

**HERMISTON SCHOOL DISTRICT  
ENROLLMENT FORECASTS  
2014-15 TO 2023-24**



**JULY, 2014**



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ENROLLMENT FORECASTS  
2014-15 TO 2023-24**

**Prepared By  
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## **EXECUTIVE SUMMARY**

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This report presents the results of a demographic study conducted by the Portland State University Population Research Center. The study includes analyses of population, housing and enrollment trends affecting the Hermiston School District (HSD) in recent years, and forecasts of district-wide enrollment by grade level for the 2014-15 to 2023-24 school years.

### ***Population and Economic Trends***

- Between 2000 and 2010, total population within the HSD grew by 22 percent, while school-age population grew by 17 percent.
- HSD population under age five increased by 32 percent between 2000 and 2010.
- The estimated total fertility rate (TFR) based on age-specific fertility rates for the District increased from 2.50 in 2000 to 2.72 in 2010, and remained well above Umatilla County (2.47) and State of Oregon (1.79) TFRs in 2010.
- In addition to the fertility rate increase, births also increased due to the growth of the young adult population. There were 19 percent more births in the three year period between 2010 and 2012 than in the equivalent period between 2000 and 2002.
- Since 2006, the number of births has been relatively steady, reflecting slower economic and population growth.
- Umatilla County's unemployment rate rose from 5.8 percent in 2007 to 10.0 percent in 2010, and fell to 8.1 percent in 2013.

### ***Enrollment Trends***

- During the past decade, HSD gained enrollment annually except in 2011-12. Over the 10-year period between 2003-04 and 2013-14, HSD gained 828 students (19 percent).
- The K-12 total in Fall 2013 was 5,241 students, 32 students (0.6 percent) higher than in the previous year.
- All school levels (elementary, middle, and high) have added enrollment during the most recent five and 10 year periods, with elementary (K-5<sup>th</sup>) enrollment growing by 22

percent since 2003-04, middle (6<sup>th</sup>-8<sup>th</sup>) grades adding 13 percent, and high school (9<sup>th</sup>-12<sup>th</sup>) adding 18 percent.

- Secondary enrollment growth has slowed in the past three years, with 2013-14 enrollment totals at or below their 2010-11 levels for both middle and high school levels.

***District-wide Enrollment Forecast: Middle Range***

- K-12 enrollment increases by 813 students (16 percent) between 2013-14 and 2023-24.
- Because births have leveled off since 2006, the size of incoming kindergarten classes are expected to remain close to their 2013-14 size for the next several years, and K-5 enrollments grow more slowly than in recent years. Over the 10 year forecast period, grades K-5 add 229 students (nine percent).
- Grades 6-8 add 204 students in the first five years but then stabilize for a total 10 year growth of 233 students (20 percent).
- The largest numeric and percentage growth occurs among high school grades, which add 351 students (24 percent) over the 10 year period.

***District-wide Enrollment Forecast: Low Range***

- The population forecast under the low scenario assumes that the economy will remain sluggish, with relatively little job growth and very little net migration.
- K-12 enrollment increases by 427 students (eight percent) between 2013-14 and 2023-24.
- K-5 enrollment remains relatively stable throughout the forecast period, growing by only 32 students.
- Middle school grades grow initially, adding 169 students during the next five years, and level off or decline slightly after 2018-19.
- Enrollment growth of 82 students is expected at high school grades during the first five years of the forecast period, with additional growth of 167 students between 2018-19 and 2023-24.



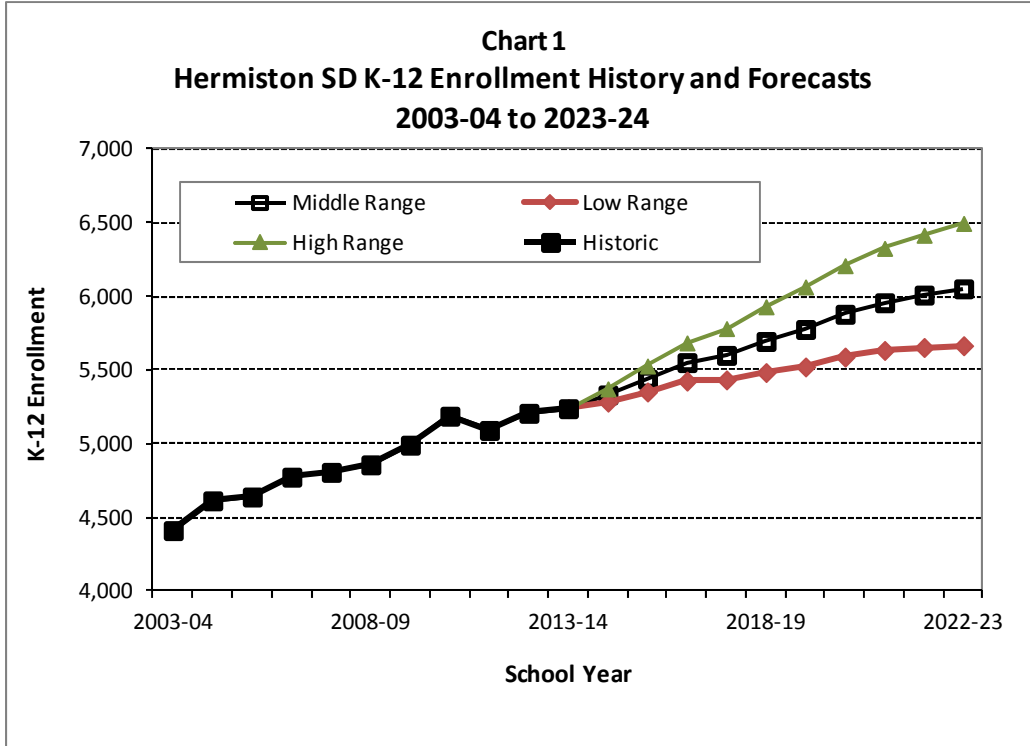
**District-wide Enrollment Forecast: High Range**

- The population forecast under the high scenario includes net migration consistently near the higher levels observed in the mid-2000s.
- K-12 enrollment increases by 1,257 students (24 percent) between 2013-14 and 2023-24.
- Elementary school grades grow steadily, adding a total of 431 students, or about 17 percent.
- Enrollment in middle grades grows by 263 students (22 percent) during the first five years, and an additional 72 new students in the second five years.
- The largest enrollment increase occurs in the high school grades, which add 491 students (33 percent) over the 10 year period.

Table 1 summarizes recent and forecast K-12 enrollments by five year intervals under the three scenarios. Chart 1 depicts the District’s 10 year K-12 enrollment history and the 10 year K-12 forecasts. Table 2 details the *Middle Range* forecast by grade level groups. More details of the forecasts are presented in the “Enrollment Forecasts” section and in Appendix A.

School Year	LOW		MIDDLE		HIGH	
	Enroll-ment <sup>1</sup>	5 year growth	Enroll-ment <sup>1</sup>	5 year growth	Enroll-ment <sup>1</sup>	5 year growth
2003-04	4,413		4,413		4,413	
2008-09	4,859	446	4,859	446	4,859	446
2013-14	5,241	382	5,241	382	5,241	382
2018-19 (fcst.)	5,486	245	5,697	456	5,932	691
2023-24 (fcst.)	5,668	182	6,054	357	6,498	566
AAEG*, 2013-14 to 2023-24	0.8%		1.5%		2.2%	

*\*Note: Average Annual Enrollment Growth.  
Source: Historic enrollment, Oregon Department of Education; Enrollment forecasts, Population Research Center, PSU. July 2014.*



**Table 2**  
**Historic and Middle Range Forecast Enrollment**  
**by School Level (K-5, 6-8, 9-12)**  
**Hermiston School District**

	Actual			Forecast	
	2003-04	2008-09	2013-14	2017-18	2022-23
Grades K-5	2,114	2,330	2,579	2,705	2,808
5 year change		216	249	126	103
		10.2%	10.7%	4.9%	3.8%
Grades 6-8	1,034	1,124	1,172	1,376	1,405
5 year change		90	48	204	29
		8.7%	4.3%	17.4%	2.1%
Grades 9-12	1,265	1,405	1,490	1,616	1,841
5 year change		140	85	126	225
		11.1%	6.0%	8.5%	13.9%
<b>Total</b>	<b>4,413</b>	<b>4,859</b>	<b>5,241</b>	<b>5,697</b>	<b>6,054</b>
5 year change		<b>446</b>	<b>382</b>	<b>456</b>	<b>357</b>
		<b>10.1%</b>	<b>7.9%</b>	<b>8.7%</b>	<b>6.3%</b>

*Actual: Oregon Department of Education, October 1st enrollment information.  
Forecast: Population Research Center, PSU, July 2014.*

## INTRODUCTION

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The Portland State University Population Research Center (PRC) has prepared long range enrollment forecasts for the Hermiston School District (HSD) based on historic enrollment data through Fall 2013. This study integrates information about HSD enrollment trends with local area population, housing, and economic trends, and includes forecasts of district-wide enrollment by grade level and total enrollment for individual schools for the period between 2014-15 and 2023-24. Information sources include the U.S. Census Bureau, birth data from the Oregon Center for Health Statistics, county population forecasts from the Oregon Office of Economic Analysis, employment trends from the Oregon Employment Department, and housing development and planning data from the City of Hermiston.

The District serves the cities of Hermiston and part of unincorporated Umatilla County. Altogether the HSD encompasses 154 square miles, with a population density of 174 persons per square mile. The City of Hermiston, with about five percent of the District's land area, accounted for 63 percent of the district's population in 2013.

Following this introduction are sections presenting recent population, housing, employment, and enrollment trends within the District and region. Next are the results of the district-wide enrollment forecasts, and a description of the methodologies used to produce the forecasts. The final section contains a brief discussion of the nature and accuracy of forecasts. Appendix A includes the district-wide enrollment forecast for the low, medium, and high growth scenarios; Appendix B contains a five page profile showing population and housing characteristics for the District from the 2000 and 2010 censuses.



## POPULATION, EMPLOYMENT, AND HOUSING TRENDS

Between 2000 and 2010, the HSD’s population grew by 22 percent, from 21,997 persons to 26,789, while the balance of Umatilla County outside of the HSD grew by only one percent. Almost 90 percent of Umatilla County’s net population gain occurred within the HSD. During the same period, the city of Hermiston’s population percent grew by 27 percent. Since 2010, the population growth in the City of Hermiston and HSD continue to outpace that of the county; however, the growth rates in the City and District since 2010 have been much lower than in the 2000s, as the region struggles to recover from the recession. The 1990, 2000, 2010, and 2013 populations of the city of Hermiston, the HSD, and Umatilla County are shown in Table 3.

**Table 3**  
**City and Region Population, 1990, 2000, 2010, and 2013**

	1990	2000	2010	2013	Avg. Annual Growth Rate		
					1990-2000	2000-2010	2010-2013
City of Hermiston <sup>1</sup>	10,047	13,154	16,745	17,240	2.7%	2.4%	0.9%
HSD Total <sup>3</sup>	16,822	21,997	26,789	27,267	2.7%	2.0%	0.5%
HSD Unincorporated	6,775	8,843	10,044	10,027	2.7%	1.3%	-0.1%
Umatilla County	59,249	70,548	75,889	77,895	1.8%	0.7%	0.8%

1. A portion of the City of Hermiston's population growth was due to the annexation of 173 persons between 1990 and 2000, 39 persons between 2000 and 2010, and 23 persons between 2010 and 2013.

2. School District population determined by PSU-PRC based on aggregation of census blocks within the HSD boundary shapefiles. The 2010 HSD population published by the Census Bureau is 26,789. The 2013 estimate is based on an extrapolation of 2010-2012 growth estimated by the Census Bureau. See <http://www.census.gov/did/www/saibe>.

Sources: U.S. Census Bureau, 1990, 2000, and 2010 censuses; Population Research Center, PSU, July 1, 2013 estimates.

### Employment

Nearly two thirds of workers residing in the HSD work within Umatilla County, and over half work within the District itself, mostly within the City of Hermiston. It is also noteworthy that seven percent of residents worked in Morrow County and five percent of residents worked in Benton County, WA. Many District residents have a short commute even if they work outside of

the District. The mean travel time to work for HSD residents was 16.6 minutes in the 2008-2012 period.<sup>1</sup>

Table 4 reports the number and share of HSD residents by where their jobs are located.<sup>2</sup> Some workers, such as agricultural, self-employed, and domestic workers, are not included. In some cases the employer’s location is used rather than the actual work site. However, the data represent the home to work flow for most workers.

<b>Job Located Within*</b>	<b>Workers</b>	<b>Share</b>
Umatilla County, OR	6,435	74%
Hermiston School District	4,537	52%
City of Hermiston	3,427	39%
Morrow County, OR	645	7%
Benton County, WA	448	5%
Union County, OR	141	2%
Franklin County, WA	124	1%
All other locations	1,038	12%
<b>Total Primary Jobs</b>	<b>8,707</b>	<b>100%</b>

*\*Note: Indentation indicates that the area is also included within the area above it. For example, workers in the City of Hermiston are also counted in the Hermiston School District.*

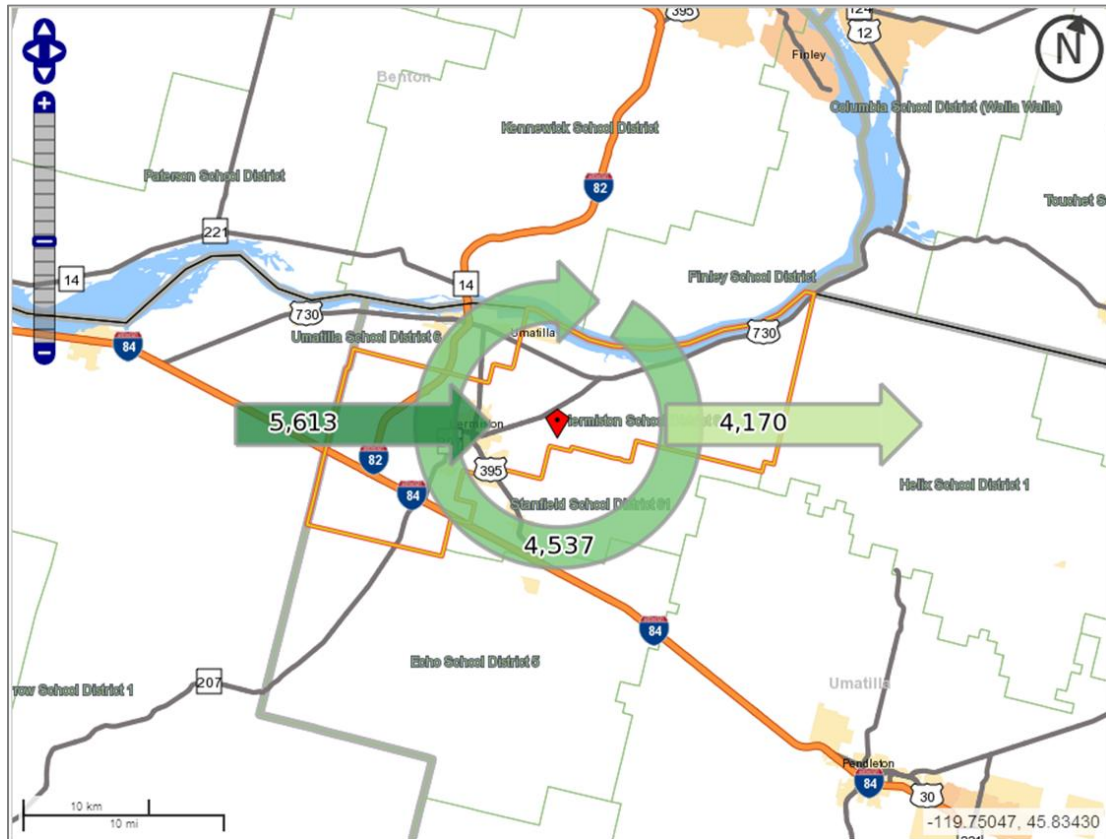
*Source: U.S. Census Bureau. 2014. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. 2nd Quarter 2011 data. Includes at most one (primary) job per resident. <http://onthemap.ces.census.gov/>*

The number of people who both lived and worked within the HSD area in 2011 was 4,537. There is a net inflow for the HSD area: the number of people who lived in the HSD area but were employed outside was 4,170 while the number of people who lived outside of the HSD area and were employed within HSD was 5,613. Figure 1 provides a graphic illustration for the jobs inflow and outflow pattern for HSD (the directions of the arrows do not indicate the direction of the job flow). This net inflow of workers characterizes Hermiston as a community with employment opportunities that attract workers from beyond the district.

<sup>1</sup> U.S. Census Bureau, 2008-2012 American Community Survey 5-Year Estimates. Comparable figures were 15.0 minutes for city of Hermiston residents and 16.7 minutes for Umatilla County overall.

<sup>2</sup> U.S. Census Bureau, LED Origin-Destination Database (2nd quarter 2011). Commute shed report for residents of EPSD. Includes workers at firms covered by unemployment insurance (excludes most agricultural jobs and self-employed). <http://lehdmapp.did.census.gov/>.

**Figure 1. Employment Inflow and Outflow in 2011, Hermiston School District**



Between 2005 and 2008 Umatilla County added 540 jobs, two percent over the four year period. Growth slowed in early 2008, and in 2009 the county began to post year-to-year job losses. By 2010, employment had fallen to the lowest level over the decade, mainly due to the loss of 1,120 jobs between 2008 and 2010.<sup>3</sup> Meanwhile, Umatilla County’s unemployment rate rose from 5.8 percent in 2007 to 10.0 percent in 2010, 0.4 percentage points above the U.S. rate. Since 2010, the unemployment rate has fallen by about 0.8 percentage point each year, due mostly to a shrinking labor force, as employment growth has been slow. The most recent annual employment data, for 2013, shows that the county’s unemployment rate was 8.1 percent, remaining higher than that of the state and nation.

There is more encouraging news in the form of income data. Local area personal income estimates for 2012 were updated in March 2014 by the U.S. Bureau of Economic Analysis.

<sup>3</sup> “Current Employment by Industry,” Oregon Employment Department, OLMIS. Average annual non-farm employment in Umatilla County was 28,300 in 2008, 27,180 in 2010 and 27,300 in 2013. <http://www.qualityinfo.org/olmisi/CES>.

Between 2007 and 2012, per capita personal income in Umatilla County increased annually. In 2008, per capita personal income in Umatilla County increased by 6.1 percent, followed by a relatively modest gain of 1.9 and 1.2 percent in 2009 and 2010, respectively; the per capita income growth resumed in 2011 with a gain of 6.0 percent and 3.3 percent in 2012. In 2012, the county's per capita personal income growth was similar to state and national growth.<sup>4</sup>

The Oregon Employment Department published its most recent employment projections in 2014, forecasting payroll employment growth of nine percent over the decade in the Columbia Basin (Morrow and Umatilla Counties):

“Agricultural jobs will climb throughout the spring and peak during summer and fall harvest. Food manufacturing follows a slightly different trend, with seasonal hires beginning in May and peaking in October. Unemployment will fall in April with the availability of jobs in agriculture and food manufacturing. Home builders face an improved market and could benefit from falling inventory. Infrastructure upgrades and a variety of public and commercial construction projects are moving forward.”<sup>5</sup>

### ***Population by Age Group***

Nearly all age groups gained population between 2000 and 2010, with the largest growth occurring among the under 5, 25-34, and 50-69 year old age groups. Age 55 to 69 population increased by 56 percent, as the large baby boom cohort neared retirement age. During the same time period, population under 18 grew by 21 percent, with the largest growth of 32 percent among children under age five. School age (5 to 17) population as a share of the total decreased from 20.7% in 2000 to 19.9% in 2010. Median age in the District increased from 33.3 in 2000 to 33.5 in 2010. Table 5 shows the population by age group for 1990, 2000, and 2010. In spite of the aging population, the 17 percent growth in HSD school age population was robust compared to many other school districts.

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<sup>4</sup> Local Area Personal Income, U.S. Department of Commerce, Bureau of Economic Analysis. [http://bea.gov/iTable/index\\_regional.cfm](http://bea.gov/iTable/index_regional.cfm). Per capita personal income growth between 2011 and 2012 was 3.27% in Umatilla County, 3.77% in Oregon, and 3.40% in the U.S. For more analysis of Oregon metro areas, see Oregon Office of Economic Analysis, at <http://oregoneconomicanalysis.com/?p=4837>.

<sup>5</sup> “Employment Projections by Industry and Occupation 2012-2022.” Oregon Employment Department, OLMIS, March, 2014. <http://www.qualityinfo.org/pubs/projections/r12.pdf>.



**Table 5**  
**Population by Age Group**  
**Hermiston School District, 1990, 2000, and 2010**

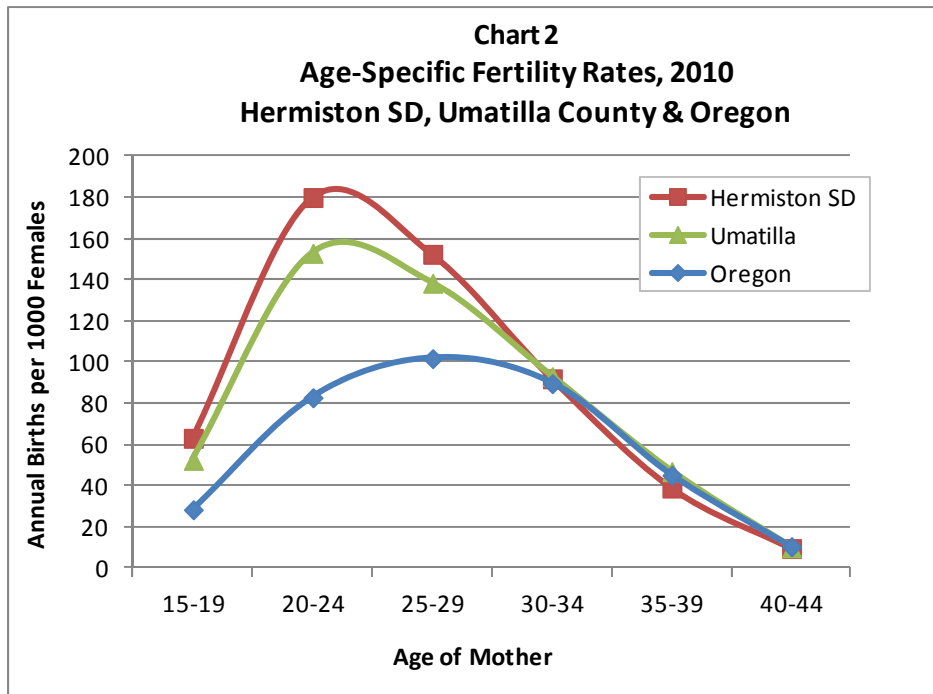
	1990	2000	2010	2000 to 2010 Change	
				Number	Percent
Under Age 5	1,368	1,701	2,252	551	32%
Age 5 to 9	1,478	1,814	2,138	324	18%
Age 10 to 14	1,429	1,691	1,981	290	17%
Age 15 to 17	808	1,052	1,224	172	16%
Age 18 to 19	483	690	687	-3	0%
Age 20 to 24	975	1,539	1,716	177	12%
Age 25 to 29	1,135	1,547	2,049	502	32%
Age 30 to 34	1,343	1,475	1,935	460	31%
Age 35 to 39	1,406	1,616	1,897	281	17%
Age 40 to 44	1,184	1,648	1,638	-10	-1%
Age 45 to 49	993	1,626	1,675	49	3%
Age 50 to 54	759	1,320	1,721	401	30%
Age 55 to 59	672	1,080	1,619	539	50%
Age 60 to 64	696	797	1,343	546	69%
Age 65 to 69	673	622	933	311	50%
Age 70 to 74	564	605	682	77	13%
Age 75 to 79	429	489	497	8	2%
Age 80 to 84	256	376	402	26	7%
Age 85 and over	171	309	400	91	29%
<b>Total Population</b>	<b>16,822</b>	<b>21,997</b>	<b>26,789</b>	<b>4,792</b>	<b>22%</b>
Total age 5 to 17	3,715	4,557	5,343	786	17%
<i>share age 5 to 17</i>	22.1%	20.7%	19.9%		

*Source: U.S. Census Bureau, 1990, 2000, and 2010 Censuses; data aggregated to HSD boundary by Portland State University Population Research Center.*

### **Births**

We estimated the number of births to women residing within the District each year from 1999 to 2012, using data from the Oregon Health Authority, Center for Health Statistics. Detailed information including the age of mothers is used to calculate fertility rates by age group for both 2000 and 2010.

In 2010, as in 2000, HSD fertility rates were higher than Umatilla County and State of Oregon rates for women under age 30, and similar to county and state rates for women age 30 and older. The 2010 age-specific rates for each area are illustrated in Chart 2. In the U.S. and in Oregon since 2000, fertility rates have decreased for women under age 30 and increased for women age 30 and older. The same trends were not observed among HSD residents; the age-specific fertility rates for women in their 20s increased over the decade.



The total fertility rate (TFR) is another measure for fertility; it is an estimate of the number of children that would be born to the average woman during her child-bearing years based on age-specific fertility rates observed at a given time. The estimated TFR for the District increased from 2.50 in 2000 to 2.72 in 2010, and remained well above Umatilla County (2.47) and State of Oregon (1.79) TFRs in 2010.

Increases in the number of births to residents of the HSD correspond to the growth of the young adult population. There were 19 percent more births in the three year period between 2010 and 2012 than in the equivalent period between 2000 and 2002. However, the number of births has remained relatively constant between 2006 and 2012, suggesting that the HSD, like many other districts, is likely to see no or little growth in kindergarten enrollments over the next few years. Many other areas have experienced significant declines in births. Birth totals fell more than eight percent in both the U.S. and in Oregon between 2007 and 2011.<sup>6</sup>

The Pew Research Center's analysis of multiple economic and demographic data sources confirms the close correlation between the economic downturn and the nation's birth

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<sup>6</sup> *Births: Final Data for 2011*. National Center for Health Statistics, National Vital Statistics Reports, Volume 62, Number 1. *Oregon Vital Statistics Annual Report, 2011*. Oregon Health Authority, Center for Health Statistics.

downturn.<sup>7</sup> They report that 2011 birth rates are the lowest ever recorded, led by a drop in rates among foreign-born women. Birth rates for Mexican immigrant women fell by 23 percent between 2007 and 2010.<sup>8</sup> Future trends in birth rates are uncertain. If couples have simply postponed having children due to the recession, rates may increase. However, Latino birth rates may continue to fall as a higher share of adult Latinos are native-U.S. born, with increasing educational attainment.

The number of births to HSD residents each year is reported in Table 6. In the “Enrollment Forecasts” section of this report we will examine the relationship between births, migration, and subsequent school enrollments.

**Table 6**  
**Annual Births, 2000 to 2012**  
**Hermiston School District**

<b>Year</b>	<b>Births</b>
2000	359
2001	387
2002	356
2003	415
2004	395
2005	388
2006	432
2007	430
2008	431
2009	411
2010	441
2011	433
2012	434

*Source: PSU-PRC estimates using Oregon Center for Health Statistics zip code data and geocoded birth records.*

<sup>7</sup> “In a Down Economy, Fewer Births.” Pew Research Center, Pew Social & Demographic Trends, October 2011.

<sup>8</sup> “U.S. Birth Rate Falls to a Record Low; Decline Is Greatest Among Immigrants.” Pew Research Center, Pew Social & Demographic Trends, November 2012.

**Housing Growth and Characteristics**

During the 2000 to 2010 period, the District added 1,072 housing units, as shown in Table 7. There was an even greater increase of 1,152 households (occupied housing units), due to a decrease in vacancy rates, from 7.0 percent in 2000 to 5.3 percent in 2010.

The 15.2 percent net increase in households with children under 18 during the 10 year period from 2000 to 2010 was slightly higher than the 14.7 percent increase in households without children. Therefore, the share of households with children increased from 40 percent in 2000 to 41 percent in 2010. The average number of persons per household also increased, from 2.73 in 2000 to 2.80 in 2010. Additional housing and household characteristics from the 2000 and 2010 censuses are included in Appendix B of this report.

	1990	2000	2010	Change	
				'90 to '00	'00 to '10
Housing Units	6,695	8,312	9,384	1,617	1,072
Households	6,246	7,731	8,883	1,485	1,152
Households with children under 18 <i>share of total</i>	2,531 41%	3,126 40%	3,603 41%	595	477
Households with no children under 18 <i>share of total</i>	3,715 59%	4,605 60%	5,280 59%	890	675
Household Population	16,663	21,143	24,834	4,480	3,691
Persons per Household	2.67	2.73	2.80	0.07	0.06

*Source: U.S. Census Bureau, 1990, 2000, and 2010 Censuses; data aggregated to HSD boundary by Portland State University Population Research Center.*

Residential building permit activity within the city of Hermiston in each of the past 18 years is presented in Table 8. The table shows that the slowdown that began in 2006 has continued through 2013. However, the housing crisis did not hit Hermiston as severely as many other areas that were overbuilt or dependent on speculative and vacation home markets. New home construction has continued at a modest pace at about one third to one half of pre-2008 levels.

**Table 8**  
**Housing Units Authorized by Building Permits**

Year Permit Issued	City of Hermiston	
	Single Family	Multiple Family
1996	33	0
1997	55	53
1998	77	106
1999	100	32
2000	70	0
2001	104	0
2002	116	124
2003	122	24
2004	94	14
2005	104	56
2006	89	22
2007	84	16
2008	40	4
2009	21	16
2010	42	8
2011	29	10
2012	32	0
2013	36	2
2014 (Jan-Apr)	11	0

*Source: U.S. Census Bureau, Residential Construction Branch. Data available online at <http://censtats.census.gov/bldg/bldgprmt.shtml>.*



## **ENROLLMENT TRENDS**

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Total K-12 enrollment of 5,241 in all HSD schools in Fall 2013 was 32 students (0.6 percent) greater than in Fall 2012. During the past decade, HSD gained enrollment annually except in 2011-12. Over the 10-year period between 2003-04 and 2013-14, HSD gained 828 students (19 percent).

All school levels (elementary, middle, and high) have added enrollment during the most recent five and 10 year periods, with elementary (K-5<sup>th</sup>) enrollment growing by 22 percent since 2003-04, middle (6<sup>th</sup>-8<sup>th</sup>) grades adding 13 percent, and high school (9<sup>th</sup>-12<sup>th</sup>) adding 18 percent. Secondary enrollment growth has slowed in the past three years, with 2013-14 enrollment totals at or below their 2010-11 levels for both middle and high school levels.

Kindergarten enrollment is often the most difficult grade to predict. It is watched closely because kindergarten growth or decline over several years is often a precursor to future enrollment changes throughout future elementary and secondary grades. The growth in kindergarten from the range of 320 to 350 students each year in the early 2000s to over 400 in each of the most recent five years has pushed elementary enrollments higher, and will influence secondary enrollments for the next several years. In Fall 2013, HSD kindergarten enrollment of 433 students was the same as the kindergarten enrollment in Fall 2012, and close to the Fall 2010 peak of 437 students.

Table 9 summarizes the enrollment history for the District by grade level annually from 2003-04 to 2013-14.

**Table 9  
Hermiston School District, Enrollment History, 2003-04 to 2013-14**

Grade	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14
K	350	393	386	399	362	386	430	437	417	433	433
1	335	373	378	397	405	358	400	461	455	426	456
2	339	350	373	385	413	406	378	395	440	444	427
3	399	341	357	370	375	405	401	391	387	435	437
4	328	399	348	365	378	399	405	417	366	389	428
5	363	344	402	350	349	376	402	411	403	373	398
6	379	388	340	405	362	367	372	416	393	408	377
7	324	398	371	359	401	362	369	374	407	408	404
8	331	343	379	377	350	395	356	382	365	429	391
9	372	351	335	369	384	346	414	370	375	363	427
10	333	356	331	337	374	374	351	414	367	370	359
11	271	310	341	325	335	352	355	352	370	359	350
12	287	269	300	338	320	333	360	370	348	372	354
US <sup>2</sup>	2	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>4,413</b>	<b>4,615</b>	<b>4,641</b>	<b>4,776</b>	<b>4,808</b>	<b>4,859</b>	<b>4,993</b>	<b>5,190</b>	<b>5,093</b>	<b>5,209</b>	<b>5,241</b>
Annual change		202	26	135	32	51	134	197	-97	116	32
		4.6%	0.6%	2.9%	0.7%	1.1%	2.8%	3.9%	-1.9%	2.3%	0.6%
<b>K-5</b>	2,114	2,200	2,244	2,266	2,282	2,330	2,416	2,512	2,468	2,500	2,579
<b>6-8</b>	1,034	1,129	1,090	1,141	1,113	1,124	1,097	1,172	1,165	1,245	1,172
<b>9-12</b>	1,265	1,286	1,307	1,369	1,413	1,405	1,480	1,506	1,460	1,464	1,490

	2003-04 to 2008-09		2008-09 to 2013-14		2003-04 to 2013-14	
	5 yr. chg.	Pct.	5 yr. chg.	Pct.	10 yr. chg.	Pct.
K-5	216	10%	249	11%	465	22%
6-8	90	9%	48	4%	138	13%
9-12	140	11%	85	6%	225	18%
<b>Total</b>	<b>446</b>	<b>10%</b>	<b>382</b>	<b>8%</b>	<b>828</b>	<b>19%</b>

\*Note: "US" is ungraded secondary; included in grade 9-12 totals.

Source: Oregon Department of Education, October 1 report information.



**Private School Enrollment, Home Schooling, and Inter-district transfers**

In nearly every community, there are students who do not attend the public schools operated by the school district. Alternatives to local public schools include private schools, home schooling, public schools in other districts, and public charter schools. Evidence shows that the share of HSD residents enrolled in private schools is significantly lower than state or countywide shares.

Private school options within the boundaries of the HSD are limited to two small schools, the Hermiston Christian Center (preschool to 12<sup>th</sup> grade) and the Hermiston Junior Academy (preschool to 9<sup>th</sup> grade). Together these schools enrolled around 120 students K through 12<sup>th</sup> grades.

**Table 10**  
**School Enrollment by Type of School**  
**Residents of Hermiston School District**  
**Census Data: 1990, 2000 & 2008-2012**

	1990	2000	2008-12	
			estimate	MOE*
Enrolled in 1 <sup>st</sup> -12 <sup>th</sup> grade	3,515	4,246	4,723	+/-480
Public Schools	3,444	4,034	4,610	+/-475
Private Schools	71	212	113	+/-065
<i>Private Share</i>	2.0%	5.0%	2.4%	+/- 1.4%
Enrolled in 1 <sup>st</sup> -8 <sup>th</sup> grade		2,931	3,145	+/-394
Public Schools	N/A	2,768	3,063	+/-388
Private Schools		163	82	+/-055
<i>Private Share</i>		5.6%	2.6%	+/- 1.8%
Enrolled in 9 <sup>th</sup> -12 <sup>th</sup> grade		1,315	1,578	+/-274
Public Schools	N/A	1,266	1,547	+/-275
Private Schools		49	31	+/-034
<i>Private Share</i>		3.7%	2.0%	+/- 2.2%

*\*Margin of sampling error at the 90 percent confidence level.*

*Sources: 1990 Census, Summary Tape File 3, Table P54 (HSD area estimated by PRC);  
2000 Census, Summary File 3, Table P36 (HSD area estimated by PRC);  
2008-2012 American Community Survey, Table C14002 (tabulated for HSD area by Census Bureau).*

The best estimates of private school enrollment for HSD residents come from the Census Bureau — the 2000 Census “long form” and the American Community Survey (ACS). Table 10 shows that in both the 2000 Census and the most recent ACS estimates compiled from surveys

collected between 2008 and 2012, fewer than five percent of the 1<sup>st</sup>-12<sup>th</sup> grade students living in the District and enrolled in school were reported as private school students. For Umatilla County and Oregon, the private school shares were about four and nine percent, respectively according to the 2008-2012 ACS <sup>9</sup>

Private schools and home schooling help to explain the difference between the number of school-age children living in the District and the number attending District schools. Both represent “outflow” from the District. That is, children eligible but not attending District schools. The other “outflow” consists of District residents who attend public schools in other school districts. There is also a related “inflow” of residents from other districts. Under Oregon’s traditional inter-district transfer policy, students who want to attend a public school outside of their resident district must gain approval from both their home district and the district that they want to attend, and that approval must be renewed each year. In each of the three years between 2011-12 and 2013-14, a somewhat larger number of students transferred out of HSD than into it under the traditional policy, as shown in Table 11.

<b>Table 11</b>				
<b>Inter-District Transfers</b>				
	<b>K-5</b>	<b>6-8</b>	<b>9-12</b>	<b>Total</b>
<b>2011-12</b>				
Into Hermiston S.D.	7	5	23	35
Out of Hermiston S.D.	40	10	26	76
<b>Net</b>	<b>-33</b>	<b>-5</b>	<b>-3</b>	<b>-41</b>
<b>2012-13</b>				
Into Hermiston S.D.	19	10	24	53
Out of Hermiston S.D.	42	17	27	86
<b>Net</b>	<b>-23</b>	<b>-7</b>	<b>-3</b>	<b>-33</b>
<b>2013-14</b>				
Into Hermiston S.D.	24	14	21	59
Out of Hermiston S.D.	39	27	34	100
<b>Net</b>	<b>-15</b>	<b>-13</b>	<b>-13</b>	<b>-41</b>

*Source: Hermiston School District*

<sup>9</sup> Underlying data from U.S. Census Bureau, 2000 Census, Summary File 3, Table P36; U.S. Census Bureau 2008-2012 American Community Survey 5 year estimates, Table B14002, with additional calculations by PSU Population Research Center.

Beginning in the 2012-13 school year, students were allowed to transfer without approval of their home district to a district that opens spaces under a new open enrollment policy enacted by the State of Oregon. HSD and districts adjacent to the HSD have not adopted the policy, so it has not had an impact on District enrollment.

**Neighboring Districts**

Table 12 compares several facts about HSD demographic and enrollment trends in comparison to three other neighboring school districts. HSD was the only one of the four showing significant enrollment growth during the 2000s. During the same time period, Umatilla School District gained enrollment during the first half of the decade and remained stable since. Pendleton and Morrow school districts lost enrollment throughout the 2000s. Statistics shown in Table 12 portray HSD demographics favorable for school enrollment growth, including population growth, high shares of child population, and a high Latino population share.

	<b>Hermiston</b>	<b>Pendleton</b>	<b>Umatilla</b>	<b>Morrow</b>
Enrollment growth, <b>2000-01 to 2005-06</b>	13%	-6%	10%	-3%
Enrollment growth, <b>2005-06 to 2010-11</b>	12%	-3%	1%	0%
Enrollment growth, <b>2010-11 to 2013-14</b>	1%	0%	0%	-4%
Latino enrollment, <b>2013-14</b>	48%	12%	65%	55%
Grades 9-12 enrollment, <b>2013-14</b>	28%	31%	30%	30%
Population growth, <b>2000 to 2010</b>	22%	0%	13%	-4%
Population share under age 18, <b>2000</b>	28.4%	24.7%	33.8%	30.8%
Population share under age 18, <b>2010</b>	28.4%	22.6%	32.4%	28.9%
Population rural, <b>2010</b>	24.9%	21.8%	11.6%	42.6%

*Data assembled by Population Research Center, PSU, from several sources: U.S. Census Bureau; OR Dept. of Education; U.S. Dept. of Education.*



## POPULATION AND ENROLLMENT FORECASTS

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### *District-wide Long-range Forecast Methodology*

To ensure that enrollment forecasts are consistent with the dynamics of likely population growth within the District, we combine a grade progression enrollment model with a demographic cohort-component model used to forecast population for the District by age and sex. The components of population change are births, deaths, and migration. Using age-specific fertility rates, age-sex specific mortality rates, age-sex specific migration rates, estimates of recent net migration levels, and forecasts of future migration levels, each component is applied to the base year population in a manner that simulates the actual dynamics of population change.

The 2000 and 2010 Census results are used as a baseline for the population forecasts. By “surviving” the 2000 population and 2000s births (estimating the population in each age group that would survive to the year 2010) and comparing the “survived” population to the actual 2010 population by age group, we are able to estimate the overall level of net migration between 2000 and 2010 as well as net migration by gender and age cohort. The net migration data were used to develop initial net migration rates, forming a baseline for rates used to forecast net migration for the 2010 to 2030 period.

We estimated the number of births to women residing within the District each year from 2000 to 2010, using data from the Oregon Health Authority, Center for Health Statistics. Detailed information including the age of mothers is incorporated in the establishment of fertility rates by age group for both 2000 and 2010. Our expectation of future declines in fertility rates for women under age 25 results in a TFR of 2.53 in 2020, down from 2.72 in 2010.

School enrollment is linked to the population forecast in two ways. The ratio of kindergarten and first grade enrollments to the population at the appropriate ages is called a “capture rate,” an estimate of the share of area children who are enrolled in HSD schools. The kindergarten capture rate in the forecast is 0.94, indicating that for every 100 residents eligible to enroll in kindergarten, there are 94 children enrolled in HSD schools. This implies that six percent of residents are enrolled in private schools or other school districts, or are home-schooled.

The other way that historic population and enrollment are linked is through migration. Annual changes in school enrollment by cohort closely follow trends in the net migration of children in the District's population. Once the students are in first grade, a set of baseline rates are used to move students from one grade to the next. These rates, usually 1.00 for elementary grades, represent a scenario under which there is no change due to migration. Enrollment change beyond the baseline is added (or subtracted, if appropriate) at each grade level depending on the migration levels of the overall population by single years of age.

### ***Residential Capacity and Development***

According to the Hermiston Planning Department 2013 Activity Report, two new residential subdivisions with a total of 65 single family lots were approved in 2013. Homebuilding has begun in the Castle Homes subdivision on W Highland and in the first phase of Aspen Homes near NE 4<sup>th</sup> Street.

The residential buildable lands inventory adopted by the City of Hermiston in 2004 showed that with the inclusion of the Desert Falls land in the SW quadrant there was an adequate supply of buildable land for the foreseeable future.<sup>10</sup> There are about 200 lots available in unbuilt phases of existing subdivisions, and additional subdivisions could be developed both within the existing city limits and in future annexations within the Urban Growth Boundary (UGB) under the right market conditions.

In 2011 the city amended its comprehensive plan with updated estimates of housing needs and buildable land, finding that “nearly 3,900 additional housing units will be required to accommodate Hermiston’s projected population growth [of 9,050 people] between 2010 and 2030.” This projected housing growth can be accommodated within current vacant residential lands.<sup>11</sup>

### ***Population Forecast***

By “surviving” the 2000 population and 2000s births (estimating the population in each age group that would survive to the year 2010) and comparing the “survived” population to actual

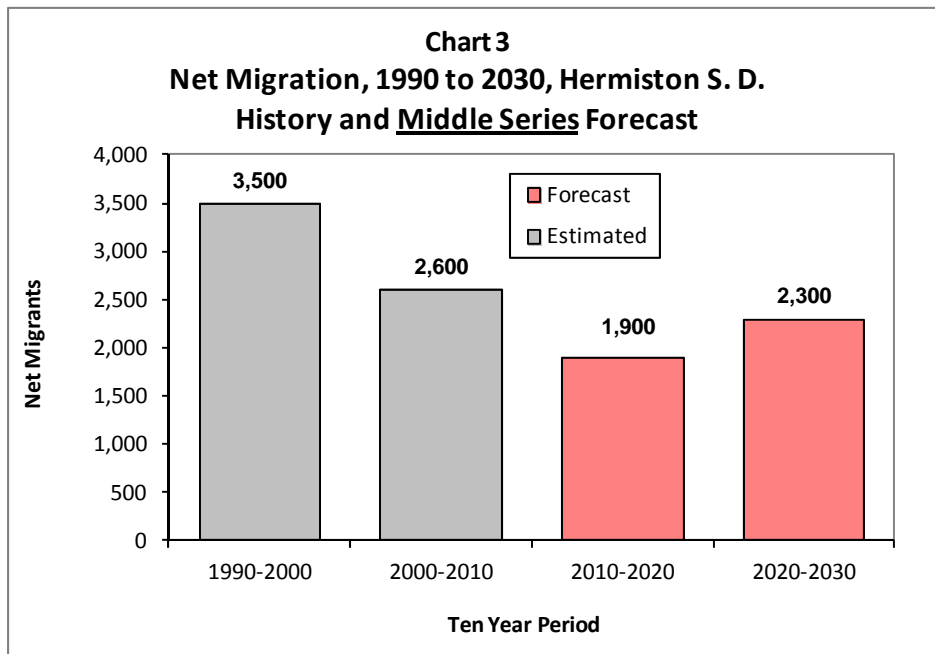
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<sup>10</sup> Email from City Planner Clinton Spencer, June 27, 2014.

<sup>11</sup> Ordinance No. 2179, City of Hermiston, July 25, 2011.

2010 population counts by age group, we are able to estimate net migration by age cohort. Just over 50 percent of the population growth within the District in the 2000s occurred due to net migration (people moving in minus those moving out), rather than natural increase (births minus deaths).

Due primarily to the slow growth that has occurred during the first four years of the current decade, net migration under the middle series is forecast to be somewhat lower in the 2010 to 2020 period than during 2000 to 2010. In the next ten year period, 2020 to 2030, population growth attributable to net migration is expected to accelerate. In both decades, net migration accounts for close to half of the District's growth. The net migration estimates for 2000 to 2010 and forecasts through 2030 are depicted in Chart 3. Similar charts for the low and high series are presented in Appendix A.



In spite of the aging population, the number of young adults will continue to grow somewhat due to in-migration, therefore growth in the number of births will resume in future years. Table 13 shows historic births from 2000 to 2012 as well as forecasts from 2013 until 2018, the period that will have an impact on the enrollment forecasts presented in this study.

**Table 13**  
**Estimated and Forecast Births**  
**Hermiston School District**

Year	Middle
2000	359
2001	387
2002	356
2003	415
2004	395
2005	388
2006	432
2007	430
2008	431
2009	411
2010	441
2011	433
2012	434
2013 (forecast)	444
2014 (forecast)	452
2015 (forecast)	457
2016 (forecast)	463
2017 (forecast)	471
2018 (forecast)	479

*Source: 2000-2012 birth data from Oregon Center for Health Statistics allocated to HSD boundary by PSU-PRC. 2013-2018 forecasts, PSU-PRC.*

The 2030 population forecast for the HSD under the middle series forecast is 35,283, an increase of 8,494 persons from the 2010 Census. This population forecast, presented by age group in Table 14, is slightly less than the 20 year increase of 9,050 persons projected in the City of Hermiston’s 2011 Comprehensive Plan update. Because growth has continued at a relatively slow pace since 2011, and very little growth is likely within the District outside of the Hermiston UGB, we consider the two forecasts to be comparable.

Although growth is forecast for all age groups, school-age population (5 to 17) is forecast to continue to decline as a share of total population; its 26 percent growth is slower than the 32 percent growth in total population between 2010 and 2030. The greatest numeric and percentage growth occurs among the leading edge of the baby boom, ages 65 to 74 in 2020 and 75 to 84 in 2030.



**Table 14**  
**Population by Age Group, Middle Range Forecast Scenario**  
**Hermiston School District, 2000 to 2030**

	2000 Census	2010 Census	2020 Forecast	2030 Forecast	2010 to 2030 Change	
					Number	Percent
Under Age 5	1,701	2,252	2,336	2,734	482	21%
Age 5 to 9	1,814	2,138	2,385	2,646	508	24%
Age 10 to 14	1,691	1,981	2,434	2,562	581	29%
Age 15 to 17	1,052	1,224	1,361	1,536	312	26%
Age 18 to 19	690	687	834	932	245	36%
Age 20 to 24	1,539	1,716	1,985	2,415	699	41%
Age 25 to 29	1,547	2,049	2,145	2,470	421	21%
Age 30 to 34	1,475	1,935	2,017	2,347	412	21%
Age 35 to 39	1,616	1,897	2,342	2,479	582	31%
Age 40 to 44	1,648	1,638	2,056	2,148	510	31%
Age 45 to 49	1,626	1,675	1,911	2,347	672	40%
Age 50 to 54	1,320	1,721	1,654	2,091	370	21%
Age 55 to 59	1,080	1,619	1,627	1,862	243	15%
Age 60 to 64	797	1,343	1,660	1,610	267	20%
Age 65 to 69	622	933	1,408	1,412	479	51%
Age 70 to 74	605	682	1,110	1,377	695	102%
Age 75 to 79	489	497	712	1,083	586	118%
Age 80 to 84	376	402	427	703	301	75%
Age 85 and over	309	400	428	528	128	32%
<b>Total Population</b>	<b>21,997</b>	<b>26,789</b>	<b>30,832</b>	<b>35,283</b>	<b>8,494</b>	<b>32%</b>
Total age 5 to 17	4,557	5,343	6,180	6,744	1,401	26%
share age 5 to 17	20.7%	19.9%	20.0%	19.1%		

	2000-2010	2010-2020	2020-2030
<b>Population Change</b>	<b>4,792</b>	<b>4,043</b>	<b>4,451</b>
Percent	22%	15%	14%
Average Annual	2.0%	1.4%	1.4%

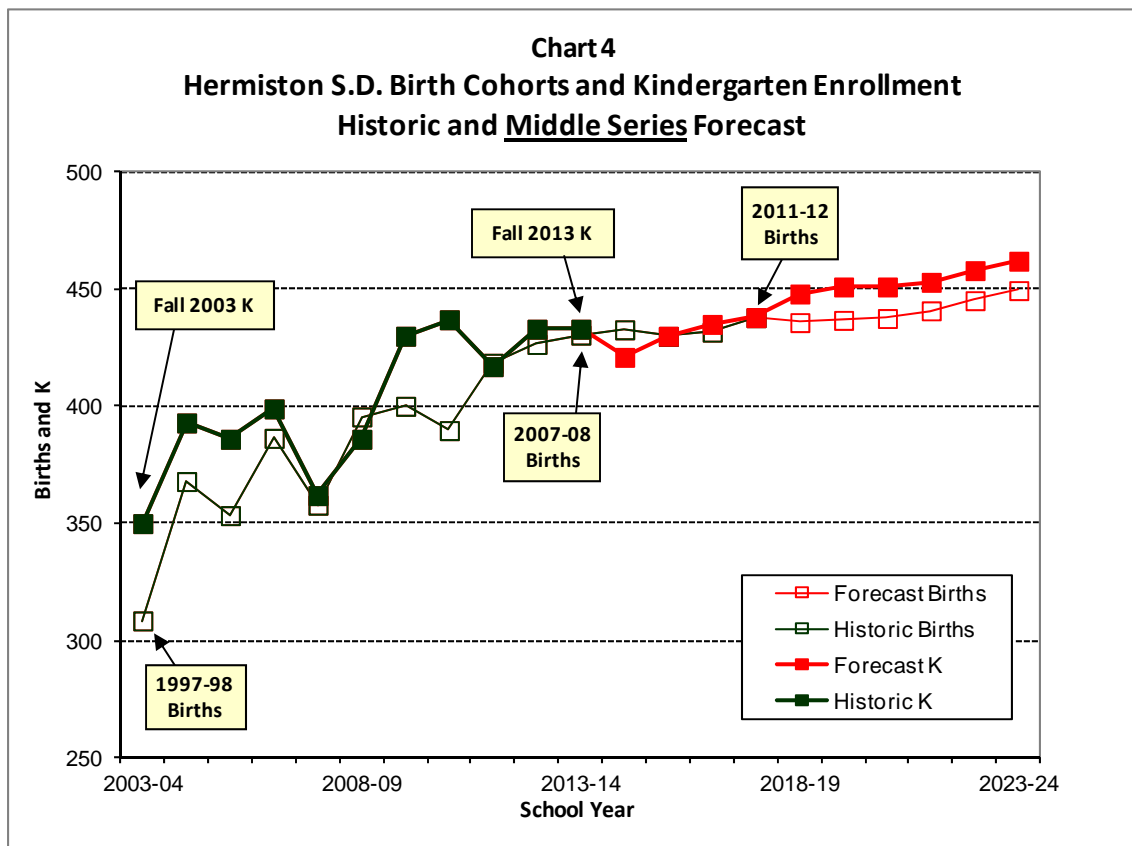
Source: U.S. Census Bureau, 2000 and 2010 Censuses; data aggregated to HSD boundary by Portland State University Population Research Center. PSU-PRC Forecasts, 2020 and 2030.

The average annual growth rate of 1.4 percent between 2010 and 2030 under the middle series forecast is lower than the 2.0 percent growth rate observed in the 2000 to 2010 period. However, the past decade included a sustained housing boom. The District’s population growth has slowed since 2008 but it will continue to outpace the County’s growth. The most recent

forecast from the State of Oregon Department of Economic Analysis shows a 1.1 percent average annual growth rate for Umatilla County.<sup>12</sup>

**District-wide Enrollment Forecast**

Chart 4 compares the historic and forecast number of births to women residing in the District with the historic and middle series forecast number of District kindergarten students. Births correspond to kindergarten cohorts (September to August). Kindergarten enrollment has consistently been close to or greater than the number of births five years earlier, indicating gains due to positive net migration. Throughout the forecast, net migration between birth and age five contributes to the population of young children within the District and consequently, future kindergarten enrollments. Similar charts for the low and high series are presented in Appendix A.



<sup>12</sup> Forecasts of Oregon’s County Populations, 2010-2050, Office of Economic Analysis, Department of Administrative Services, State of Oregon, March 2013.

Table 15 displays Grade Progression Rates (GPRs) contrasting the slightly more rapid growth during the five years between 2003-04 and 2008-09 with the slower growth in the following five years. The GPR is the ratio of enrollment in a specific grade in one year to the enrollment of the same age cohort in the previous year; for example, the number of students enrolled in second grade this year divided by the number of students enrolled in first grade last year. For most elementary grades, if net migration is zero, one would expect GPRs very close to 1.00. Depending on the school district, rates for some grades can be higher or lower if current residents enter or leave District schools for other options including private schools. For example, even in periods of low in-migration, the GPRs average above 1.00 for the K-1<sup>st</sup> grade transitions in the HSD. In 10<sup>th</sup>, 11<sup>th</sup>, or 12<sup>th</sup> grade, low GPRs can indicate that students are leaving high school or being retained at lower grade levels. These rates are considered baseline rates, used in the forecast model to move cohorts of students forward one grade prior to applying migration rates.

**Table 15**  
**Grade Progression Rates<sup>1</sup>**  
**HSD History and Middle Range Forecast**

<b>Grade Transition</b>	<b>Historic Average: 2003-04 to 2008-09</b>	<b>Historic Average: 2008-09 to 2013-14</b>	<b>Baseline (without the influence of migration)</b>	<b>Forecast Average: 2013-14 to 2023-24</b>
K-1	1.01	1.04	-- <sup>2</sup>	1.03
1-2	1.02	1.00	1.00	1.01
2-3	0.99	0.99	1.00	1.00
3-4	1.03	0.99	1.00	1.00
4-5	1.00	1.01	1.00	1.01
5-6	1.03	1.00	1.01	1.02
6-7	1.01	1.00	1.00	1.00
7-8	1.00	1.00	1.00	1.00
8-9	1.00	1.01	1.00	1.00
9-10	0.98	1.00	0.99	0.99
10-11	0.96	0.95	0.96	0.96
11-12	0.99	1.01	1.00	1.00

*1. Ratio of enrollment in an individual grade to enrollment in the previous grade the previous year.*

*2. The enrollment forecast model uses capture rates for first grade; K-1 baseline GPRs are not used.*

In the *middle range* forecast, overall K-12 enrollment is expected to increase by 813 students (15.5 percent) in the next 10 years. Because births have leveled off since 2006, the size of incoming kindergarten classes are expected to remain close to their 2013-14 size for the next several years, and K-5 enrollments grow more slowly than in recent years. Over the 10 year forecast period, grades K-5 add 229 students (nine percent). Middle school grades 6-8 add 204 students in the first five years but then stabilize for a total 10 year growth of 233 students (20 percent). The largest numeric and percentage growth occurs among high school grades, which add 351 students (24 percent) over the 10 year period.

The *low range* forecast depicts a scenario under which net migration remains near its recent low levels. It assumes that the economy will remain sluggish, with relatively little job growth and very little net migration. Under the low range scenario, K-12 enrollment increases by 427 students (eight percent) between 2013-14 and 2023-24. K-5<sup>th</sup> grade enrollment remains relatively stable throughout the forecast period, growing by only 32 students. Middle school grades grow initially, adding 169 students during the next five years, and level off or decline slightly after 2018-19. Enrollment growth of 82 students is expected at high school grades during the first five years of the forecast period, with additional growth of 167 students between 2018-19 and 2023-24.

The *high range* forecast includes net migration consistently near the higher levels observed in the mid-2000s. K-12 enrollment increases by 1,257 students (24 percent) between 2013-14 and 2023-24. Elementary school grades grow steadily, adding a total of 431 students, or about 17 percent. Enrollment in middle grades grows by 263 students (22 percent) during the first five years, and an additional 72 students in the second five years. The largest enrollment increase occurs in the high school grades, which add 491 students (33 percent) over the 10 year period.

Table 16 contains annual district-wide forecasts by school level under the three scenarios for the District. Detailed annual forecasts by individual grades are included in Appendix A.

**Table 16  
Hermiston S.D., Enrollment Forecasts by School Level, 2014-15 to 2023-24**

		<u>LOW RANGE FORECAST</u>						<u>FORECAST CHANGE</u>		
Grade	Actual 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2023-24	2013-14 to 2018-19	2018-19 to 2023-24	2013-14 to 2023-24
K-5	2,579	2,598	2,605	2,600	2,598	2,573	2,611	-6	38	32
6-8	1,172	1,180	1,210	1,277	1,310	1,341	1,318	169	-23	146
9-12	1,490	1,507	1,539	1,551	1,528	1,572	1,739	82	167	249
<b>Total</b>	<b>5,241</b>	<b>5,285</b>	<b>5,354</b>	<b>5,428</b>	<b>5,436</b>	<b>5,486</b>	<b>5,668</b>	<b>245</b>	<b>182</b>	<b>427</b>
<i>Annual change</i>		44 0.8%	69 1.3%	74 1.4%	8 0.1%	50 0.9%	36 0.7%			

		<u>MIDDLE RANGE FORECAST</u>						<u>FORECAST CHANGE</u>		
Grade	Actual 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2023-24	2013-14 to 2018-19	2018-19 to 2023-24	2013-14 to 2023-24
K-5	2,579	2,631	2,660	2,676	2,702	2,705	2,808	126	103	229
6-8	1,172	1,189	1,226	1,299	1,337	1,376	1,405	204	29	233
9-12	1,490	1,514	1,555	1,578	1,563	1,616	1,841	126	225	351
<b>Total</b>	<b>5,241</b>	<b>5,334</b>	<b>5,441</b>	<b>5,553</b>	<b>5,602</b>	<b>5,697</b>	<b>6,054</b>	<b>456</b>	<b>357</b>	<b>813</b>
<i>Annual change</i>		93 1.8%	107 2.0%	112 2.1%	49 0.9%	95 1.7%	71 1.2%			

		<u>HIGH RANGE FORECAST</u>						<u>FORECAST CHANGE</u>		
Grade	Actual 2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2023-24	2013-14 to 2018-19	2018-19 to 2023-24	2013-14 to 2023-24
K-5	2,579	2,656	2,711	2,749	2,798	2,824	3,010	245	186	431
6-8	1,172	1,196	1,243	1,329	1,382	1,435	1,507	263	72	335
9-12	1,490	1,523	1,576	1,609	1,604	1,673	1,981	183	308	491
<b>Total</b>	<b>5,241</b>	<b>5,375</b>	<b>5,530</b>	<b>5,687</b>	<b>5,784</b>	<b>5,932</b>	<b>6,498</b>	<b>691</b>	<b>566</b>	<b>1,257</b>
<i>Annual change</i>		134 2.6%	155 2.9%	157 2.8%	97 1.7%	148 2.6%	113 1.8%			

Population Research Center, Portland State University, July 2014.



## **FORECAST ERROR AND UNCERTAINTY**

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We characterize the middle series forecast as the “most likely scenario” based on a moderate blend of long term trends. Although the K-12 total under the middle series grows consistently each year, there are likely to be more extreme periods of growth or even decline that no forecast can anticipate. Forecasts should be understood to represent a range of outcomes even though discrete numbers are provided. The low and middle series are presented as alternatives modeling sustained periods of slower or faster growth.

In general, forecast error varies according to the size of the population being forecast and the length of the forecast horizon. The smaller the population and the longer the forecast period, the larger the error is likely to be. In particular, the forecasts furthest away from the base year would have the greatest uncertainty due to less confidence in the assumptions about economic conditions and housing and population growth in the District over a 10 or 20 year period. The forecasts should be used as only one of many tools in the planning process.

The best way to measure potential forecast error is to compare actual enrollments with previous forecasts that were conducted using similar data and methodologies. Additional context about institutional changes or unforeseen circumstances or trends may be helpful. A regular assessment of the forecast and timely updates using the most recent demographic, economic, and housing data will help ensure the incorporation of latest information in future enrollment forecast for planning purposes.

In Table 17, actual HSD enrollment by grade level in Fall 2013 is compared with the 2013-14 forecasts that were prepared seven years earlier for the low, middle and high range scenarios. The percentage errors from each of those forecasts are shown on the “Total” row of the table, showing that the actual K-12 enrollment fell between the low and middle forecasts. The K-12 total was closest to the low range. However, the middle range forecast was most accurate for each grade from Kindergarten to 3<sup>rd</sup> grade.

Measures of forecast error for total K-12 enrollments can benefit from compensating differences among individual grades, so individual grades are likely to have larger percentage errors than the K-12 total. A measure of average error for individual grades, the mean absolute percent error (MAPE), is also included in Table 17.

**Table 17**  
**Fall 2013 Enrollment Compared to June 2007 Forecasts**  
**By Grade Level**

Grade	2013-14 Actual	Middle range forecast <sup>1</sup>			Low range forecast <sup>1</sup>			High range forecast <sup>1</sup>		
		Fcst.	Diff.	Error	Fcst.	Diff.	Error	Fcst.	Diff.	Error
K	433	428	-5	-1.2%	386	-47	-10.9%	478	45	10.4%
1	456	437	-19	-4.2%	397	-59	-12.9%	485	29	6.4%
2	427	438	11	2.6%	402	-25	-5.9%	482	55	12.9%
3	437	440	3	0.7%	407	-30	-6.9%	477	40	9.2%
4	428	457	29	6.8%	428	0	0.0%	489	61	14.3%
5	398	448	50	12.6%	424	26	6.5%	471	73	18.3%
6	377	440	63	16.7%	421	44	11.7%	460	83	22.0%
7	404	441	37	9.2%	423	19	4.7%	459	55	13.6%
8	391	432	41	10.5%	413	22	5.6%	449	58	14.8%
9	427	426	-1	-0.2%	407	-20	-4.7%	444	17	4.0%
10	359	395	36	10.0%	377	18	5.0%	411	52	14.5%
11	350	369	19	5.4%	351	1	0.3%	385	35	10.0%
12	354	337	-17	-4.8%	319	-35	-9.9%	353	-1	-0.3%
<b>Total</b>	<b>5,241</b>	<b>5,488</b>	<b>247</b>	<b>4.7%</b>	<b>5,155</b>	<b>-86</b>	<b>-1.6%</b>	<b>5,843</b>	<b>602</b>	<b>11.5%</b>
<b>MAPE<sup>2</sup></b>				<b>6.5%</b>			<b>6.5%</b>			<b>11.6%</b>

1. Forecasts for 2013-14 school year by PSU-PRC, baseline 2006-07 enrollment, prepared June 2007.

2. Mean absolute percent error for individual grades K-12.

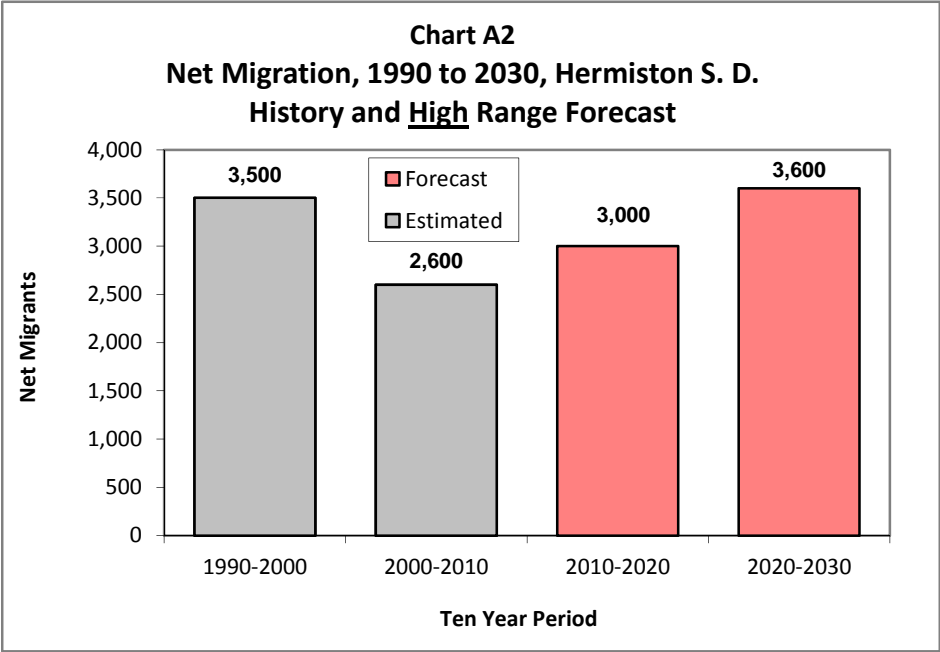
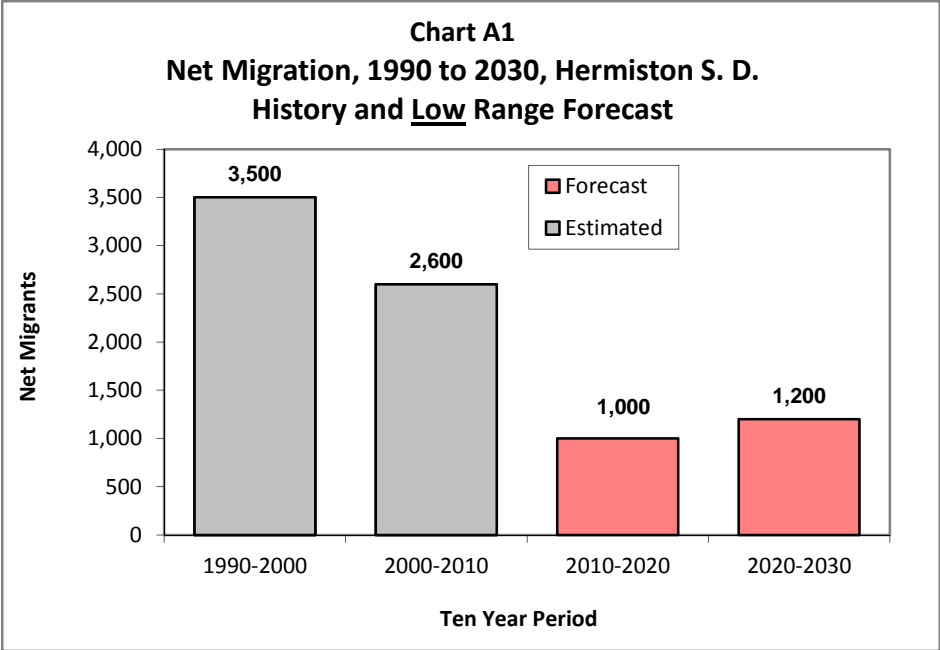


## **APPENDIX A**

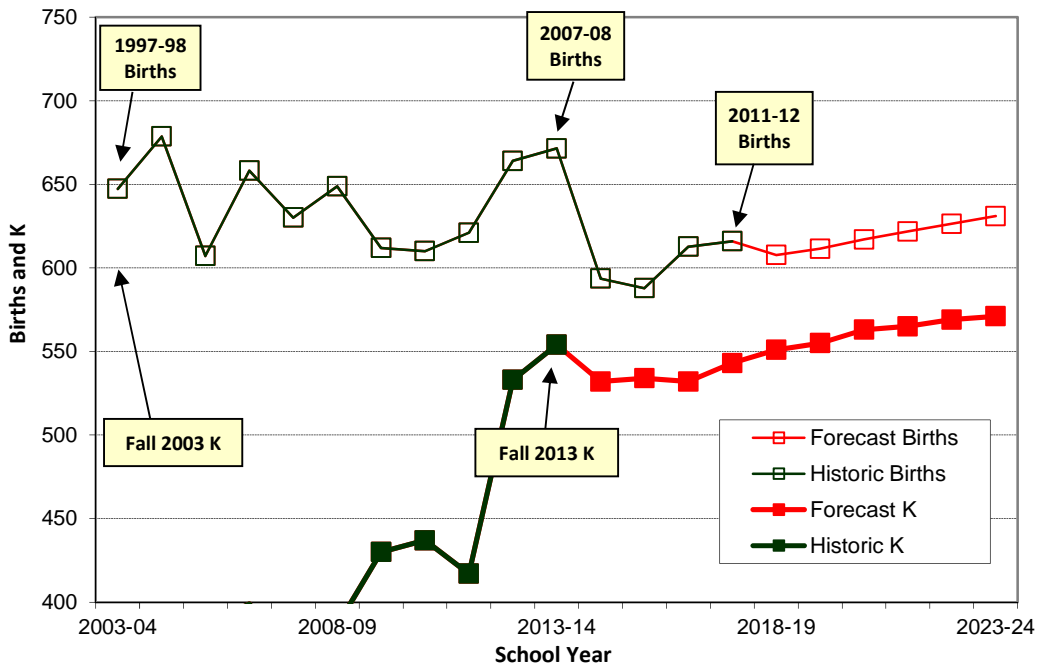
### **Hermiston School District**

LOW, MEDIUM and HIGH Range Enrollment Forecasts, 2014-15 to 2023-24

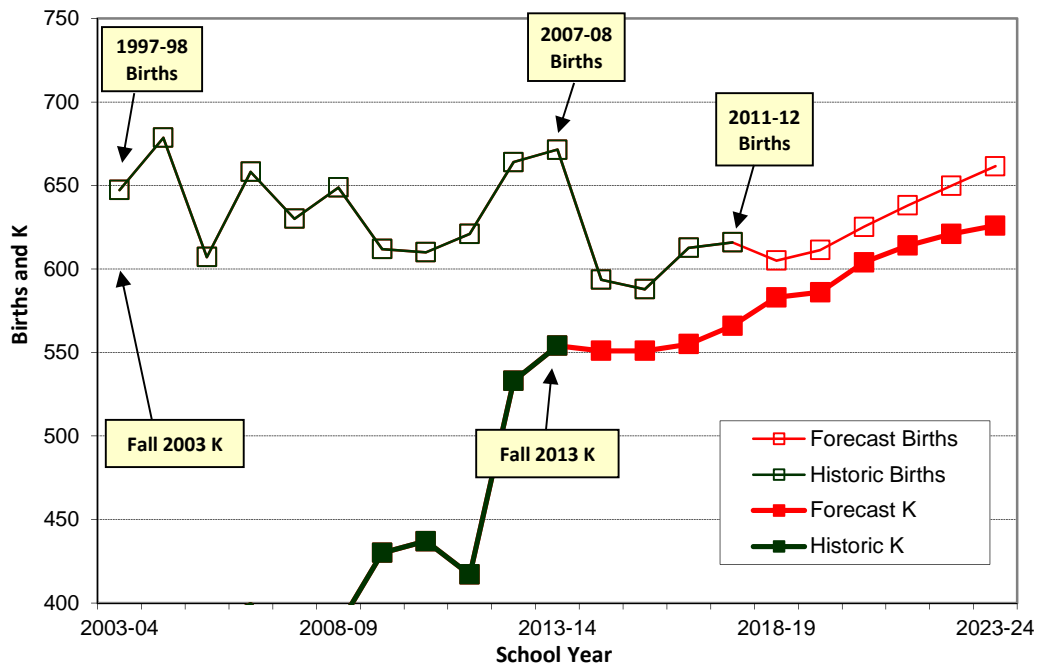




**Chart A3**  
**Hermiston SD Birth Cohorts and Kindergarten Enrollment**  
Low Range Forecast Scenario



**Chart A4**  
**Hermiston SD Birth Cohorts and Kindergarten Enrollment**  
High Range Forecast Scenario



**Table A1**  
**Hermiston S.D., Low Range Enrollment Forecasts, 2014-15 to 2023-24**

Grade	Actual	Forecast									
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
K	433	410	418	419	414	421	423	422	424	428	431
1	456	444	422	427	427	422	429	431	431	433	436
2	427	455	445	423	428	428	423	431	433	433	435
3	437	426	456	446	424	429	429	425	433	435	435
4	428	436	427	457	447	425	430	431	427	435	437
5	398	427	437	428	458	448	426	432	433	429	437
6	377	401	432	442	433	463	453	432	438	439	435
7	404	376	402	433	443	434	464	455	434	440	441
8	391	403	376	402	434	444	435	466	457	436	442
9	427	391	403	376	402	434	444	435	466	457	436
10	359	422	387	399	372	398	429	439	430	460	451
11	350	344	405	371	383	357	382	411	420	412	441
12	354	350	344	405	371	383	357	381	410	419	411
<b>Total</b>	<b>5,241</b>	<b>5,285</b>	<b>5,354</b>	<b>5,428</b>	<b>5,436</b>	<b>5,486</b>	<b>5,524</b>	<b>5,591</b>	<b>5,636</b>	<b>5,656</b>	<b>5,668</b>
Annual change		44 0.8%	69 1.3%	74 1.4%	8 0.1%	50 0.9%	38 0.7%	67 1.2%	45 0.8%	20 0.4%	12 0.2%
<b>K-5</b>	2,579	2,598	2,605	2,600	2,598	2,573	2,560	2,572	2,581	2,593	2,611
<b>6-8</b>	1,172	1,180	1,210	1,277	1,310	1,341	1,352	1,353	1,329	1,315	1,318
<b>9-12*</b>	1,490	1,507	1,539	1,551	1,528	1,572	1,612	1,666	1,726	1,748	1,739

	2013-14 to 2018-19		2018-19 to 2023-24		2018-19 to 2023-24	
	5 yr. chg.	Pct.	5 yr. chg.	Pct.	10 yr. chg.	Pct.
K-5	-6	-0.2%	38	1.5%	32	1.2%
6-8	169	14.4%	-23	-1.7%	146	12.5%
9-12	82	5.5%	167	10.6%	249	16.7%
<b>Total</b>	<b>245</b>	<b>4.7%</b>	<b>182</b>	<b>3.3%</b>	<b>427</b>	<b>8.1%</b>

*Population Research Center, Portland State University, July 2014.*

**Table A2  
Hermiston S.D., Middle Range Enrollment Forecasts, 2014-15 to 2023-24**

Grade	Actual	Forecast									
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
<b>K</b>	433	421	430	435	438	448	451	451	453	458	462
<b>1</b>	456	453	438	441	446	449	460	462	462	464	468
<b>2</b>	427	459	456	441	444	449	452	463	465	465	467
<b>3</b>	437	429	462	459	444	447	452	455	466	468	468
<b>4</b>	428	439	432	465	462	447	450	455	458	469	471
<b>5</b>	398	430	442	435	468	465	450	453	458	461	472
<b>6</b>	377	404	437	449	442	476	473	458	461	466	469
<b>7</b>	404	379	407	440	452	445	479	476	461	464	469
<b>8</b>	391	406	382	410	443	455	448	482	479	464	467
<b>9</b>	427	393	408	384	412	445	457	450	485	481	466
<b>10</b>	359	424	391	406	382	410	442	454	447	482	478
<b>11</b>	350	346	409	377	391	368	395	426	437	431	464
<b>12</b>	354	351	347	411	378	393	369	396	428	439	433
<b>Total</b>	<b>5,241</b>	<b>5,334</b>	<b>5,441</b>	<b>5,553</b>	<b>5,602</b>	<b>5,697</b>	<b>5,778</b>	<b>5,881</b>	<b>5,960</b>	<b>6,012</b>	<b>6,054</b>
Annual change		93 1.8%	107 2.0%	112 2.1%	49 0.9%	95 1.7%	81 1.4%	103 1.8%	79 1.3%	52 0.9%	42 0.7%
<b>K-5</b>	2,579	2,631	2,660	2,676	2,702	2,705	2,715	2,739	2,762	2,785	2,808
<b>6-8</b>	1,172	1,189	1,226	1,299	1,337	1,376	1,400	1,416	1,401	1,394	1,405
<b>9-12</b>	1,490	1,514	1,555	1,578	1,563	1,616	1,663	1,726	1,797	1,833	1,841

	2013-14 to 2018-19		2018-19 to 2023-24		2013-14 to 2023-24	
	5 yr. chg.	Pct.	5 yr. chg.	Pct.	10 yr. chg.	Pct.
K-5	126	4.9%	103	3.8%	229	8.9%
6-8	204	17.4%	29	2.1%	233	19.9%
9-12	126	8.5%	225	13.9%	351	23.6%
<b>Total</b>	<b>456</b>	<b>8.7%</b>	<b>357</b>	<b>6.3%</b>	<b>813</b>	<b>15.5%</b>

*Population Research Center, Portland State University, July 2014.*

**Table A3  
Hermiston S.D., High Range Enrollment Forecasts, 2014-15 to 2023-24**

Grade	Actual	Forecast									
	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
K	433	428	439	444	451	466	472	476	481	487	493
1	456	456	449	453	459	465	481	486	490	495	501
2	427	462	463	456	460	467	473	487	492	496	501
3	437	433	470	471	463	468	475	479	493	498	503
4	428	443	440	478	479	471	476	481	485	500	505
5	398	434	450	447	486	487	479	482	487	491	507
6	377	407	445	461	458	498	499	489	492	498	502
7	404	381	412	451	467	464	504	504	494	497	503
8	391	408	386	417	457	473	470	509	509	499	502
9	427	395	413	391	422	462	479	475	514	514	504
10	359	427	396	414	392	423	463	479	475	514	514
11	350	348	415	384	402	381	411	449	464	460	498
12	354	353	352	420	388	407	385	415	453	469	465
<b>Total</b>	<b>5,241</b>	<b>5,375</b>	<b>5,530</b>	<b>5,687</b>	<b>5,784</b>	<b>5,932</b>	<b>6,067</b>	<b>6,211</b>	<b>6,329</b>	<b>6,418</b>	<b>6,498</b>
Annual change		134	155	157	97	148	135	144	118	89	80
		2.6%	2.9%	2.8%	1.7%	2.6%	2.3%	2.4%	1.9%	1.4%	1.2%
<b>K-5</b>	2,579	2,656	2,711	2,749	2,798	2,824	2,856	2,891	2,928	2,967	3,010
<b>6-8</b>	1,172	1,196	1,243	1,329	1,382	1,435	1,473	1,502	1,495	1,494	1,507
<b>9-12*</b>	1,490	1,523	1,576	1,609	1,604	1,673	1,738	1,818	1,906	1,957	1,981

	2013-14 to 2018-19		2018-19 to 2023-24		2018-19 to 2023-24	
	5 yr. chg.	Pct.	5 yr. chg.	Pct.	10 yr. chg.	Pct.
K-5	245	9.5%	186	6.6%	431	16.7%
6-8	263	22.4%	72	5.0%	335	28.6%
9-12	183	12.3%	308	18.4%	491	33.0%
<b>Total</b>	<b>691</b>	<b>13.2%</b>	<b>566</b>	<b>9.5%</b>	<b>1,257</b>	<b>24.0%</b>

*Population Research Center, Portland State University, July 2014.*





**APPENDIX B**

**2000 and 2010 CENSUS PROFILE**

Hermiston School District

