feet have been added to bring each building up to a reasonable sq. footage per student, without altering boundary lines. Clearly, most of the square footage requirements in the elementary schools can be taken care of through redistricting, but not all of it. Between the 9th grade center and the high school, we estimate that 224,610 sq. ft. would be needed, which is about 58 percent the total square footage in the present high school. This would not be the break point of recommending an entirely new high school, but we question whether only additional temporary classrooms could fill the deficit.

Figure 10. Current building enrollment and room capacity levels, shifting the 9th grade into the middle schools and the 10th grade into the Simonsen center.

School	Grades	2021-22 Enrollment	2011-12 Square Footage per Building	Gross Square Footage per Student	Square Footage Per Student Standard	Variance	Sq Footage Added	Square Footage Advantage/ Disadvantage	
Belair Elem	K-5	411	47,530	116	110	6	0	5.13%	
Callaway Hills Elem	K-5	392	43,357	111	110	1	0	0.55%	
Cedar Hill Elem	K-5	380	46,583	123	110	13	0	11.44%	
East Elem	K-5	392	43,121	110	110	0	7,970	0.00%	
Lawson Elem	K-5	487	53,571	110	110	0	9,345	0.00%	
Moreau Heights Elem	K-5	399	43,889	110	110	0	2,515	0.00%	
North Elem	K-5	348	40,866	117	110	7	0	6.76%	
Pioneer Trail Elementary	K-5	601	66,110	110	110	0	1,110	0.00%	
South Elem	K-5	335	44,104	132	110	22	0	19.69%	
Thorpe Gordon Elem	K-5	354	40,598	115	110	5	0	4.26%	
West Elem	K-5	380	41,799	110	110	0	1,015	0.00%	
_ewis & Clark Middle School	6-8	1,031	140,000	136	130	6	0	4.45%	
Thomas Jefferson Middle School	6-8	1,155	150,150	130	130	0	10,150	0.00%	
Simonsen 9th Grade Center	9	839	134,200	160	160	0	54,180	0.00%	
Jefferson City High School	9-12	2,415	386,430	160	160	0	170,430	0.00%	
15		9,919	1,231,421				256,715		

Overview of the District and 2010 Census Data

he Jefferson City School District covers approximately 215.6 sq. miles in central Missouri. The average school district in the state is 142.4 sq. miles. It is surrounded by 10 other school districts adjacent to it. The school district is nearly exactly half in Cole County and half in Callaway County, with the Missouri River and Highway 50 splitting the district.

Figure 12 on p. 13 compares the population growth in municipalities within Jefferson City and the Jefferson City School District. (No 1980 data is available for the school district population.) The 2010 Census shows that the school district's population grew by 6.1 percent since 2000, but this was a slower growth rate than either Cole or Callaway County, or the City of Jefferson City, which is hard to explain. On average, the school district added 460 persons per year since 2000, which was almost half the rate of growth that it had between 1990 and 2000.

To give some perspective on this growth, the population in the United States increased nationally by 9.7 percent between 2000 and 2010. That is less than 1 percent per year growth, far slower than in previous Census. But the population in the Jefferson City School District grew by even less.

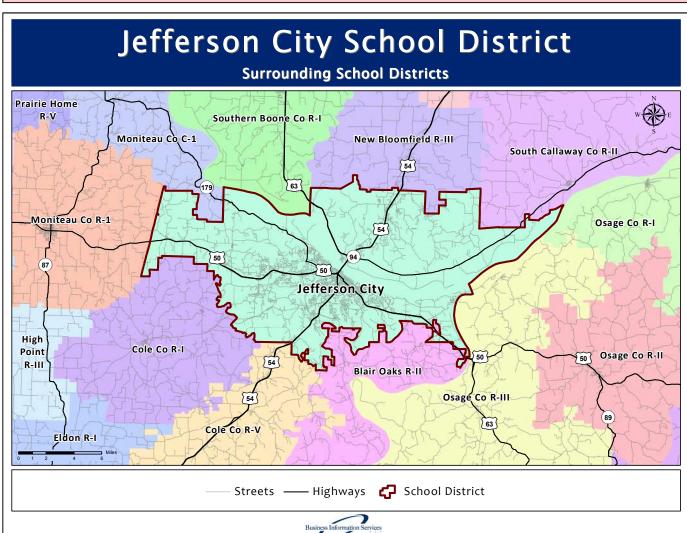


Figure 11. School districts near the Jefferson City School District.

Between 2000 and 2010, the Jefferson City School District added 4,142 persons. The enrollment in the district schools in 1999-2000 was 8,395 and was 8,438 in 2009-10, a net change of only 38 students. (The Census was taken on April 1 in 2000 and 2010.) That means that for every 109 people who moved to the school district during the 2000s, only one student was added to the enrollment. This is the highest ratio of population to students that we have ever seen, where usually the ratio is seven or nine new person added for each student enrolled. Part of the issue is the one out of three school-age children living in the district are either home-schooled or attend private schools. But that does not come close to explaining why there are so few students enrolled in the district's schools during the last decade.

Figure 13 shows that the percentage change in Black and Hispanic populations increased sharply in the school district during the last decade while White population grew only slightly. The number of Blacks added to the district exceeded Whites slightly, 1,678 versus 1,504.

Figure 12. Total population growth in Cole and Callaway counties, the Cities of Holts Summit, Centertown, St. Martins and Jefferson City, in 1980, 1990, 2000 and 2010 Census.

Geography	1980 Population	1990 Population	% Growth 1980-1990	2000 Population	% Growth 1990-2000	2010 Population	% Growth 2000-2010
Cole County	56,663	63,579	12.2%	71,397	12.3%	75,990	6.4%
Callaway County	32,252	32,809	1.7%	40,766	24.3%	44,332	8.7%
City of Holts Summit	2,540	2,292	-9.8%	2,935	28.1%	3,247	10.6%
City of Centertown	304	356	17.1%	257	-27.8%	278	8.2%
City of St. Martins	739	717	-3.0%	1,023	42.7%	1,140	11.4%
City of Jefferson City	33,619	35,481	5.5%	39,636	11.7%	43,079	8.7%
Jefferson City School District		59,769		67,849	13.5%	71,991	6.1%
Growth Per Year				808	1.4%	460	0.7%

Figure 13. Ethnic population changes in Cole and Callaway counties, the Cities of Holts Summit, Centertown, St. Martins and Jefferson City, 2000 Census versus 2010 Census.

Geography	2000 White Population	2010 White Population	% Change	2000 Black Population	2010 Black Population	% Change	2000 Hispanic Population	2010 Hispanic Population	% Change
Cole County	62,158	64,137	3.2%	7,084	8,512	20.2%	915	1,795	96.2%
Callaway County	37,420	40,778	9.0%	2,307	2,032	-11.9%	377	707	87.5%
City of Holts Summit	2,774	2,991	7.8%	87	128	47.1%	37	73	97.3%
City of Centertown	255	270	5.9%	0	2	#DIV/0!	0	2	#DIV/0!
City of St. Martins	996	1,087	9.1%	9	13	44.4%	13	14	7.7%
City of Jefferson City	32,303	33,599	4.0%	5,828	7,263	24.6%	616	1,103	79.1%
Jefferson City School District	58,330	59,834	2.6%	7,020	8,698	23.9%	920	1,896	106.1%

Figure 15 on p. 15 shows that in the spring 2010 there was a large 3-year-old cohort, which should translate into a larger Kindergarten class for 2012. But after this blip, the successive cohorts are more in line with past years. It is interesting to compare the 2010 school-age cohorts with those from the 2000 Census, shown in light blue rows. The overall change is only 69 more school-age children in 2010 compared with 2000, despite the large variations from one age cohort to the next.

The national cohort data is not yet released, but to compare the Missouri data with the Jefferson City School District shows some interesting differences. For example, the 3-year-old cohort in the district increased by 24 percent compared with the 2000 Census, but increased statewide only 8.1 percent between 2000 and 2010.

One of the clearest trends in the age data is the 11.4 percent decrease in the childbearing-age groups of 30 to 49, and the large increase in the older age cohorts, above 50 years old. Both groups in the school district have increased significantly greater than statewide during the last decade. The population for the age groups from 50 to 69 years old increased by nearly 50 percent. Neither one of these factors is at all encouraging for a long-term enrollment growth for the Jefferson City School District.

Because of the depressed housing market, nearly one out of every 11 houses were vacant in 2010, and it is unlikely that during the last 18 months since the Census was taken that this has improved. This vacancy rate is actually lower than the statewide average of 12.4 percent. In 2000, the statewide vacancy rate was 10.1 percent, as shown in Figure 14, below.

Figure 14. Housing units in the Jefferson City School District, 2000 and 2010 Census data.

Geography	200	0 Housing U	nits	201	0 Housing	Units
Geography	Occupied	Vacant	% Vacant	Occupied	Vacant	% Vacant
Cole County	27,040	1,875	6.9%	29,722	2,602	8.8%
Callaway County	14,416	1,751	12.1%	16,333	2,189	13.4%
City of Holts Summit	1,124	92	8.2%	1,377	195	14.2%
City of Centertown	117	16	13.7%	128	23	18.0%
City of St. Martins	391	8	2.0%	451	23	5.1%
City of Jefferson City	15,794	1,189	7.5%	17,278	1,574	9.1%
Jefferson City School District	25,941	1,725	6.6%	28,575	2,473	8.7%

Figure 15. Age cohorts in the Jefferson City School District, compared in the 2000 and 2010 Census, along with percentage changes statewide.

Age			Census	Da		2000 C	ensus	Davage	Overall Change 2000 > 2010	Overall % Change 2000 >	2010 Census Missour % Change
	Both sexes	Number Male	Female	Both sexes	Both sexes	Number Male	Female	Percent Both sexes		2010	2000 > 2010
Total population (all ages)	71,991	36,284	35,707	100.0%	67.860	34,770	33,090	100.0%	4,131	6.1%	7.0°
Under 5 years	4,840	2,417	2,423	6.7%	3,740	1,880	1,860	5.5%	1,100	29.4%	5.5°
Under 1 year	929	464	465	1.3%	820	330	490	1.2%	1,100	13.3%	4.5
1 year	961	475	486	1.3%	945	475	470	1.4%	16	1.7%	3.4
2 years	964	453	511	1.3%	910	410	500	1.3%	54	5.9%	6.9
3 years	1,018	510	508	1.4%	820	445	375	1.2%	198	24.1%	8.1
4 years	968	515	453	1.3%	1,065	550	515	1.6%	-97	-9.1%	4.6
5 to 9 years	4,596	2,316	2,280	6.4%	4,570	2,370	2,200	6.7%	26	0.6%	-2.1
5 years	959	464	495	1.3%	810	395	415	1.2%	149	18.4%	3.1
6 years	974	486	488		880	430	450	1.3%	94	10.7%	0.6
7 years	901	472	429	1.3%	970	535	435	1.4%	-69	-7.1%	-3.6
8 years	895	451	444	1.2%	920	465	455	1.4%	-25	-2.7%	-5.5
9 years	867	443	424	1.2%	990	545	445	1.5%	-123	-12.4%	-4.7
10 to 14 years	4,463	2,252	2,211	6.2%	4,425	2,240	2,185	6.5%	38	0.9%	-3.7
10 years	910	462	448	1.3%	780	375	405	1.1%	130	16.7%	-4.6
11 years	860	451	409	1.2%	990	520	470	1.5%	-130	-13.1%	-3.5
12 years	888	447	441	1.2%	895	440	455	1.3%	-7	-0.8%	-2.6
13 years	924	464	460	1.3%	785	405	380	1.2%	139	17.7%	-3.0
14 years	881	428	453	1.2%	975	500	475	1.4%	-94	-9.6%	-4.6
15 to 19 years	4,607	2,363	2,244	6.4%	4,530	2,230	2,300	6.7%	77	1.7%	2.5
15 years	876	452	424	1.2%	985	465	520	1.5%	-109	-11.1%	-1.9
16 years	908	464	444	1.3%	820	450	370	1.2%	88	10.7%	0.9
17 years	846	418	428	1.2%	820	375	445	1.2%	26	3.2%	2.3
18 years	1,009	521	488	1.4%	900	490	410	1.3%	109	12.1%	5.9
19 years	968	508	460	1.3%	1,005	450	555	1.5%	-37	-3.7%	5.6
20 years	931	445	486	1.3%	1,005	490	515	1.5%	-74	-7.4%	1
21 years	851	394	457	1.2%	950	565	385	1.4%	-99	-10.4%	١
22 to 24 years	2951	1520	1431	4.1%	2,815	1,555	1,260	4.1%	136	4.8%	١
25 to 29 years	5,359	2,845	2,514	7.4%	5,315	3,020	2,295	7.8%	44	0.8%	11.3
30 to 34 years	4,946	2,712	2,234	6.9%	5,255	2,990	2,265	7.7%	-309	-5.9%	-1.1
35 to 39 years	4,720	2,598			5,935		2,715	8.7%	-1,215	-20.5%	-17.0
40 to 44 years	4,739	2,544	2,195		5,715	3,100	2,615	8.4%	-976	-17.1%	-14.4
45 to 49 years	5,361	2,825			5,410		2,610			-0.9%	12.4
50 to 54 years	5,455	2,723			4,375	2,330	2,045	6.4%		24.7%	
55 to 59 years	5,102	2,528		7.1%	3,085	1,515	1,570	4.5%	2,017	65.4%	
60 and 61 years	1774	850			960	435	525	1.4%	814	84.8%	
62 to 64 years	2347	1198		3.2%	1,315	670	645	1.9%	1,032	78.5%	<u> </u>
65 and 66 years	1222	595		1.7%	910	425	485	1.3%	312	34.3%	25.2
67 to 69 years	1522	702	820	2.1%	1,275	595	680	1.9%	247	19.4%	3.0
70 to 74 years	1,962	904			1,870	820	1,050	2.8%	92	4.9%	
75 to 79 years	1,701	711	990		1,480	570	910	2.2%	221	14.9%	11.6
80 to 84 years	1,241	460	781	1.7%	1,100	385	715	1.6%	141	12.8%	N
85 years and over	1301	382	919	1.8%	1,010	240	770	1.5%	291	28.8%	N

In some school districts, there is a high correlation between births in a county or city and Kindergarten enrollment five years later. That is definitely not the case in the Jefferson City School District as shown in Figure 8 below. But with the exception of the 818 student enrollment in 2010, the model would have been a fairly accurate predictor during the last 10 years.

The correlation rate is 0.42 for births in the ZIP codes within the district with Kindergarten enrollment in the Jefferson City Schools. A rate of 1.0 would mean that every time there is a birth in the district's ZIP codes, for example, there would be a Kindergartner entering Jefferson City schools. The statistical predictability is only 0.18, which 1.0 would be perfect. The births in the Jefferson City ZIP codes, steadily increased since 2002. (The green numbers show the predicted Kindergarten enrollment based on the actual births.)

For 2011-12 school year, the model predicted 698 and the actual enrollment was 708, a difference of only 10 students. We believe that the birth rate in the Jefferson City School District will follow the national trend of

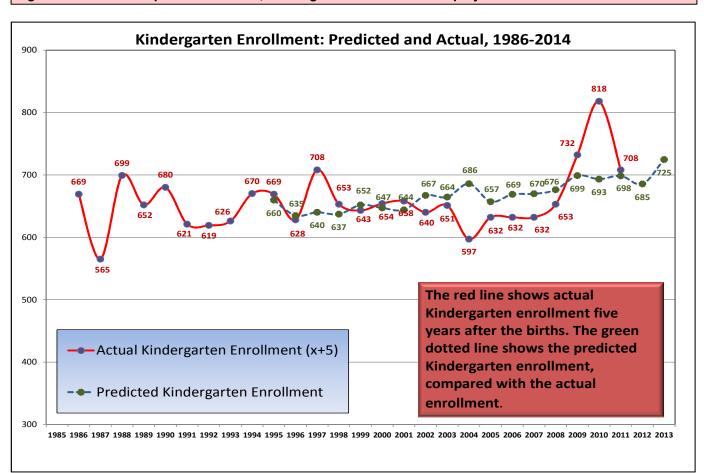


Figure 16. Relationship between births, Kindergarten enrollment and projected births.

fewer births. Just between 2008 and 2009, we saw a birth rate decrease of more than 10 percent in the school district.

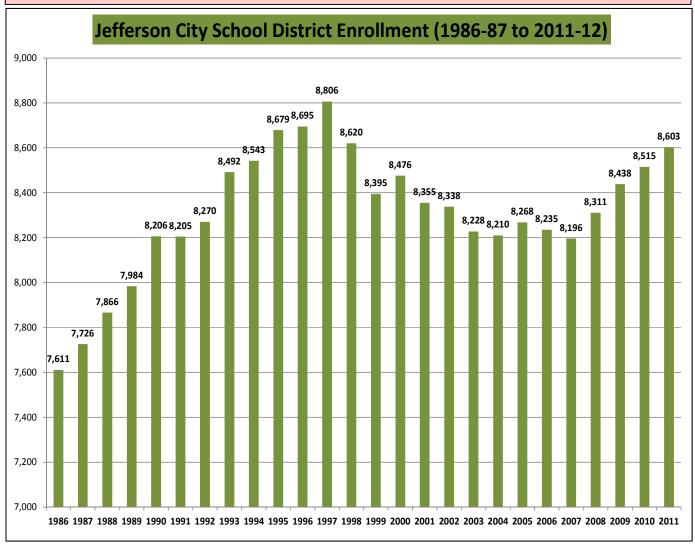
Figure 17. Relationship between births, and actual and projected Kindergarten enrollment. (Shown in chart in Figure 16.)

Birth Year	Total Births	Kindergarten Year	Actual Kindergarten Enrollment	Predicted Kindergarten Enrollment	Variance Actual vs Predicted Kindergarten
1980					
1981		1986	669		
1982		1987	565		
1983		1988	699		
1984		1989	652		
1985		1990	680		
1986		1991	621		
1987		1992	619		
1988		1993	626		
1989		1994	670		
1990	974	1995	669	660	9
1991	979	1996	628	635	-7
1992	923	1997	708	640	68
1993	897	1998	653	637	16
1994	943	1999	643	652	-9
1995	962	2000	654	647	7
1996	971	2001	658	644	14
1997	942	2002	640	667	-27
1998	967	2003	651	664	-13
1999	1,041	2004	597	686	-89
2000	949	2005	632	657	-25
2001	1,007	2006	632	669	-37
2002	968	2007	632	670	-38
2003	1,032	2008	653	676	-23
2004	1,073	2009	732	699	33
2005	1,039	2010	818	693	125
2006	1,099	2011	708	698	10
2007	1,075	2012		685	
2008	1,108	2013		725	
2009	1,000	2014			

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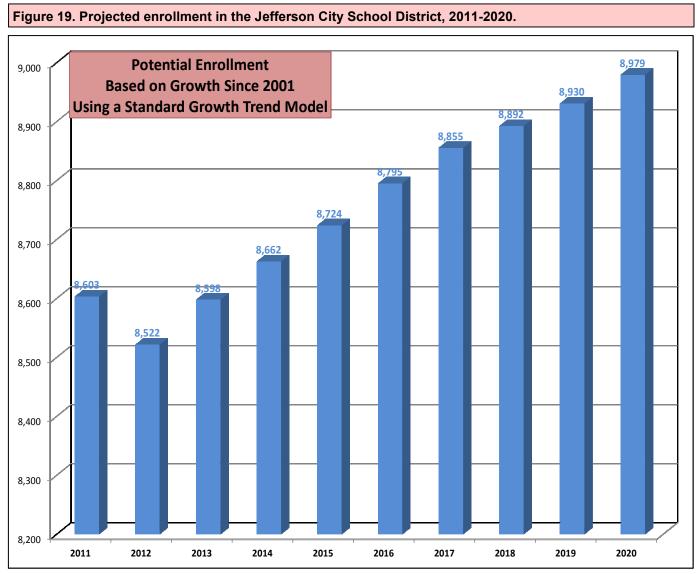
Enrollment in the Jefferson City School District has not followed a normal growth pattern since 1997, when it peaked at 8,806. In fact, at a time when the population in the school district was increasing since 2000, enrollment in the district was declining or remaining flat. It appears that when the economic collapse started in 2008, enrollment in the district started to increase. This would make sense, since parochial education can be costly and there is a large pool of students living in the district who do not attend the district's schools. (See analysis on p. 22.) However, we could not determine that parochial enrollment had decreased appreciably during that time. In fact, we cannot point to any factor that would contribute to the enrollment growth since 2004.

Figure 18. Total enrollment, Jefferson City School District, 1986-2011. Source: National Center for Education Statistics, based on data provided by the Missouri Department of Elementary and Secondary Education.



Based on this growth model, the Jefferson City School District could have 8,979 students by 2020, as shown in Figure 18. (This would be in-line with our low-end scenario, shown on p. 56-57).

This model, of course, would be based on the same level of enrollment during the next 10 years as has occurred during the last 10. From 2002 until 2010, enrollment grew steadily. We are not convinced, however, that given the demographic trends that we have already mentioned, that this type of steady enrollment growth is probable



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Figure 20. Year-by-year enrollment, Jefferson City Schools, 1986-2011.

Figure 20 shows a yearby-year comparison of Jefferson City enrollment. For the 2011-12 school year, decreases occurred in eight grades. Anomalies can show through in this table, for example, by looking at the 6th grade class in 2009-10. In 2010-11, the 7th grade was only 593, a drop of 29 students. The 2011-12 8th grade class maintained at 596 members. While one class was decreasing, another was increasing. In 2009-10, the 8th grade had 640 members. In 2010-11, there are 714 9th graders, an increase of 74, which usually doesn't happen in 9th grades.

0 0 0 0 0 4.29% 621 3.68% 619 0 0 566 -15.55% 699 23.72% 652 -6.72% 680 4.29% 621 -3.68% 619 -0.32% 700 1.706% 586 -16.43% 711 21.54% 680 4.29% 621 -3.68% 619 -0.32% 588 1.73% 660 1.224% 689 1.264% 689 1.264% 689 1.27% 683 -0.32% 605 6.51% 596 1.624% 681 1.264% 689 1.264% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77% 689 1.77%	0 626 651 646 697 702 702 687 687 682 682 682 682 682 682 682 683 684 687 687 688 688 688 688 688 688 688 688	0.00% 0 1.13% 670 3.01% 626 626 620% 645 1.59% 882 11.59% 895 11.59% 695 11.59% 695 11.5	0.00% 7.03% 9.84% 0.15% 3.01% 11.35% 11.35% 10.43% 4.33% 3.060%	0 669 649 647 645 677 672 672 778 680 680 680 682 682 682 682 682 682 683 683 683 683 683 683 683 683 683 683	0.00% -0.15% -3.87% -3.89% -4.59% -5.88% -5.58% -5.56% -1.54% -1.54% 0.00%	628 - 628 - 628 - 628 - 628 - 628 - 628 - 624 -	0.00% 4.78% 7.72% 2.27% 6.10% 6.10% 7.21% 7.21% 7.21% 7.21% 7.21% 7.21% 7.21% 7.21% 7.21% 7.21% 7.21% 7.21% 7.21%	70 0 7708 11, 12, 12, 12, 12, 13, 13, 14, 14, 14, 14, 14, 14, 14, 14, 14, 14			0.00% 56 7.77% 643 1.52% 638 638 661 6.31% 665 6.31% 665 6.31% 675 6.31% 675 6.30% 729 1.82% 729 1.82% 729 1.82% 739 7.59% 374 0.00% 0 2.11% 8.395	1.53% 1.153% 1.153% 1.280% 1.280% 1.280% 1.280% 1.83%
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650 -3.70% 608 -6.46% 671 10.36% 652 -2.83% 666 2.15% 672 0.90% 637	-5.21%			3.69%	640	3.56%		.88%		-8.59% 6.0	%9(
664 -5.82% 642 -3.31% 611 -4.83% 673 10.15% 719 6.84% 759 5.56% 765	3.00%		L	-8.13%	691	-2.95%	714 3	3.33%	705 -1	ı	53%	
3 760 4.25% 701 <u>-7.76%</u> 714 1.85% 678 <u>-5.04%</u> 673 <u>-0.74%</u> 654 <u>-2.82%</u> 673	2.91%	671 -0.30%	%	1.64%	653	-4.25%		1.38%		10.27% 20.	20.66%	
-9.97% 608 6.85% 574 -5.59% 601 4.70% 575 -4.33% 635 10.43%	-5.83%	634 6.02%		1.74%	644	-0.16%	Ė	2.48%		-1.27% 9.9	9.93%	
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0 0 %00'0 0	%00:0	0.00%	1	%00:0	0	%00.0	0 0	%00:0	1	0.00%	%00.0	
OTAL 8,476 0.96% 8,355 -1,43% 8,338 -0.20% 8,228 -1,32% 8,210 -0.22% 8,288 0,71% 8,235	-0.40%	8,196 -0.47%	8,311	1.40%	8,438	1.53%	8,515 0	0.91%	8,603	1.03% 13.	13.03%	

A key factor involved in having growing enrollment in a school district is the employment profile in an area. Again, this is not positive for the Jefferson City School District. As the seat of state government, employment in local, state and federal government accounts for 35 percent of all area jobs. Since 2004, government employment has shrank by 4.55 percent; since July 2011 the metro area has seen 400 government jobs leave. Given the status of national and state budgets, we do not see a short-term reason for increases in government employment, and unless the state legislature were to approve a second nuclear plant in Callaway County or some private business, we don't see increased employment resulting in an increase in district enrollment.

Employmen					
Metropolitan A					
		nber of Jo		Net Chan	
Industry	Aug 2011	Jul 2011	Aug 2010	July 2011	Aug 2010
Total Nonfarm	76,500	76,800	78,100	-300	-1,600
Total Private	49,200	49,100	50,600	100	-1,400
Goods Producing	9,600	9,700	9,500	-100	100
Service-Providing	66,900	67,100	68,000	-200	-1,100
Private Service Providing	39,600	39,400	41,100	200	-1,500
Trade	12,500	12,200	13,700	300	-1,200
Retail Trade	9,100	9,100	8,600	0	500
Government	27,300	27,700	26,900	-400	400
Federal Government	800	900	900	-100	-100
State Government	21,400	21,500	20,900	-100	500
Local Government	5,100	5,300	5,100	-200	0

Figure 21 and 22. Employment in the Jefferson City metro area.

Produced by MERIC in cooperation with U.S. Department of	
Labor, Bureau of Labor Statistics	

	Change in	the Nun	nber of]	Jobs in t	he Jeffe	rson Cit	y Metro	Area		
Industry				Number o	of Jobs				Change 2011 <	Percentage Change
	Aug-11	Jan-10	Jan-09	Jan-08	Jan-07	Jan-06	Jan-05	Jan-04	2004	2011 < 2004
Total Nonfarm	76,500	76,700	78,500	79,100	78,200	77,100	77,700	77,100	-600	-0.78%
Total Private	49,200	48,600	49,400	50,400	49,800	49,200	48,500	48,500	700	1.44%
Goods Producing	9,600	8,700	9,600	10,000	10,000	10,400	9,800	10,500	-900	-8.57%
Service-Providing	66,900	68,000	68,900	69,100	68,200	66,700	67,900	66,600	300	0.45%
Private Service Providing	39,600	39,900	39,800	40,400	39,800	38,800	38,700	38,000	1,600	4.21%
Trade	12,500	13,200	13,300	13,800	13,700	13,800	13,800	13,600	-1,100	-8.09%
Retail Trade	9,100	8,500	8,100	8,900	8,900	8,800	9,000	9,200	-100	-1.09%
Government	27,300	28,100	29,100	28,700	28,400	27,900	29,200	28,600	-1,300	-4.55%
Federal Government	800	900	900	800	800	800	800	900	-100	-11.11%
State Government	21,400	21,400	22,400	22,300	22,100	21,700	23,000	22,300	-900	-4.04%
Local Government	5,100	5,800	5,800	5,600	5,500	5,400	5,400	5,400	-300	-5.56%

Figure 23, below, shows that, in 2010, 72.19 percent of the children living within the school district attended the Jefferson City schools. In 1990, the percentage was 76.12. Admittedly, the school enrollment data was gathered in the fall and the Census data was captured in the spring of the following year. But this is the closest comparison that we have of actual versus possible enrollment. There is virtually no change between the 2000 Census and the 2010 Census in the percentage attending the district schools. This means that in 2010, 28 percent of the children were either home-schooled, or attended private schools or other public school. Statewide, about 14 percent of the students do not attend public schools at the district in which they live.

In 2010, we compiled Figure 25 on p. 23 that showed that there were 11,144 school-age children living in the district. With the Census showing 11,689 children living in the district, we were able to account for all except 4.8 percent of the children. (We calculated the home-school attendance by using a factor of 3 children per household and multiplying by 160 confirmed home-school households within the district's border. Since home-school families may be larger than that factor, we have likely underestimated the home-school enrollment.) We cannot emphasize enough that the impact of non-public school students on the attendance levels of the Jefferson

Figure 23. 2000 Census versus 2009 estimated population with Jefferson City School District enrollment.

Co	-	of 2000 Ce efferson Cit			isus Popula nrollment	ation
	2000 Census	2000-01 Enrollment	% of Census to Enrollment	2010 Census	2009-10 Enrollment	% of Estimated Population to Enrollment
Under 1 yrs	820			929		
1 yr olds	945			961		
2 yr olds	910			964		
3 yr olds	820			1,018		
4 yr olds	1,065			968		
Kindergarten	810	654	80.74%	959	732	76.33%
1st Grade	880	651	73.98%	974	673	69.10%
2nd Grade	970	633	65.26%	901	641	71.14%
3rd Grade	920	652	70.87%	895	653	72.96%
4th Grade	990	659	66.57%	867	614	70.82%
5th Grade	780	644	82.56%	910	618	67.91%
6th Grade	990	655	66.16%	860	622	72.33%
7th Grade	895	611	68.27%	888	680	76.58%
8th Grade	785	650	82.80%	924	640	69.26%
9th Grade	975	664	68.10%	881	691	78.43%
10th Grade	985	760	77.16%	876	653	74.54%
11th Grade	820	569	69.39%	908	644	70.93%
12th Grade	820	602	73.41%	846	577	68.20%
Total (K-12)	11,620	8,404	72.32%	11,689	8,438	72.19%

Figure 24. 1990 Census versus 1990 estimated population with Jefferson City School District enrollment.

	Compa	rison of 199	90 Census	
and Jeffe	rson City	School Di	strict 1990 l	Enrollment
	1990 Census	1990-01 Enrollment	% of Census to Enrollment	% of Total Population
Under 1 yrs	861			18.20%
1 yr olds	883			18.66%
2 yr olds	715			15.11%
3 yr olds	775			16.38%
4 yr olds	788			16.65%
Kindergarten	846	680	80.38%	17.88%
1st Grade	866	680	78.52%	18.30%
2nd Grade	842	676	80.29%	17.79%
3rd Grade	913	581	63.64%	19.29%
4th Grade	890	659	74.04%	18.81%
5th Grade	928	598	64.44%	19.61%
6th Grade	823	633	76.91%	17.39%
7th Grade	751	617	82.16%	15.87%
8th Grade	718	626	87.19%	15.17%
9th Grade	725	655	90.34%	15.32%
10th Grade	773	623	80.60%	16.34%
11th Grade	694	542	78.10%	14.67%
12th Grade	811	483	59.56%	17.14%
Total (K-12)	10,580	8,053	76.12%	

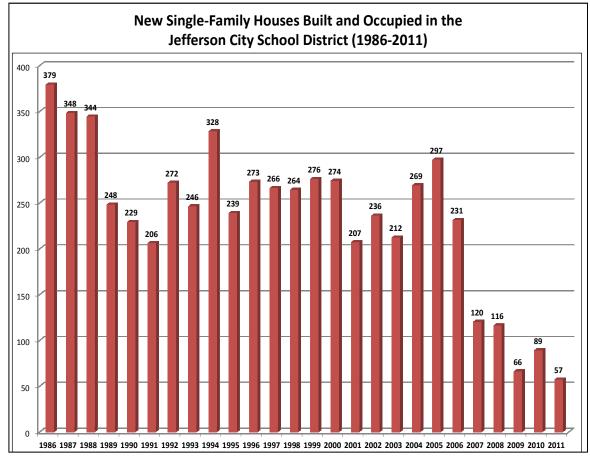
City School District is significant. In the United States, private school enrollment has decreased between 15 and 30 percent since 2008, but it appears that little to no decrease has occurred in the Jefferson City area, especially how the percentage of children attending the district's schools have changed so little during the last 20 years.

Figure 25. Analysis of the school-age population in the Jefferson City School District, 2010.

Analysis of the School-Age Popula Jefferson City School Distr		the					
Criteria Number %							
2009-10 Jefferson City School District Enrollment	8,438	75.7%					
2010-11 Private School Enrollment	2,226	20.0%					
2010-11 Est. Home-School Enrollment	480	4.3%					
Estimated Number of Total School-Age Children	11,144	100.0%					

Figure 26. New single-family houses in Jefferson City School District, 1986-2011 and the enrollment relationship, right, and overall single-family houses built, Figure 27, below.

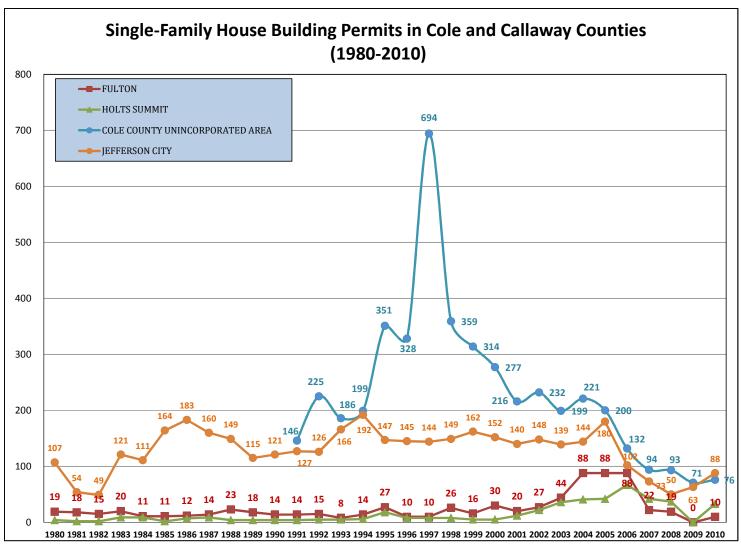
Year SF Home Built	Count of New Houses Built	District Enrollment	District Enrollment Increase	Ratio of Enrollment Increase to New Houses Built
1986	379	7,611		
1987	348	7,726	115	0.330
1988	344	7,866	140	0.407
1989	248	7,984	118	0.476
1990	229	8,206	222	0.969
1991	206	8,205	-1	-0.005
1992	272	8,270	65	0.239
1993	246	8,492	222	0.902
1994	328	8,543	51	0.155
1995	239	8,679	136	0.569
1996	273	8,695	16	0.059
1997	266	8,806	111	0.417
1998	264	8,620	-186	-0.705
1999	276	8,395	-225	-0.815
2000	274	8,476	81	0.296
2001	207	8,355	-121	-0.585
2002	236	8,338	-17	-0.072
2003	212	8,228	-110	-0.519
2004	269	8,210	-18	-0.067
2005	297	8,268	58	0.195
2006	231	8,235	-33	-0.143
2007	120	8,196	-39	-0.325
2008	116	8,311	115	0.991
2009	66	8,438	127	1.924
2010	89	8,695	257	2.888
2011	57	8,603	-92	-1.614
Average	234		36	0.204



ince 2007, a total of 302 new single-family houses have been built in the Jefferson City School District in Cole County. (We could not obtain data from Callaway County to indicate levels of housing.) In 2005 there were 297 new homes constructed and occupied. The nationwide depression in the home building industry has affected the school district, where there has been a huge drop-off in construction.

We show in Figure 229 below that just because there are a large number of building permits issued does not necessarily mean the house was constructed. Builders may not have been able to get financing after getting the permit. We also have shown there is little relationship between new homes built and actual enrollment increases, therefore, we will focus for the rest of this section on an analysis of parcels that impacts the finances of the district.

Figure 28. New single-family house building permits in Cole and Callaway Counties, 1980-2010.



As part of this updated study, we compared several demographic factors tracked in the 2010 Census as well as the 2000 Census, and those tables are shown in Figure 29 on p. 27 through Figure 34 on p. 35. In those rows where there is "NA" or is blank, those factors were not included in both censuses.

There are 1,204 more rental units in 2010 than in 2000. In 2000, free and clear ownership wasn't tracked. The overall ownership numbers haven't changed much. One out of every three housing units in the district is a rental unit.

The number of large households dropped significantly in owner-occupied housing, but increased in renter units. This would seem to imply that these families were moving into houses and renting them rather than apartments. Data in this recessions indicates that the economy has forced these families into rental houses and out of their owner-occupied houses.

This is a big drop in the main cohort that would usually be group involved in child-rearing.

Rental properties for the over-65-yearold crowd has increased dramatically during the last decade.

Figure 29. Households and tenure in the Jefferson City School District, 2000 and 2010 Census data.

Households and Tenure		Jeffers		y Scho	ool District:	2000 and
	2010 C	ensus	2000 C	ensus		0/ 01
Subject			Number	Percent	Change 2000 > 2010	% Change 2000 > 2010
TENURE						
Occupied housing units	28,575	100.0%	25,941	100.0%	2,634	10.2%
Owned with a mortgage or loan	12,860	45.0%	17,230	66.4%		
Owned free and clear	5,800	20.3%	NA			
Renter occupied	9,915	34.7%	8,711	33.6%	1,204	13.8%
TENURE BY HOUSEHOLD SIZE						
Owner-occupied housing units	18,660	100.0%	17,205	100.0%	1,455	8.5%
1-person household	4,207	22.5%	3,555	20.7%	652	18.3%
2-person household	7,501	40.2%	6,285	36.5%	1,216	19.3%
3-person household	2,958	15.9%	3,055	17.8%	-97	-3.2%
4-person household	2,533	13.6%	2,775	16.1%	-242	-8.7%
5-person household	1,002	5.4%	1,150	6.7%	-148	-12.9%
6-person household	341	1.8%	325		16	4.9%
7-or-more-person household	118		55			114.5%
Renter-occupied housing units	9,915		8,720			13.7%
1-person household	4,478		4,075			9.9%
2-person household	2,514		2,325			
3-person household	1,392		1,180			18.0%
4-person household	892	9.0%	740	8.5%		20.5%
5-person household	377	3.8%	255			47.8%
6-person household	181	1.8%	115			57.4%
7-or-more-person household	81	0.8%	30			170.0%
TENURE BY AGE OF	01	0.070	- 00	0.070	01	17 0.0 70
HOUSEHOLDER						
Owner-occupied housing units	18,660	100.0%	17,205	100.0%	1,455	8.5%
15 to 24 years	311	1.7%				17.4%
25 to 34 years	2,230	12.0%	2,145		85	4.0%
→ 35 to 44 years	3,042		•			
45 to 54 years	4,190					-1.9%
55 to 64 years	4,316					
65 years and over	4,571					277.8%
65 to 74 years	2,405		2,190			9.8%
75 to 84 years	1,616		1,335			21.0%
85 years and over	550		350			57.1%
Renter-occupied housing units	9,915	100.0%	8,720			13.7%
15 to 24 years	1,310		1,360			-3.7%
25 to 34 years	2,652		2,445			8.5%
▲35 to 44 years	1,760		1,775			-0.8%
45 to 54 years	1,631	16.4%	1,405			16.1%
55 to 64 years	1,031	12.4%	445	5.1%		176.9%
65 years and over	1,330	13.4%		2.1%		
65 to 74 years	570	5.7%	430	4.9%		
75 to 84 years 85 years and over	436 324	4.4% 3.3%	445 230	5.1% 2.6%		-2.0% 40.9%

Figure 30. Household types in the Jefferson City School District, 2000 and 2010 Census data.

During the 2000s, females in the school district who were household heads increased by 41 percent.

One-person households increased overall by 13.8 percent; 7-person households increased by 134 percent since 2000. The number of 4- and 5- person households fell slightly.

The number of husbandwife families in the school district has decreased by nearly 20 percent since 2000 and a female without a husband increased by 31 percent.

Household Types in the Jefferson City School District: 2000 and 2010 Census									
	2010			00	Change	% Change			
Subject	Cen	sus	Cen	sus	_	2000 > 2010			
	Number	Percent	Number	Percent					
HOUSEHOLD TYPE									
Total households	28,575	100.0%	25,925	100.00%	2,650	10.2%			
Family households [1]	18,236	63.8%	16,935	65.32%	1,301	7.7%			
Male householder	13,068	45.7%	13,290	51.26%	-222	-1.7%			
Female householder	5,168	18.1%	3,650	14.08%	1,518	41.6%			
Nonfamily households [2]	10,339	36.2%	10,650	41.08%	-311	-2.9%			
Male householder	4,636	16.2%	3,950	15.24%	686	17.4%			
Living alone	3,703	13.0%	3,205	12.36%	498	15.5%			
Female householder	5,703	20.0%	5,060	19.52%	643	12.7%			
Living alone	4,982	17.4%	4,450	17.16%	532	12.0%			
HOUSEHOLD SIZE									
Total households	28,575	100.0%	25,925	100.00%	2,650	10.2%			
1-person household	8,685	30.4%	7,630	29.43%	1,055	13.8%			
2-person household	10,015	35.0%	8,610	33.21%	1,405	16.3%			
3-person household	4,350	15.2%	4,235	16.34%	115	2.7%			
4-person household	3,425	12.0%	3,515	13.56%	-90	-2.6%			
5-person household	1,379	4.8%	1,405	5.42%	-26	-1.9%			
6-person household	522	1.8%	440	1.70%	82	18.6%			
7-or-more-person household	199	0.7%	85	0.33%	114	134.1%			
Average household size	2.35		2.39		-0.04	-1.7%			
Average family size	2.92		2.97		-0.05	-1.7%			
FAMILY TYPE AND PRESENCE									
Families [3]	18,236	100.0%	16,935	100.00%	1,301	7.7%			
With related children under 18	8,908	48.8%	NA	NA	NA	NA			
With own children under 18	8,345	45.8%	NA	NA	NA	NA			
Under 6 years only	2,142	11.7%	NA	NA	NA	NA			
Under 6 and 6 to 17 years	1,646	9.0%	NA	NA	NA	NA			
6 to 17 years only	4,557	25.0%	NA	NA	NA	NA			
Husband-wife families	13,675	100.0%	13,460	100.00%	215	1.6%			
With related children under 18	5,677	41.5%	6,615	49.15%	-938	-14.2%			
With own children under 18	5,412	39.6%	NA	NA	NA	NA			
Under 6 years only	1,279	9.4%	1,575	11.70%	-296	-18.8%			
Under 6 and 6 to 17 years	1,175	8.6%			-305	-20.6%			
6 to 17 years only	2,958	21.6%	3,555	26.41%	-597	-16.8%			
Female householder, no husband	3,387	100.0%	2,580	100.00%	807	31.3%			
With related children under 18	2,422			72.09%	562	30.2%			
With own children under 18	2,193			NA	NA	NA			
Under 6 years only	632	18.7%		NA	NA	NA			
Under 6 and 6 to 17 years	376			NA	. NA	NA			
6 to 17 years only	1 185	35.0%	NA	NA	NA	NΔ			

X Not applicable.

Source: U.S. Census Bureau, 2010 Census.

^[1] A household that has at least one member of the household related to the householder by birth, marriage, or adoption is a "Family household." Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. Responses of "same-sex spouse" were edited during processing to "unmarried partner." [2] "Nonfamily households" consist of people living alone and households which

do not have any members related to the householder.

^{[3] &}quot;Families" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couples are included in the families category if there is at least one additional person related to the householder by birth or adoption. Responses of "same-sex spouse" were edited during processing to "unmarried partner." Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households.

Figure 31. Race in the Jefferson City School District, 2000 and 2010 Census data.

	2010 C	ensus	2000 C	ensus	Change 2000 > 2010	% Change 2000 > 201	
Subject	Number	Percent	Number	Percent	Number	Percent	
RACE	=1.001	100.00/		100.00/			
Total population	71,991	100.0%	67,860	100.0%	, -	6.1	
One race	70,511	97.9%	66,760	98.4%	-, -	5.6	
White	59,834	83.1%	58,330	86.0%	,	2.6	
Black or African American	8,698	12.1%	7,020	10.3%	,		
American Indian and Alaska Native	246	0.3%	245	0.4%		0.4	
American Indian, specified	142	0.2%	NA	NA	. NA		
Alaska Native, specified	2	0.0%	NA	NA	NA NA		
Both American Indian and Alaska Native, specified	0	0.0%	NA	NA	. NA		
American Indian or Alaska Native, not specified	102	0.1%	NA	NA	. NA		
Asian	975	1.4%	660	1.0%	315	47.7	
Native Hawaiian and Other Pacific Islander	46	0.1%	55	0.1%		-16.4	
Some Other Race	712	1.0%	450	0.7%	_	58.2	
Two or More Races	1,480	2.1%	1,100	1.6%		34.	
Two races with Some Other Race	144	0.2%	NA	NA			
Two races without Some Other Race	1,250	1.7%	NA	NA			
Three or more races with Some Other Race	10	0.0%	NA	NA	. NA		
Three or more races without Some Other Race	76	0.1%	NA	NA	. NA		
IISPANIC OR LATINO							
Total Population	71,991	100.0%	67,860	100.0%	.,	6.1	
Hispanic or Latino (of any race)	1,896	2.6%	920	1.4%	976	106.1	
Mexican	1,267	1.8%	NA	NA			
Puerto Rican	123	0.2%	NA	NA	. NA		
Cuban	37	0.1%	NA	NA	. NA		
Other Hispanic or Latino	469	0.7%	NA	NA	. NA		
Not Hispanic or Latino	70,095	97.4%	66.940	98.6%	3.155	4.	

Minority populations in the district have increased far faster than the White population since 2000, mirroring trends nationwide. In 2010, the Census was much more specific about cataloging race than in previous censuses.

There is a 43 percent increase in vacant housing in the district since 2000. Even with a strong government presence, the area is not immune of the effects of the deep recession.

Of the vacant housing, there has been a 33 percent increase in rental units since 2000. The "other vacant" would include foreclosed and bank-owned properties.

Rental units among Hispanics increased by about the same proportion as ownership decreased among Hispanics.

Figure 32. Housing tenure in race in the Jefferson City School District, 2000 and 2010 Census data.

Subject		2010 Census		2000 Census		% Change 2000 > 2010
	Number	Percent	Number	Percent		
CCUPANCY STATUS	24 040	100.00/	27.650	100.0%	2 200	10.0
Total housing units	31,048	100.0%	27,650		3,398	12.3
Occupied housing units	28,575 2,473	92.0%	25,925	93.8%	2,650	10.2
Vacant housing units ENURE	2,473	8.0%	1,725	6.2%	748	43.4
	20 575	100.0%	25.025	100.0%	2.650	10.0
Occupied housing units Owner occupied	28,575 18,660	65.3%	25,925		2,650 1,455	10.2
'	,	45.0%	17,205	66.4%		8.5
Owned with a mortgage or loan	12,860		NA NA	NA	NA	
Owned free and clear	5,800	20.3%	NA 0.700	NA 00.00/	NA 4 405	40.7
Renter occupied	9,915	34.7%	8,720	33.6%	1,195	13.7
ACANCY STATUS		100.001		100.00/		
Vacant housing units	2,473	100.0%	1,725	100.0%	748	43.4
For rent	906	36.6%	680	39.4%	226	33.
Rented, not occupied	50	2.0%	NA	NA	NA	
For sale only	391	15.8%	390	22.6%	1	0.
Sold, not occupied	109	4.4%	145	8.4%	-36	-24.
For seasonal, recreational, or occasional use	318	12.9%	305	17.7%	13	4.
For migratory workers	0	0.0%	0	0.0%	0	0.
Other vacant	699	28.3%	205	11.9%	494	241.
ENURE BY HISPANIC OR LATINO ORIGIN OF HOUSEHOLDER BY						
Occupied housing units	28,575	100.0%	25,925	100.0%	2,650	10.
Owner-occupied housing units	18,660	65.3%	17,205	66.4%	1,455	8.
Not Hispanic or Latino householder	18,429	64.5%	16,885	65.1%	1,544	9.
White alone householder	17,458	61.1%	16,485	63.6%	973	5.
Black or African American alone householder	655	2.3%	410	1.6%	245	59.
American Indian and Alaska Native alone householder	53	0.2%	50	0.2%	3	6.
Asian alone householder	126	0.4%	90	0.3%	36	40.
Native Hawaiian and Other Pacific Islander alone householder	7	0.0%	20	0.1%	-13	-65.
Some Other Race alone householder	6	0.0%	55	0.2%	-49	-89.
Two or More Races householder	124	0.4%	100	0.4%	24	24.
Hispanic or Latino householder	231	0.8%	320	1.2%	-89	-27.
White alone householder	137	0.5%	NA	NA	NA	
Black or African American alone householder	3	0.0%	NA	NA	NA	
American Indian and Alaska Native alone householder	5	0.0%	NA	NA	NA	
Asian alone householder	1	0.0%	NA NA	NA	NA NA	
Native Hawaiian and Other Pacific Islander alone householder	0		NA	NA		
Some Other Race alone householder	69	0.2%	NA NA	NA	NA NA	
Two or More Races householder	16	0.1%	NA NA	NA NA	NA NA	
Renter-occupied housing units	9.915	34.7%	8.720	33.6%		13.
Not Hispanic or Latino householder	9,634	33.7%	8.515	32.8%		
White alone householder	7,431	26.0%	6,965	26.9%	466	6.
Black or African American alone householder	1,781	6.2%	1,365	5.3%	416	30.
American Indian and Alaska Native alone householder	40	0.2 %	45	0.2%	-5	-11.
Asian alone householder	205	0.1%	145	0.2 %	60	41.
Native Hawaiian and Other Pacific Islander alone householder	<u>205</u>	0.7%	143	0.0%	-5	-50.
Some Other Race alone householder	10	0.0%	75	0.0%	-65	-50. -86.
Two or More Races householder	162	0.0%	110	0.3%	- 05	-86. 47.
Two of More Races flousefloider ▲Hispanic or Latino householder						
	281	1.0%	205	0.8%	76	37.
White alone householder	128	0.4%	NA NA	NA	NA	
Black or African American alone householder	16	0.1%	NA NA	NA	NA	
American Indian and Alaska Native alone householder	8	0.0%	NA	NA	NA	
Asian alone householder	2	0.0%	NA	NA	NA	
Native Hawaiian and Other Pacific Islander alone householder	0	0.0%	NA	NA	NA	

The number of prisoners fell by 20 percent since 2000.

Nonrelatives living in the household has doubled since the last census. Unemployment and foreclosures are forcing more people to double—and triple-up under the same roof.

45 percent more parents live with their adult children than in 2000.

More than 1,100 children live in a home where there is a male head-of-house only. And 839 children are being raised by grandparents.

Figure 33. Housing relationships in the Jefferson City School District, 2000 and 2010 Census data.

Subject	2010 (Census	2000 C	ensus	Change 2000 >	% Change 2000 > 2010	
	Number	Percent	Number	Percent	2010	2000 - 201	
OUSEHOLD AND GROUP QUARTERS							
OPULATION							
Total population	71,991	100.0%			4,131	6.	
In households	67,009	93.1%			4,919	7.	
In group quarters	4,982	6.9%		8.5%	-793	-13.	
Institutionalized population	3,990	5.5%	5,045	7.4%	-1,055	-20.	
Noninstitutionalized population	992	1.4%	730	1.1%	262	35.	
OUSEHOLD RELATIONSHIP							
Household population	67,009	100.0%	62,090	100.0%	4,919	7.	
Householder	28,575	42.6%	16,935	27.3%	11,640	68.	
Spouse [1]	13,675	20.4%		21.7%	210	1.	
Child	19,017	28.4%		29.8%	532	2.	
Under 18 years	15,154	22.6%		NA	NA		
Grandchild	989	1.5%		0.9%	419	73.	
Brother or sister	386	0.6%		0.6%	11	2.	
Parent	364	0.5%		0.4%	114	45.	
Other relatives of householder	626	0.9%		0.6%	246	64.	
Nonrelatives of householder	3,377	5.0%		2.6%	1,737	105	
Roomer or boarder	162	0.2%	NA	NA	NA		
Housemate or roommate	656	1.0%		NA	NA		
Unmarried partner	1,841	2.7%		NA	NA		
Other nonrelatives	718	1.1%	NA NA	NA NA	NA		
OUSEHOLD RELATIONSHIP FOR	7 10	1.170	INA	I N/A	14/-1		
ELECTED AGE GROUPS							
Household population under 18 years	16,497	100.0%	NA	NA	NA		
Householder or spouse	5	0.0%	NA	NA	NA		
Child of householder	15,154	91.9%	NA	NA	NA		
In husband-wife family	10,194			NA	NA		
With female householder, no husband	3,768	22.8%	NA	NA	NA		
►With male householder, no wife present	1,192	7.2%		NA	NA		
Grandchild	839	5.1%		NA	NA		
Other relatives	180			NA NA	NA NA		
Nonrelatives	319	1.9%		NA NA	NA NA		
Household population 65 years and over	8,488			NA	NA NA		
Householder	5,901	69.5%		NA	NA		
Family householder [2]	3.047	35.9%		NA	NA NA		
Male	2,598				NA		
Female	449			NA	NA		
Nonfamily householder [3]	2,854			NA NA	NA NA		
Male	732	8.6%		NA NA	NA NA		
Living alone	682	8.0%		NA NA	NA NA		
Female	2,122			NA NA	NA NA		
Living alone	2,122			NA NA	NA NA		
	2,073			NA NA	NA NA		
Spouse	_						
Parent	215 128			NA NA	NA NA		
Other relatives							

X Not applicable.

^{[1] &}quot;Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."

^[2] A household that has at least one member of the household related to the householder by birth, marriage, or adoption is a "Family household." The householder is termed a "family householder." All persons living in family households are included in this total regardless of their relationship to the householder. Same-sex couples are included in the nonrelatives category.

^{[3] &}quot;Nonfamily households" consist of people living alone and households which do not have any members related to the householder. The householder is termed a "nonfamily householder."

Consistently, rental housing has fewer children than owner-owned housing in national research for the last 20 years. It holds true also for the Jefferson City School District in 2010.

Home ownership took a big step backward in the district among all age groups that were fami-

The difference between a family and household is that a family is made up of relatives and a household can be made up of non-relatives.

More than 4,400 households have no children in them.

Figure 34. Housing populations in the Jefferson City School District, 2000 and 2010 Census data.

	2010 Ce	nsus	2000 Ce	nsus		%
Subject	Number	Percent	Number	Percent	2000 > 2010	Change 2000 > 2010
HOUSEHOLD POPULATION						
Occupied housing units	28,575	100.0%	25,925	100.0%	2,650	10.2%
Owner-occupied housing units	18,660	65.3%	17,205	66.4%	1,455	8.5%
Population in owner-occupied housing units	46,183	NA	NA	NA	NA	N/A
Average household size of owner-occupied units	2.47	NA	NA	NA	NA	N/A
Renter-occupied housing units	9,915	34.7%	8,720	33.6%	1,195	13.7%
Population in renter-occupied housing units	20,826	NA	NA	NA	NA	N/A
Average household size of renter-occupied units	2.10	NA	NA	NA	NA	N/A
HOUSEHOLD TYPE						
Owner-occupied housing units	18,660	100.0%	17,205	100.0%	1,455	8.5%
Family households [1]	13,717	73.5%	13,235		482	3.6%
Householder 15 to 64 years	10,942	58.6%	13,340		-2,398	-18.0%
Householder 65 years and over	2,775	14.9%	3,875		-1,100	-28.4%
Husband-wife family	11,651	62.4%	11,690		-39	-0.3%
Male householder, no wife present	618	3.3%	440		178	40.5%
Female householder, no husband present	1,448	7.8%	1,110		338	30.5%
Nonfamily households [2]	4,943	26.5%	3,965		978	24.7%
Householder 15 to 64 years	3,147	16.9%	NA	NA	NA	N/A
Householder 65 years and over	1,796	9.6%	NA	NA	NA	NA
Male householder	2,019	10.8%	NA	NA	NA	N/A
Living alone	1,610	8.6%	NA	NA	NA	N/A
65 years and over	403	2.2%	NA	NA	NA	N/A
Living with others	409	2.2%	NA	NA	NA	N/A
Female householder	2,924	15.7%	NA	NA	NA	NA
Living alone	2,597	13.9%	NA NA	NA NA	NA NA	NA
65 years and over	1,329	7.1%	NA NA	NA	NA	NA
Living with others	327	1.8%	NA NA	NA	NA	NA
Renter-occupied housing units	9,915	100.0%	8,720		1,195	13.7%
Family households [1]	4,519	45.6%	3,705		814	22.0%
Householder 15 to 64 years	4,247	42.8%	7,620		-3,373	-44.3%
Householder 65 years and over	272	2.7%	1,100		-828	-75.3%
Husband-wife family	2,024	20.4%	1,830		194	10.6%
Male householder, no wife present	556	5.6%	445		111	24.9%
Female householder, no husband present	1,939	19.6%	1,430		509	35.6%
Nonfamily households [2]	5,396		5,015		381	7.6%
Householder 15 to 64 years	4,338	43.8%	NA		NA	NA
Householder 65 years and over	1,058	10.7%	NA NA		NA	NA NA
Householder Living Alone	4,478	45.2%	4,075		403	9.9%
Male householder	2,617	26.4%	1,910		707	37.0%
Living alone	2,093	20.4%	NA		NA	37.0% NA
65 years and over	2,093	21.1%	NA NA	NA NA	NA NA	NA NA
Living with others	524	5.3%	NA NA		NA NA	NA NA
Female householder Living alone	2,779	28.0%	2,165 NA		614 NA	28.4%
i ivii () alone	2,385	24.1%	INA	INA	IVA	NΑ
65 years and over	744	7.5%	NA	NA	NA	NA

X Not applicable.

^[1] A household that has at least one member of the household related to the householder by birth, marriage, or adoption is a "Family household." All persons living in family households are included in this total regardless of their relationship to the householder. Same-sex couple households are included in the family households category if there is at least one additional person related to the

householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. Responses of "same-sex spouse" were edited during processing to "unmarried partner."

^{[2] &}quot;Nonfamily households" consist of people living alone and households which do not have any members related to the householder.

These projections were done by FinCo GeoDemographics, LLC, a firm headed by two accomplished professors of Geography at Oklahoma State University. The principal, Dr. Jon Comer, has authored 24 peer-reviewed research articles, received \$300,000 in research grants and has served as a board of directors of the Spatial Analysis and Modeling Specialty Group of the **Association of Amer**ican Geographers.

Summary

As noted in an enrollment projection report submitted to this district in 2010, making population or enrollment projections without the 2010 Census data in hand was challenging. Now that 2010 Census data are available, as well as the fall 2011 enrollment figures for the district, it is possible to both evaluate the projections made in 2010 (revised projections were subsequently provided to the district in November 2010 based on new fall 2010 enrollment figures) and to update them with the newly available information. This report is therefore not a mere revision of the 2010 report with new numbers simply replacing old, but instead an explanation of what significant new information is now available, a discussion how this impacts the new projections, and documentation of the new projections for the district from 2012 out to 2021, a ten-year projection horizon. However, as will be noted shortly, only projections out to 2015 are based entirely on data about the population currently living in the district (as of April 2010, the date of the Census); after 2015, even stronger assumptions must be made about the source of new students than is the case for projections up through 2015.

The most notable new piece of information is Kindergarten enrollment in fall 2011. A year ago, when the most recent projections were completed, an astonishing 818 Kindergarteners had enrolled in the district in September 2010. The previous five years' enrollments were 732 (2009), 653 (2008), and 632 each in the year 2007, 2006, and 2005. This jump, combined with American Community Survey estimates of steady growth in Jefferson City since 2004 and Cole County through virtually the entire decade from 2000 to 2010, led to an assumption of future Kindergarten totals of over 800 and growing steadily into the future. This proved not to be the case in September 2011 as just 708 Kindergarteners enrolled, fewer even than in 2009.

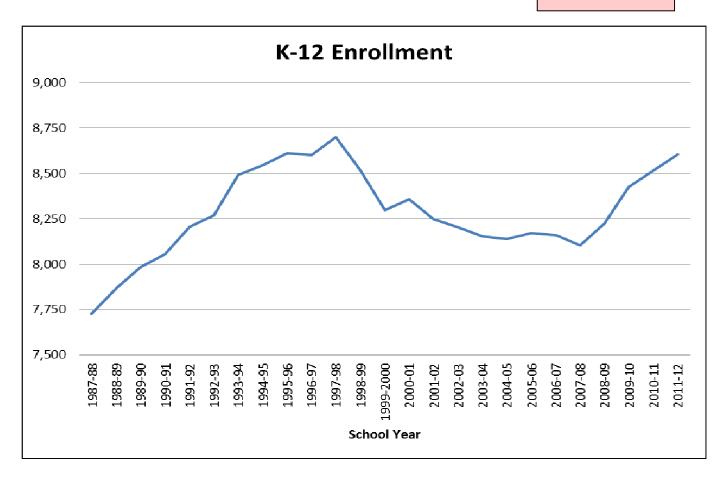
Additionally, the 2010 Census age cohort breakdowns point to another one-year bump possibly occurring next year (2012). The following table shows the population of children aged 5 and younger in the district from the Census (as of April, 2010) and the year they would be expected to enter Kindergarten as a group:

Age	5 years old	4 years old	3 years old	2 years old	1 year old	< 1 year
Entering	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015
IX.						
Number	959	968	1,018	964	961	929

Thus, assuming 5 year-olds in April 2010 entered Kindergarten in fall 2010 (818 of 959, at least), this year's cohort of Kindergarteners came from the 4 year-olds (708 out of 968). Thus, fall 2012 could see a modest uptick based on over 1,000 3 year-olds living in the district at the time of the Census entering Kindergarten that year. Afterwards, a downward trend could occur as seen from the next three groups. Of course, this ignores migration, child mortality, private schooling, and the like, but this is the most firm information at hand.

The second significant piece of new information is the overall district enrollment in fall 2011, providing another year's information to add to recent trends. Overall, compared to the data used a year ago, the district witnessed another year of moderate growth. Though the district continues on an upward trajectory compared to the decade from 1997-98 through 2007-08, the growth of the last two years has been somewhat slower than the preceding two years. In 2008 the district increased by 118 students over the previous year and in 2009 it grew by another 200 students. In 2010, however, the growth was 92 students and this year it has been 88 students based on September 2011 numbers.

Figure 35. Births in the Jefferson City School District.



Because of the inconsistent nature of enrollment growth over the past 25 years, the lack of predictability in parental migration, private school, or home schooling choices, and historically poor match between district births and Kindergarten enrollments five years later (as was noted in the 2010 report), Jefferson City remains one of the most difficult districts to model in the experience of this analyst. District personnel were unable to explain the decline of enrollments from 1997-98 through 2007-08, a period in which population of the district does not seem to have been similarly declining, and so the analysts can only make assumptions about the district based on publicly available Census data and enrollments provided.

Evaluation of Projections Provided in 2010

The analyst as a matter of practice provides three sets of enrollment projections out to ten years beyond present: high, medium, and low. Although this could be thought of as system with a "most likely" outcome (medium) with confidence intervals or a boundary envelope (high and low), it is really meant to provide three distinct trajectories that districts can evaluate based on their first-hand knowledge and experience. It is up to each district to evaluate the three models and base its planning on which model seems most feasible in that time and place.

However, the first interpretation listed above could have certainly applied to the projections provided to the district in 2010. The total enrollment estimate for 2011 for the medium model was 8,610, whereas the district currently has 8,603 students. However, while the district total was relatively accurate, some grade-level estimates were not as accurate. This mostly occurred due to high Kindergarten estimates based on the fall 2010 jump and expectations that enrollments over 800 Kindergarteners per year would become the norm in the district.

Figure 36, on p. 39. compares the three projections for the 2011-12 school year as projected in 2010 alongside actual 2011 enrollments. As can be seen, all Kindergarten enrollments were overestimated by at least 100 due to the influence of 2010 Kindergarten enrollments. This drove estimates for other grades lower, and notably the 4th, 6th, and 8th grades were all underestimated by the models (and 2nd graders and high school seniors, to a lesser extent).

		2011 enro	llments	_		Differences	
<u>Grade</u>	<u>High</u>	Medium	<u>Low</u>	<u>Actual</u>	<u>High</u>	<u>Medium</u>	Low
K	835	822	809	708	127	114	101
1	805	802	799	788	17	14	11
2	694	691	689	707	-13	-16	-18
3	674	671	669	670	4	1	-1
4	632	630	627	654	-22	-24	-27
5	629	627	624	625	4	2	-1
6	587	585	583	629	-42	-44	-46
7	605	603	601	603	2	0	-2
8	572	570	568	596	-24	-26	-28
9	707	704	702	705	2	-1	-3
10	735	732	730	730	5	2	0
11	623	620	618	620	3	0	-2
12	554	552	550	568	-14	-16	-18
Totals	8651	8610	8569	8603	48	7	-34

Figure 36, above, compares 2011-12 projections with 2011 actual enrollments. Figure 37, below, projections changing Kindergarten enrollment to 708 in 2011.

A simple reevaluation of last year's estimates, changing only the number of projected Kindergarteners to the known 2011 total of 708, produces the following comparisons:

	2011 enrollments				ι	Differences	
<u>Grade</u>	<u>High</u>	<u>Medium</u>	<u>Low</u>	<u>Actual</u>	<u>High</u>	<u>Medium</u>	Low
K	708	705	701	708	0	-3	-7
1	818	814	810	788	30	26	22
2	705	702	699	707	-2	-5	-8
3	685	681	678	670	15	11	8
4	642	639	636	654	-12	-15	-18
5	639	636	633	625	14	11	8
6	596	593	591	629	-33	-36	-38
7	615	612	609	603	12	9	6
8	582	579	576	596	-14	-17	-20
9	718	715	711	705	13	10	6
10	747	743	740	730	17	13	10
11	633	630	627	620	13	10	7
12	563	560	557	568	-5	-8	-11
Totals	8651	8610	8569	8603	48	7	-34

Locking in the known number of 2011 Kindergarteners has the effect of redistributing the expected district totals of 8,651 (high), 8,610 (medium), and 8,569 (low) across all the different grades, but overall only the 1st and 6th grades demonstrate differences of more than 20 students per grade between the model projections and the known enrollments for fall 2011.

The models upon which the projections of a year ago were based were as follows. High projections were based on a cubic model using enrollments back to 1986 (25 years), medium projections were based on a quadratic model using enrollments back to 1999 (12 years), while low projections were based on a linear model using enrollments back to 2003 (8 years). These models did not fit the district's enrollment patterns as well as the analyst has seen in other districts, as the trend evident in the enrollment figure given earlier is quite atypical in the experience of the analyst. However, the best models available at the time were chosen for making the projections as of fall 2010. As was noted in the 2010 report, the projections are very sensitive to estimates of incoming Kindergarten classes and as such, while overall district enrollment projections were quite accurate (especially the medium model), individual grade totals were skewed by the overly large (over 800) estimates of future Kindergarten classes. Hopefully this situation has been avoided with the new projections contained in this report, but only time will tell as each new year's Kindergarten cohort enrolls in the fall.

New Projections Incorporating Fall 2011 Enrollments and 2010 Census Data

A significant change in methodology from projections provided one year ago is that more focused Kindergarten enrollment projections are made through 2015. Overall, the district enrolls slightly under 73% of the schoolage population living within the district based on 2010 Census population values for each age 5-17 (Kindergarten through 12th grade students, based on the typical age of most students when they enter school in August of each year). Each age varies somewhat, from a high of 82.9% of 15 year-olds (10th graders) in the district to a low of 61.6% of 17 year-olds (12th graders). This last number is not surprising in light of early graduations and dropouts. Furthermore, the district average of 72.8% matriculation has been very consistent for the district's current elementary school population (grades K-5) and is applied to the upcoming classes of Kindergarteners based on the populations shown in the population table given earlier in this report. Thus, all models start with base estimates of about 740 Kindergarteners in 2012 (based on an estimated population of 1,018 three year-olds in

the Census in 2010 who will be 5 years old in 2012), about 710 Kindergarteners in 2013 (based 964 two year-olds in 2010), about 720 Kindergarteners in 2014 (based on 961 one year-olds), and just over 700 Kindergarteners in 2015 based on 929 infants in the Census. Actual estimates for each model are the result of proportional adjustments based on the high, medium, and low models (which also capture in-migration). After 2015, lacking firm information on births after 2010, the models progressively grow the Kindergarten classes at high, medium, and low growth rates along with all other grades in the last five years of the projection horizon.

A reanalysis using fall 2011 enrollment figures is thus conducted and, after evaluating several possible models and time periods, the range of models is limited to linear and logarithmic models and the analyses only use district enrollment data back to either 2007 or 2003. Attempting to model the district with enrollment data earlier than 2003 is simply too uncertain given the overall pattern of district enrollments since the mid-1980s.

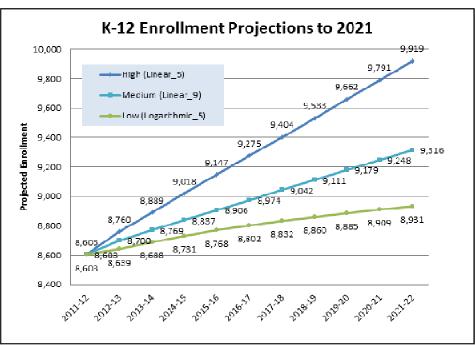
The linear growth model takes the functional form $Y=b_0+b_1t$ and the logarithmic growth model takes the functional form $Y=b_0+(b_1*ln(t))$, where the b values are intercept (b_0) and slope coefficients (b_1) and t is a sequence (time) indicator, with values of b_i differing between the models. The linear model simply multiplies the time indicator by the slope coefficient while the logarithmic model multiplies the natural logarithm (ln) of time by the slope coefficient.

Figure 38. High, medium and low-growth models in the Jefferson City School District, 2011-21.

A linear model based on the period 2007-11 thus produces the

highest enrollment projections for the district (Linear_5), a linear growth model for the period 2003-11 produces intermediate projections (Linear_9), and a logarithmic model for the period 2007-11 provides a lowend set of projections (Logarithmic_5). These three models are shown in Figure 2.

For comparison purposes, the projections provided a year ago estimated that fall 2012 enrollments would be 8,807 (high), 8,732 (medium),



and 8,610 (low), whereas new projections for fall 2012 are 8,760 (high), 8,700 (medium), and 8,639 (low). The high and medium projections are somewhat lower in the reanalysis, whereas the low projections are a bit higher because the old low growth model was flatter in the first five years of the projections than the new low growth model.

At the other end of the projection horizon, the projections provided a year ago estimated that fall 2020 enrollments would be 11,628 (high), 10,280 (medium), and 8,938 (low), whereas new projections for fall 2020 are 9,791 (high), 9,248 (medium), and 8,909 (low), all lower than the projections that were made a year ago. The two low models (old and new), though, nearly converge as the new low model flattens out in the latter five years being a logarithmic model. For comparative purposes, actual population growth between 2000 and 2010 was 6.1% in the district, 8.7% in Jefferson City, and 6.4% in Cole County. Meanwhile, the low projection represents 3.8% growth over a decade, the medium model 8.3%, and the high model 15.3%.

The high projections are still not considered likely but are an upper bound in case Kindergarten enrollments and overall district growth prove to be extremely healthy. Nonetheless, another year of enrollment data, a significant decline of over 100 Kindergarteners between fall 2010 and 2011, and new Census data showing a gradual decline in numbers of children in the district from ages 3-0 in 2010 all result in more modest estimates of future enrollments. The difference between old and new model projections for 2012 are 47 (high), 31 (medium), and 29 (low) fewer students in the new models. In 2020, the differences are really noticeable as the new high model projects over 1,800 fewer students than the old high model, the new medium model projects over 1,000 fewer students, while the new low model has only 28 fewer students in 2020 than the old low model. Unless the Census data are significantly in error, in-migration significantly increases, or fertility rates of the resident population noticeably increase, it is difficult to find evidence in the data that the district will experience excessively high growth in enrollments and a gain of between 500-1,000 students over the coming decade (50 or 100 new students per year) seems the most likely outcome based on current data (note that the medium model predicts an increase of 713 students by 2021-22, or 8.3% growth as noted earlier).

As with past modeling, grade-level estimates across the district are based on the three aforementioned models. A standard cohort progression model provides an estimate of each year's basic enrollment assuming steady -state trends, which are then adjusted by the varying growth rates represent-

ed by the high, medium, and low growth models evinced above. Finally, K-8 enrollments must be divided across various schools in their current configurations. Current proportions of students at each of the eleven elementary schools at any given grade level K-5 and both of the middle schools' grades 6-8 are assumed to remain in effect, lacking any other sound source of information except the last four years' enrollment figures.

Although ninth graders are actually located at the Simonsen Center, they are simply treated as high school students in ninth grade to reduce the need for an extra table and graph in the spreadsheet for that grade. Likewise, any students in grades 9-12 who are actually attending classes at the Jefferson City Academic Center (JCAC) are allocated to their respective grades at the high school.

In order to facilitate future planning by the district, the submitted spreadsheet breaks down the three projection models by grade ("Summaries by Grade") and by school ("Summaries by School"). The basic projection methods and results are on a separate tab ("District") and the individual school charts are likewise available ("Charts").

Conclusion

The results presented in this report and the comparisons to the report submitted in 2010 highlight the challenges in estimating school enrollments for most school districts, but especially one such as Jefferson City that has non-linear historical enrollment trends, poor correlations between births and Kindergarten enrollments five years later, variable matriculation rates of eligible school-age populations in the district (as noted earlier, between 61.6% and 82.9%, with a district average of 72.8%), and declining school enrollments (between 1997 and 2007) when the overall population in the district was almost certainly growing.

A year ago, with another healthy gain in total students (from 8,423 in fall 2009 to 8,515 in fall 2010), and a huge increase in Kindergarteners (from 732 to 818 for the same two years), led to optimism that the district was on a strong upward trend. While the district grew again this year by nearly the same number of students (from 8,515 to 8,603, or 88 students compared to 92 last year), most of the gains resulted from growth in the same grade from last year to this year, offset by the huge decline in the number of Kindergarteners (or, alternatively, a return to more representative Kindergarten enrollments). Another small bump in Kindergarteners could occur next year (fall 2012) based on Census tallies of 3 year-olds

living in the district in 2010, but even so this district has not shown a strong correlation between births and Kindergarten enrollments. Thus, the sizes of incoming Kindergarten classes continue to be the primary influence on the accuracy of projection models.

Another factor that has not been satisfactorily explained is the annual increase of around 50 new students in 9th grade compared to that age cohort's size as 8th graders in the district the year before. It is assumed that this jump is caused by previously private- or home-schooled students switching to public school either because the private schools end at 8th grade or these students wish to partake of athletic (sports teams), academic (advanced placement or college-bound courses), or artistic (band, orchestra, chorale) opportunities only afforded by a large public high school. This "freshman 50" has been evident at least since 2007 and if it were to suddenly stop then future projections of freshman classes would be affected as the models all incorporate this bump in some fashion.

Finally, as noted in the 2010 report, the reasons for the district matriculating just 72.8% of the eligible school-age population relate primarily to private and home schooling, phenomena which have always proven challenging to not only model but to even document or track in the experience of the analysts. Likewise, birth rates fluctuate with the economy and are very hard to predict. Neither the district nor the analysts have much ability to anticipate short-term changes in these influences on district populations and thus enrollments.

Model Details

The statistical information, especially goodness-of-fit statistics (r^2, F) , the intercept b_0 (constant) and slope b_1 and b_2 (Case Sequence) parameters, the standard errors, and the functional forms of the models used, are provided below.

High growth profile

The high growth profile is based on a linear model fit to enrollment trends in the K-12 grades of the district for the period 2007 to 2011. The functional form of this model is:

$$Y = b_0 + b_1 t$$

Model Summary

		Adjusted R	Std. Error of the		
R	R Square	Square	Estimate		
.988	<mark>.977</mark>	.969	<mark>36.471</mark>		

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	165894.400	1	165894.400	<mark>124.720</mark>	<mark>.002</mark>
Residual	3990.400	3	1330.133		
Total	169884.800	4			

Coefficients

	Unstandardize	ed Coefficients	Standardized Coefficients		
	В	Std. Error	Beta	t	Sig.
Case Sequence	<mark>128.800</mark>	11.533	.988	11.168	<mark>.002</mark>
(Constant)	<mark>7987.400</mark>	38.251		208.815	<mark>.000</mark>

Medium growth profile

The medium growth profile is based on a linear model fit to enrollment trends in the K-12 grades of the district for the period 2003 to 2011. The functional form of this model is:

Model Summary

			Adjusted R Std. Erro		or of the			
R	R Square		Square	Estir	mate			
.859		.739	.701		<mark>101.734</mark>			

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	204633.600	1	204633.600	<mark>19.772</mark>	<mark>.003</mark>
Residual	72448.622	7	10349.803		
Total	277082.222	8			

_			
(:0	Δttı	CIC	ents
\sim	CIII	CIC	iilo.

	Unstandardize	ed Coefficients	Standardized Coefficients		
	В	Std. Error	Beta	t	Sig.
Case Sequence	<mark>58.400</mark>	13.134	.859	4.447	<mark>.003</mark>
(Constant)	<mark>7984.444</mark>	73.908		108.032	<mark>.000</mark>

$$Y = b_0 + b_1 t$$

Low growth profile

The low growth profile is based on a logarithmic model fit to enrollment trends in the K-12 grades of the district for the period 2007 to 2011. The functional form of this model is:

$$Y = b_0 + (b_1 * \ln(t))$$

Model Summary

		Adjusted R	Std. Error of the					
R	R Square	Square	Estimate					
.981	<mark>.963</mark>	.951	<mark>45.636</mark>					

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	163636.753	1	163636.753	<mark>78.570</mark>	.003
Residual	6248.047	3	2082.682		
Total	169884.800	4			

Coefficients

	Unstandardize	ed Coefficients	Standardized Coefficients		
	В	Std. Error	Beta	t	Sig.
In(Case Sequence)	<mark>318.265</mark>	35.905	.981	8.864	<mark>.003</mark>
(Constant)	<mark>8069.062</mark>	39.981		201.823	<mark>.000</mark>



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Figure 39. Enrollment projections for the Jefferson City High School, 2011-2021.

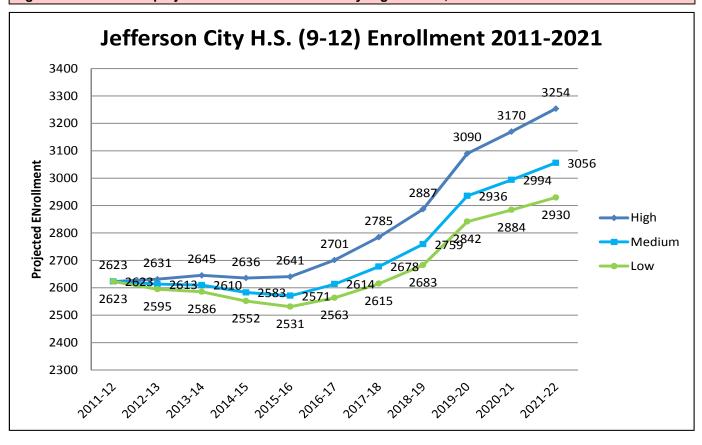


Figure 40. Enrollment projections for Lewis & Clark Middle School, 2011-2021.

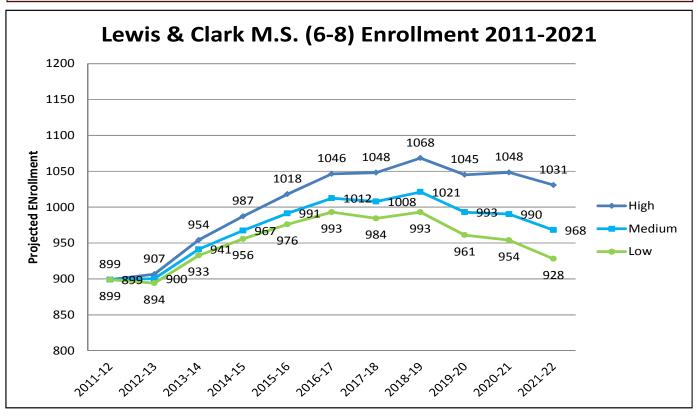


Figure 41. Enrollment projections for Thomas Jefferson Middle School, 2011-2021.

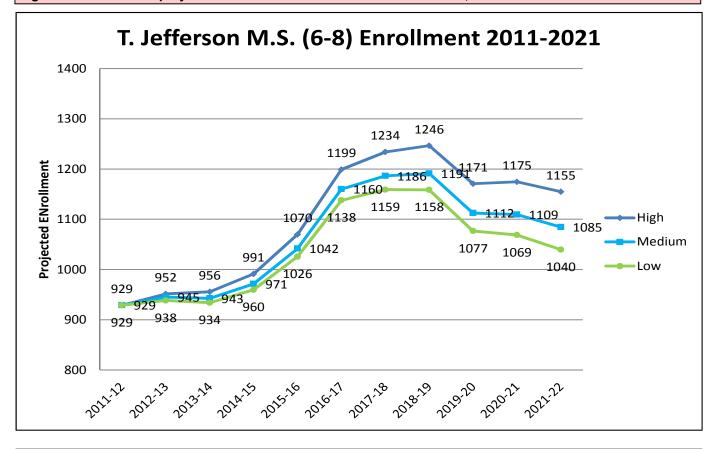


Figure 41. Enrollment projections for Callaway Elementary School, 2011-2021.

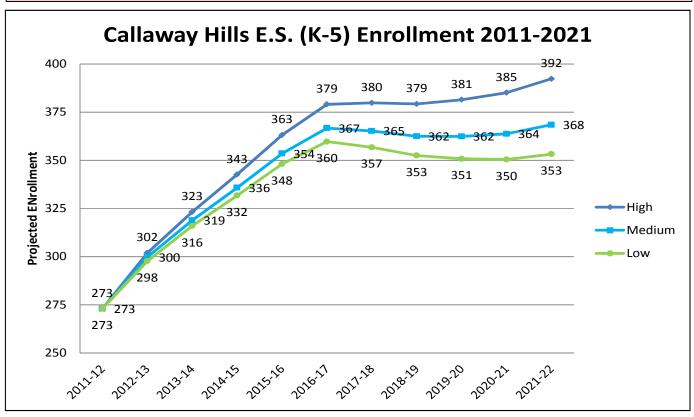


Figure 42. Enrollment projections for Cedar Hill Elementary School, 2011-2021.

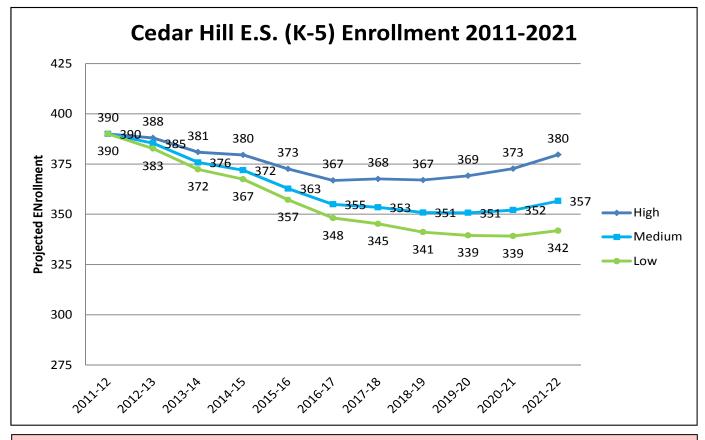


Figure 43. Enrollment projections for East Elementary School, 2011-2021.

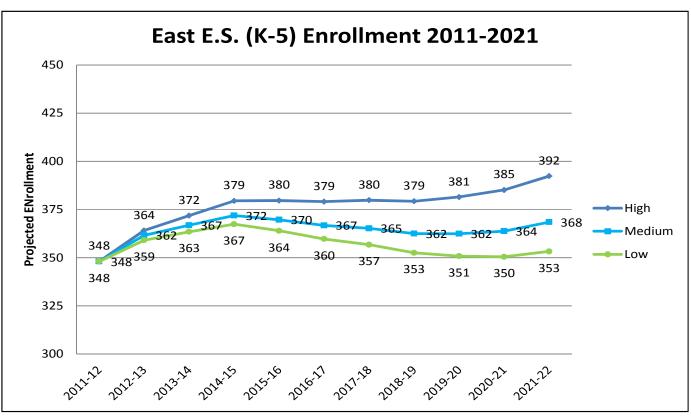


Figure 44. Enrollment projections for Moreau Heights Elementary School, 2011-2021.

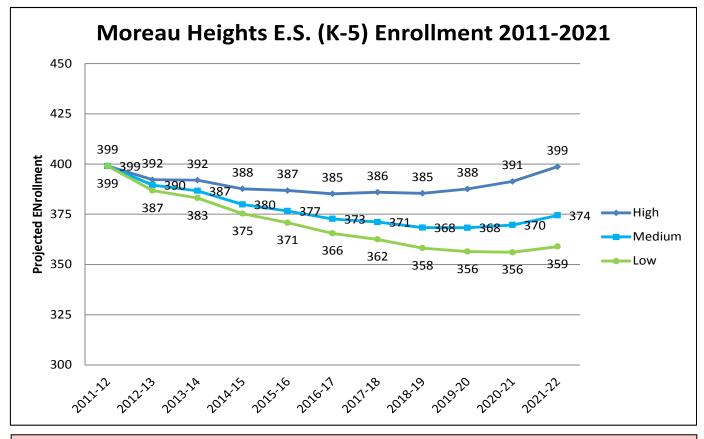


Figure 45. Enrollment projections for North Elementary School, 2011-2021.

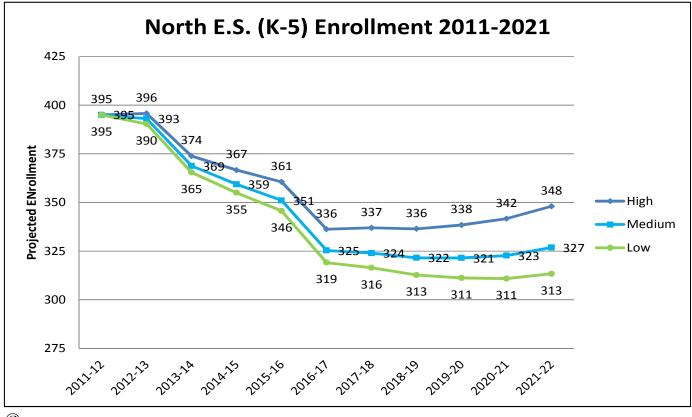


Figure 46. Enrollment projections for Thorpe Gordon Elementary School, 2011-2021.

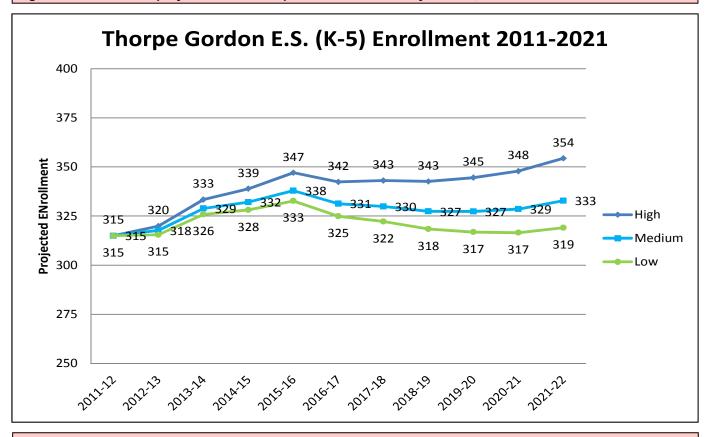


Figure 47. Enrollment projections for Belair Elementary School, 2011-2021.

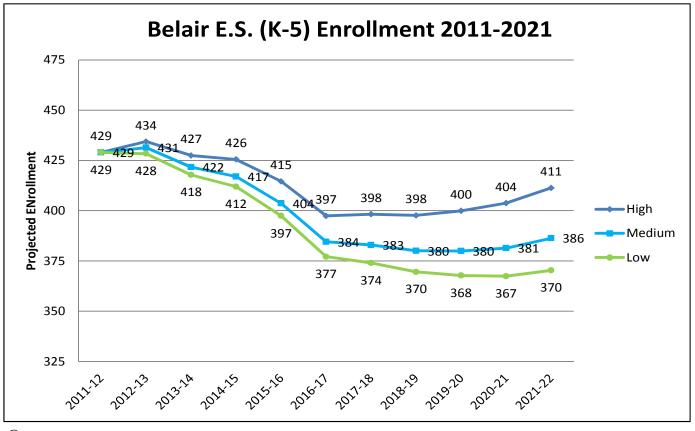


Figure 48. Enrollment projections for Lawson Elementary School, 2011-2021.

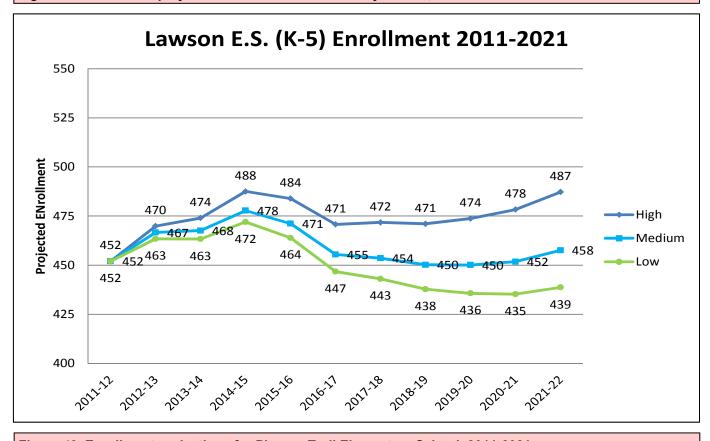


Figure 49. Enrollment projections for Pioneer Trail Elementary School, 2011-2021.

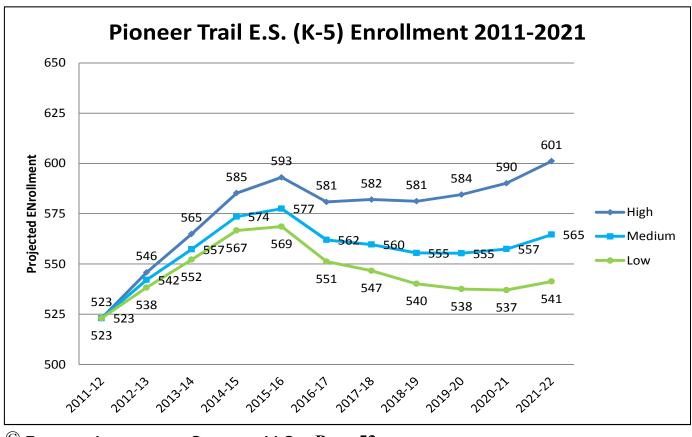


Figure 50. Enrollment projections for South Elementary School, 2011-2021.

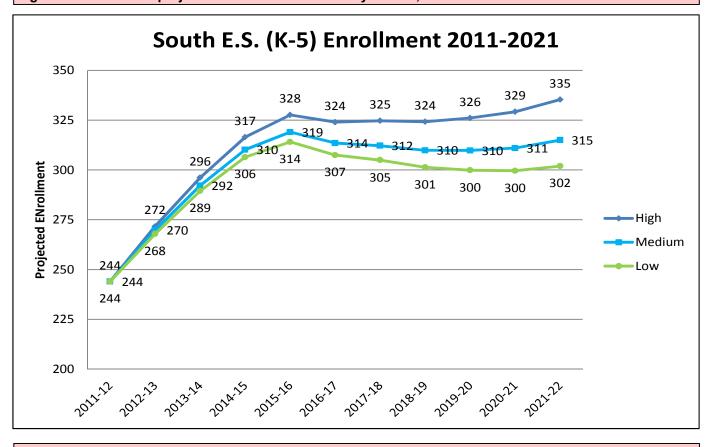
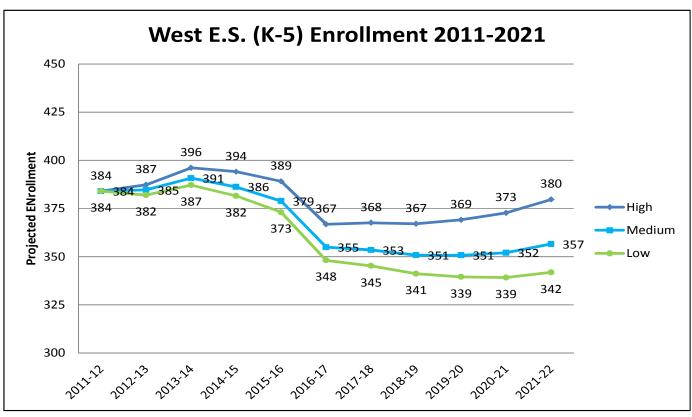


Figure 51. Enrollment projections for West Elementary School, 2011-2021.





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Figure 52. Enrollment projections by grade in the Jefferson City School District, 2012-2022.

District	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-2
High	8,603	8,760	8,889	9,018	9,147	9,275	9.404	9,533	9,662	9,791	9,9
Medium	8,603	8,700	8,769	8,837	8,906	8,974	9,042	9,111	9,179	9,248	9,3
_OW	8,603	8,639	8,688	8,731	8,768	8,802	8,832	8,860	8,885	8,909	8,9
High	2011 12	2012 12	2012 14	2014 15	201F 16	2016 17	2017 19	2019 10	2010 20	2020 21	2021
K	2011-12 708	2012-13 744	2013-14 711	2014-15 718	2015-16 704	2016-17 733	2017-18 737	2018-19 743	2019-20 747	2020-21 754	2021 -
1	788	698	726	699	709	686	715	721	725	732	7
2	707	794	708	739	712	716	694	724	729	736	7
3	670	711	799	715	749	714	719	697	727	735	7
4	654	677	720	817	730	758	724	729	707	740	7
 5	625	647	670	715	815	720	749	717	721	701	7
6	629	631	658	690	732	828	733	763	729	736	7
7	603	633	626	662	695	729	826	733	761	730	-
8	596	594	626	627	660	688	723	820	726	757	-
9	705	657	658	693	696	727	757	797	903	802	
10	730	719	667	677	711	708	740	772	812	923	
11	620	695	688	638	650	677	673	706	735	775	
12	568	561	632	629	583	590	614	612	641	669	-
Medium	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021
K	708	739	702	704	685	709	709	710	710	713	2021
1	788	693	716	685	690	664	688	689	689	692	
2	707	788	698	725	693	693	667	692	693	695	
3	670	706	788	700	729	691	691	667	691	694	
4	654	672	710	801	710	734	696	697	672	699	
5	625	643	661	701	710	697	720	685	685	662	(
6	629	626	649	676	713	801	705	729	693	695	(
7	603	629	617	649	677	705	795	700	723	690	(
8	596	590	618	614	643	666	695	783	690	715	(
9	705	652	649	679	678	703	728	762	858	713	
10	730	714	658	663	692	685	712	738	771	871	
11	620	690	679	625	633	655	647	675	698	732	
12	568	557	624	616	568	570	590	585	609	632	(
Low	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021
K	708	734	695	696	675	695	692	690	687	686	2021
1	788	688	709	677	679	651	672	670	667	666	(
2	707	783	692	716	683	680	651	673	671	670	(
3	670	701	781	692	718	678	675	648	669	668	(
4	654	667	704	791	699	720	680	678	650	673	(
5	625	638	655	692	781	684	703	666	663	638	(
6	629	622	643	668	702	786	689	709	671	670	(
7	603	624	612	641	666	692	776	681	700	665	(
	596	586	612	607	633	653	679	762	668	688	- 6
8						690	711	741	830	730	-
		648	6431	6/11	00/1	0901	/ 1 11	/ + 11	0001	7301	
8 9	705	648 709	643 652	671 655	667 682	672			746	840	
8			643 652 673	671 655 617			695 632	717 656			

Figure 53. Enrollment projections by building in the Jefferson City School District, 2012-2022.

Enrollme	nt Proj	ections	for the	Jeffers	son City	y Scho	ol Distr	ct, 201	2-2021,	by Bui	lding
District	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-
High	8,603	8,760	8,889	9,018	9,147	9,275	9,404	9,533	9,662	9,791	9,9
Medium	8,603	8,700	8,769	8,837	8,906	8,974	9,042	9,111	9,179	9,248	9,3
Low	8,603	8,639	8,688	8,731	8,768	8,802	8,832	8,860	8,885	8,909	8,9
High School	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-
High	2,623	2,631	2,645	2,636	2,641	2,701	2,785	2,887	3,090	3,170	3,2
Medium	2,623	2,613	2,610	2,583	2,571	2,614	2,678	2,759	2,936	2,994	3,0 2,9
Low	2,623	2,595	2,586	2,552	2,531	2,563	2,615	2,683	2,842	2,884	2,8
L&C M.S.	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021
High	899	907	954	987	1,018	1,046	1,048	1,068	1,045	1,048	1,0
Medium	899 899	900 894	941 933	967 956	991 976	1,012 993	1,008 984	1,021 993	993 961	990 954	9
LOW	099	094	933		970	993		993		904	•
TJ M.S.	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021
High	929	952	956	991	1,070	1,199	1,234	1,246	1,171	1,175	1,1
Medium Low	929 929	945 938	943 934	971 960	1,042 1,026	1,160 1,138	1,186 1,159	1,191 1,158	1,112 1,077	1,109 1,069	1,0 1,0
LOW	929	930	304		ŕ	·	·	·			1,0
Callaway	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021
High Modium	273 273	302 300	323 319	343 336	363 354	379 367	380 365	379 362	381 362	385 364	;
Medium Low	273	298	319	330	354	360	357	353	351	350	•
Cedar	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021
High	390	388	381	380	373	367	368	367	369	373	- 3
Medium Low	390 390	385 383	376 372	372 367	363 357	355 348	353 345	351 341	351 339	352 339	;
East	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021
High	348	364	372	379	380	379	380	379	381	385	- 3
Medium Low	348 348	362 359	367 363	372 367	370 364	367 360	365 357	362 353	362 351	364 350	3
	340										
Moreau	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021
High	399	392	392	388	387	385	386	385	388	391	3
Medium Low	399 399	390 387	387 383	380 375	377 371	373 366	371 362	368 358	368 356	370 356	:
North	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021
High Medium	395 395	396 393	374 369	367 359	361 351	336 325	337 324	336 322	338 321	342 323	;
Low	395	390	365	355	346	319	316	313	311	311	
Thorpe Gordor	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021
High Medium	315 315	320 318	333 329	339 332	347 338	342 331	343 330	343 327	345 327	348 329	
Low	315	315	329	328	333	325	322	318	317	317	- (
Belair	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021
High Medium	429 429	434 431	427 422	426 417	415 404	397 384	398 383	398 380	400 380	404 381	
Low	429	428	418	412	397	377	374	370	368	367	
Lawson	2011-12 452	2012-13 470	2013-14 474	2014-15 488	2015-16 484	2016-17 471	2017-18 472	2018-19 471	2019-20 474	2020-21 478	2021
High Medium	452 452	470	468	488 478	484 471	471	472	471	474	478	
Low	452	463	463	472	464	447	443	438	436	435	
Pioneer High	2011-12 523	2012-13 546	2013-14 565	2014-15 585	2015-16 593	2016-17 581	2017-18 582	2018-19 581	2019-20 584	2020-21 590	2021
Medium	523	542	557	574	577	562	560	555	555	557	
_OW	523	538	552	567	569	551	547	540	538	537	
South High	2011-12 244	2012-13 272	2013-14 296	2014-15 317	2015-16 328	2016-17 324	2017-18 325	2018-19 324	2019-20 326	2020-21 329	2021
Medium	244	270	290	310	319	314	312	310	310	311	
_OW	244	268	289	306	314	307	305	301	300	300	
West High	2011-12 384	2012-13 387	2013-14 396	2014-15 394	2015-16 389	2016-17 367	2017-18 368	2018-19	2019-20 369	2020-21	2021
High Medium	384	387	396	394	389	357	353	367 351	359	373 352	
viculuiii	304	303	391	300	319	555	333	JJ 1	551	332	- 3

Philosophy and Ethics Statement

I am an entrepreneur who strives to serve my firm's clients as best I can. I provide information and analysis to several clients on a contractual basis. I also commit to the following business principles:

- Uphold a high professional level of competence, honesty and confidentiality.
- Provide my clients the most current, accurate and complete information requested, within their timeframe and budget constraints.
- Accept only those projects that require that I use legal and publicly-available techniques to obtain information.
- Respect my client's confidentiality.
- Maintain a professional relationship with my clients, and comply with all their requirements for information disclosure.
- Assume responsibility for all my employees and subcontractors to comply with this statement.
- Meet all deadlines and modifications for my clients.
- Deliver first-rate value for my clients with the aim of establishing a long-term relationship where both parties receive what they expected.

Business Information Services

Business Information Services, LLC is a Missouri-registered Limited Liability Corporation, owned by Preston Smith of Blue Springs, Missouri.

Smith has an undergraduate journalism degree from the University of Missouri and a Master's in Public Administration from the University of Missouri-Kansas City, with a specialization in statistics and quantitative analysis. Certified GIS analyst Sarah Rose provided the maps. Researcher Deb Liptak provided in-depth research. Proofreader Andrew Felker did much to improve readability and clean up all the typos.

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Smith consults with school districts around the Midwest and has prepared more than 60 demographic analysis studies for school districts.

Preston Smith, pvsmith@sbcglobal.net 816-224-3498

www.businessinformationservices.biz