9-13-2015

Projections of the First-Year Full-Time Undergraduate Enrollment at South Dakota State University to 2020

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PROJECTIONS OF THE FIRST-YEAR FULL-TIME UNDERGRADUATE ENROLLMENT AT SOUTH DAKOTA STATE UNIVERSITY TO 2020

STATE DATA CENTER

September 13, 2015

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Contents

ABOUT THIS REPORT

This report has three parts. The first section provides a brief description of the full-time first-year (FYFT) undergraduate cohort enrolled at South Dakota State University (SDSU) from 2005 to 2014. The second section provides projections by year for the FYFT enrollment to the year 2020. The third section provides project changes between 2014 and 2020 in public high school graduates in South Dakota by school district.

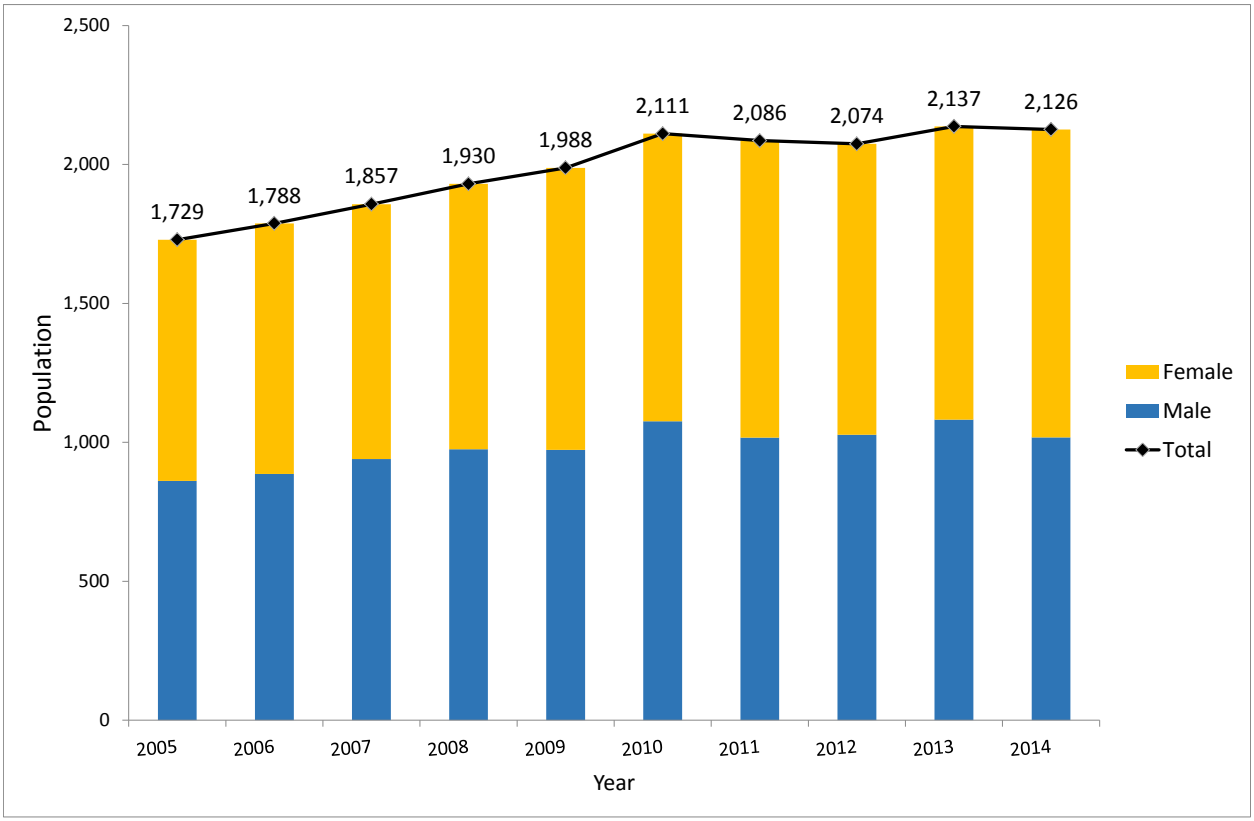
Three datasets are utilized for this report. The FYFT undergraduate enrollment data from 2005 to 2014 are provided by the Institutional Research Office at SDSU. These data are used for preparing descriptive statistics and calculating numbers of high school graduates from South Dakota, Minnesota, and Iowa, respectively, enrolled at SDSU as FYFT students from 2005 to 2014.

Data of enrollment in grades 7-12 from 2009 to 2012 and numbers of high school graduates from 2005 to 2014 are downloaded from the Department of Education of South Dakota, Minnesota, and Iowa, respectively. These data are used to calculate: (1) grade-progression rates and graduation rates; and (2) numbers of enrollment in grades 7-12 in 2014. The enrollment and graduation data by school district in South Dakota are used for projections of changes in numbers of high school graduates by school district in the state.

Finally, a crosswalk file linking the Census school district identification and the within-state school district identification is derived from National Center for Education Statistics (NCES) for making the school district map.

FYFT COHORT STATISTICS: 2005 - 2014

Figure 1. FYFT Cohort by Gender: From 2005 to 2014

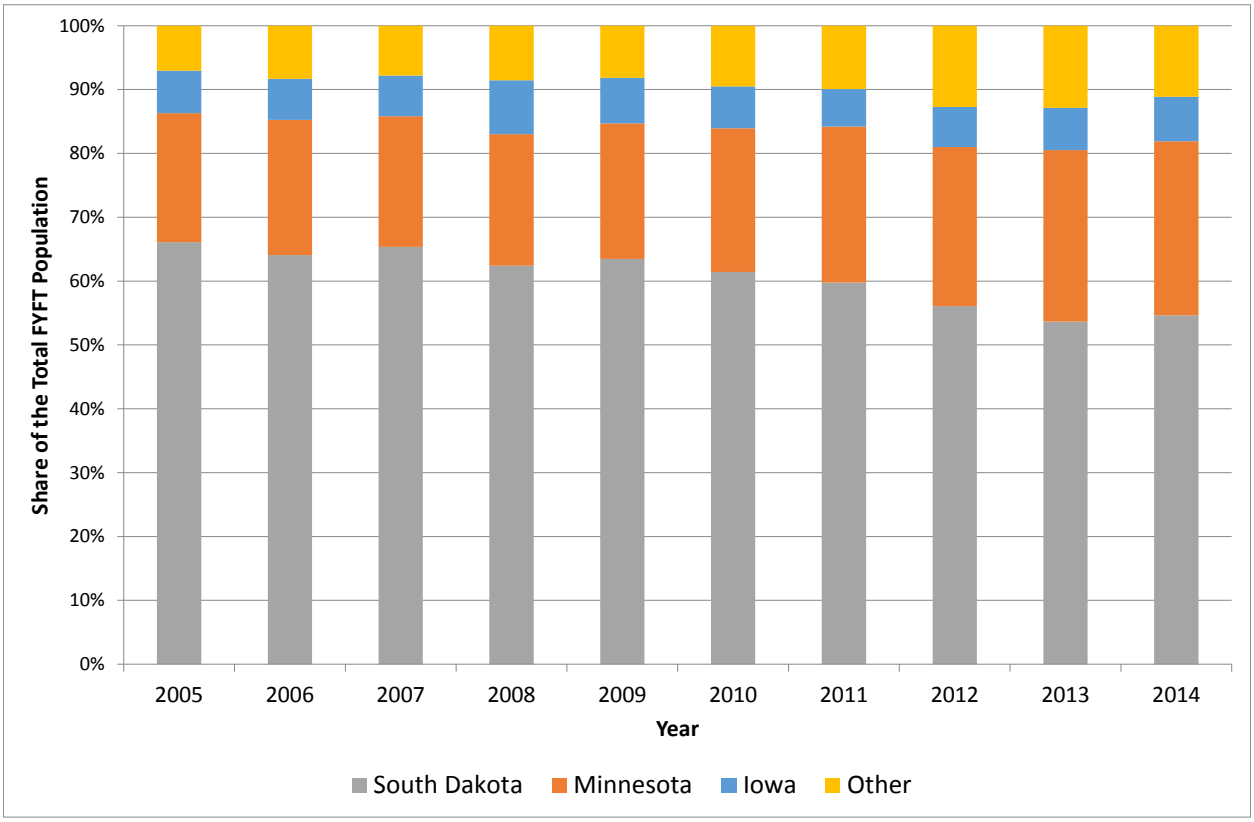


The total number of FYFT students at SDSU

- increased steadily between 2005 and 2010
- stable around 2,100 after 2010

Gender composition stays fairly even from 2005 to 2014.

Figure 2. FYFT Cohort by Sending States (South Dakota, Minnesota, Iowa, and Others Unspecified): From 2005 to 2014[1]



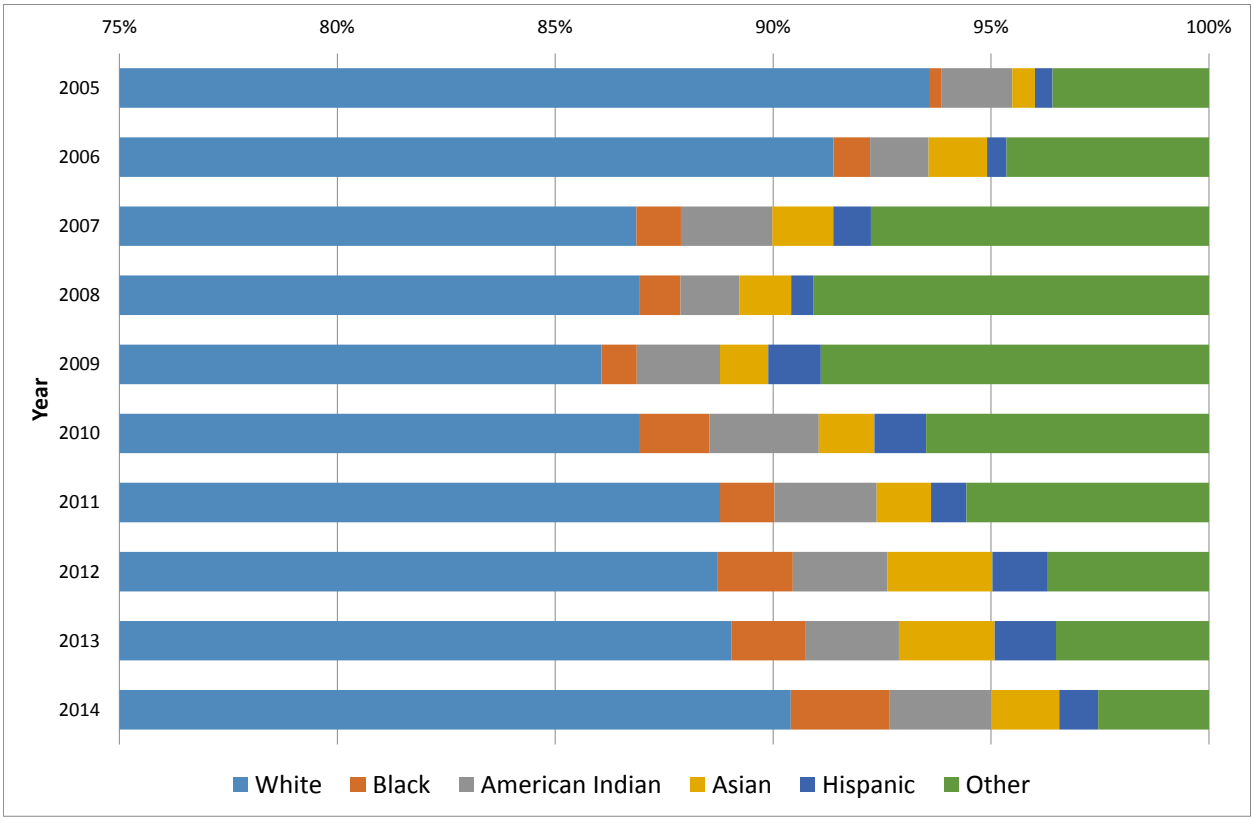
NOTE: The state is not defined by the student's residence state. Rather, it refers to the state where the high school district is.

The FYFT cohort at SDSU from 2005 to 2014

- majority were graduates from high schools in South Dakota
- the next two states that have sent relatively large numbers of high school graduates are Minnesota and Iowa
- South Dakota graduates are declining in the share of the FYFT cohort
- Minnesota graduates are increasing in the share of the FYFT cohort
- the group of FYFT students from other places (including international students) is growing

[1] SDSU's market share in high school graduates from South Dakota, Minnesota, and Iowa, respectively, are reported in Reference Table 1 on Page 11.

Figure 3. FYFT Cohort by Race/Ethnic Groups: From 2005 to 2014 [2]



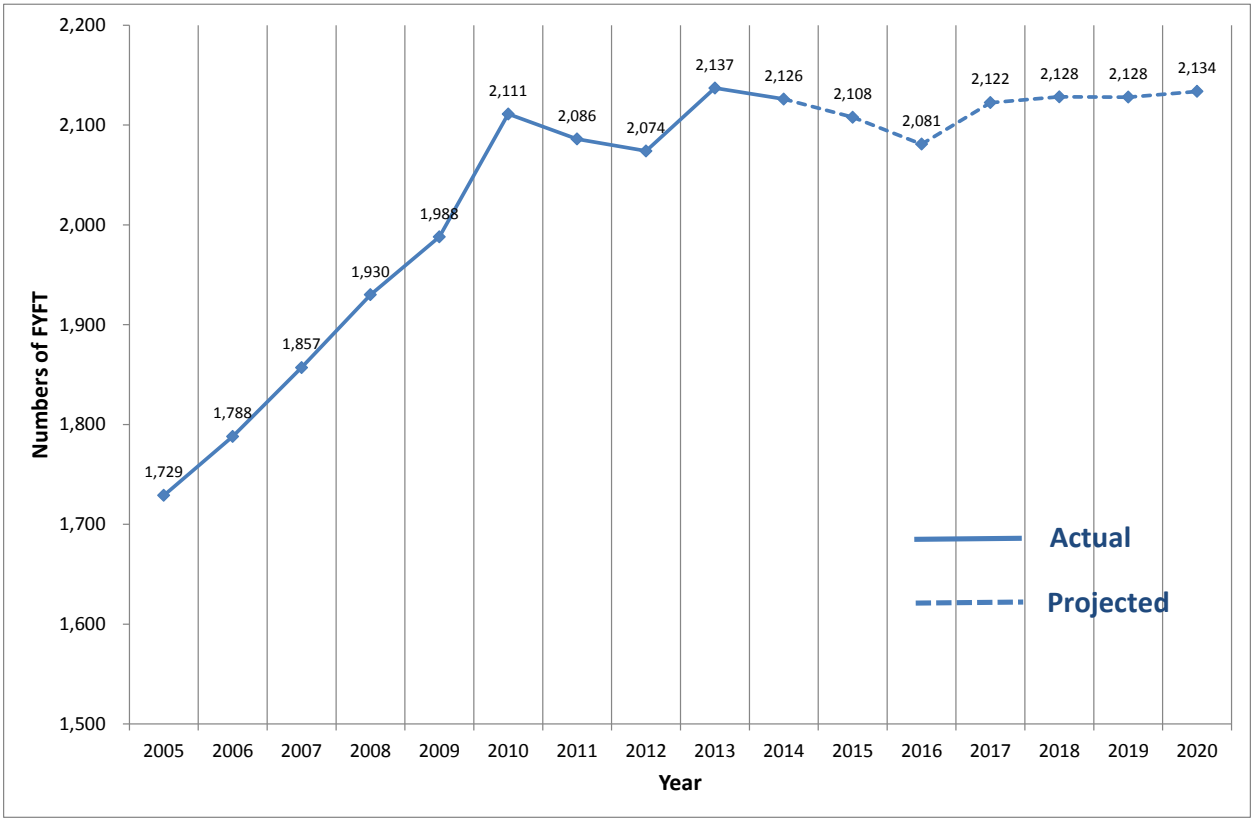
The FYFT cohort at SDSU from 2005 to 2014

- shows relatively stable racial/ethnic composition over time
- majority students were White (the lowest: 86 percent in 2009; the highest: 94 percent in 2005)
- slight decrease in the share of White students in the FYFT cohort
- slight increases in the share of non-White students

[2] Before the 2010-11 year, students were restricted to choose one category for the race/ethnicity question; after the 2010-11 year, students can make multiple choices and the group of students who reported two more races can be identified. For the trend analysis in the current project, the single race variable is used.

PROJECTIONS OF THE FYFT ENROLLMENT AT SDSU

Figure 4. Actual and Projected Numbers of the FYFT Enrollment at SDSU: From 2005 to 2020[3]

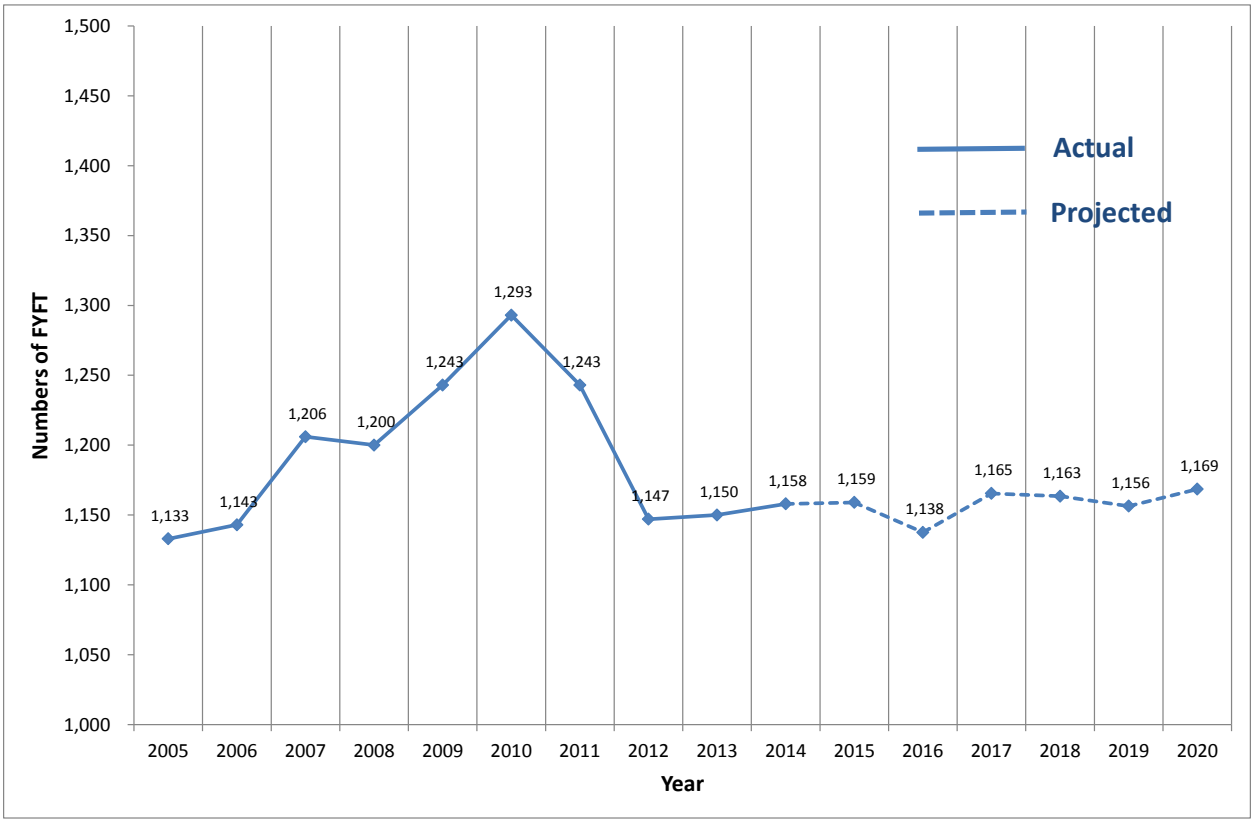


The total numbers of the FYFT enrollment at SDSU

- is projected to decrease 0.85 percent between 2014 and 2015
- is projected to decrease 2.12 percent between 2014 and 2016
- is projected to rebound slightly after 2016
- stable enrollment projected 2017 through 2020

[3] For details, please refer to Reference Table 4 on Page 13.

Figure 5. Actual and Projected Numbers of the FYFT Enrollment at SDSU, from South Dakota: From 2005 to 2020[4]



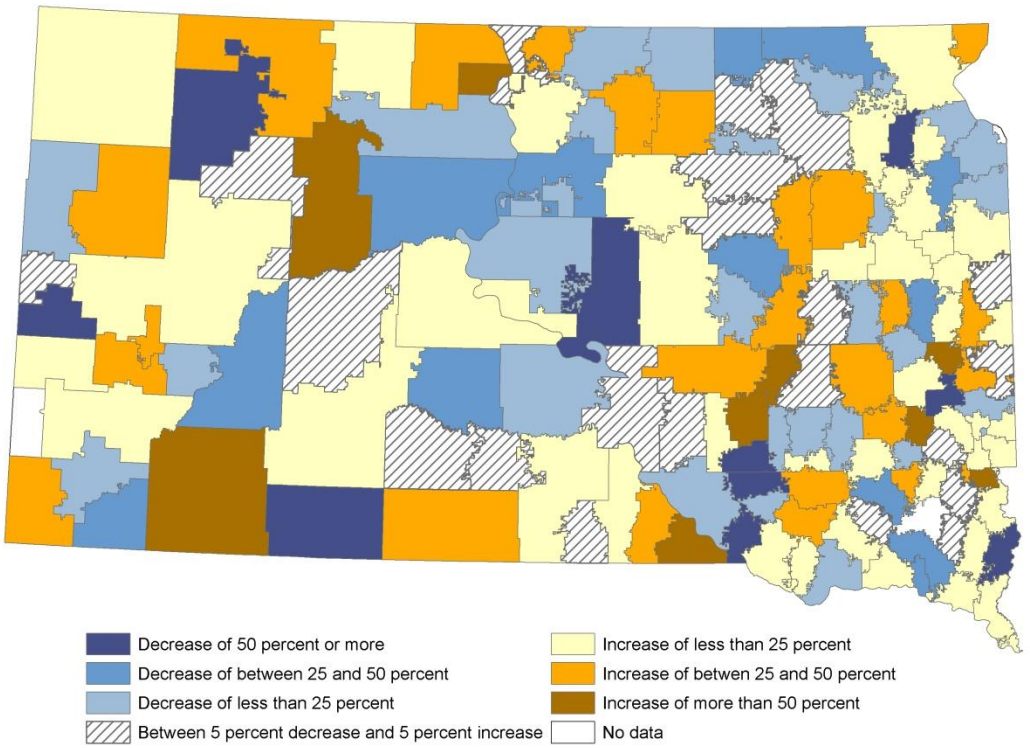
The total numbers of the FYFT enrollment at SDSU who are South Dakota high school graduates

- is projected to be approximately the same between 2014 and 2015
- is projected to decrease 1.73 percent between 2014 and 2016
- is projected to rebound after 2016
- is projected to increase about 1 percent between 2014 and 2020

[4] Projections of graduates from Minnesota and Iowa high schools enrolled as FYFT student at SDSU are available upon request.

PROJECTIONS OF HIGH SCHOOL GRADUATES BY SCHOOL DISTRICT IN SOUTH DAKOTA

Figure 6. Projected Percentage Change in the Number of High School Graduates between 2014 and 2020, by School District in South Dakota



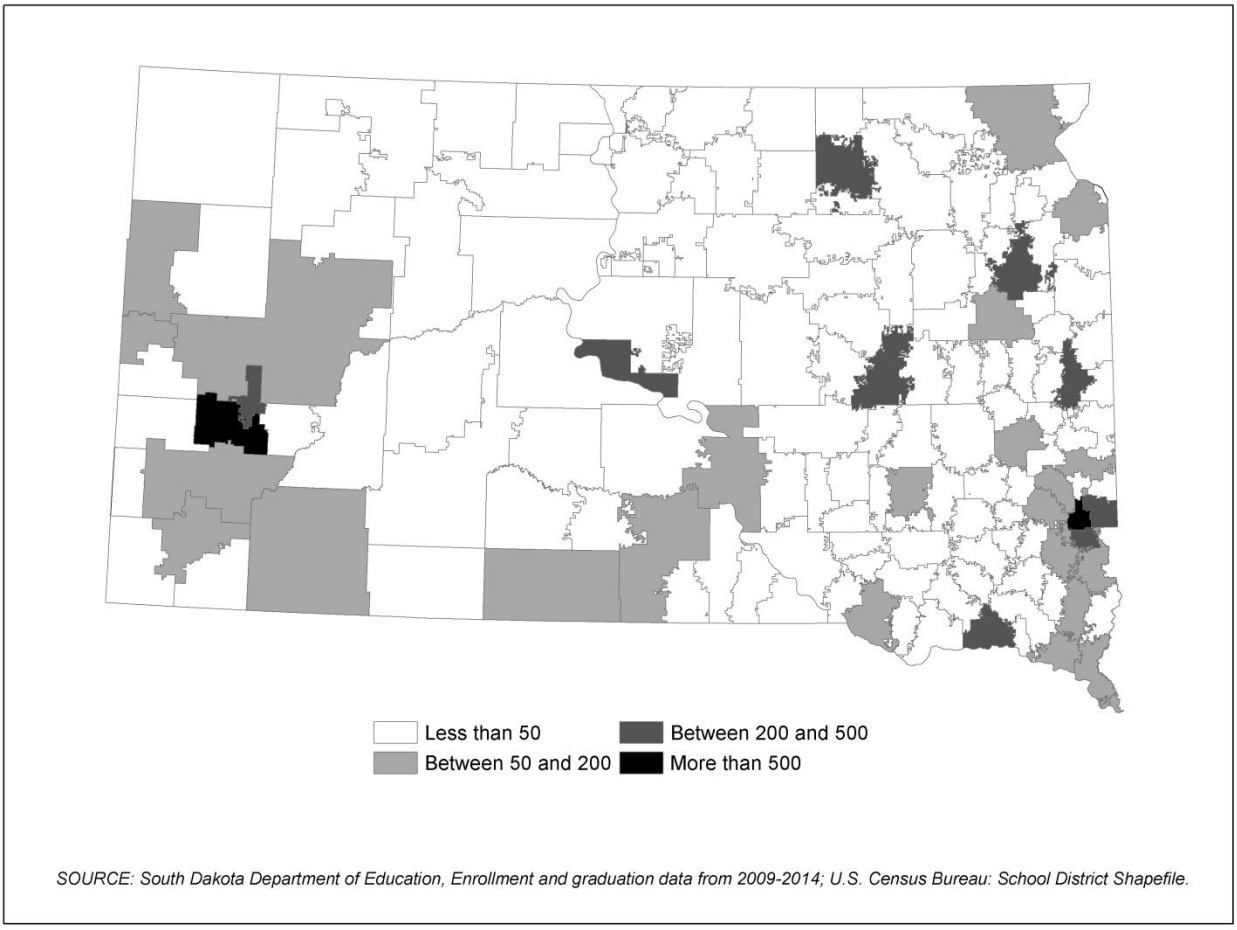
SOURCE: South Dakota Department of Education, Enrollment and graduation data from 2009-2014; U.S. Census Bureau: School District Shapefile.

It is projected that between 2014 and 2020 the number of high school graduates

- increases, more or less, in about 60 percent of the school districts in South Dakota
- increases by more than 50 percent in six school districts. However, these districts are very small (on average less than 10 high school graduates in each district from 2009 to 2014) – the projected percentage change is greatly affected
- decreases in 55 school districts in South Dakota
- decreases by more than 50 percent in 10 school districts (these districts ranges between 15 and 93 high school graduates in 2014)

The projected percentage change between 2014 and 2020 in the two largest school districts, Sioux Falls and Rapid City, is approximately 14 percent and 29 percent increases, respectively.

Figure 7. Projected Numbers of High School Graduates in 2020, by School District in South Dakota[5]



SOURCE: South Dakota Department of Education, Enrollment and graduation data from 2009-2014; U.S. Census Bureau: School District Shapefile.

It is projected that in 2020 the number of high school graduates

- is less than 50 in the majority of school districts in South Dakota
- is greater than 200 in 11 school districts, of which 6 districts had less than 200 high school graduates in 2014 (These school districts are Brookings, Douglas, Harrisburg, Huron, Pierre, and Yankton school districts.)
- is the largest in Sioux Falls followed by that of Rapid City school districts (the same in 2014).

[5] A similar map for actual numbers of high school graduates in 2014 is available upon request for comparison.

REFERENCE TABLES

Table 1. Share of High School Graduates from South Dakota, Minnesota, and Iowa, Enrolled as FTFY students at SDSU: 2005 - 2014

	SHARE OF HS GRADUATES ENROLLED AT SDSU		
YEAR	South Dakota	Minnesota	Iowa
2005	0.1321	0.0063	0.0035
2006	0.1378	0.0067	0.0034
2007	0.1474	0.0063	0.0035
2008	0.1396	0.0065	0.0048
2009	0.1530	0.0070	0.0042
2010	0.1591	0.0080	0.0040
2011	0.1516	0.0085	0.0038
2012	0.1409	0.0089	0.0039
2013	0.1396	0.0096	0.0044
2014	0.1424	0.0099	0.0048

This table reports the share of South Dakota, Minnesota, and Iowa high school graduates enrolled at South Dakota State University as the FYFT undergraduate students from the Fall 2005 to the Fall 2014. These historical records are used as the basis for the projection of the share from 2015 to 2020.

Table 2. Numbers for Enrollment in Grades 7-12 of Elementary and Secondary Schools in South Dakota, Minnesota, and Iowa: 2009 - 2014

State	Year	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
South Dakota	2009	10,336	10,391	11,550	11,055	10,249	9,885
	2010	10,250	10,365	11,623	10,987	10,150	10,070
	2011	10,479	10,204	11,453	10,892	9,958	9,798
	2012	10,633	10,518	11,287	10,703	9,900	9,802
	2013	10,537	10,622	11,460	10,693	9,873	9,600
	2014	10,674	10,554	11,533	10,908	9,713	9,638
Minnesota	2009	61,479	61,245	64,955	65,788	66,911	74,486
	2010	61,296	61,678	63,889	64,957	65,400	73,598
	2011	62,015	61,552	64,034	63,853	64,578	71,532
	2012	62,618	62,316	63,721	64,251	63,483	70,488
	2013	63,532	62,881	64,409	63,795	64,049	69,075
	2014	62,759	63,791	65,093	64,690	63,628	69,596
Iowa	2009	35,091	35,183	37,283	37,397	36,805	37,913
	2010	35,429	35,274	37,014	36,614	36,474	37,544
	2011	35,477	35,514	36,764	36,402	35,660	36,942
	2012	36,076	35,706	36,785	36,322	35,776	36,550
	2013	35,683	36,263	36,980	36,462	35,721	36,538
	2014	35,711	35,863	37,463	36,749	36,043	36,363

This table reports actual numbers of enrollment in grade 7 to 12 in high schools in South Dakota, Minnesota, and Iowa between 2009 and 2014. These numbers are used for the calculation of grade progression rates, the basis for the projections of the enrollment in each grade and the high school graduates to the year 2020.

Table 3. Actual and Projected Numbers for High School Graduates from Schools in South Dakota, Minnesota, and Iowa: 2005 - 2020

	YEAR	HIGH SCHOOL GRADUATES		
		South Dakota	Minnesota	Iowa
ACTUAL	2005	8,577	54,980	33,641
	2006	8,292	55,531	33,801
	2007	8,183	59,749	34,387
	2008	8,594	60,586	34,573
	2009	8,123	59,388	33,926
	2010	8,129	59,377	34,462
	2011	8,201	59,087	33,853
	2012	8,143	57,259	33,231
	2013	8,235	58,046	32,548
	2014	8,130	57,287	31,893
PROJECTED	2015	8,162	57,719	32,675
	2016	8,011	57,340	32,977
	2017	8,207	58,144	33,232
	2018	8,193	58,683	33,666
	2019	8,143	59,532	33,295
	2020	8,229	58,812	33,305

This table reports actual numbers of high school graduates in South Dakota, Minnesota, and Iowa from 2005 to 2014 and the project numbers of high school graduates to the year 2020. The product of the project number of high school graduates and the project share for each state respectively is the project number of high school graduates in the FYFT undergraduate cohort at South Dakota State University to the year 2020.

Table 4. Actual and Projected Numbers of the FYFT Enrollment at SDSU by Sending States (South Dakota, Minnesota, Iowa, and Others Unspecified): 2005 - 2020

	YEAR	SD	MN	IA	OTHERS	TOTAL
ACTUAL	2005	1,133	347	117	132	1,729
	2006	1,143	374	114	157	1,788
	2007	1,206	377	119	155	1,857
	2008	1,200	396	165	169	1,930
	2009	1,243	418	144	183	1,988
	2010	1,293	474	139	205	2,111
	2011	1,243	505	128	210	2,086
	2012	1,147	508	130	289	2,074
	2013	1,150	560	143	284	2,137
	2014	1,158	567	153	248	2,126
PROJECTED	2015	1,159	571	140	238	2,108
	2016	1,138	568	141	235	2,081
	2017	1,165	575	142	239	2,122
	2018	1,163	581	144	240	2,128
	2019	1,156	589	142	240	2,128
	2020	1,169	582	142	241	2,134

This table reports actual numbers of FYFT undergraduate at South Dakota State University from 2005 to 2014, and the project number of high school graduates in the FYFT undergraduate cohort to the year 2020 by state where the graduated high school is.

The project numbers for the high school graduates from South Dakota, Minnesota, and Iowa schools are the product of the project high school graduates from these three states respectively. The project numbers for students from other places are calculated by applying the single exponential smoothing method to the residual share of FYFT undergraduate students other than those from South Dakota, Minnesota, or Iowa schools.

METHODOLOGY

Enrollment in Grade 8-12

A grade progression rate method is used to project enrollments in grades 8 through 12 from the fall 2015 to 2019. The rate of progression from grade 8 to grade 9 is the current year's grade 9 enrollment expressed as a percentage of the previous year's grade 8 enrollment. For each progression from one grade to the next grade, five time points from the actual data of 2009 and 2014 enrollment are derived. Single exponential smoothing is used to generate a constant grade progression rate for each grade for the forecast period.[6] The constant grade progression rate is used for calculating enrollment in each grade for each year in the forecast period.

High School Graduates

The method for projections of high school graduates first calculates the number of high school graduates as a percentage of grade 12 enrollment numbers. Single exponential smoothing is used to project this percentage. The projected constant percentage is applied to projections of grade 12 enrollment to derive projections of high school graduates.

FTFY Undergraduate Enrollment

The method for projections of FTFY first calculates the number of FTFY students as a percentage of high school graduates in South Dakota, Minnesota, and Iowa, respectively from 2005 to 2014. Single exponential smoothing is used to project this percentage. The projected percentage is then applied to projections of high school graduates in South Dakota, Minnesota, and Iowa, respectively, to derive projections of FTFY enrollment.

[6] For detailed discussions of the method, please refer to http://nces.ed.gov/pubs2014/2014051.pdf