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Hillsboro School District: Population and Enrollment Forecasts, 2006-07 to 2015-16

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HILLSBORO SCHOOL DISTRICT
POPULATION AND ENROLLMENT FORECASTS
2006-07 TO 2015-16

Prepared By
Population Research Center
Portland State University

APRIL, 2006

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TABLES, CHARTS, AND MAPS

TABLES, CHARTS, AND MAPS (continued)

EXECUTIVE SUMMARY

The Hillsboro School District (HSD) has experienced enrollment growth throughout the 1990s and 2000s. This report presents the results of a forecast conducted by the Portland State University Population Research Center (PRC) indicating that HSD enrollment will continue to grow during the next ten years. PRC's methodology links enrollment trends with population dynamics and housing development. Population and housing are closely related to employment levels. By itself, the District's past growth is no guarantee of future long-term growth, but in the context of expected employment, population, and housing growth, enrollment is likely to continue to increase at all grade levels.

Washington County currently has the lowest unemployment rate in the state, and employment in the region is forecast to grow by over 16 percent in a ten year period.[1,2] The county's population is forecast to grow by 22 percent.[3] Most significantly for the area within the HSD boundaries, there are about 3,500 housing units in new single family subdivisions and multi-family housing developments currently under construction, recently approved, or awaiting approval.[4] This development has the potential to increase the District's housing stock by eight percent within the next three years.

Table 1 on the next page contains HSD's recent enrollment history and forecasts by five year interval. Following the table are highlights of this study — district-wide enrollment forecasts, the average number of students generated by new housing development, and enrollment forecasts for individual schools.

[1]"February 2006 Oregon Labor Force and Employment by Area." Oregon Employment Department, Workforce Analysis, March 23, 2006.
[2]"Employment Projections by Industry, 2004-2014." Oregon Employment Department, Workforce Analysis, July, 2005. PRC note: the "region" includes Multnomah County, which typically has lower percentage employment growth than Washington County.
[3]Growth rate 2005-2015 from "Forecasts of Oregon's County Populations and Components of Change, 2000 to 2040." Oregon Department of Administrative Services, Office of Economic Analysis, April, 2004.
[4]Information on specific developments from city and county planning departments.

Table 1 Historic and Forecast Enrollment, Hillsboro School District					
	Enrollment History			Forecast	
	1995-96	2000-01	2005-06	2010-11	2015-16
K-6 *5 year growth*	8,948	10,284 *1,336*	10,839 *555*	12,098 *1,259*	12,843 *745*
7-8 *5 year growth*	2,468	2,694 *226*	2,904 *210*	3,241 *337*	3,596 *355*
9-12 *5 year growth*	4,099	4,986 *887*	5,674 *688*	6,120 *446*	6,643 *523*
Total* ***5 year growth***	**15,564**	**18,081** ***2,517***	**19,562** ***1,481***	**21,618** ***2,056***	**23,252** ***1,634***
** Total includes K-12 and unclassified grade levels.*					

District-wide Enrollment Forecast between 2005-06 and 2010-11

- Total enrollment is expected to grow by more than 2,000 students, an average of more than 400 each year.
- Percentage growth in total enrollment is 10.5 percent, or 2 percent annually.
- Average annual growth is less than the 500 student per year average during 1995-96 to 2000-01, but more than the 300 per year during 2000-01 to 2005-06.
- Elementary (K-6) enrollment grows by about 1,250 students (more than 11 percent), as younger families are attracted by the surge in housing development.
- Junior high (7-8) enrollment grows by about 340 students (more than 11 percent).
- Senior high (9-12) enrollment grows by about 450 students (almost 8 percent).

District-wide Enrollment Forecast between 2010-11 and 2015-16

- Total enrollment is expected to grow by about 1,600 students, an average of more than 300 each year.
- Percentage growth in total enrollment is 7.6 percent, or 1.5 percent annually.
- Elementary (K-6) enrollment grows by about 750 students (just over 6 percent).
- Junior high (7-8) enrollment grows by about 350 students (11 percent).
- Senior high (9-12) enrollment grows by about 520 students (more than 8 percent).
- Elementary enrollment growth is less than between 2005-06 and 2010-11, but secondary growth is greater in part due to momentum from previous elementary growth.

Students Generated by New Housing Development

Estimates of the number of future students residing in new housing developments are an important part of the enrollment forecasts contained in this report. They are essential for individual school forecasts in parts of the District where major housing construction is underway or planned. Although many factors influence the number of students per housing unit in specific developments, average student generation rates (SGRs) were developed for this study by matching HSD student residence in Fall 2005 with all single family homes built between 1999 and 2003, and large multiple family developments built between 1990 and 2005. The average number of HSD students in grades K-12 for each major category of housing is:

- Single-family, detached — 0.59 (about six students per 10 units)
- Single-family, attached or small-lot (<3250 sq. ft.) — 0.33 (one student per three units)
- Multi-family, market-rate rental — 0.17 (one student per six units)
- Multi-family, income-restricted rental — 1.03 (more than one student per unit)
- Multi-family, condominium — 0.10 (one student per ten units)

For each of these categories of recently built housing, the proportion of residents in elementary grades K-6 was greater than in the District overall. This is not surprising, as younger families often occupy newer housing, and their families age as the home itself ages. The peak impact of new housing on school enrollment may be seen first at the elementary level, and later at the secondary level.

Individual School Forecasts

In order to address long-range planning needs, the District requested that PRC prepare forecasts for individual schools under a scenario in which current boundaries and grade configurations remain constant. Because schools grow at different rates, forecast enrollment at some schools may exceed current capacities. The largest growth occurs at schools impacted by planned housing growth, so District staff should continue to monitor the level and pace of housing growth. Also, caution in using individual school forecasts

is advised, because unexpected demographic changes occurring in existing neighborhoods may have a small impact on district-wide enrollment, but a large impact on individual schools' enrollments. Among elementary schools in the next ten years:

- Little or no enrollment change is expected at Reedville, Imlay, Mooberry, Indian Hills, Eastwood, McKinney, and Farmington View.
- Large enrollment growth is expected at Witch Hazel (516 students, 106 percent growth), Orenco (352 students, 59 percent growth), and West Union (249 students, 71 percent growth).
- Moderate enrollment growth of 30 to 130 students is expected at each of the other elementary schools in the district.

Among junior high schools in the next ten years:

- Expected enrollment growth ranges from 125 students at Brown (14 percent) to 248 students at Poynter (34 percent).

Among senior high schools in the next ten years:

- The smallest enrollment growth is expected at Century (161 students).
- Moderate enrollment growth is expected at Glencoe, Liberty, and Hillsboro (230 to 302 students each).

INTRODUCTION

During the 2005-06 school year, the Hillsboro School District (HSD) requested that the Portland State University Population Research Center (PRC) prepare enrollment forecasts for use in the District's long-range planning. The PRC conducted two similar studies in the past decade, in 1996 and again in 2000. Like the 1996 and 2000 studies, the current study integrates information about HSD enrollment trends with area population, housing, and economic trends, and includes a population forecast for the District as well as enrollment forecasts by grade level. Information sources include the U.S. Census Bureau, birth data from the Oregon Center for Health Statistics, population forecasts from Metro and the Oregon Office of Economic Analysis, employment trends and forecasts from the Oregon Employment Department, and subdivision and building permit information from city and county planning and building departments.

Total enrollment in the District has remained close to PRC's most recent forecast, which used 1999-2000 as the base year. Current (2005-06) K-12 enrollment deviates from that forecast by less than 3 percent. While that forecast proved reliable, and may continue to track well into the future, it is time for a new forecast. The current forecast uses six more years of historical enrollment and benefits from the results of the 2000 Census, which facilitate an updated analysis of migration and household composition. Also, new information about current and planned housing development within the HSD boundaries is available, so identifying the location and potential enrollment impact of specific developments is a major component of this study.

This report contains the results of the population and enrollment forecasts, and a description of the methodology used to produce them. It begins with an analysis of recent population, housing, and enrollment trends. Next is an accounting of current and planned housing development in the District, with estimates of the number of students that the new homes are expected to generate at each school. Then the 10 year annual district-wide enrollment forecast by grade level is presented along with two alternate

forecasts that use different assumptions about enrollment growth. Ten year annual enrollment forecasts for HSD's four current high school attendance areas are also presented. For each of the District's 33 existing schools, total enrollment forecasts based on current boundaries and grade configurations are presented for the 2010-11 and 2015-16 school years. Finally, this report concludes with a brief discussion of forecasts and comparison between the current and previous forecasts.

POPULATION AND HOUSING TRENDS

During the decade between the 1990 and 2000 Censuses, total population within the boundaries of the Hillsboro School District grew by 49 percent, from just under 70,000 persons to over 103,000. Population growth in the district outpaced the 43 percent growth in Washington County overall and the 27 percent growth of the six county Portland-Vancouver metro area. Like Washington County in general, the District grew primarily due to large positive net migration — many more people moving in than moving out. This growth was facilitated by housing construction and proximity to job growth during the decade. Washington County gained nearly 85,000 jobs between 1990 and 2000, many of them within the Hillsboro area.[5] Growth accelerated near the end of the decade, so population, housing, and job gains were greatest in the late 1990s.

Between the 2000 Census and the most recent population estimates in 2005, the District and the County have continued to grow, but at a slower rate. The census year coincided with the end of the high-tech boom that fueled much of the area's employment and housing growth, so it serves as an inflection point for growth. Between April, 2000 and July, 2005, the County's population grew by 10 percent, adding an average of 8,500 persons per year, compared with the 13,400 per year growth in the 1990s.[6] Washington County lost jobs in 2002 and in 2003; by 2004 its job total had just barely recovered to its 2000 level.[5]

By 2005 and early 2006 a different picture began to emerge, as job growth statewide in 2005 was greater than expected, with growth in industries including manufacturing and software publishing.[7] The industrial real estate vacancy rate in the Portland area was the lowest in a decade in the fourth quarter of 2005, and job growth is expected in the

[5]"Covered Employment and Wages". Oregon Employment Department, OLMIS.
[6]"2005 Oregon Population Report." Portland State University, Population Research Center, April, 2006.
[7]"Oregon Added Lots of Jobs in 2005". Oregon Employment Department, OLMIS, December 21, 2005.

bioscience sector.[8,9] Washington County currently has the lowest unemployment rate among Oregon counties. While it is too early to measure the impact of this economic rebound on population trends, developers are continuing to address demand for new housing. There are currently about 3,500 housing units under construction or planned in new single family subdivisions and large multiple family developments within HSD. This figure does not include ongoing construction on lots that were subdivided in past years. Continuing a pattern that began in 2004, most of the planned development is single family homes, which are home to more K-12 students, on average, than new multiple family complexes.

In addition to quantifying growth in total population and housing units, the 1990 and 2000 Censuses provide demographic information that is essential in preparing population forecasts and demographic-based enrollment forecasts for the district. Forecast methodology will be described in more detail later, but population by age is invaluable for school enrollment analysis. Age groups or single years of age are compared with enrollment at the time of the census to determine the school district's enrollment share of the area's population. Female population by age group and birth data are used to calculate the area's fertility rates. And net migration by age group is estimated by comparing the population at the end of a period (the year 2000 in this case) with the population that would be expected given the base year population, births within the area, and age-specific mortality rates.

Population by age group for 1990 and 2000 is shown in Table 2 on the next page. Population grew in all categories in the table, but the growth in school-age population (37 percent) was lower than the growth rate for total population (49 percent). At the bottom of the page, Chart 1 shows the estimated share that each age group contributed to the migration that fueled the HSD's growth between 1990 and 2000. For example, the 25 percent share for ages 25 to 29 means that for every 100 people added to the population as the result of migration, the population age 25 to 29 grew by 25 people. Migration in

[8]"Demand for industrial space undergoes noteworthy revival." Portland Business Journal, March 3, 2006.
[9]"Genentech picks Hillsboro." Portland Business Journal, March 17, 2006.

Table 2

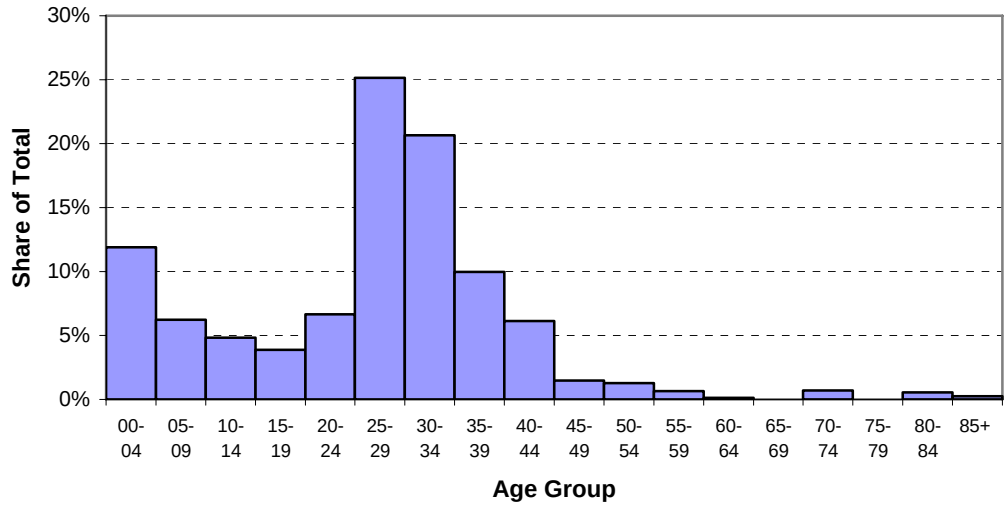
Population by Age Group
Hillsboro School District, 1990 and 2000

	1990	2000	1990 to 2000 Change	
			Number	Percent
Under Age 5	5,934	9,046	3,112	*52%*
Age 5 to 9	6,253	8,496	2,243	*36%*
Age 10 to 14	5,862	7,765	1,903	*32%*
Age 15 to 17	3,122	4,595	1,473	*47%*
Age 18 to 19	1,803	2,794	991	*55%*
Age 20 to 24	4,183	7,244	3,061	*73%*
Age 25 to 29	5,536	9,465	3,929	*71%*
Age 30 to 34	6,643	9,500	2,857	*43%*
Age 35 to 39	6,703	8,738	2,035	*30%*
Age 40 to 44	6,010	8,300	2,290	*38%*
Age 45 to 49	4,281	7,269	2,988	*70%*
Age 50 to 54	2,934	6,149	3,215	*110%*
Age 55 to 59	2,400	4,289	1,889	*79%*
Age 60 to 64	2,105	2,799	694	*33%*
Age 65 to 69	1,908	2,084	176	*9%*
Age 70 to 74	1,482	1,830	348	*23%*
Age 75 to 79	1,125	1,461	336	*30%*
Age 80 to 84	711	1,032	321	*45%*
Age 85 and over	579	866	287	*50%*
Total Population	**69,574**	**103,722**	**34,148**	***49%***
Total age 5 to 17	15,237	20,856	5,619	*37%*
share age 5 to 17	*21.9%*	*20.1%*		

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

Chart 1

Distribution of Net Migration by Age Group
Hillsboro School District, 1990 to 2000



the 1990s was dominated by young adults, ages 25 to 34, consistent with the job growth observed during the decade. Some of those young adults brought small children with them, because the population under age 5 is higher than would be expected based on the births that occurred in the District in the late 1990s. For age groups 55 and older, the net migration shares were close to zero. Of course, it is likely that many people in these age groups moved into the District between 1990 and 2000, but the number of older adults who moved out was nearly as great as the number who moved in.

The annual birth totals for both the HSD and the County are closely related to the population growth trends. Table 3 on the next page reports the number of births each year from 1989 to 2004. The total soared between 1989 and 2000, with most of the increase occurring in the 1995 to 2000 period. Since 2000, there has been very little change in the number of births. The flat birth trend has occurred in spite of moderate population growth since 2000. It is probable that the absence of job growth between 2000 and 2004 caused the migration rates for young adults to be much lower than in the late 1990s, resulting in much less population increase in the age groups with the highest fertility rates. Fertility rates may have also declined, as part of a long term trend as well as a result of short term fluctuation.

Fertility rates for the HSD in 1990 and 2000 are shown in Chart 2, on the bottom of the next page. They were calculated for each age group by dividing the number of births in the calendar year by the female population counted in the census. For example, in 2000 there were 413 births to mothers age 20 to 24 and a population of 3,427 women age 20 to 24. So the fertility rate is 413/3427 = 0.1206 births per female, or 120.6 per thousand. Chart 2 shows that fertility rates within HSD increased from 1990 to 2000 for women in their 30s, but fell sharply for women age 20 to 24.

Another common measure of fertility is the Total Fertility Rate (TFR). This is an estimate of the number of children that would be born to the average women during her child-bearing years, based on age-specific fertility rates observed at a given time. The 1990 TFR for the District was 2.40. By 2000, the TFR had fallen slightly to 2.36. In the

Table 3

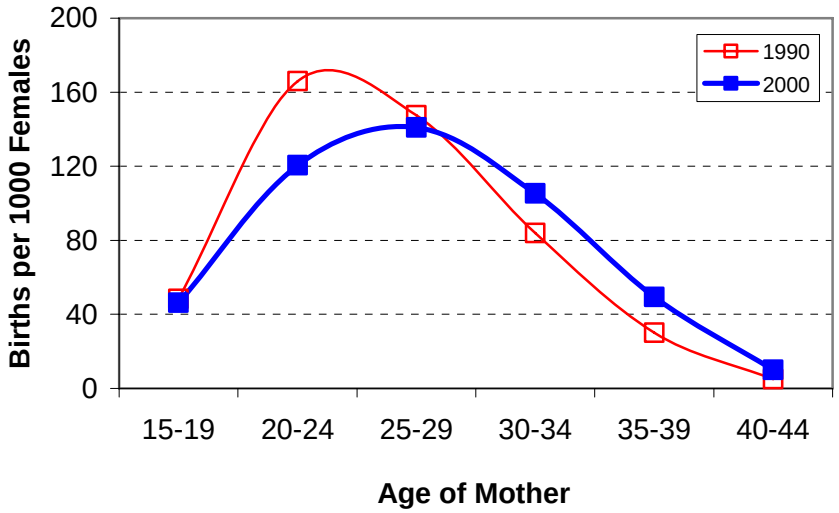
Annual Births, 1989 to 2004
Hillsboro S. D. and Washington County

	Hillsboro S.D.	Washington County
1989	1,084	4,855
1990	1,236	5,320
1991	1,292	5,394
1992	1,296	5,542
1993	1,373	5,681
1994	1,419	5,834
1995	1,392	5,970
1996	1,551	6,292
1997	1,577	6,537
1998	1,764	6,931
1999	1,782	7,100
2000	1,902	7,564
2001	1,948	7,509
2002	1,916	7,568
2003	1,950	7,630
2004	1,892	7,615

Source: Washington County births, Oregon Center for Health Statistics; Hillsboro S.D. births, PSU-PRC estimates using Oregon Center for Health Statistics zip code data and individual birth records.

Chart 2

Age-Specific Fertility Rates
Hillsboro School District, 1990 and 2000



rest of Washington County (excluding the HSD), the TFR was only 2.16 — about 9 percent lower than in the HSD. TFRs were higher in the HSD than in the rest of the County for both Hispanic (3.68 compared with 3.32) and non-Hispanic (2.06 compared with 1.98) females. Rates fell in the 1990s for both Hispanics and non-Hispanics, and Hispanic fertility rates are expected to continue to fall as the population changes from predominately foreign-born to more native-born, with higher labor force participation rates and education levels. Research has shown strong relationships between fertility and nativity, labor force participation, and educational attainment.[10]

During the 1990s, the number of housing units within the District's boundaries increased by about 14,000. Table 4 on the next page reports the change and also includes changes in the characteristics of the District's housing stock that may account for the discrepancies between the decade's 58 percent housing growth, 49 percent population growth, and 37 percent growth in the population age 5 to 17. Most notably, the share of multiple family housing (apartments and condominiums) increased from 15 percent of the total housing stock in 1990 to 25 percent in 2000. Although a majority of the new units added in the 1990s were single family homes, the single family share of the HSD total fell from 78 percent to 69 percent. As the District's housing stock became more diverse, the average number of persons per household fell slightly, from 2.90 in 1990 to 2.85 in 2000, and the percentage of households with children under 18 fell from 45 percent of all households to 42 percent.

The 5,700 multiple family units added between 1990 and 2000 accounted for 41 percent of the District's housing growth. Over half of the new apartment units were in large complexes north of the MAX line between Shute Road and the District's eastern boundary. Compared with other types of housing, these complexes generally house fewer students per unit, and are more likely to include residents who live there at the time that their children are born, but move away as their children grow older. Single family homes were built throughout the District, with the greatest concentrations in the western

[10]"Fertility of Immigrant Women in California." California Department of Finance, Demographic Research Unit, April, 1995.

portion of the Century High area between Baseline Road and Tualatin Valley Highway, and in the Glencoe High area near Jackson and Patterson Elementary schools.

The average home in the HSD is still more likely to include children under the age of 18, compared with the rest of Washington County and the metro area overall. The share of households reporting at least one child under the age of 18 in the 2000 Census was 42 percent in the HSD, 36 percent in the rest of Washington County (excluding the HSD), and 35 percent in the Portland-Vancouver metro area overall. On the next page, Map 1 shows how the share of households with children varies within the HSD. In the areas with the darkest shading, at least one out of every two households had children under age 18. The highest rates, 55 to 60 percent, were in some of the same areas of new single family housing described above in the Century and Glencoe areas. Also among the highest shares were some established neighborhoods to the east and northeast of Downtown Hillsboro. The lowest shares, shown in the lightest shade on Map 1, are the areas also described above that contain most of the large new apartment development. In those areas, fewer than one in five households included children under age 18.

Table 4
Hillsboro School District
Housing and Household Characteristics, 1990 and 2000

			1990 to 2000 Change	
	1990	2000	Number	Percent
Housing Units	24,287	38,313	14,026	*58%*
Single Family	18,908	26,581	7,673	*41%*
share of total	*78%*	*69%*		
Multiple Family	3,738	9,455	5,717	*153%*
share of total	*15%*	*25%*		
Mobile Home and Other	1,641	2,277	636	*39%*
share of total	*7%*	*6%*		
Households	23,457	35,953	12,496	*53%*
Households with Children under 18	10,664	15,197	4,533	*43%*
share of total	*45%*	*42%*		
Households with no Children under 18	12,793	20,756	7,963	*62%*
share of total	*55%*	*58%*		
Household Population	68,119	102,448	34,329	*50%*
Persons per Household	2.90	2.85	-0.05	*-2%*

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

Map 1

Percentage of Households Having Children Under Age 18 in Hillsboro School District, 2000

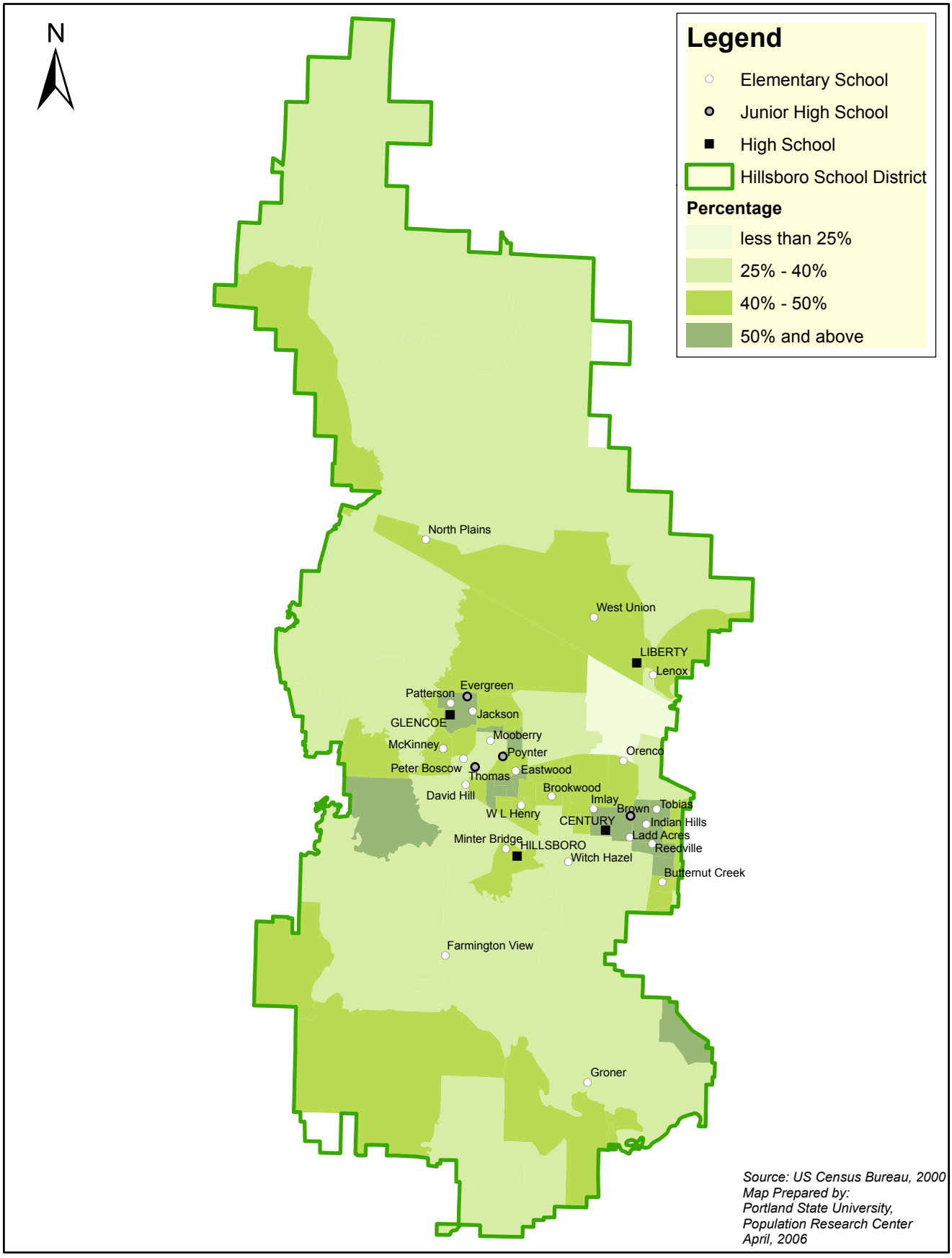


Table 5 below shows housing stock by high school attendance area for 1990, 2000, and 2005. The Liberty High area added the largest number of units in both periods (1990 to 2000 and 2000 to 2005), followed by the Century High area. Liberty High's area includes the concentration of large apartment complexes built in the 1990s, but new development has recently shifted to predominately single family homes. The Hillsboro High area added the fewest number of new units in the 1990s, but has increased its share and its rate of growth since 2000.

Table 5

Housing Units by High School Attendance Area (2005-06 Boundaries)
Hillsboro School District, 1990 to 2005

	Century	Glencoe	Hillsboro	Liberty	District Total
Housing Units, 1990 Census	4,040	5,357	8,892	5,998	24,287
Housing Units, 2000 Census	8,576	8,559	10,004	11,174	38,313
1990 to 2000 Change	4,536	3,202	1,112	5,176	14,026
percent change	*112%*	*60%*	*13%*	*86%*	*58%*
Housing Units, 2005 Estimate	9,544	9,444	10,910	14,575	44,473
2000 to 2005 Change	968	885	906	3,401	6,160
percent change	*11%*	*10%*	*9%*	*30%*	*16%*

Source: U.S. Census Bureau, 1990 and 2000 Censuses, data aggregated to HS attendance areas by Portland State University Population Research Center (PRC); 2005 estimated by PRC.

ENROLLMENT TRENDS

In the past 10 years, the Hillsboro School District has added 4,000 students to its enrollment, growing from about 15,600 students in the 1995-96 school year to 19,600 in the current year (2005-06). To handle the growth since 1995-96, the District has opened three new elementary schools and two new senior high schools, and shifted 9th grade from its junior high schools to its senior high schools. The HSD now operates 23 elementary schools, all serving grades kindergarten to 6th, four junior high schools serving grades 7 and 8, and four senior high schools serving grades 9 to 12. There is also one charter elementary school.

On the next page, Table 6 summarizes information that was published in the District's *Population Overview, October 1, 2005* publication. Ten years of enrollment data are shown in the table, providing symmetry with the PRC enrollment forecasts, which extend 10 years into the future. Many of the historic and forecast comparisons included later in this report are shown in five year intervals. This time frame is particularly relevant for historic enrollment, because the 1995 to 2000 enrollment trends differ from the 2000 to 2005 trends, much like the population and housing trends differ between the two intervals.

Total enrollment grew by just over 2,500 students in the 1995-96 to 2000-01 period, and just under 1,500 in the 2000-01 to 2005-06 period. The average rate of growth in the first half of the 2000s (1.6 percent annually) was about half of that in the last half of the 1990s (3.0 percent annually). But the biggest difference between the two periods was at the elementary school level. Enrollment in grades K-6 grew by more than 1,300 between 1995-96 and 2000-01, and by only 555 between 2000-01 and 2005-06. In contrast, secondary enrollment growth did not decline as much in the latter period. Migration of population to the District fueled much of the elementary enrollment growth in the late 1990s. As Chart 1 on page 9 showed, the youngest age groups (under age 10) were more likely than older children to be part of the migration flow. As migration slowed after

Table 6

Hillsboro School District, October Total Enrollment, 1995-96 to 2005-06

Grade	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
K	1,324	1,318	1,368	1,366	1,398	1,451	1,469	1,531	1,513	1,553	1,549
1	1,316	1,366	1,399	1,447	1,442	1,491	1,585	1,510	1,547	1,531	1,614
2	1,222	1,324	1,390	1,482	1,474	1,467	1,480	1,571	1,513	1,555	1,535
3	1,265	1,252	1,324	1,410	1,506	1,500	1,477	1,516	1,495	1,543	1,578
4	1,288	1,290	1,256	1,346	1,431	1,519	1,496	1,452	1,503	1,514	1,543
5	1,300	1,267	1,324	1,283	1,370	1,455	1,543	1,505	1,424	1,534	1,520
6	1,233	1,331	1,286	1,346	1,307	1,401	1,470	1,502	1,464	1,453	1,500
7	1,240	1,209	1,304	1,293	1,359	1,309	1,395	1,460	1,485	1,470	1,454
8	1,228	1,208	1,250	1,333	1,320	1,385	1,316	1,415	1,489	1,498	1,450
9	1,191	1,267	1,268	1,272	1,367	1,400	1,440	1,372	1,454	1,520	1,553
10	1,078	1,197	1,254	1,282	1,253	1,340	1,387	1,397	1,353	1,433	1,495
11	966	987	1,090	1,163	1,166	1,161	1,275	1,333	1,359	1,302	1,360
12	864	840	851	987	1,028	1,085	1,085	1,190	1,240	1,286	1,266
Unclassified	49	42	72	106	93	117	101	96	112	151	145
Total	**15,564**	**15,898**	**16,436**	**17,116**	**17,514**	**18,081**	**18,519**	**18,850**	**18,951**	**19,343**	**19,562**
K-6	8,948	9,148	9,347	9,680	9,928	10,284	10,520	10,587	10,459	10,683	10,839
7-8	2,468	2,417	2,554	2,626	2,679	2,694	2,711	2,875	2,974	2,968	2,904
9-12	4,099	4,291	4,463	4,704	4,814	4,986	5,187	5,292	5,406	5,541	5,674
K-12	**15,515**	**15,856**	**16,364**	**17,010**	**17,421**	**17,964**	**18,418**	**18,754**	**18,839**	**19,192**	**19,417**

Five and Ten Year Change by School Level

	Grade K-6 Change		Grade 7-8 Change		Grade 9-12 Change		Total Change*	
	Number	***Percent***	**Number**	***Percent***	**Number**	***Percent***	**Number**	***Percent***
1995-96 to 2000-01	1,336	*14.9%*	226	*9.2%*	887	*21.6%*	2,517	*16.2%*
2000-01 to 2005-06	555	*5.4%*	210	*7.8%*	688	*13.8%*	1,481	*8.2%*
1995-96 to 2005-06	**1,891**	***21.1%***	**436**	***17.7%***	**1,575**	***38.4%***	**3,998**	***25.7%***

Data Source: Hillsboro School District, Population Overview, October 1, 2005

** Includes Unclassified*

2000, the elementary growth slowed, but momentum from previous elementary growth moved into secondary grades.

Another way to evaluate enrollment growth is by comparing historic district-wide grade progression rates (GPRs). 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. Rates for some grades may be consistently high, indicating that new students are entering the District from private schools. For this reason, it is common to see higher GPRs for the K-1st and 8th-9th grade transitions. In grades 10, 11, or 12, low GPRs can indicate that students are dropping out of District schools. But for most elementary grades, if the population entering and leaving the District is in balance and there is not widespread grade retention, one can expect GPRs very close to 1.00.

Chart 3 on the next page shows the average of five years of GPRs beginning with the 1995-96 to 1996-97 rates and ending with the 1999-00 to 2000-01 rates. GPRs during these five years were relatively high. Rates for elementary rates exceeding 1.01 and even exceeding 1.02 for 1st-2nd grade illustrate the positive net migration during the period. The significantly higher kindergarten to 1st grade average GPR of 1.055 likely includes students who lived in the District but did not attend public schools in kindergarten, as well as students added due to net migration.

Averages for the most recent five years, beginning with the 2000-01 to 2001-02 rates and ending with the 2004-05 to 2005-06 years, are presented in Chart 4. In this period, the number of people moving into the District was not much higher than the number moving out, and the elementary rates are very close to 1.00. The K-1st and 8th-9th rates are still higher than GPRs for the other grades, showing the impact of new students entering District schools. Finally, the rates for the 10th-11th and 11th-12th grade transitions are much higher in the latest period. These higher rates also contributed to the enrollment growth in high school, as more students were staying in school.

Chart 3
Average Grade Progression Rates
Hillsboro School District, 1995 to 2000

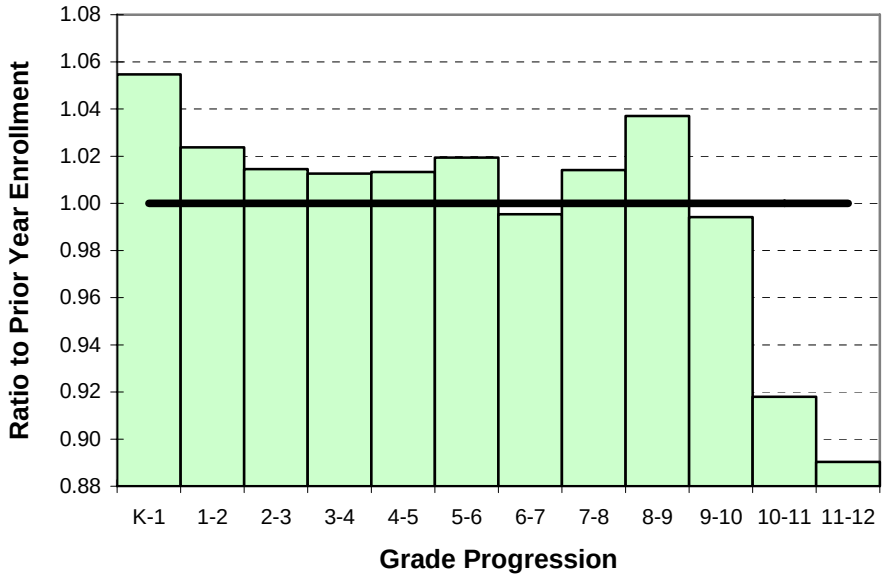
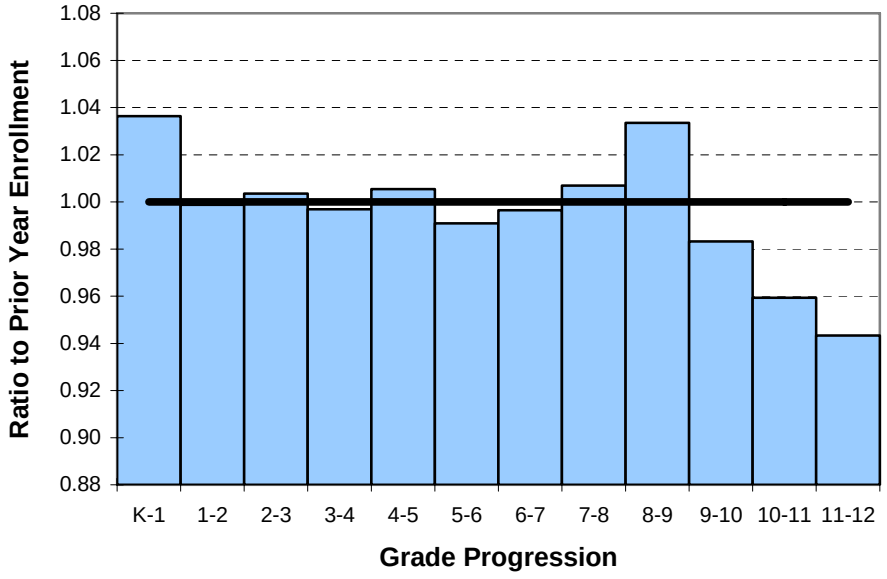


Chart 4
Average Grade Progression Rates
Hillsboro School District, 2000 to 2005



ENROLLMENT IMPACTS OF NEW HOUSING DEVELOPMENT

HSD staff use information from local planning departments to monitor new housing development on an ongoing basis. Most of the new housing in the District is within the City of Hillsboro, so maintaining contact and receiving updated information from the City planning department is very important. There is also new housing development within the HSD that is under the jurisdiction of the City of North Plains, and some development in unincorporated areas under the jurisdiction of Washington County.

For this study, the list of new developments that the District maintains was verified and updated to include proposals brought to the Hillsboro Planning Commission through February 2006, as well as subdivisions that were approved as early as 2004, but were not yet completed and occupied as of Fall, 2005. Information from Washington County and North Plains was also added to the list. More than 100 subdivisions and multi-family developments of four or more units were included and associated with specific elementary, junior high, and high school attendance areas. There are a few developments within the City of Hillsboro that are outside of the HSD boundaries, so those were excluded from the list. Major developments of 40 or more units are summarized in Table 7 on the next page.

In the days when housing development in suburban Portland was dominated by detached single family homes on large lots, and a majority of those homes were occupied by families with children, school planners could simply count the units in new developments and apply a factor for each school level (elementary, jr. high, sr. high) to estimate the potential number of public school students generated by the new development. There is still a need to estimate student generation rates (SGRs), but residential development today is increasingly complex. Attached single family homes, detached homes on very small lots including zero-lot line dwellings, and condominium ownership of units in developments ranging from detached garden-style to large multi-story buildings have been added to the traditional detached single family and rental multi-family development

Table 7

Major Residential Development -- Under Construction or Planned
Hillsboro School District

Development Name	Net Units	Elementary	Junior High	High School
Airport Rd Townhomes	69	West Union	Poynter	Liberty
Amberglen Village Townhomes	56	Lenox	Poynter	Liberty
Arbor Crossing (part in HSD)	132	Orenco	Poynter	Liberty
Arbor Roses 6 & 7	85	Witch Hazel	Thomas	Hillsboro
Brookwood Crossing 1, 2, & 3	305	Witch Hazel	Thomas	Hillsboro
Brookwood Crossing 4, 5, & 6	91	Witch Hazel	Thomas	Hillsboro
Carlyle Oaks	41	Ladd Acres	Brown	Century
Dolores Park	47	Orenco	Poynter	Liberty
Evergreen Park	104	Jackson	Evergreen	Glencoe
Nexus	422	West Union	Poynter	Liberty
Oak Hurst Hts	181	Witch Hazel	Thomas	Hillsboro
Orenco Meadows	40	Orenco	Poynter	Liberty
Orenco Woods	252	Orenco	Poynter	Liberty
Quatama Park Townhomes	84	Orenco	Poynter	Liberty
Solano West	73	Brookwood	Poynter	Liberty
Spring Meadows 1 & 2	55	Patterson	Evergreen	Glencoe
Stonewater 2 & 3	203	West Union	Poynter	Liberty
The Q	92	West Union	Poynter	Liberty
Villages at Orenco	172	Orenco	Poynter	Liberty
Wash. Co. -- L0500461	74	Indian Hills	Brown	Century
Wildwood	47	Patterson	Evergreen	Glencoe
Others (fewer than 40 units each)	848			
District Total	**3,473**			

Portland State University Population Research Center; Information from Washington County, and Cities of Hillsboro and North Plains, March 2006

styles. Each of these types of housing has a unique market. All of them may generate many students or fewer students depending on factors other than the type of structure. These factors include affordability, proximity to schools, the number of bedrooms, and the presence or absence of child-friendly amenities in the development and in the surrounding neighborhood.

In this study PRC does not attempt to measure the enrollment impact of all of the variables influencing school enrollment, but we have estimated the SGRs for new developments of several different types. These rates are used in the enrollment forecasts in this study, and may be used by HSD staff for other school planning work in the near future.

At the time that new development is first proposed, many of the details that may impact school enrollment are not known, but basic facts including the location, the number of units, the type of structures (attached, detached, or multi-family) and type of tenure (market-rate rental, income-restricted rental, or for sale condos) usually are part of the proposal. By measuring the actual number of students in Fall, 2005 residing in specific types of recently built housing, we have developed a set of rates that can be used for general estimates of student generation if these basic facts are known.

To calculate the SGRs, a geographic information system (GIS) was developed so that student addresses (points) could be associated with specific tax lots (polygons). The tax lot polygons contain information including structure type and, for single family homes, year built. Additional research was required to develop lists of apartments and determine the number of units and year built. The rates are shown in Table 8 below.

Table 8
Average Number of HSD Students per Housing Unit, Fall 2005
By Type of Housing Unit

	Grade Level			
Housing Type	**K-6**	**7-8**	**9-12**	**K-12**
Single family homes built before 1990				**0.500**
Single family homes built since 1990 -- overall				**0.558**
Detached SF built 1999-2003 [1]	*0.362*	*0.078*	*0.154*	***0.594***
Attached or small lot SF built 1999-2003 [2]	*0.217*	*0.042*	*0.075*	***0.334***
Multiple family homes built before 1990				**0.338**
Multiple family homes built since 1990 -- overall				**0.200**
Market-rate rentals [3]	*0.107*	*0.025*	*0.043*	***0.175***
Affordable (income-restricted) rentals [3]	*0.608*	*0.139*	*0.280*	***1.027***
Condominiums [3]	*0.064*	*0.012*	*0.023*	***0.099***
Manufactured or mobile homes and other				**0.207**

1. Single family homes on lots larger than 3250 square feet. Average lot size is 6575 sq. ft.

2. Single family homes on lots smaller than 3250 square feet.

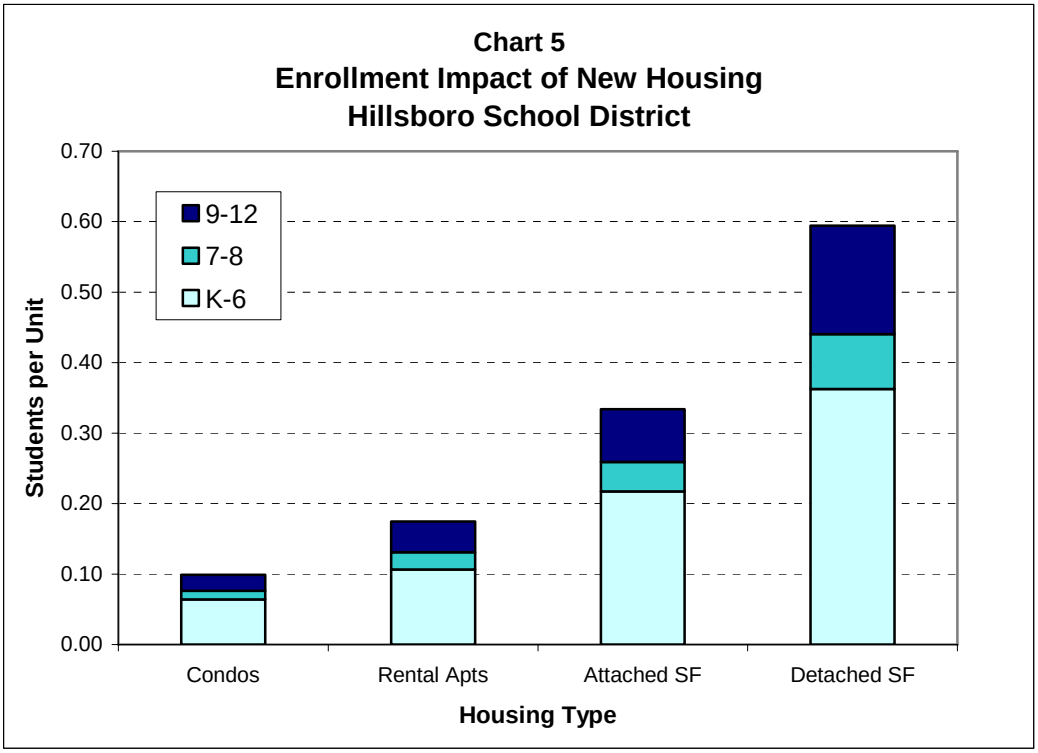
3. Student generation rates for specific types of multi-family housing for large complexes within the District, representing about 82% of all multi-family units built since 1990.

Portland State University, Population Research Center, April 2006

Newer single family homes, built since 1990, have slightly higher student generation than homes built before 1990, which were at least 15 years old as of Fall, 2005. Although many homes turn over to younger families after their original occupants move out, there is an element of "aging in place" when householders remain in their homes after their children are no longer school-age. Newer single family homes have higher SGRs overall, but they come in various sizes, on various size lots. Although attached and small lot single family homes are generally more affordable, school-age children are more numerous in detached homes on standard lots. We found 0.59 students per unit (about six students per 10 homes) in single family homes built between 1999 and 2003 on larger lots, compared with an average of 0.33 (one student per three homes) in single family homes on smaller lots. The tax lot information does not specify whether homes are attached or detached, so we chose lot sizes less than 3,250 square feet as a proxy for attached homes after consulting aerial photos.

Among multi-family units, the lowest rates were in condominiums, where there was about one HSD student for every 10 units. There are relatively few recently constructed condominiums in the HSD, and condominium status refers to the ownership, rather than structure type, so future research should be conducted to refine the SGRs for condos. The market-rate rentals built since 1990 are mostly large complexes, and K-12 student generation in the 26 individual developments included in the study varies widely, from as low as 0.06 (six students per 100 units) to more than 0.50 (50 students per 100 units). The average is 0.175, or about one HSD student for every six units. In contrast, affordable rental apartments with a requirement that renters have low incomes have much higher SGRs. We identified six newer apartment developments with income restrictions, and found more than one student per unit in these developments, on average.

In order to estimate the potential impact of the approximately 100 developments on the current development inventory, we applied the SGRs by school level shown in Chart 5 for four types of housing. There are no income-restricted rentals or manufactured home parks that we are aware of at this time among the current developments.



Because neighborhood schools were identified for each development, applying the SGRs yields an estimate of the enrollment impact at each school. Those estimates are shown in Table 9 on the next page. Although actual impacts at individual schools may be higher or lower than these estimates, the district-wide totals should be relatively accurate if the average characteristics of the new developments are similar to those used to estimate the Fall, 2005 SGRs. Of course, demographic changes that occur in existing homes within each school's area may have a positive or negative impact on school enrollment, so even if all of the units are built and generate students at rates similar to the estimates, actual enrollment changes at impacted schools may not resemble the simple incremental growth from new housing.

Table 9

Total Number of Students Potentially Generated by Current Planned New Development*
Hillsboro School District by Existing (2005-06) School Attendance Area

Elementary -- Total K-6th Grade Students	
Brookwood	45
Butternut Creek	14
David Hill	15
Eastwood	0
Farmington View	1
Groner	13
Imlay	1
Indian Hills	32
Jackson	24
Ladd Acres	32
Lenox	12
McKinney	17
Minter Bridge	7
Mooberry	6
North Plains	34
Orenco	210
Patterson	45
Peter Boscow	5
Reedville	10
Tobias	52
W.L. Henry	4
West Union	115
Witch Hazel	189
HSD Total	**883**

Junior High -- Total 7th-8th Grade Students	
Poynter	80
Evergreen	26
Thomas	47
Brown	30
HSD Total	**183**

Senior High -- Total 9th-12th Grade Students	
Glencoe	51
Century	53
Liberty	146
Hillsboro	100
HSD Total	**350**

**Includes most new subdivisions of four or more units that have been approved or submitted but not completed; does not include scattered infill in existing developments.*

Source: Subdivision and planned unit development lists, Cities of Hillsboro, North Plains, and Washington County

Student Generation calculated by Portland State University, Population Research Center, using information from recent comparable developments. *April, 2006*

ENROLLMENT FORECASTS

District-wide Forecast Methodology

A demographic cohort-component model was used to forecast population for the District by age and sex. The components of population change are births, deaths, and migration (residential relocation). 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.

Historic school enrollment is linked to the population forecast in two ways. First, the kindergarten and first grade enrollments in the census years (the 1989-90 and 1999-2000 school years) are compared to the population at the appropriate age counted in the census. The ratio of enrollment to population is called a "capture rate" and is an estimate of the share of area children who are enrolled in HSD schools. Assumptions for capture rates based on the census data are used to bring new kindergarten and first grade students into the District's enrollment. Once the students are in first grade, a set of baseline GPRs are used to move students from one grade to the next. These baseline GPRs, shown in the Appendix, assume that 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.

The base year data for the population forecast is 1990 Census data. From the 1990 base, the model is calibrated to actual change using 2000 Census results and annual school enrollment data beginning with the 1989-90 school year and extending to the most recent year. Forecast births in this historic period are calibrated to actual births that occurred within the District, and net migration levels are calibrated to the net migration that was estimated between the 1990 and 2000 censuses.

District-wide Population Forecast

The findings described in the earlier section "Population and Housing Trends" draw a picture of the characteristics of growth in the District during a period of high population and job growth, and the subsequent period of slower growth. Young adults, and the youngest children, settled in the HSD at very high rates during the late 1990s. In the early 2000s, momentum from the late 1990s caused increases in the number of older children, but the population growth in the youngest age groups slowed as births were stable and migration was low. Those findings inform the assumptions in the population forecast, which uses migration rates by age and sex as well as migration levels to predict the population by age group for the next 10 years.

The past may hold clues about the type of growth that the HSD can expect in the future, but is less helpful in predicting the amount of growth. For the long-range (ten years), the HSD population forecast is consistent with the employment and population forecasts produced by state and local agencies. Washington County currently has the lowest unemployment rate in the state, and employment in the region is forecast to grow by over 16 percent in a ten year period.[11,12] The County's population is forecast to grow by 22 percent.[13] Metro's allocation of the regional household forecast indicates 22 percent growth in the number of households within the HSD between 2005 and 2015.[14]

The mid-range (five year) forecast horizon is consistent with the economic recovery and with current planned housing development, which has the potential to increase the District's housing stock by eight percent within the next three years.

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[11]"February 2006 Oregon Labor Force and Employment by Area." Oregon Employment Department, Workforce Analysis, March 23, 2006.

[12]"Employment Projections by Industry, 2004-2014." Oregon Employment Department, Workforce Analysis, July, 2005. PRC note: the "region" includes Multnomah County, which typically has lower percentage employment growth than Washington County.

[13]Growth rate 2005-2015 from "Forecasts of Oregon's County Populations and Components of Change, 2000 to 2040." Oregon Department of Administrative Services, Office of Economic Analysis, April, 2004.

[14]Metro produces a regional forecast for the Portland-Vancouver area, and allocates selected characteristics including households to small areas called Transportation Analysis Zones (TAZs) with the input of local jurisdictions. The allocation represents one scenario of the distribution of growth, is primarily used for transportation modeling, and is not necessarily consistent with current zoning. But for large areas it is a helpful indicator of the general locations where the region's growth may occur.

Table 10

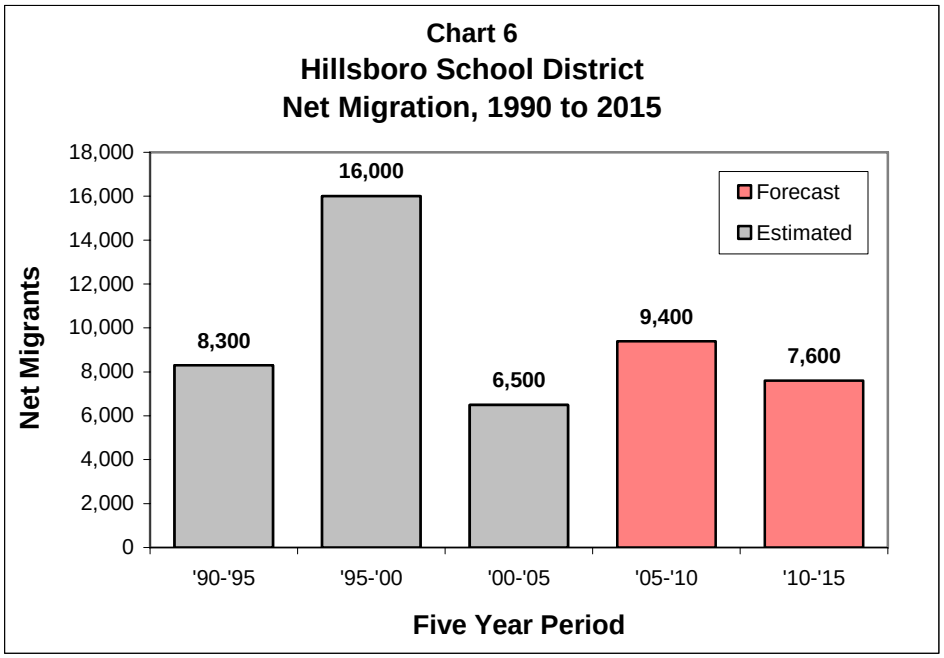
Population by Age Group
Hillsboro School District, 1990 to 2015

	1990 Census	1995 Estimate	2000 Census	2005 Estimate	2010 Forecast	2015 Forecast	2005 to 2015 Change	
							Number	Percent
Under Age 5	5,934	7,021	9,046	9,631	10,371	11,130	1,499	*16%*
Age 5 to 9	6,253	6,816	8,496	9,623	10,447	10,978	1,355	*14%*
Age 10 to 14	5,862	6,703	7,765	8,850	10,144	10,847	1,997	*23%*
Age 15 to 17	3,122	3,858	4,595	4,842	5,501	6,246	1,404	*29%*
Age 18 to 19	1,803	2,342	2,794	3,061	3,600	4,031	970	*32%*
Age 20 to 24	4,183	5,577	7,244	8,159	8,762	9,818	1,659	*20%*
Age 25 to 29	5,536	6,561	9,465	10,150	11,550	12,223	2,073	*20%*
Age 30 to 34	6,643	6,966	9,500	10,744	12,056	13,209	2,465	*23%*
Age 35 to 39	6,703	7,403	8,738	9,518	11,087	11,969	2,451	*26%*
Age 40 to 44	6,010	7,113	8,300	8,967	9,955	11,358	2,391	*27%*
Age 45 to 49	4,281	6,054	7,269	8,097	8,815	9,717	1,620	*20%*
Age 50 to 54	2,934	4,305	6,149	7,253	8,135	8,811	1,558	*21%*
Age 55 to 59	2,400	2,907	4,289	5,860	6,939	7,779	1,919	*33%*
Age 60 to 64	2,105	2,305	2,799	4,054	5,557	6,570	2,516	*62%*
Age 65 to 69	1,908	1,932	2,084	2,485	3,613	4,992	2,507	*101%*
Age 70 to 74	1,482	1,755	1,830	1,903	2,291	3,269	1,366	*72%*
Age 75 to 79	1,125	1,237	1,461	1,506	1,572	1,882	376	*25%*
Age 80 to 84	711	893	1,032	1,136	1,196	1,229	93	*8%*
Age 85 and over	579	700	866	961	1,117	1,224	263	*27%*
Total Population	**69,574**	**82,448**	**103,722**	**116,800**	**132,708**	**147,282**	**30,482**	***26%***
Total age 5 to 17	15,237	17,377	20,856	23,315	26,092	28,071	4,756	*20%*
share age 5 to 17	*21.9%*	*21.1%*	*20.1%*	*20.0%*	*19.7%*	*19.1%*		

		1990-95	1995-00	2000-05	2005-10	2010-15
Population Change		**12,874**	**21,274**	**13,078**	**15,908**	**14,574**
Percent		*18.5%*	*25.8%*	*12.6%*	*13.6%*	*11.0%*
Average Annual		*3.4%*	*4.6%*	*2.4%*	*2.6%*	*2.1%*

Source: U.S. Census Bureau, 1990 and 2000 Censuses; data aggregated to HSD boundary by Portland State University Population Research Center. PSU-PRC Estimates and Forecasts, 1995, 2005,2010, and 2015.

The district-wide population forecast by age group is presented in Table 10 on the previous page. Total population is forecast to grow by 26 percent between 2005 and 2015, at an average annual rate of 2.6 percent between 2005 and 2010, slowing to 2.1 percent between 2010 and 2015. School-age population ages 5 to 17 is expected to grow by 20 percent, continuing the recent trend of school-age population growing slower than total population. The population increase that is attributable to net migration for each five year interval is shown in Chart 6 below.



District-wide Enrollment Forecast

Table 11 on the next page contains grade level forecasts for the Hillsboro School District for each year from 2006-07 to 2015-16. The forecasts are also summarized by school level — elementary (K-6), junior high (7-8), and high school (9-12). For the 10 years from now (2005-06) to the end of the forecast period (2015-16), total HSD enrollment is forecast to grow by 3,690 students, slightly less than the 3,998 student growth in the most recent 10 years. The past 10 years included the late 1990s period of extraordinary growth in the Hillsboro area's economy and population. That level of growth is not expected to return soon. But judging from the current levels of job growth and housing development,

Table 11

Hillsboro School District, Enrollment Forecasts, 2006-07 to 2015-16

Grade	Actual 2005-06	Forecast 2006-07	>>> 2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
K	1,549	1,630	1,669	1,714	1,737	1,736	1,759	1,779	1,793	1,808	1,829
1	1,614	1,619	1,681	1,724	1,768	1,793	1,792	1,814	1,834	1,848	1,863
2	1,535	1,623	1,632	1,693	1,734	1,775	1,796	1,795	1,817	1,838	1,851
3	1,578	1,542	1,633	1,643	1,701	1,740	1,777	1,798	1,797	1,819	1,838
4	1,543	1,597	1,565	1,655	1,664	1,719	1,755	1,793	1,813	1,811	1,834
5	1,520	1,549	1,607	1,573	1,662	1,668	1,721	1,757	1,794	1,814	1,811
6	1,500	1,527	1,559	1,615	1,580	1,667	1,673	1,725	1,760	1,797	1,817
7	1,454	1,512	1,541	1,572	1,626	1,589	1,675	1,680	1,733	1,768	1,804
8	1,450	1,480	1,540	1,569	1,597	1,652	1,612	1,699	1,704	1,757	1,792
9	1,553	1,492	1,527	1,589	1,615	1,642	1,696	1,654	1,744	1,748	1,802
10	1,495	1,530	1,475	1,509	1,568	1,591	1,615	1,668	1,627	1,714	1,717
11	1,360	1,444	1,477	1,424	1,457	1,512	1,533	1,555	1,605	1,566	1,649
12	1,266	1,285	1,364	1,395	1,343	1,375	1,424	1,445	1,464	1,512	1,475
Unclassified	145	147	150	154	156	159	161	164	167	168	170
Total	**19,562**	**19,977**	**20,420**	**20,829**	**21,208**	**21,618**	**21,989**	**22,326**	**22,652**	**22,968**	**23,252**
K-6	10,839	11,087	11,346	11,617	11,846	12,098	12,273	12,461	12,608	12,735	12,843
7-8	2,904	2,992	3,081	3,141	3,223	3,241	3,287	3,379	3,437	3,525	3,596
9-12	5,674	5,751	5,843	5,917	5,983	6,120	6,268	6,322	6,440	6,540	6,643
K-12	**19,417**	**19,830**	**20,270**	**20,675**	**21,052**	**21,459**	**21,828**	**22,162**	**22,485**	**22,800**	**23,082**

Five and Ten Year Change by School Level

	Grade K-6 Change			Grade 7-8 Change			Grade 9-12 Change			Total Change*	
	Number	*Percent*		Number	*Percent*		Number	*Percent*		Number	*Percent*
2005-06 to 2010-11	1,259	*11.6%*		337	*11.6%*		446	*7.9%*		2,056	*10.5%*
2010-11 to 2015-16	745	*6.2%*		355	*11.0%*		523	*8.5%*		1,634	*7.6%*
2005-06 to 2015-16	**2,004**	***18.5%***		**692**	***23.8%***		**969**	***17.1%***		**3,690**	***18.9%***

Note: Total enrollment includes students who live outside the District (1.1% of total), and those whose residence could not be determined (0.3% of total), so it is larger than the sum of the high school attendance areas .

Portland State University, Population Research Center, April 2006

** Includes Unclassified*

the next few years are likely to bring more growth than what the District experienced during the recessionary years in the early 2000s.

The elementary grades are expected to add about 2,000 students in the next 10 years, grade 7 and 8 are expected to grow by nearly 700 students, and senior high grades are expected to add almost 1,000 students.

Characteristics of forecast enrollment growth differ between the 2005-06 to 2010-11 and 2010-11 to 2015-16 periods. Following are highlights of the forecast for each five year period.

District-wide Enrollment Forecast between 2005-06 and 2010-11

- Total enrollment is expected to grow by more than 2,000 students, an average of more than 400 each year.
- Percentage growth in total enrollment is 10.5 percent, or 2 percent annually.
- Average annual growth is less than the 500 student per year average during 1995-96 to 2000-01, but more than the 300 per year during 2000-01 to 2005-06.
- Elementary (K-6) enrollment grows by about 1,250 students (more than 11 percent), as younger families are attracted by the surge in housing development.
- Junior high (7-8) enrollment grows by about 340 students (more than 11 percent).
- Senior high (9-12) enrollment grows by about 450 students (almost 8 percent).

District-wide Enrollment Forecast between 2010-11 and 2015-16

- Total enrollment is expected to grow by about 1,600 students, an average of more than 300 each year.
- Percentage growth in total enrollment is 7.6 percent, or 1.5 percent annually.
- Elementary (K-6) enrollment grows by about 750 students (just over 6 percent).
- Junior high (7-8) enrollment grows by about 350 students (11 percent).
- Senior high (9-12) enrollment grows by about 520 students (more than 8 percent).
- Elementary enrollment increases less than in 2005-06 to 2010-11, but secondary growth remains high due to momentum from previous elementary growth.

Alternative District-wide Forecasts

The District-wide enrollment forecast reported on the previous pages has the benefit of being linked to the population forecast. If the population forecast is accurate, then the enrollment forecast should be reliable. If population trends deviate from the forecast in the future, it will be easy to understand the deviation in the enrollment forecast, and adjust the assumptions if needed. We characterize the forecast model as a "demographic enrollment forecast model." A different type of forecast model simply uses ratios to convert historic and forecast births into kindergarten enrollment and incorporates the assumptions about migration into future grade progression rates (GPRs). We call this a "GPR enrollment forecast model." GPR models can also be reliable, but their connections to demographic and economic dynamics are weaker.

To put the results of the demographic model into context, we produced district-wide enrollment forecasts for HSD based on two alternative GPR models. Results of the forecasts are shown in Table 12 on the next page, and graphically in Chart 7. The first model is based entirely on recent enrollment trends — the 2004-05 and 2005-06 ratios of kindergarten enrollment to lagged births, and the average GPRs from the past five years, which include the early 2000s recession. This model produces a lower enrollment forecast than the demographic model, but total enrollment still grows by 12 percent. The second model brings more growth to the district by increasing the ratio of incoming kindergarten enrollment and using the higher GPRs from the 1995-96 to 2000-01 period. The result is 24 percent growth in total enrollment, exceeding the forecast produced with the demographic model. Specific assumptions for the two GPR models are shown in the Appendix.

Table 12

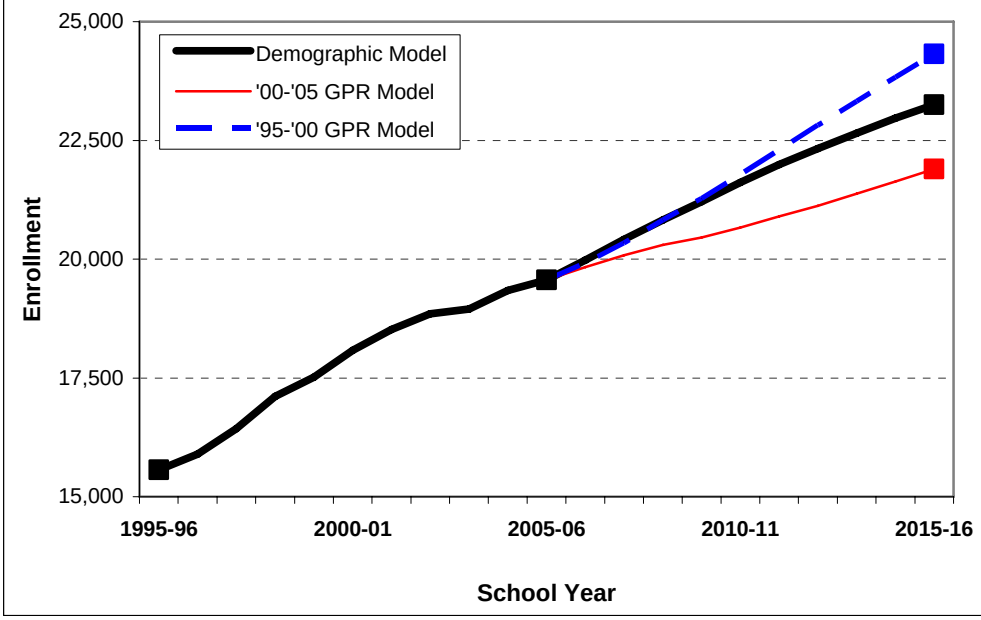
HSD Alternative Forecasts, 2010-11 and 2015-16

	Actual 2005-06	Forecast 2010-11	Forecast 2015-16	Forecast Change 2005-06 to 2010-11	Forecast Change 2010-11 to 2015-16	Forecast Change *2005-06 to 2015-16*
Demographic Model						
K-6	10,839	12,098	12,843	1,259	745	*18%*
7-8	2,904	3,241	3,596	337	355	*24%*
9-12	5,674	6,120	6,643	446	523	*17%*
Total*	**19,562**	**21,618**	**23,252**	**2,056**	**1,634**	***19%***
GPR Model 1: 2000-01 to 2005-06 rates						
K-6	10,839	11,474	12,085	635	611	*11%*
7-8	2,904	3,097	3,331	193	234	*15%*
9-12	5,674	5,945	6,319	271	374	*11%*
Total*	**19,562**	**20,669**	**21,897**	**1,107**	**1,228**	***12%***
GPR Model 2: 1995-96 to 2000-01 rates						
K-6	10,839	12,379	13,479	1,540	1,100	*24%*
7-8	2,904	3,286	3,819	382	533	*32%*
9-12	5,674	5,956	6,844	282	888	*21%*
Total*	**19,562**	**21,782**	**24,322**	**2,220**	**2,540**	***24%***

**Total includes K-12 and unclassified grade ranges.*
Portland State University, Population Research Center, April 2006

Chart 7

HSD Total Enrollment, 1995-96 to 2015-16
Alternative Districtwide Enrollment Forecasts



Resident Enrollment Forecasts for High School Attendance Areas

Geographic precision was added to the forecasts in this study by producing annual grade level forecasts at a sub-district level. The HSD's four current high school attendance areas were chosen as the sub-district areas, and demographic models forecasting population and enrollment were built for each of the areas. Because the housing development analysis required matching student addresses to the GIS, we were able to group most of the District's students by their neighborhood high school attendance area for Fall, 2005. The forecasts that were produced are *resident* forecasts for all students, regardless of whether or not they attend their assigned neighborhood school.

The high school attendance area population and enrollment forecasts are consistent with the district-wide forecasts produced with the demographic model. The population forecasts use the same methodology as the district-wide population forecasts, with rates and assumptions specific to each individual area. For example, the Liberty area has a high share of young adults and relatively low fertility rates, and experiences a net outflow of children between birth and age 5. The Century High area gains children due to migration between birth and age 5. Population forecasts for the high school areas are controlled to match the District totals. But the sums of the enrollment forecasts for high school areas are a little lower than the district-wide enrollment forecasts, because the district-wide figures include students who live outside the District boundaries (about 1.1 percent of the total) and those whose residence could not be determined (about 0.3 percent of the total).

On the page following this section is a chart for each high school attendance area showing population growth due to net migration estimated by five year interval between 1990 and 2005, and forecast between 2005 and 2015. The Liberty and Hillsboro High areas are expected to grow the most in the next ten years, due mostly to housing growth in the Witch Hazel (Hillsboro High) and Orenco and West Union (Liberty High) areas. For the current Hillsboro High boundary, this is a reversal of the trend of slow population growth seen in the 1990s. The current Century and Glencoe areas are expected to experience much slower growth, due to limited housing development. These future

growth patterns are consistent with the current housing development inventory, as well as with the small area allocations of Metro's household forecast. If current plans or zoning change, the geographic distribution of future growth could change. For example, the change in the Hillsboro High area's development trends occurred after the Witch Hazel area was added to the Urban Growth Boundary.

Following Charts 8 to 11, Tables 13 to 16 detail the enrollment forecasts for each high school attendance area, and Map 2 outlines the high school areas and includes a small graph showing incremental enrollment growth in each area by school level.

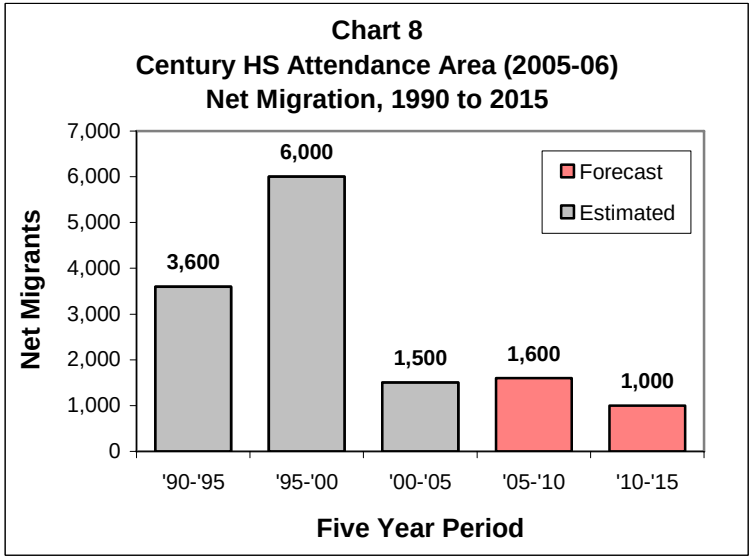


Chart 8
Century HS Attendance Area (2005-06)
Net Migration, 1990 to 2015
Net Migrants
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
3,600
6,000
1,500
1,600
1,000
Forecast
Estimated
'90-'95
'95-'00
'00-'05
'05-'10
'10-'15
Five Year Period

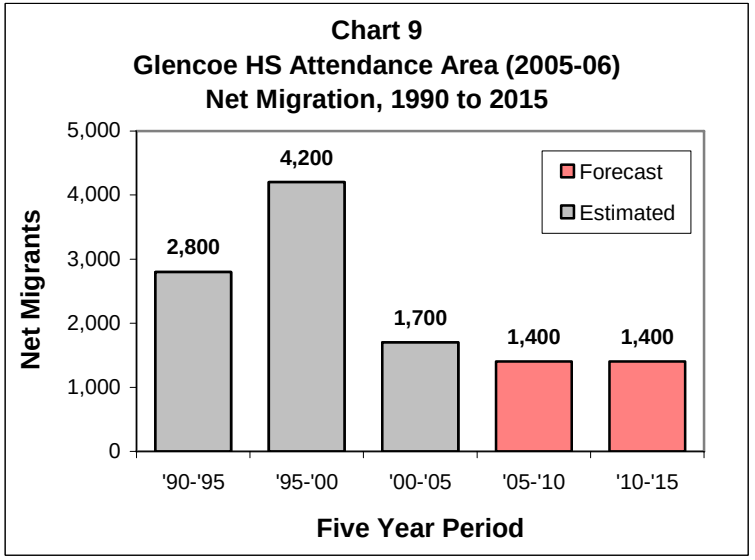


Chart 9
Glencoe HS Attendance Area (2005-06)
Net Migration, 1990 to 2015
Net Migrants
5,000
4,000
3,000
2,000
1,000
0
2,800
4,200
1,700
1,400
1,400
Forecast
Estimated
'90-'95
'95-'00
'00-'05
'05-'10
'10-'15
Five Year Period

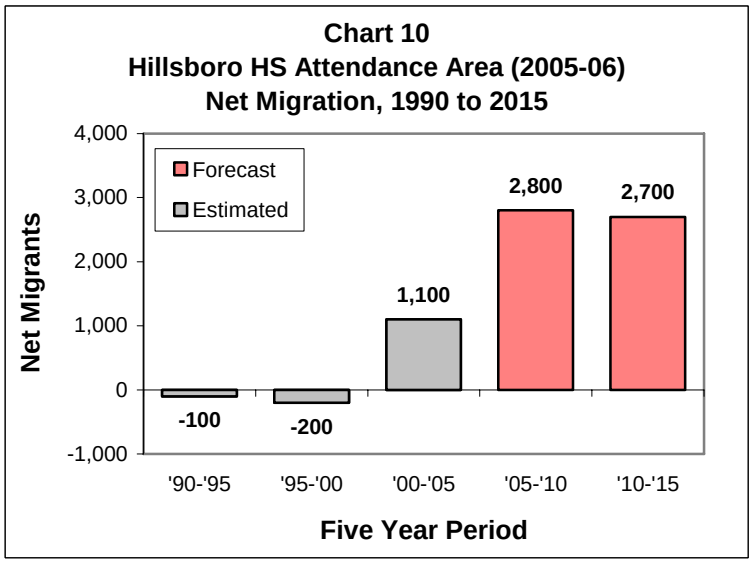


Chart 10
Hillsboro HS Attendance Area (2005-06)
Net Migration, 1990 to 2015
Net Migrants
4,000
3,000
2,000
1,000
0
-1,000
-100
-200
1,100
2,800
2,700
Forecast
Estimated
'90-'95
'95-'00
'00-'05
'05-'10
'10-'15
Five Year Period

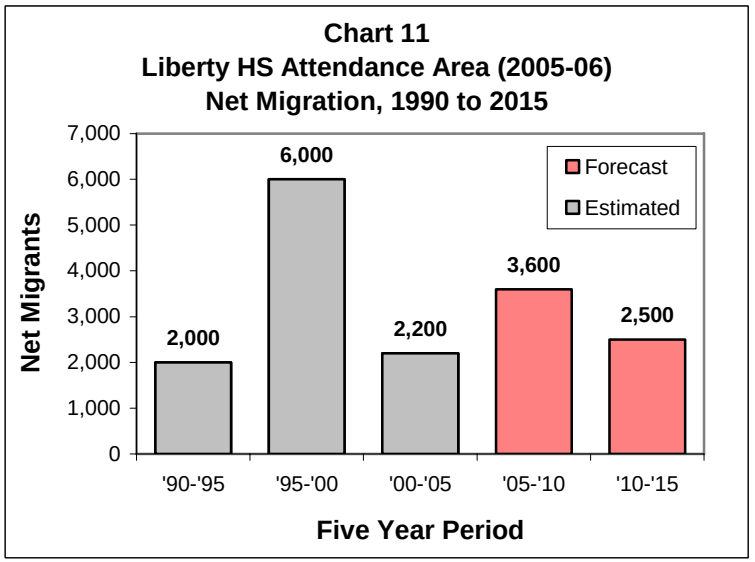


Chart 11
Liberty HS Attendance Area (2005-06)
Net Migration, 1990 to 2015
Net Migrants
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
2,000
6,000
2,200
3,600
2,500
Forecast
Estimated
'90-'95
'95-'00
'00-'05
'05-'10
'10-'15
Five Year Period

Table 13

Students Residing in Century High Attendance Area[1] and Enrolled in HSD Schools

Grade	Actual 2005-06	Forecast 2006-07	>>> 2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
K	367	411	406	414	412	408	410	411	412	413	415
1	429	400	419	417	427	428	425	426	427	428	429
2	376	428	399	417	416	424	425	422	423	424	425
3	410	378	431	402	420	417	425	426	423	424	425
4	395	413	381	434	405	421	418	426	427	424	425
5	364	398	416	383	437	406	422	419	427	428	425
6	399	363	397	414	381	434	403	419	416	424	425
7	377	402	365	399	416	382	435	404	420	417	425
8	368	379	404	367	401	417	383	436	405	421	418
9	402	381	393	419	380	414	431	395	450	418	435
10	392	396	375	387	412	373	406	423	388	442	410
11	365	378	381	361	373	396	359	390	407	373	425
12	311	345	357	359	340	351	373	338	367	383	351
Unclassified	25	26	26	26	26	27	27	27	27	27	27
Total	**4,980**	**5,098**	**5,150**	**5,199**	**5,246**	**5,298**	**5,342**	**5,362**	**5,419**	**5,446**	**5,460**
K-6	2,740	2,791	2,849	2,881	2,898	2,938	2,928	2,949	2,955	2,965	2,969
7-8	745	781	769	766	817	799	818	840	825	838	843
9-12	1,470	1,500	1,506	1,526	1,505	1,534	1,569	1,546	1,612	1,616	1,621
K-12	**4,955**	**5,072**	**5,124**	**5,173**	**5,220**	**5,271**	**5,315**	**5,335**	**5,392**	**5,419**	**5,433**

Century Residents, Five and Ten Year Change by School Level

	Grade K-6 Change			Grade 7-8 Change			Grade 9-12 Change			Total Change[2]	
	Number	***Percent***		**Number**	***Percent***		**Number**	***Percent***		**Number**	***Percent***
2005-06 to 2010-11	198	*7.2%*		54	*7.2%*		64	*4.4%*		318	*6.4%*
2010-11 to 2015-16	31	*1.1%*		44	*5.5%*		87	*5.7%*		162	*3.1%*
2005-06 to 2015-16	**229**	***8.4%***		**98**	***13.2%***		**151**	***10.3%***		**480**	***9.6%***

1. Current (2005-06) Boundary
2. Includes Unclassified

Table 14

Students Residing in Glencoe High Attendance Area[1] and Enrolled in HSD Schools

Grade	Actual 2005-06	Forecast 2006-07	>>> 2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
K	362	371	403	404	389	385	388	392	396	399	403
1	397	379	390	423	424	408	405	408	412	415	419
2	401	398	380	391	424	425	409	406	409	413	416
3	396	406	403	385	396	429	430	414	411	414	418
4	396	401	411	408	390	401	434	435	419	416	419
5	426	401	406	416	413	395	406	439	440	424	421
6	360	427	402	406	416	414	396	407	439	440	424
7	373	365	432	407	410	421	419	401	412	444	445
8	367	378	369	437	411	414	425	423	405	416	448
9	375	382	394	384	455	428	431	442	440	421	433
10	371	371	378	390	380	449	423	426	436	434	416
11	350	359	359	365	377	367	434	409	411	421	419
12	344	331	340	340	345	357	347	410	387	389	398
Unclassified	39	39	40	41	41	42	42	43	43	43	43
Total	**4,957**	**5,008**	**5,107**	**5,197**	**5,271**	**5,335**	**5,389**	**5,455**	**5,460**	**5,489**	**5,522**
K-6	2,738	2,783	2,795	2,833	2,852	2,857	2,868	2,901	2,926	2,921	2,920
7-8	740	743	801	844	821	835	844	824	817	860	893
9-12	1,440	1,443	1,471	1,479	1,557	1,601	1,635	1,687	1,674	1,665	1,666
K-12	**4,918**	**4,969**	**5,067**	**5,156**	**5,230**	**5,293**	**5,347**	**5,412**	**5,417**	**5,446**	**5,479**

Glencoe Residents, Five and Ten Year Change by School Level

	Grade K-6 Change			Grade 7-8 Change			Grade 9-12 Change			Total Change[2]	
	Number	***Percent***		**Number**	***Percent***		**Number**	***Percent***		**Number**	***Percent***
2005-06 to 2010-11	119	*4.3%*		95	*12.8%*		161	*11.2%*		378	*7.6%*
2010-11 to 2015-16	63	*2.2%*		58	*6.9%*		65	*4.1%*		187	*3.5%*
2005-06 to 2015-16	**182**	***6.6%***		**153**	***20.7%***		**226**	***15.7%***		**565**	***11.4%***

Portland State University, Population Research Center, April 2006

1. Current (2005-06) Boundary
2. Includes Unclassified

Table 15

Students Residing in Hillsboro High Attendance Area[1] and Enrolled in HSD Schools

Grade	Actual 2005-06	Forecast 2006-07	>>> 2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
K	360	416	415	417	433	434	445	457	468	479	491
1	387	408	440	439	441	458	459	470	483	494	505
2	372	393	415	447	446	448	464	465	476	489	500
3	406	381	402	424	456	455	457	473	474	485	498
4	373	413	388	409	431	463	462	464	480	481	492
5	366	377	418	393	414	436	467	466	468	484	485
6	380	368	379	421	396	416	438	469	468	470	486
7	366	388	376	387	430	404	424	446	477	476	478
8	380	373	396	383	394	438	412	432	454	485	484
9	418	392	385	409	395	406	451	425	445	467	499
10	360	403	379	372	395	381	391	435	410	429	450
11	320	340	380	358	351	373	359	368	410	386	404
12	319	296	314	351	331	324	344	331	339	378	356
Unclassified	38	39	40	41	42	43	44	45	46	47	48
Total	**4,845**	**4,987**	**5,127**	**5,251**	**5,355**	**5,479**	**5,617**	**5,746**	**5,898**	**6,050**	**6,176**
K-6	2,644	2,756	2,857	2,950	3,017	3,110	3,192	3,264	3,317	3,382	3,457
7-8	746	761	772	770	824	842	836	878	931	961	962
9-12	1,417	1,431	1,458	1,490	1,472	1,484	1,545	1,559	1,604	1,660	1,709
K-12	**4,807**	**4,948**	**5,087**	**5,210**	**5,313**	**5,436**	**5,573**	**5,701**	**5,852**	**6,003**	**6,128**

Hillsboro High Residents, Five and Ten Year Change by School Level

	Grade K-6 Change			Grade 7-8 Change			Grade 9-12 Change			Total Change[2]	
	Number	***Percent***		**Number**	***Percent***		**Number**	***Percent***		**Number**	***Percent***
2005-06 to 2010-11	466	*17.6%*		96	*12.9%*		67	*4.7%*		634	*13.1%*
2010-11 to 2015-16	347	*11.2%*		120	*14.3%*		225	*15.2%*		697	*12.7%*
2005-06 to 2015-16	**813**	***30.7%***		**216**	***29.0%***		**292**	***20.6%***		**1,331**	***27.5%***

Portland State University, Population Research Center, April 2006

1. Current (2005-06) Boundary
2. Includes Unclassified

Table 16

Students Residing in Liberty High Attendance Area[1] and Enrolled in HSD Schools

Grade	Actual 2005-06	Forecast 2006-07	>>> 2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
K	434	405	418	451	475	480	487	489	487	486	489
1	379	410	409	422	452	475	478	485	487	485	484
2	359	376	410	409	419	448	468	471	478	480	478
3	349	360	379	414	411	420	446	466	469	476	477
4	359	350	364	383	416	412	419	445	464	467	474
5	351	360	353	367	384	417	411	418	444	463	465
6	340	348	359	352	364	380	412	406	413	438	457
7	322	341	351	362	353	364	379	411	405	412	437
8	309	323	344	354	363	354	363	378	410	404	411
9	342	321	338	360	368	376	365	374	390	423	416
10	351	339	321	338	358	365	371	360	369	384	416
11	300	341	331	313	329	348	353	359	348	357	371
12	264	284	324	315	297	312	329	334	339	329	337
Unclassified	33	34	35	36	37	38	39	40	41	41	42
Total	**4,492**	**4,592**	**4,736**	**4,876**	**5,026**	**5,189**	**5,320**	**5,436**	**5,544**	**5,645**	**5,754**
K-6	2,571	2,609	2,692	2,798	2,921	3,032	3,121	3,180	3,242	3,295	3,324
7-8	631	664	695	716	716	718	742	789	815	816	848
9-12	1,257	1,285	1,314	1,326	1,352	1,401	1,418	1,427	1,446	1,493	1,540
K-12	**4,459**	**4,558**	**4,701**	**4,840**	**4,989**	**5,151**	**5,281**	**5,396**	**5,503**	**5,604**	**5,712**

Liberty Residents, Five and Ten Year Change by School Level

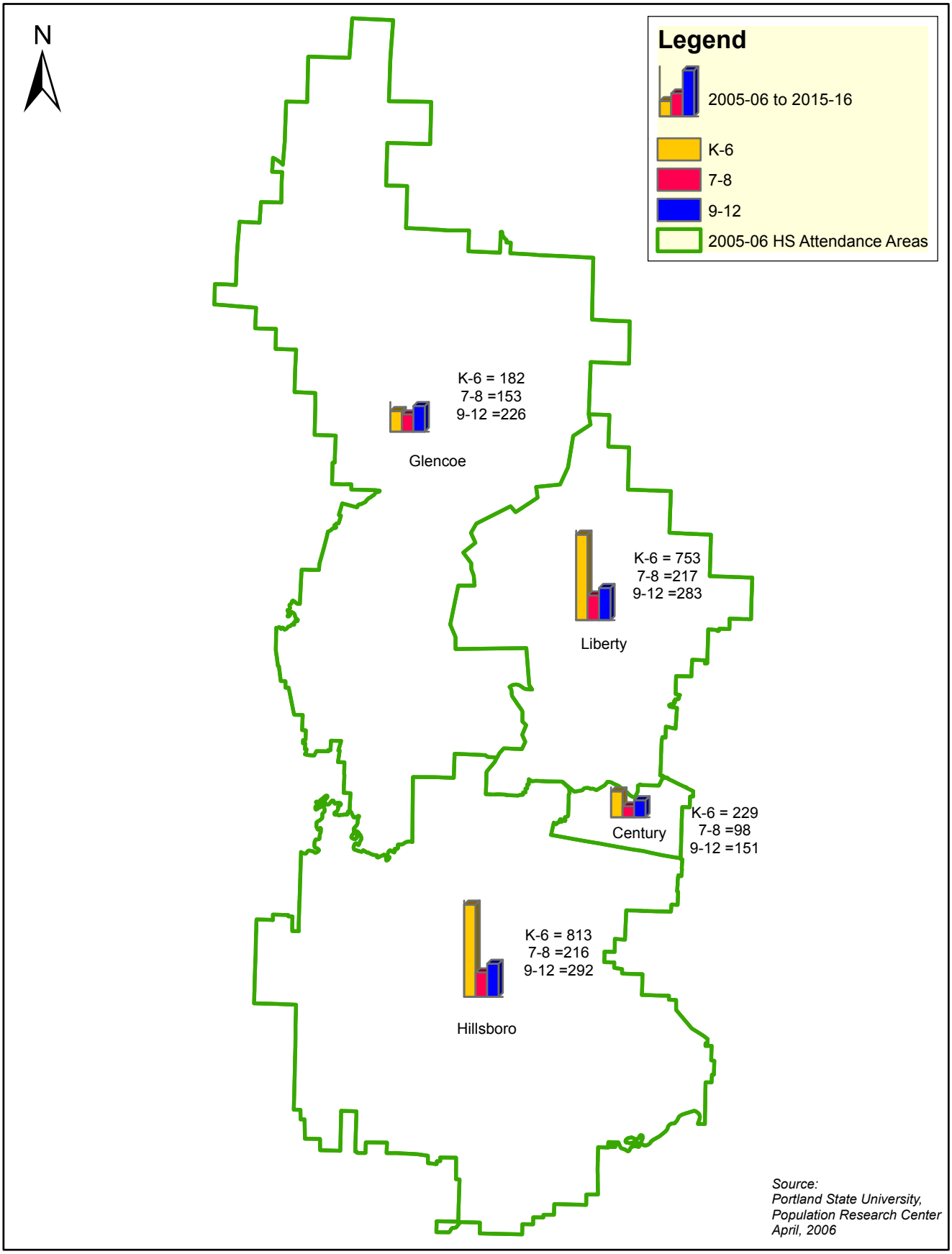
	Grade K-6 Change			Grade 7-8 Change			Grade 9-12 Change			Total Change[2]	
	Number	***Percent***		**Number**	***Percent***		**Number**	***Percent***		**Number**	***Percent***
2005-06 to 2010-11	461	*17.9%*		87	*13.8%*		144	*11.5%*		697	*15.5%*
2010-11 to 2015-16	292	*9.6%*		130	*18.1%*		139	*9.9%*		565	*10.9%*
2005-06 to 2015-16	**753**	***29.3%***		**217**	***34.4%***		**283**	***22.5%***		**1,262**	***28.1%***

Portland State University, Population Research Center, April 2006

1. Current (2005-06) Boundary
2. Includes Unclassified

Map 2

2005-06 to 2015-16 Enrollment Change Forecast by Resident High School Area, Hillsboro School District



Individual School Forecasts

In order to address long-range planning needs, the District requested that PRC prepare forecasts for individual schools under a scenario in which current boundaries and grade configurations remain constant. Because schools grow at different rates, forecast enrollment at some schools may exceed current capacities. The largest growth occurs at schools impacted by planned housing growth, so District staff should continue to monitor the level and pace of housing growth. Also, caution in using individual school forecasts is advised, because unexpected demographic changes that occur in existing neighborhoods may have a small impact on district-wide enrollment, but a large impact on individual schools' enrollments.

Among elementary schools in the next ten years, little or no enrollment change is expected at Reedville, Imlay, Mooberry, Indian Hills, Eastwood, McKinney, and Farmington View. Large enrollment growth is expected at Witch Hazel (516 students, 106 percent growth), Orenco (352 students, 59 percent growth), and West Union (249 students, 71 percent growth). Moderate enrollment growth of 30 to 130 students is expected at each of the other elementary schools in the district.

Among junior high schools in the next ten years, expected enrollment growth ranges from 125 students at Brown (14 percent) to 248 students at Poynter (34 percent).

Among senior high schools in the next ten years, the smallest enrollment growth is expected at Century (161 students), and moderate enrollment growth is expected at Glencoe, Liberty, and Hillsboro (230 to 302 students each).

Table 17 on the next page includes enrollment forecasts with numeric and percentage change for all of the District's current schools.

Table 17

Enrollment Forecasts for Individual Schools, 2010-11 and 2015-16

School		Actual 2005-06	Forecast 2010-11	Forecast 2015-16	Forecast Change 2005-06 to 2010-11	Forecast Change 2010-11 to 2015-16	Forecast Change *2005-06 to 2015-16*
122	**Brookwood**	558	608	652	50	44	*17%*
125	**Butternut Creek**	442	461	504	19	43	*14%*
155	**David Hill**	332	349	362	17	13	*9%*
160	**Eastwood**	505	494	503	-11	9	*0%*
164	**Farmington View**	226	231	237	5	6	*5%*
182	**Groner**	206	224	240	18	16	*17%*
123	**Imlay**	655	636	626	-19	-10	*-4%*
132	**Indian Hills**	399	411	391	12	-20	*-2%*
172	**Jackson**	656	679	704	23	25	*7%*
239	**Ladd Acres**	603	651	679	48	28	*13%*
186	**Lenox**	440	482	501	42	19	*14%*
190	**McKinney**	533	541	544	8	3	*2%*
208	**Minter Bridge**	362	410	399	48	-11	*10%*
213	**Mooberry**	543	538	530	-5	-8	*-2%*
216	**North Plains**	310	363	401	53	38	*29%*
218	**Orenco**	594	843	946	249	103	*59%*
146	**Patterson**	677	728	761	51	33	*12%*
222	**Peter Boscow**	388	433	468	45	35	*21%*
140	**Reedville**	356	347	336	-9	-11	*-6%*
175	**Tobias**	563	631	654	68	23	*16%*
253	**W.L. Henry**	616	714	749	98	35	*22%*
258	**West Union**	349	488	598	139	110	*71%*
264	**Witch Hazel**	489	779	1,005	290	226	*106%*
299	**City View Charter**	87	112	112	25	0	*29%*
Elementary Totals		**10,889**	**12,153**	**12,902**	**1,264**	**749**	***18%***
506	**Brown**	875	934	1000	59	66	*14%*
508	**Evergreen**	778	845	924	67	79	*19%*
512	**Poynter**	723	852	971	129	119	*34%*
510	**Thomas**	544	627	718	83	91	*32%*
550	**Miller (grades 7-8)**	15	17	19	2	2	*27%*
Jr. High Totals		**2935**	**3275**	**3632**	**340**	**357**	***24%***
610	**Century**	1493	1562	1654	69	92	*11%*
612	**Glencoe**	1444	1603	1674	159	71	*16%*
620	**Hillsboro**	1478	1561	1780	83	219	*20%*
614	**Liberty**	1269	1405	1545	136	140	*22%*
650	**Miller (grades 9-12)**	54	59	65	5	6	*20%*
High School Totals		**5738**	**6190**	**6718**	**452**	**528**	***17%***

Portland State University, Population Research Center, April 2006

Note: Forecasts based on current (2005-06) boundaries and grade configurations, with an adjustment for the 2006-07 boundary change from Witch Hazel to Minter Bridge.

CONCLUSION

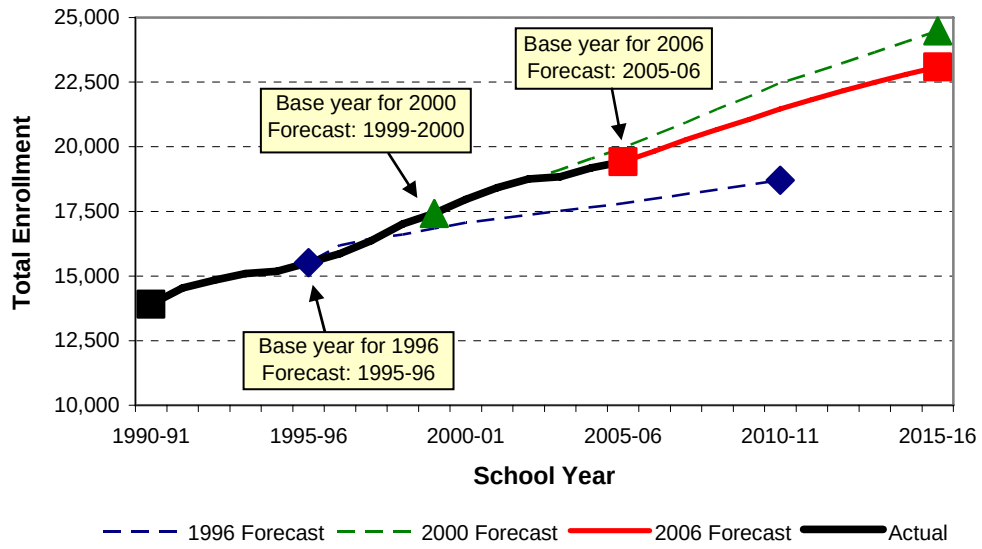
By exploring recent population, housing, and enrollment trends in the Hillsboro School District, estimating average student generation for different types of new housing development, linking population and enrollment forecasts in the demographic model, and allocating the enrollment forecasts to high school attendance areas and individual schools, we have completed a study that we believe will be useful for a variety of long-range planning needs of the District.

In general, we expect significant enrollment growth to occur at all grade levels district-wide, though enrollment at some schools is expected to grow very little or not at all. However, we caution the users of this report on the nature of forecasting in general. Fertility and mortality rates are relatively stable, but migration can vary greatly in an uncertain future. The migration assumptions involve judgment and the expectation that future trends will fall neatly into place in alignment with current trends and external forecasts produced by other agencies. We know from past history that unforeseen events can affect these expectations.

To illustrate this uncertainty, and to emphasize the need for periodic updates to the long-range enrollment forecast, total K-12 enrollment from the previous forecasts produced in 1996 and 2000 is depicted in Chart 12, along with actual enrollment and the current forecast. The economy and population were growing rapidly in 1996, and the enrollment forecast included significant growth. But the analysts could not have anticipated the magnitude of the boom that affected Hillsboro between 1996 and 2000, so actual enrollment has been higher than the 1996 forecast. Conversely, in 2000 most economic and population forecasts could not have predicted the severity of the recession and its specific impact on Oregon's international trade and Washington County's electronic industries. Total enrollment remained very close to the 2000 forecast for a few years, but is now slightly below the forecast. The long-range forecast of total enrollment produced

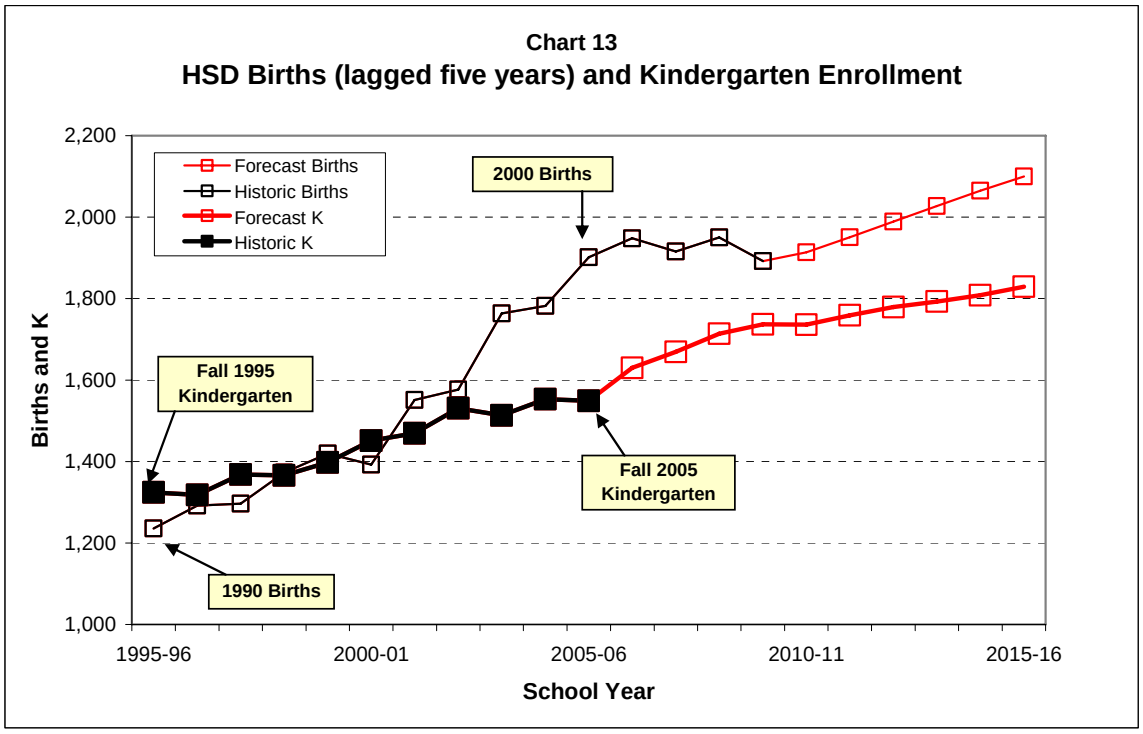
in this study falls between the 1996 and 2000 forecasts, but it should be re-evaluated in a few years, if not annually.

Chart 12
Current and Previous Long Range Forecasts
Hillsboro School District, K-12 Enrollment



Another uncertainty in the forecast involves the entry grades, kindergarten and first grade. The relationship between births and subsequent kindergarten and first grade enrollment five to six years later is affected by two factors — the migration of children during the years prior to enrolling in school, and the capture rate. The capture rate observed in 2000 was 0.826 for kindergarten, so about 17 percent of District residents attend private kindergartens or remain at home. But Chart 13 on the next page shows that kindergarten enrollment in 1999-2000 was almost identical to the number of births five years earlier. That means that a large inflow of young children occurred between 1994 and 1999, increasing the size of the age cohort by about 15 percent. Six years later, the gap between lagged births and 2005-06 kindergarten enrollment was about 19 percent, revealing that the cohort (2005-06 kindergarten students born in 1999 or 2000) either lost population due to migration, or had a lower capture rate, or both.

In the demographic-based enrollment forecast, kindergarten enrollment is expected to rebound as shown in the bottom (thick) line in Chart 13. That expectation is based on a moderate population gain due to migration, and a return to capture rates near the 1999-2000 level. If the kindergarten and first grade forecasts are not attained during the first few years, that could affect forecasts for other grades in future years.



Finally, in spite of the cautions expressed above, differences between actual and forecast enrollments in the first year or two of the forecast do not ensure that the forecast will be off track in five or ten years. This forecast does not attempt to predict annual fluctuations that will likely occur, and it is possible that the change forecast over a ten year period will be more accurate than the change forecast over a one or two year period.

APPENDIX

Table A1
Capture Rates
HSD Demographic Model*

School Year	Kindergarten	Grade 1
1989-90	0.865	0.932
1999-00	0.826	0.866
2009-10	0.810	0.840
2015-16	0.810	0.840

**The ratio of enrollment to population in the age cohort.*

Table A2
Baseline GPRs
HSD Demographic Model*

Grade Transition	GPR
1-2	0.99
2-3	1.00
3-4	1.00
4-5	1.00
5-6	0.99
6-7	1.00
7-8	1.00
8-9	1.03
9-10	0.98
10-11	0.96
11-12	0.94

**Grade progression rates expected under a scenario of zero net migration.*

Table A3
Kindergarten to Birth Ratios
Alternative GPR Models*

Kindergarten Year	Actual	
2000-01	1.04	
2001-02	0.95	
2002-03	0.97	
2003-04	0.86	
2004-05	0.87	
2005-06	0.81	
	Low Forecast	High Forecast
2006-07	0.82	0.83
2007-08	0.83	0.85
2008-09	0.84	0.87
2009-10	0.84	0.89
2010-11	0.84	0.89
2011-12	0.84	0.89
2012-13	0.84	0.89
2013-14	0.84	0.89
2014-15	0.84	0.89
2015-16	0.84	0.89

**The ratio of Kindergarten enrollment in the year indicated to births in the cohort five years earlier.*

Table A4
Forecast GPRs
Alternative GPR Models*

Grade Transition	Low Forecast (2000-05 rates)	High Forecast (1995-00 rates)
K-1	1.036	1.055
1-2	0.999	1.024
2-3	1.003	1.015
3-4	0.997	1.013
4-5	1.005	1.013
5-6	0.991	1.019
6-7	0.996	0.995
7-8	1.007	1.014
8-9	1.033	1.037
9-10	0.983	0.994
10-11	0.959	0.918
11-12	0.943	0.890

**Grade progression rates incorporating forecast net migration.*