School District Enrollment Forecast Reports   Population Research Center

12-1-2007

Amity School District: Population and Enrollment Forecasts 2008-09 to 2017-18

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AMITY SCHOOL DISTRICT
POPULATION AND ENROLLMENT FORECASTS
2008-09 TO 2017-18

Portland State
UNIVERSITY
**Population Research
Center**

PRC

DECEMBER, 2007

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Prepared By
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EXECUTIVE SUMMARY

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The Amity School District (ASD) experienced enrollment growth during the late 1980s and early 1990s, but reached a peak of 945 K-12 students in Fall 1994. In the 12 years that followed, enrollment fell by 143 students, or 15 percent. This year's enrollment of 822 represents an increase of 20 students (2.5 percent) from Fall 2006, the largest increase since 1994. The long period of decline initially had its greatest impact on elementary grades, followed by middle school and more recently high school.

This report presents the results of a study conducted by the Portland State University Population Research Center (PRC) concluding that the District should not expect enrollment declines to continue in the long run, although about three more years of small losses are forecast at the high school level. Two forecast scenarios are presented, a "baseline" forecast under which housing development and migration trends remain similar to their recent levels, and a "high range" forecast that anticipates higher migration levels, primarily due to an increase in housing development.

Population in the District is forecast to grow by an average of 1.1 percent annually between 2010 and 2020 under the baseline forecast or 1.7 percent under the high range. Both scenarios depict slower rates of growth for the ASD than the growth rates for Yamhill and Polk Counties in the State of Oregon Office of Economic Analysis' most recent long-range forecasts.[1]

This study also presents estimates of the number of students per housing unit within the District. We found that student generation is higher in homes within the City of Amity than those in unincorporated Yamhill County, and that the lowest student generation rates are found in the Polk County portion of the ASD. Also, ASD student generation rates are

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[1]County growth rates for 2010-2020 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. Polk County's forecast for 2010 to 2020 is 2.7 percent average annual growth, and Yamhill County's forecast is 1.8 percent average annual growth.

higher in new homes (built since 2000) than in homes built before 2000. Detailed information about the average number of ASD students per home is presented in the "Housing Development and Student Generation" section of this report.

Baseline Enrollment Forecast

Table 1 contains recent historic and *baseline* forecast enrollments for the District's grade level groups in five year intervals. Following the table is a brief summary of the forecasts.

Table 1
Enrollment History and *BASELINE* Forecast
Amity School District

	Actual			BASELINE Forecast	
	1997-98	2002-03	2007-08	2012-13	2017-18
K-5	406	366	360	385	391
5 year change		*-40*	*-6*	*25*	*6*
6-8	244	196	185	200	204
5 year change		*-48*	*-11*	*15*	*4*
9-12	283	295	277	251	286
5 year change		*12*	*-18*	*-26*	*35*
Total	**933**	**857**	**822**	**836**	**881**
5 year change		*-76*	*-35*	*14*	*45*

- Total K-12 enrollment is expected to grow by 59 students in the next ten years.

- Enrollment grows very little during the first three to five years of the forecast as enrollment growth in elementary grades is offset by expected declines in high school grades.

- Incoming kindergarten and 1st grade class sizes are forecast to remain near their current levels throughout the forecast, because births have not increased in the past several years and fertility rates are expected to decline further even as the young adult population grows.

High Range Enrollment Forecast

Assumptions that characterize the "high range" forecast are:

- in the first five years of the period there will be slightly more migration into the District than under the baseline forecast,

- the pace of development increases after the first five years of the forecast due to land use changes and/or multiple family development, facilitating even higher migration levels, and

- fertility rates remain close to the levels observed in 2000 rather than continuing to decline as expected under the baseline forecast.

Table 2 contains recent historic and *high range* forecast enrollments for the District's grade level groups in five year intervals. Following the table is a brief summary of the forecasts. Chart 1 at the end of the Executive Summary compares total K-12 enrollment under the baseline and high range with historic enrollment.

	Actual			**HIGH RANGE Forecast**	
	1997-98	**2002-03**	**2007-08**	**2012-13**	**2017-18**
K-5	406	366	360	409	446
5 year change		*-40*	*-6*	*49*	*37*
6-8	244	196	185	203	224
5 year change		*-48*	*-11*	*18*	*21*
9-12	283	295	277	258	313
5 year change		*12*	*-18*	*-19*	*55*
Total	**933**	**857**	**822**	**870**	**983**
5 year change		*-76*	*-35*	*48*	*113*

Table 2
Enrollment History and *HIGH RANGE* Forecast
Amity School District

- Total K-12 enrollment is expected to grow by 161 students in the next ten years.

- High school enrollment is forecast to fall slightly in the first five years, and then grow significantly in the following five year interval.

- Incoming kindergarten and 1st grade class sizes are forecast to grow throughout the ten year horizon.

- Larger incoming grades combined with higher migration levels cause elementary enrollment to grow by 86 students (24 percent) between 2007-08 and 2017-18.

- Steady growth of 10 percent in each five year interval is forecast for middle school grades.

Chart 1
ASD Enrollment Forecast Scenarios, 2008-09 to 2017-18
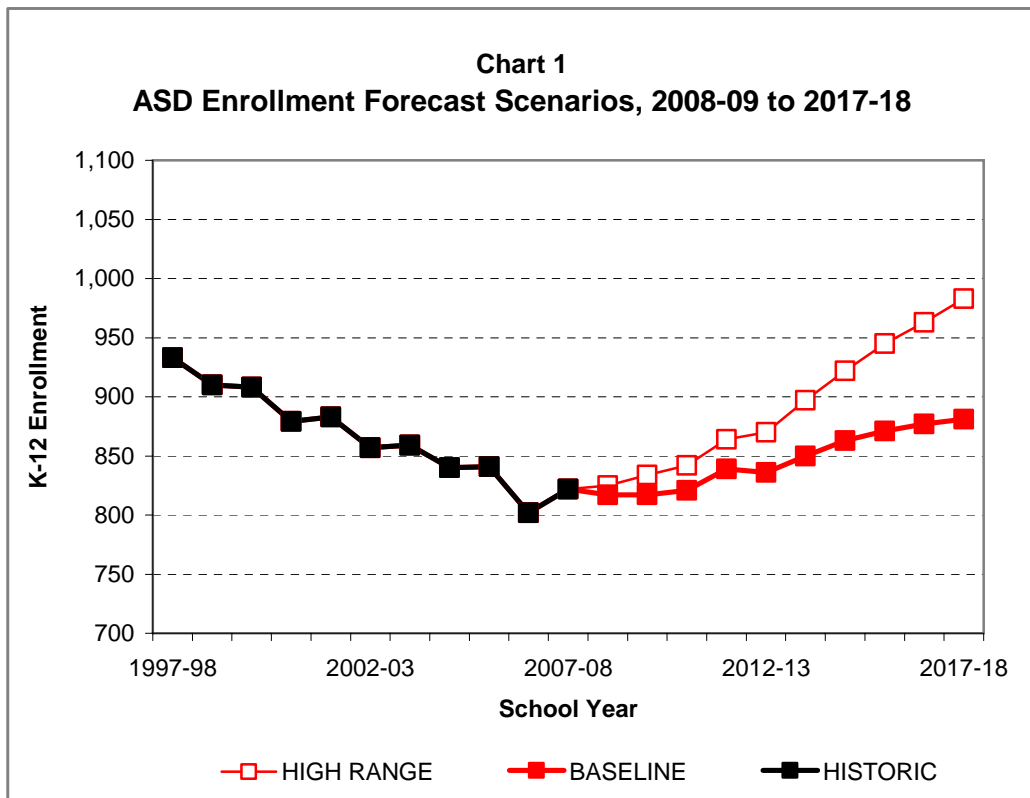
INTRODUCTION

The Amity School District (ASD) requested that the Portland State University Population Research Center (PRC) prepare enrollment forecasts for use in the District's long-range planning. This study integrates information about ASD enrollment trends with local area population, housing, and economic trends, and includes a population forecast for the District as well as forecasts of district-wide enrollment by grade level for the period between 2008-09 and 2017-18. 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, residential tax lot data from Yamhill and Polk Counties, employment trends and forecasts from the Oregon Employment Department, and personal interviews with city and regional officials.

The District serves the City of Amity in Yamhill County as well as surrounding unincorporated areas in southern Yamhill and northern Polk Counties, including the communities of Ballston, Hopewell, and Whiteson and the rural residential area of Eola Hills.

Following this introduction are sections presenting recent population, housing, and enrollment trends within the District. Another section is devoted to our research on the average number of ASD students per housing unit by housing characteristic. Next are the results of the district-wide population and enrollment forecasts and a description of the forecast methodology. The final section contains a brief discussion of the nature and accuracy of forecasts.

POPULATION AND HOUSING TRENDS, 1990 to 2007

During the decade between 1990 and 2000, total population within the ASD grew by 14 percent, from 3,704 persons to 4,240. The District's growth in the 1990s was slower than countywide growth in both Yamhill County, which grew by 30 percent, and Polk County, which grew by 26 percent. Between 2000 and 2007, average annual growth rates in Yamhill and Polk counties slowed to about half of their 1990s levels. While population counts are not available for the ASD after the 2000 Census, trends in housing construction, births, and school enrollment suggest that the District's population has continued to grow more slowly than the overall population of the counties. In contrast to the region's more developed suburban areas such as West Salem and Dallas in Polk County or Newberg in Yamhill County, the distance to major employment centers and predominately rural land use limit the pace of growth in the Amity area.

The biggest employment destination for Amity area residents is nearby McMinnville. According to Oregon Employment Department Workforce Analyst Pam Ferrara, McMinnville's job market is thriving, with the largest manufacturing firms adding jobs. Between October 2006 and October 2007, Yamhill County added 430 non-agricultural jobs, a growth rate of 1.3 percent. In contrast to the decline in manufacturing employment in Oregon and the U.S., Yamhill County's job growth is being led by the manufacturing sector, which added 240 jobs (3.6 percent) in the past year.[2]

Based on 2004 data from firms covered by unemployment insurance (excluding most agricultural jobs and self-employment), 25 percent of Amity area residents worked within the City of McMinnville and another 24 percent worked in the remainder of Yamhill County, including Newberg (seven percent) and the City of Amity itself (five percent). After Yamhill County, Marion County was the next most common place of work, with 18 percent of Amity area workers commuting to Marion County, primarily Salem. More

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[2]"Covered Employment and Wages". Oregon Employment Department, OLMIS.

distant but also significant work destinations included Oregon's biggest employment centers, Washington County (10 percent of Amity area residents) and Multnomah County (eight percent). The dots on Map 1 below indicate the places of work in 2004 for most Amity area residents.[3]

Map 1
Place of Work of Amity Area Residents, 2004
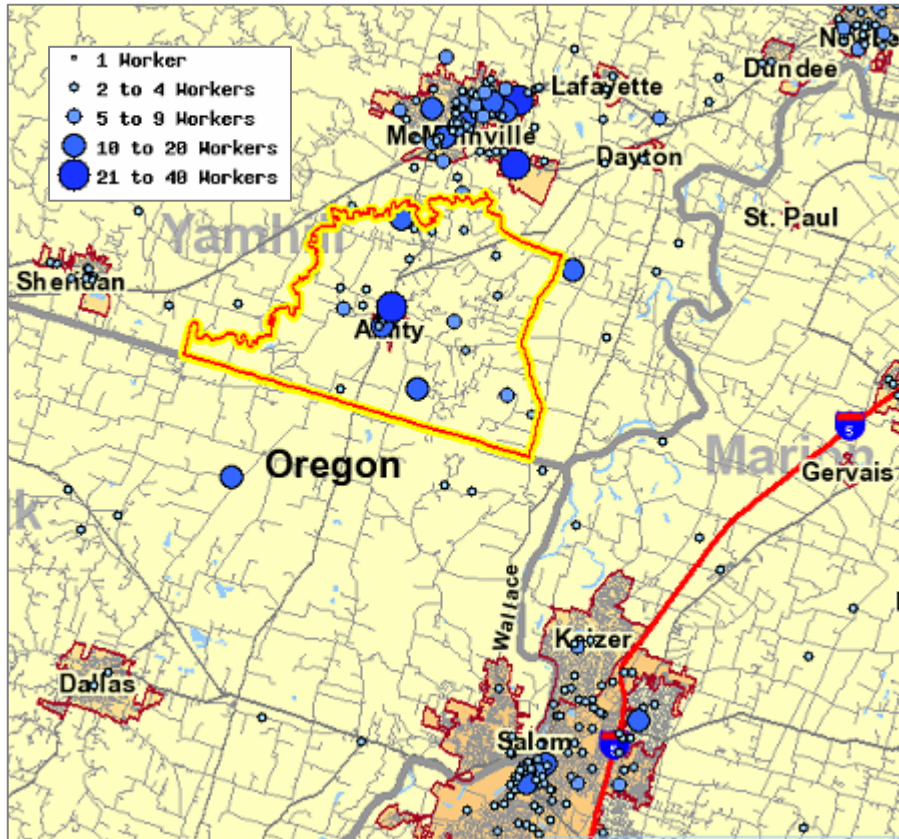
Population by Age Group

Population by age group for 1990 and 2000 is shown in Table 3 on the next page. In 2000, 24 percent of the District's population was of school age (5 to 17). The ASD's school-age population share was higher than both Yamhill County's 20 percent and Polk County's 19 percent shares. School-age population in the ASD grew by 24 percent in the 1990s, a faster rate than the 14 percent increase for overall population. However,

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[3]U.S. Census Bureau, LED Origin-Destination Database (2nd quarter 2004). Commute shed report for residents of Yamhill County census tract 310, which approximates the Yamhill County portion of the ASD. The map and report were created on line at http://lehdmap2.did.census.gov/themap/.

population under age 10 was about the same in 2000 as in 1990, and the share of the District's population under age five fell from 7.0 percent in 1990 to 6.3 percent in 2000. The largest growth rates for any age groups under age 45 were among children age 10 to 14 (41 percent) and 15 to 17 (48 percent). Declines in the 25 to 34 year old population between 1990 and 2000 have a precedent in state and national demographic trends, as persons age 25 to 34 in 2000 were born during the late 1960s and early 1970s "baby bust" that followed the "baby boom." Similarly, persons who were age 65 to 69 in 2000 were born during the depression era of the early 1930s, when births also fell from previous levels. In the ASD, the 65 to 69 age group experienced the biggest decline between 1990 and 2000.

Table 3
Population by Age Group
Amity School District, 1990 and 2000

	1990	2000	1990 to 2000 Change	
			Number	**Percent**
Under Age 5	259	266	7	*3%*
Age 5 to 9	350	339	-11	*-3%*
Age 10 to 14	296	418	122	*41%*
Age 15 to 17	174	258	84	*48%*
Age 18 to 19	84	117	33	*39%*
Age 20 to 24	167	192	25	*15%*
Age 25 to 29	243	211	-32	*-13%*
Age 30 to 34	272	260	-12	*-4%*
Age 35 to 39	337	343	6	*2%*
Age 40 to 44	291	350	59	*20%*
Age 45 to 49	203	360	157	*77%*
Age 50 to 54	188	305	117	*62%*
Age 55 to 59	167	225	58	*35%*
Age 60 to 64	169	159	-10	*-6%*
Age 65 to 69	172	134	-38	*-22%*
Age 70 to 74	142	120	-22	*-15%*
Age 75 to 79	103	89	-14	*-14%*
Age 80 to 84	49	50	1	*2%*
Age 85 and over	38	44	6	*16%*
Total Population	**3,704**	**4,240**	**536**	***14%***
Total age 5 to 17	820	1,015	195	*24%*
share age 5 to 17	*22.1%*	*23.9%*		

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

Chart 2 provides even more age detail for the child population within the ASD in 2000, and helps to illustrate why elementary enrollments declined in the late 1990s as large 5th grade classes were replaced by smaller kindergarten classes. The District's small share of multiple family housing may be a factor in why there are fewer young children than teenagers in the District (younger families are more likely to be renters), but the age distribution in 2000 was more skewed toward older children than it was in 1990, or than it is today.

Chart 2
2000 Census Population by Single Year of Age
Amity School District
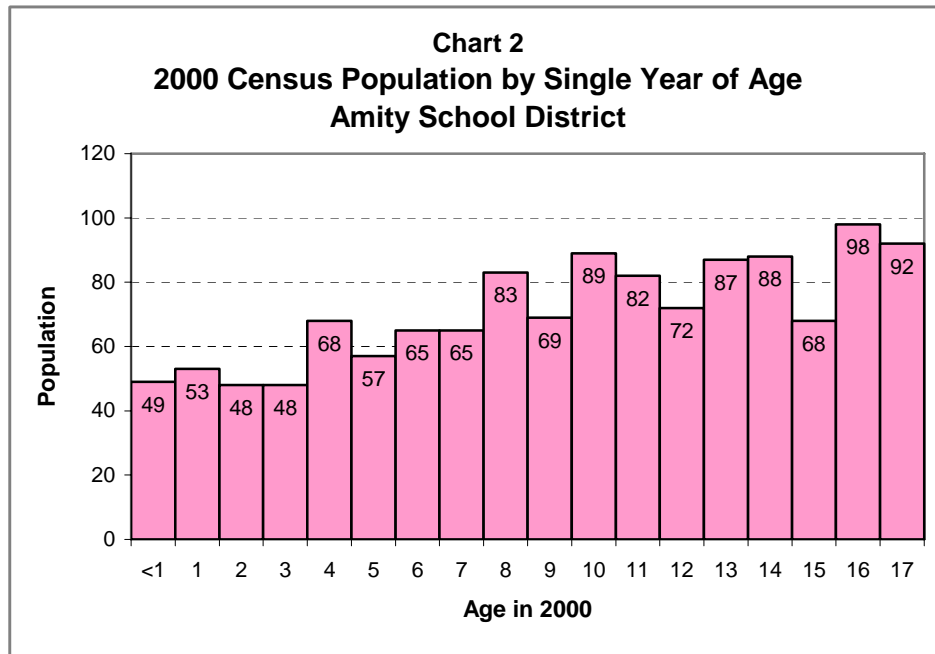
Births and Fertility Rates

The number of births each year to women living in the ASD has fluctuated throughout the 1990s and 2000s, to the extent that neither an upward nor downward trend is discernable. Table 4 on the next page reports the number of births in the District annually from 1990 to 2005. The annual average of 47 births between 2001 and 2005 was similar to the 1991 to 1995 average of 45 and the 1996 to 2000 average of 51. The stagnant birth levels are likely related to the age distribution shown earlier in Table 3 as well as changes in fertility rates, as we explain following Table 4.

Table 4	
Annual Births, 1990 to 2005	
Amity School District	
Year	**Births**
1990	60
1991	51
1992	37
1993	47
1994	50
1995	43
1996	52
1997	34
1998	48
1999	59
2000	58
2001	45
2002	50
2003	49
2004	42
2005	50

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

Fertility rates for the ASD's primary zip code, 97101, are shown in Charts 3a and 3b on the next page. For comparison, Yamhill County and State of Oregon fertility rates are also included. The District's rates were calculated for each age group by dividing the average annual number of births in the three year period around each census (1989 to 1991 and 1999 to 2001) by the female population counted in the census. For example, there were an average of 13 births per year to mothers age 25 to 29 in 1999 to 2001 and a population of 98 women age 25 to 29 counted in the 2000 Census. So the fertility rate in 2000 for women age 25 to 29 was 13/98 = 0.133 births per female, or 133 per thousand. Charts 3a and 3b show that fertility rates for women age 20 to 24 within the ASD remain higher than comparable rates for Yamhill County and the State of Oregon in 2000, but fell substantially between 1990 and 2000.

The relationship between population change, fertility rates, and resulting births is easy to understand once all of the data has been collected. A large majority of births occur to women between the ages of 20 and 34. The population of women age 20 to 24 increased between 1990 and 2000, but they contributed about the same number of births because

their fertility rates went down. The population of women age 25 to 34 decreased, but they also contributed about the same number of births in 2000 as in 1990 due to increases in their fertility rates.

Chart 3a
Age-Specific Fertility Rates, 1990
ZIP 97101, Yamhill Co. & State of Oregon

Chart 3b
Age-Specific Fertility Rates, 2000
ZIP 97101, Yamhill Co. & State of Oregon
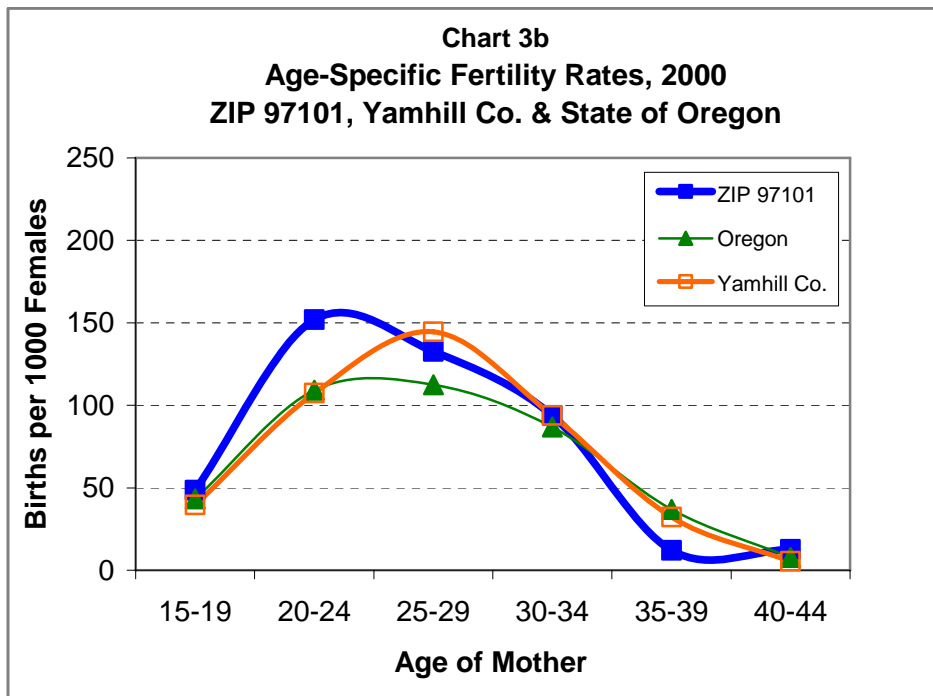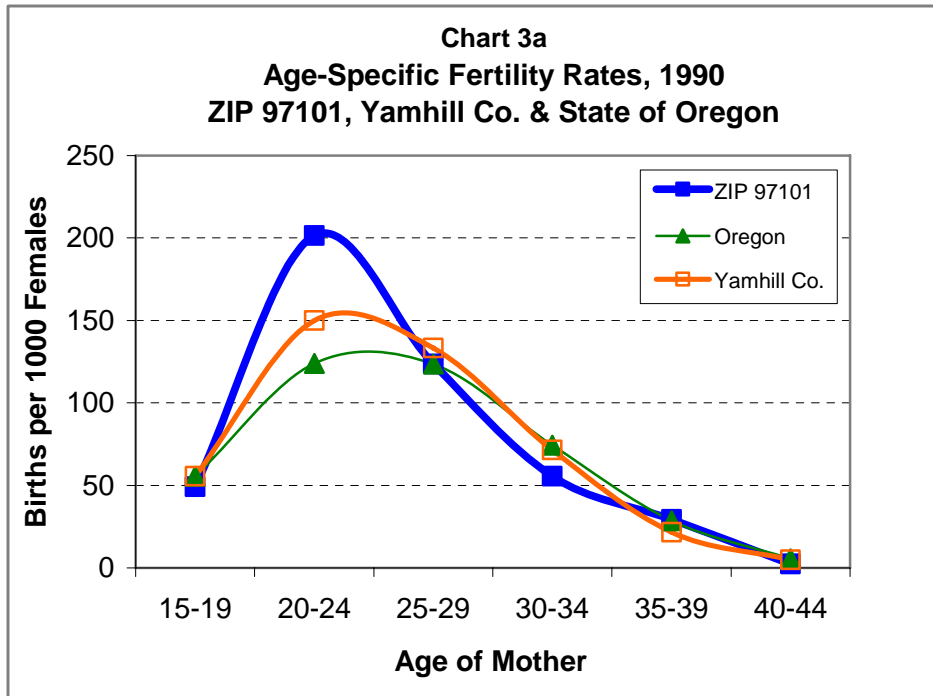
Another common measure of fertility is the Total Fertility Rate (TFR). This is an estimate of the number of children that would be born to the average woman during her childbearing years, based on age-specific fertility rates observed at a given time. The 2000 TFR for the District was 2.18, lower than the 1990 rate of 2.31. The TFRs remained higher than those in Yamhill County (2.18 in 1990 and 2.12 in 2000) and the State (2.05 in 1990 and 1.98 in 2000) overall.

Trends observed throughout the State between 1990 and 2000 included declining fertility rates for women under age 30 and increases for women age 30 and over, declining fertility rates for both Latina and non-Latina females, and an increasing share of total births attributed to Latinas, due to the population increase among Latinas and population decline among young non-Latina adults influenced by the U.S. "baby bust" of the 1970s. These age and ethnic-specific trends offset each other, resulting in relatively stable TFRs in many areas.

Housing Growth

During the 1990s, the number of housing units within the District's boundaries increased by 162 (12 percent), as shown in Table 5 on the next page. The number of households (occupied housing units) increased by only nine percent due to a small increase in the vacancy rate. The growth rate for the number of households with children under 18 (21 percent) outpaced both housing unit and household growth. Expressed in net change, 105 of the additional 141 households included children under 18. The share of households in the ASD that included at least one child under the age of 18 increased from 40 percent in 1990 to 44 percent in 2000. The average number of persons per household also increased, from 2.90 in 1990 to 2.99 in 2000.

Table 5
Amity School District
Housing and Household Characteristics, 1990 and 2000

	1990	2000	1990 to 2000 Change	
			Number	**Percent**
Housing Units	1,331	1,493	162	*12%*
Single Family	1,006	1,099	93	*9%*
share of total	*76%*	*74%*		
Multiple Family	32	51	19	*59%*
share of total	*2%*	*3%*		
Mobile Home and Other	293	343	50	*17%*
share of total	*22%*	*23%*		
Households	1,269	1,410	141	*11%*
Households with children under 18	510	615	105	*21%*
share of total	*40%*	*44%*		
Households with no children under 18	759	795	36	*5%*
share of total	*60%*	*56%*		
Household Population	3,681	4,218	537	*15%*
Persons per Household	2.90	2.99	0.09	*3%*

Source: U.S. Census Bureau, 1990 and 2000 Censuses; data aggregated to ASD boundary by Population Research Center, PSU.

To determine the pace of housing construction since 2000, we used taxlot attribute data from Yamhill and Polk Counties, and summarized the number of units built by jurisdiction in Table 6. New housing identified from tax roles includes replacement homes, and does not indicate how many homes were removed or demolished. For example, several of the new homes in the City of Amity replaced older mobile homes on individual tax lots in a former mobile home park. For that reason, the number of new homes exceeds the *net* change in housing stock. Notice that the 1990 to 1999 total of 241 new homes is nearly 50 percent higher than the 1990 to 2000 net change of 162 units calculated from census data in Table 5. The 182 *new* units built between 2000 and 2006 average 26 per year, so we estimate that the *net* change in the District's housing stock has averaged in the range of 15 to 20 units annually since 2000, a rate of growth just over one percent.

Table 6
Amity School District
Homes Built 1990 to 2006 by Jurisdiction*

Jurisdiction	1990-99 Total	Year Built							2000-06 Total
		2000	2001	2002	2003	2004	2005	2006	
Amity	87	7	5	5	7	32	15	6	77
Yamhill Uninc.	121	15	8	13	14	16	8	16	90
Polk Uninc.	33	6	0	1	2	2	0	4	15
District Total	**241**	**28**	**13**	**19**	**23**	**50**	**23**	**26**	**182**

Note: Includes each unit in duplexes, triplexes, or fourplexes. Also includes replacement homes that do not result in a net increase to the District's housing stock.

Source: Data compiled by PSU-PRC, using geographic shapefiles and attribute data from Polk County and Yamhill County, May 2007. Housing unit counts were determined by PSU-PRC using the taxlot attribute data.

Some of the new homes in unincorporated Yamhill County in the late 1990s and the 2000s were on the nearly 40 home sites approved in the Eola Hills area as a product of 1993 and 1994 land use decisions allowing "forest template" and "lot of record" dwellings. These lots are now nearly all developed. The greatest number of units built since 2000 was in 2004, partly due to the 23 lot Amity Meadows subdivision on Getchell Court in the City of Amity. The trend in new housing by jurisdiction suggests that the City's share of the District's population is growing. The City grew from 32 percent of the ASD's total population in 1990 to 35 percent in 2000 and comprised 36 percent of the ASD's new housing units in the 1990s. The City's share of new housing units built between 2000 and 2006 has grown to 42 percent.

The impact of future housing development on school enrollment will depend on the number of new homes and the share of those homes that are occupied by families with children. The section of this report titled "Housing Development and Student Generation" presents data on the average number of ASD students in the District's existing and new housing units, helping readers to quantify the actual relationship between housing and school enrollment.

ENROLLMENT TRENDS

The Amity School District experienced enrollment growth during the late 1980s and early 1990s, but reached a peak of 945 K-12 students in Fall 1994. In the 12 years that followed, between 1994-95 and 2006-07, enrollment fell by 143 students, or 15 percent. The current (Fall 2007) enrollment of 822 is 20 students (2.5 percent) greater than in Fall 2006, the largest increase since 1994. The long period of decline initially had its greatest impact on elementary grades (20 percent loss 1994-95 to 2000-01), then middle school (20 percent loss 1997-98 to 2001-02), and more recently high school (10 percent loss since 2003-04).

Table 7 on the next page summarizes the enrollment history for the District by grade level annually from 1997-98 to 2007-08. The distribution of enrollment by grade level and the year to year change give some clues that the District should not expect continued enrollment decline. Kindergarten enrollment has increased for two consecutive years, the first time that has happened since 1995. Elementary enrollment was essentially stable between 2003-04 and 2006-07, particularly considering that several Amity students attending Ballston charter school in 2006-07 are not included in the figures. In the past year, the District's elementary enrollment increased by 33 students. Another indicator of future enrollment stability is that the current ratio of enrollment in high school grades (9-12) to primary grades (K-3) is the lowest that it has been since 1997. For the second consecutive year, the District's largest class is in grade 12, but enrollments in other grades are more evenly distributed than in previous years.

The bar charts following Table 7 illustrate the enrollment change in two discrete intervals since 1997-98. Chart 4a shows the losses in elementary and middle school enrollment between 1997-98 and 2002-03, while Chart 4b shows the more stable elementary enrollment but declining high school enrollment in the later period between 2002-03 and 2007-08.

Table 7
Amity School District, Historic Enrollment, 1997-98 to 2007-08

Grade	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
K	52	51	60	53	48	52	45	69	49	55	60
1	70	60	61	61	56	54	47	46	68	52	60
2	65	66	66	55	63	55	54	50	53	58	59
3	71	60	70	63	66	70	59	50	55	52	61
4	78	71	57	62	70	61	73	57	55	54	61
5	70	77	76	59	67	74	62	70	58	56	59
6	78	68	76	72	66	61	73	63	67	57	56
7	78	78	67	74	67	66	64	67	64	69	55
8	88	75	76	69	80	69	73	62	66	59	74
9	91	106	86	87	85	92	94	83	70	63	59
10	65	71	87	84	75	70	81	87	79	73	68
11	67	63	66	76	71	76	63	75	84	75	73
12	60	64	60	64	69	57	71	61	73	79	77
Total	**933**	**910**	**908**	**879**	**883**	**857**	**859**	**840**	**841**	**802**	**822**
K-5	406	385	390	353	370	366	340	342	338	327	360
6-8	244	221	219	215	213	196	210	192	197	185	185
9-12	283	304	299	311	300	295	309	306	306	290	277

	5 Year Change: 1997-98 to 2002-03		5 Year Change: 2002-03 to 2007-08		10 Year Change: 1997-98 to 2007-08	
	Change	Pct.	Change	Pct.	Change	Pct.
K-2	-40	-10%	-6	-2%	-46	-11%
6-8	-48	-22%	-11	-6%	-59	-24%
9-12	12	4%	-18	-6%	-6	-2%
Total	**-76**	**-8%**	**-35**	**-4%**	**-111**	**-12%**

Note: Does not include students enrolled at the Ballston Community School chartered by the Amity School District in 2006.

Source: Amity School District.

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Chart 4a
Enrollment by School Level, 1997-98 and 2002-03
Amity School District

Chart 4b
Enrollment by School Level, 2002-03 and 2007-08
Amity School District
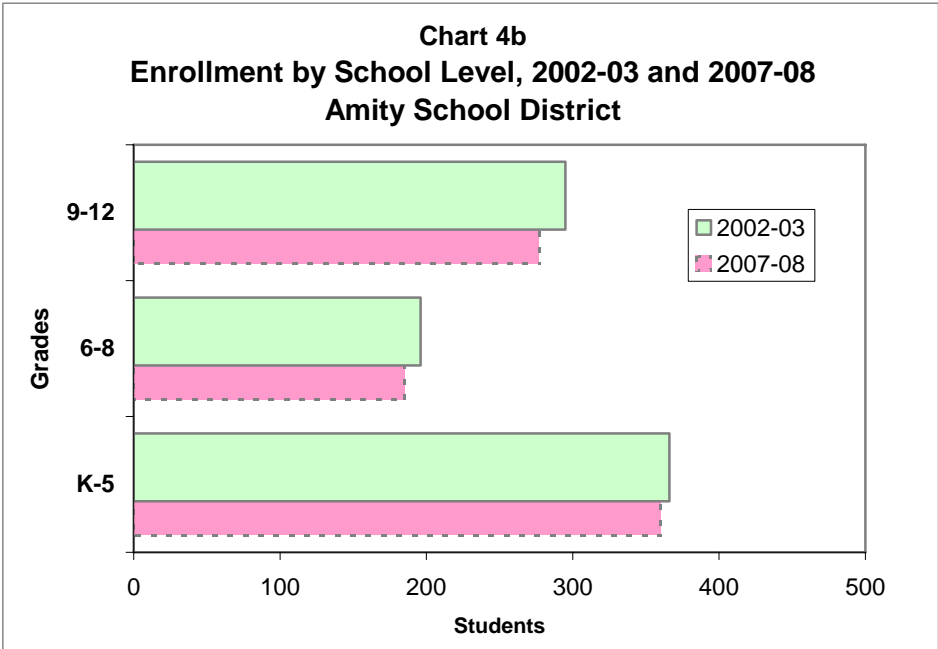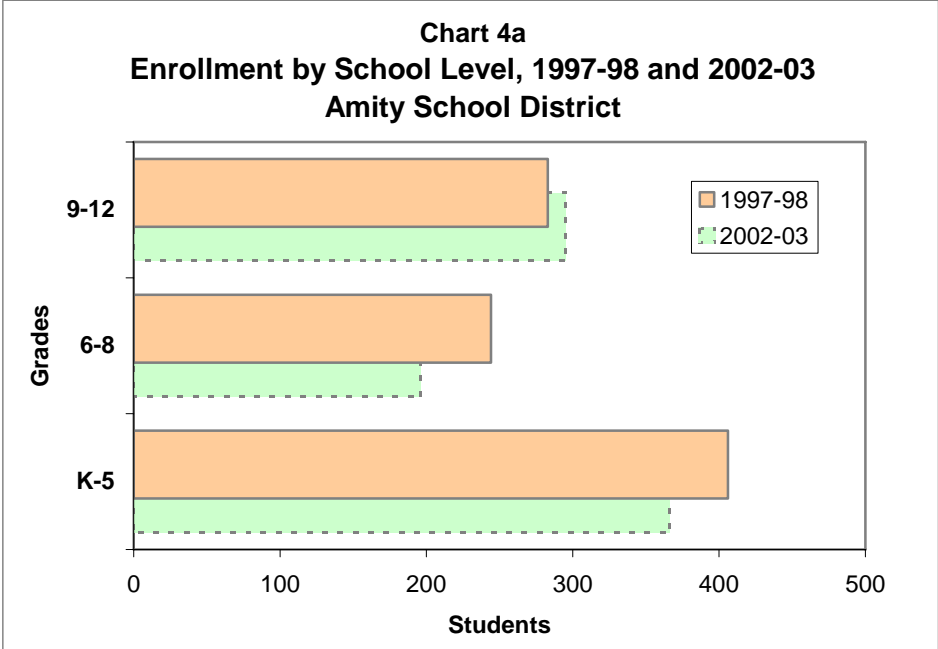
An essential part of any school enrollment analysis is the calculation of grade progression rates (GPRs). The GPR is the ratio of enrollment in a specific grade to the enrollment in the preceding grade in the previous year. For example, the number of students enrolled in second grade this year divided 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 kindergarten to 1st and the 8th to 9th grade transitions. After 9th grade, low GPRs can indicate that students are leaving school before graduation or being retained at previous grade levels. But for most elementary grades, if the population entering and leaving the District is in balance and students are not being retained at particular grades for academic reasons, one can expect GPRs very close to 1.00. Rates above 1.00 in the elementary grades usually indicate net migration into the District, while rates below 1.00 indicate net out-migration.

Table 8 shows the average GPRs observed in the last three five year intervals. In the earliest and the most recent period, each of the elementary grade transitions has been greater than 1.00, indicating that the District generally gains students each year due to more families with children moving in than out. In the middle period between 1997-98 and 2002-03 when the ASD lost elementary enrollment, GPRs were a bit lower, but still close to or above 1.00. This indicates that much of the elementary loss was influenced by

Table 8
Average Grade Progression Rates[*]
ASD, 1992-93 to 2007-08

Grade Transition	1992-93 to 1997-98	1997-98 to 2002-03	2002-03 to 2007-08
K-1	1.13	1.11	1.01
1-2	1.02	0.99	1.04
2-3	1.04	1.05	1.03
3-4	1.05	0.97	1.06
4-5	1.05	1.05	1.02
5-6	1.05	0.99	0.99
6-7	1.01	0.98	1.00
7-8	1.03	1.02	1.02
8-9	1.25	1.18	1.12
9-10	0.73	0.85	0.98
10-11	0.87	0.93	0.95
11-12	0.92	0.92	0.97

Ratio of enrollment in an individual grade to enrollment in the previous grade the previous year. The figures are averages for each period.

smaller birth cohorts, because the District was not losing many children due to migration. The table also shows that in recent years the District has been gaining fewer new students at the 1st grade and 9th grade level, but has been keeping more students enrolled in high school.

Private and Home School Enrollment and District "Capture Rate"

The Oregon Department of Education's (ODE's) most recent list of private schools does not list any private schools within the ASD boundaries. Private K-8 schools in nearby McMinnville include Bethel Christian School, McMinnville Adventist School, and St. James Catholic School. Responses to the "long form" of the 2000 Census indicate that only about eight percent of ASD area students attended private schools in 2000.[4]

In addition to public and private schools, the other option is home schooling. Home schooled students age 7 to 18 living in the District are required to register with the Willamette Educational Service District (WESD), though the statistics kept by the WESD are not precise because students who move out of the area are not required to drop their registration. Students who enroll in public schools after being registered as home schooled are dropped from the home school registry. In Spring 2007 there were 43 ASD residents registered, including 19 high school age children and 24 younger children. The current number of registered home school students represents about four percent of the ASD's total K-8 residents, and about six percent of its high school age residents.

Comparing the population counted in the decennial censuses with the ASD enrollment by grade level suggests that a very high percentage of area children enroll in ASD schools. In school years corresponding to both the 1990 and 2000 censuses, the ratio of ASD kindergarten and first grade enrollment to kindergarten and first grade age children counted in the census was about 0.90. Factors such as inter-district transfer students and census count irregularities may affect these ratios, but they are the best benchmarks for developing what we call "capture rates," an important link between the overall population in a school district and its public school enrollment.

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[4]Summary File 3, Table P36, U.S. Census Bureau, 2000 Census. Estimate for ASD based on data reported for census block groups.

Neighboring Districts

Table 9 displays several facts about ASD demographic and enrollment trends in comparison to three other nearby school districts. The overall enrollment growth or decline in each district is influenced by housing availability, and also by the district's unique demographics. The table shows that the ASD's multi-family housing share is similar to Dayton's, while its Latino enrollment share is similar to Sheridan's. However, both Dayton and Sheridan have continued to add enrollment in recent years, while Amity has not. Because most Oregon districts have experienced falling birth rates and a shrinking population of non-Latinos in their 20s and 30s between the 1990s and 2000s (due to the 1970s "baby bust"), the districts that have grown are generally those with significant housing growth, a large Latino population, or both.

Table 9
Selected School Districts
Demographic and Enrollment Highlights, 1990 to 2006

	Amity	Dayton	McMinnville	Sheridan*
Enrollment growth, **1990-91 to 1995-96**	20%	19%	21%	8%
Enrollment growth, **1995-96 to 2000-01**	-6%	7%	11%	1%
Enrollment growth, **2000-01 to 2006-07**	-9%	5%	15%	12%
Latino enrollment, **2006-07**	11%	33%	27%	11%
Grades 9-12 enrollment, **2006-07**	36%	33%	30%	33%
Population growth, **1990 to 2000**	14%	20%	41%	27%
Multi-family housing share, **2000**	3%	4%	20%	18%
Population age 5 to 17, **1990**	22%	23%	19%	21%
Population age 5 to 17, **2000**	24%	25%	19%	23%
Population under age 5, **1990**	7.0%	8.2%	7.6%	7.4%
Population under age 5, **2000**	6.3%	6.6%	7.2%	7.5%

Note: Population at correctional instutitons excluded from 1990 and 2000 population calculations.

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

HOUSING DEVELOPMENT AND STUDENT GENERATION

For school districts with the potential for housing growth, understanding the existing demographics of the district is not enough. A common concern is the impact of new residential development on school enrollment. Without a detailed analysis, community members and school officials are often unsure about the impact. Residential developments generally contribute enrollment growth to local schools, but the average number of students in each home is often lower than many people anticipate, and demographic trends in existing homes may either offset or exacerbate the enrollment gains from new housing. Also, the impacts vary by the characteristics of the new housing. In this section, we present estimates of student generation by jurisdiction for new (built since 2000) and existing housing in the ASD. These estimates help to inform the enrollment forecasts, and they can be used by District staff on an *ad hoc* basis to estimate potential student generation from future developments as they are proposed or approved.

We estimated the Fall 2006 number of students per unit with a geographic information system (GIS), combining tax lots from Yamhill and Polk Counties (polygons) with ASD student residences (points) and the City of Amity boundaries. Points for student residences were created by matching the student addresses to the tax lot addresses. In all cases, the student records used in this study contain no personally identifiable data such as names or birth dates, and the confidential locations of student residences are reported only in summary form, such as in the tables in this section.

Information from the tax assessor's records is associated with the tax lot polygons. We used the information to determine whether each tax lot included housing, and the number of housing units on each lot. The tax assessor's information also identifies the year that the homes were built. To estimate the number of students per new home, we limited the analysis to homes built between 2000 and 2005, because some of the units built in 2006 may not have been completed and occupied in time for the 2006-07 school year.

A summary of the results for all homes by jurisdiction is shown in Table 10. For the District overall in Fall 2006, the average number of K-12 students per housing unit was 0.47, just under one student for every two homes. The figure is similar to K-12 public school students per unit in neighboring districts calculated from 2000 Census tabulations. The table identifies significant differences by jurisdiction in the average number of students per housing unit. The lowest generation rates are for the Polk County portion of the ASD, fewer than half as many students per home as in the City of Amity. The City of Amity has 35 percent of the District's housing stock, but 49 percent of its resident students (excluding those who transfer from outside the District).

Table 10
Average Number of ASD Students per Home, Fall 2006
By Jurisdiction

Jurisdiction	Grade Level			
	K-5	6-8	9-12	K-12
District Total	0.20	0.11	0.16	**0.47**
City of Amity	*0.29*	*0.14*	*0.23*	***0.66***
Yamhill County Unincorporated	*0.16*	*0.10*	*0.13*	***0.40***
Polk County Unincorporated	*0.09*	*0.08*	*0.10*	***0.28***

Source: Data compiled by PSU-PRC, using geographic shape files and tax lot attribute data from Polk County Information Services and Yamhill County GIS. Housing unit counts were determined by PSU-PRC using the attribute data. Includes single family and manufactured homes; does not include apartment units.

In both the City of Amity and in the Yamhill County unincorporated area, the average number of ASD K-12 students per housing unit for recently constructed housing is higher than the average for all housing. The Polk County portion of the ASD has only a small number of new homes, but it again has the lowest rate among the three jurisdictions. Table 11 reports student generation from homes built between 2000 and 2005. Notice that the greatest difference between the average number of students residing in newer homes compared with all homes is for students in elementary grades (0.31 in newer homes compared with 0.20 in all homes). Younger families with preschool or elementary children are often the occupants of new homes, so elementary enrollment generated from the new housing peaks a few years after the homes are occupied, followed by secondary

enrollment peaking several years later. Overall K-12 information from both Tables 10 and 11 is compared by jurisdiction in Chart 5.

Table 11
Average Number of ASD Students per New Home, Fall 2006
Homes Built 2000 to 2005 by Jurisdiction

Jurisdiction	Grade Level			
	K-5	**6-8**	**9-12**	**K-12**
Homes built 2000 to 2005 -- ASD	0.31	0.09	0.22	**0.62**
City of Amity				*0.87*
Yamhill County Unincorporated				*0.49*
Polk County Unincorporated				*0.28*

Note: Rates by grade level groups are not shown by jurisdiction because the number of units built between 2000 and 2005 is not sufficient to produce reliable estimates by grade level.

Source: Data compiled by PSU-PRC, using geographic shape files and tax lot attribute data from Polk County Information Services and Yamhill County GIS. Housing unit counts were determined by PSU-PRC using the attribute data. Includes single family and manufactured homes; does not include apartment units.

Chart 5
ASD Students per Housing Unit, Fall 2006

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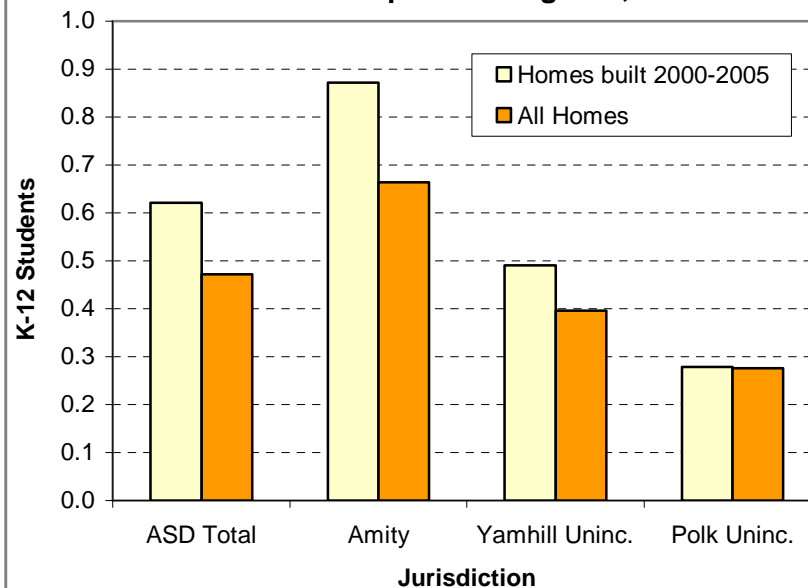
Because the tax assessor's information about the number of bedrooms is relatively complete for newer homes built in Yamhill County, we were able to compare student generation from new homes with three bedrooms and student generation from new homes with four or more bedrooms. Both were very close to the overall rate of 0.62 K-12 students per new home. We expected that more students would be living in the homes with more bedrooms, but the result is not too surprising since three bedroom homes are likely to be more affordable for young families with school age children. These results are shown in Table 12.

Table 12
Average Number of ASD Students per New Home, Fall 2006
Homes Built 2000 to 2005 by Number of Bedrooms

	Grade Level			
Number of Bedrooms				**K-12**
Homes built 2000 to 2005 -- ASD				**0.62**
Three Bedroom Homes				***0.64***
Four of Five Bedroom Homes				***0.60***

Source: Data compiled by PSU-PRC, using geographic shape files and tax lot attribute data from Yamhill County GIS. Housing unit counts were determined by PSU-PRC using the attribute data. Includes single family and manufactured homes for which the number of bedrooms was reported; does not include apartment units.

ENROLLMENT FORECASTS

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District-wide Population Forecast

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.

Some of the findings described in the earlier section "Population and Housing Trends, 1990 to 2007" inform the assumptions used in the population forecast for the 2000 to 2020 period. In particular, the migration levels experienced during the 1990s characterize a period of moderate population growth associated with the average net increase of about 15 to 20 housing units annually. So far in the 2000s, the rate of housing growth is similar to the 1990s. In both periods, the ASD's growth was slower than in Polk or Yamhill County overall.

We also consulted population and employment forecasts published by state agencies:

- The Oregon Office of Economic Analysis forecasts that Yamhill County's population will grow by 40 percent (1.7 percent annually) between 2000 and 2020, from about 85,000 in 2000 to 119,000 in 2020, and that Polk County will grow by 53 percent (2.1 percent annually), from about 62,400 to 95,600.[5]

- The Oregon Employment Department forecasts that employment in the region is forecast to grow by 14 percent in a ten year period (1.3 percent annually).[6]

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[5]"Forecasts of Oregon's County Populations and Components of Change, 2000 to 2040." Oregon Department of Administrative Services, Office of Economic Analysis, April, 2004.
[6]"Regional Projections by Industry and Occupations, 2006-2016." Oregon Employment Department, Workforce Analysis, November, 2007. Employment in the Marion/Polk/Yamhill region was 179,800 in 2006 and grows to 205,600 in the 2016 forecast.

We first prepared a baseline, or status quo, population forecast for the ASD assuming that future population and housing trends would be similar to recent trends. Because no major land use changes have been approved at this time, we characterize the baseline forecast as the most likely scenario.

Our baseline forecast for 2020 population in the ASD is 5,341, an increase of 1,101 persons from the 2000 Census (1.2 percent average annual growth). The district-wide population forecast by age group is presented in Table 13 on the next page. Total population is forecast to grow throughout the period. School-age population ages 5 to 17 has declined since 2000, but is expected to recover somewhat between 2010 and 2020. Still, the school-age growth forecast of eight percent between 2010 and 2020 remains lower than the 12 percent growth forecast for total population during the same period. The overall population increase attributable to net migration in the baseline forecast is shown in Chart 6 below.

Chart 6
Amity School District
Net Migration, 1990 to 2020, *BASELINE* Forecast

Legend:
- Forecast
- Estimated

Ten Year Period	Net Migrants
'90-'00	370
'00-'10	390
'10-'20	410
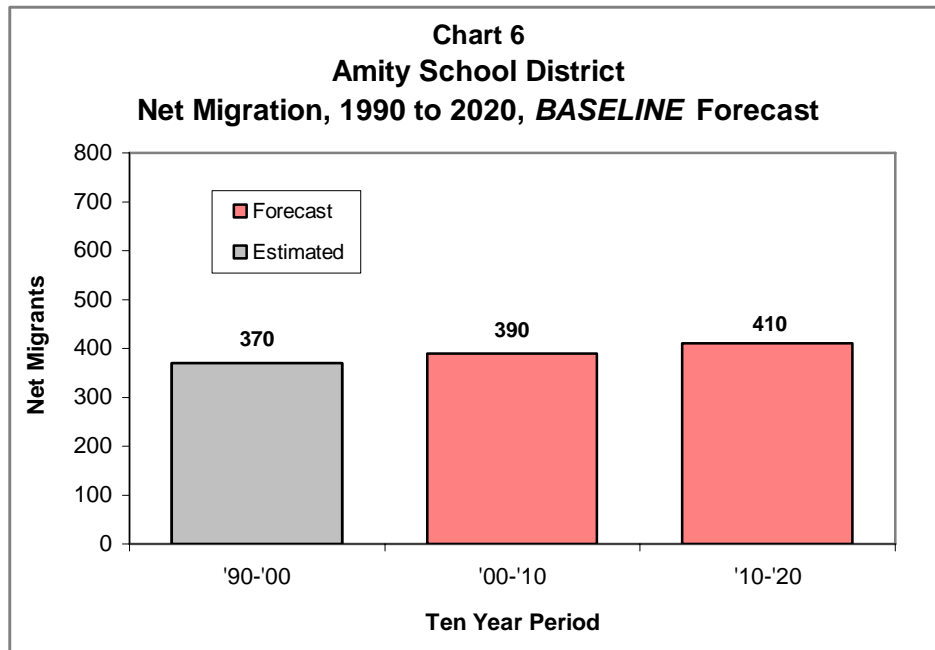
Table 13
Population by Age Group: *BASELINE* Forecast
Amity School District, 1990 to 2020

	1990 Census	2000 Census	2010 Forecast	2020 Forecast	2000 to 2020 Change	
					Number	Percent
Under Age 5	259	266	291	290	24	*9%*
Age 5 to 9	350	339	328	341	2	*1%*
Age 10 to 14	296	418	342	388	-30	*-7%*
Age 15 to 17	174	258	222	230	-28	*-11%*
Age 18 to 19	84	117	133	135	18	*16%*
Age 20 to 24	167	192	250	205	13	*7%*
Age 25 to 29	243	211	264	257	46	*22%*
Age 30 to 34	272	260	290	358	98	*38%*
Age 35 to 39	337	343	319	382	39	*11%*
Age 40 to 44	291	350	360	388	38	*11%*
Age 45 to 49	203	360	409	380	20	*6%*
Age 50 to 54	188	305	416	423	118	*39%*
Age 55 to 59	167	225	409	445	220	*98%*
Age 60 to 64	169	159	304	395	236	*148%*
Age 65 to 69	172	134	186	338	204	*152%*
Age 70 to 74	142	120	113	216	96	*80%*
Age 75 to 79	103	89	69	96	7	*8%*
Age 80 to 84	49	50	43	40	-10	*-20%*
Age 85 and over	38	44	41	34	-10	*-23%*
Total Population	**3,704**	**4,240**	**4,788**	**5,341**	**1,101**	***26%***
Total age 5 to 17	820	1,015	892	959	-56	-6%
share age 5 to 17	*22.1%*	*23.9%*	*18.6%*	*17.9%*		

		1990-2000	2000-2010	2010-2020
Population Change		**536**	**548**	**552**
Percent		*14.5%*	*12.9%*	*11.5%*
Average Annual		*1.4%*	*1.2%*	*1.1%*

Source: U.S. Census Bureau, 1990 and 2000 Censuses; data aggregated to ASD boundary by Portland State University Population Research Center. PSU-PRC Forecasts, 2010 and 2020.

A 23 lot planned unit development originally known as "Sunset West Townhomes" and renamed "Amity Ridge" was recently approved in the City of Amity. Infrastructure work has been done, but homes are not yet under construction. Most of the homes planned in Amity Ridge are attached single family townhomes, which might house about one third to one half as many K-12 students per home as detached homes, judging from research in other districts.[7] Aside from Amity Ridge, we are not aware of other future

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[7]For example, *Hillsboro School District, Population and Enrollment Forecasts, 2006-07 to 2015-16*, Population Research Center, Portland State University, April, 2006. Estimates of Fall 2005 HSD students per unit were 0.59 for detached single family homes, 0.33 for attached or small lot single family homes, and 0.10 for condominium units.

large developments that have gained approval. But much can change over a 10 year period, including land use and development plans. We have considered three plausible scenarios that would contribute more housing, population, and enrollment growth to the area served by the ASD.

First, the City of Amity's urban growth boundary (UGB) could be expanded. Earlier this year, former City of Amity planner Walt Wendolowski did preliminary work on a potential request add about 32 acres to the UGB, at a planned density of four to four and one half homes per acre. We expect that the City will continue similar work. Second, the ongoing statewide debate about development on farm and forest lands could take a new turn that would allow more development in the unincorporated areas. We do not expect the large scale development that might have occurred under Measure 37, but smaller adjustments are possible. Finally, a limited amount of multiple family housing could be developed within the City of Amity.

Any of the three scenarios described above, or others that we have not foreseen, could result in an increase in new housing construction by about halfway through the 10 year forecast horizon. Therefore, we have developed a "high range" forecast that assumes that:

- in the first five years of the period there is slightly more migration of families with children into the District than under the baseline forecast,

- the pace of development increases after the first five years of the forecast due to land use changes and/or multiple family development, facilitating even higher migration levels, and

- fertility rates do not fall as expected under the baseline forecast.

The age-specific fertility rates used in each of the two population forecast scenarios were used to calculate the total fertility rates shown in Table 14. By 2020, the fertility rates average about 11 percent higher in the high range forecast than in the baseline forecast.

Table 14

Total Fertility Rate Assumptions[*]
ASD Population Forecasts

Year	BASELINE	HIGH RANGE
1990 estimate	2.31	2.31
2000 estimate	2.18	2.18
2010 forecast	1.98	2.11
2020 forecast	1.90	2.11

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 migration levels associated with the high range forecast are depicted in Chart 7 below, and the high range population forecasts by age group are shown in Table 15 on the next page. In the high range forecast between 2010 and 2020, average annual growth is 1.7 percent, and the school-age population growth of 17 percent nearly keeps pace with overall population growth of 18 percent.

Chart 7
Amity School District
Net Migration, 1990 to 2020, *HIGH RANGE* Forecast

Net Migrants by Ten Year Period:
- '90-'00: 370 (Estimated)
- '00-'10: 470 (Forecast)
- '10-'20: 670 (Forecast)
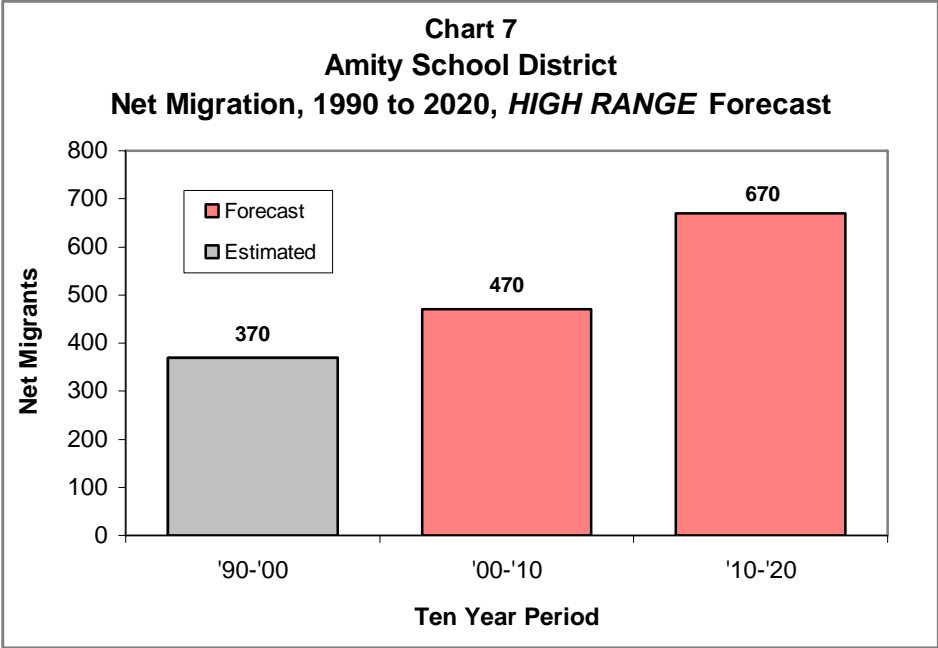
Table 15
Population by Age Group: *HIGH RANGE* Forecast
Amity School District, 1990 to 2020

	1990 Census	2000 Census	2010 Forecast	2020 Forecast	2000 to 2020 Change	
					Number	Percent
Under Age 5	259	266	306	335	69	26%
Age 5 to 9	350	339	342	393	54	16%
Age 10 to 14	296	418	353	436	18	4%
Age 15 to 17	174	258	228	255	-3	-1%
Age 18 to 19	84	117	139	155	38	33%
Age 20 to 24	167	192	250	220	28	15%
Age 25 to 29	243	211	264	285	74	35%
Age 30 to 34	272	260	295	371	111	43%
Age 35 to 39	337	343	329	384	41	12%
Age 40 to 44	291	350	368	409	59	17%
Age 45 to 49	203	360	417	409	49	14%
Age 50 to 54	188	305	420	449	144	47%
Age 55 to 59	167	225	409	475	250	111%
Age 60 to 64	169	159	304	419	260	164%
Age 65 to 69	172	134	186	359	225	168%
Age 70 to 74	142	120	113	227	107	89%
Age 75 to 79	103	89	69	100	11	12%
Age 80 to 84	49	50	43	42	-8	-16%
Age 85 and over	38	44	41	37	-7	-16%
Total Population	**3,704**	**4,240**	**4,877**	**5,760**	**1,520**	**36%**
Total age 5 to 17	820	1,015	923	1,084	69	7%
share age 5 to 17	*22.1%*	*23.9%*	*18.9%*	*18.8%*		

		1990-2000	2000-2010	2010-2020
Population Change		**536**	**637**	**883**
Percent		*14.5%*	*15.0%*	*18.1%*
Average Annual		*1.4%*	*1.4%*	*1.7%*

Source: U.S. Census Bureau, 1990 and 2000 Censuses; data aggregated to ASD boundary by Portland State University Population Research Center. PSU-PRC Forecasts, 2010 and 2020.

District-wide Enrollment Forecast

Historic school enrollment is linked to the population forecast in two ways. First, the "capture rate," or the share of area kindergarten and 1st grade children who are enrolled in ASD schools, is applied to the District's population. Capture rates are used to bring new kindergarten and first grade students into the District's enrollment. If there is evidence that capture rates have changed since the time of the census, they may be adjusted in the forecast. The rates used in the baseline forecast are 0.91 for kindergarten and 0.92 for first grade, and the high range forecast uses capture rates of 0.91 for kindergarten and 0.94 for first grade.

Chart 8 compares the historic and baseline forecast number of births in the District with the historic and baseline forecast kindergarten enrollment. The fact that kindergarten enrollment has generally been larger than the number of corresponding births indicates

Chart 8
ASD Birth Cohorts and Kindergarten Enrollment
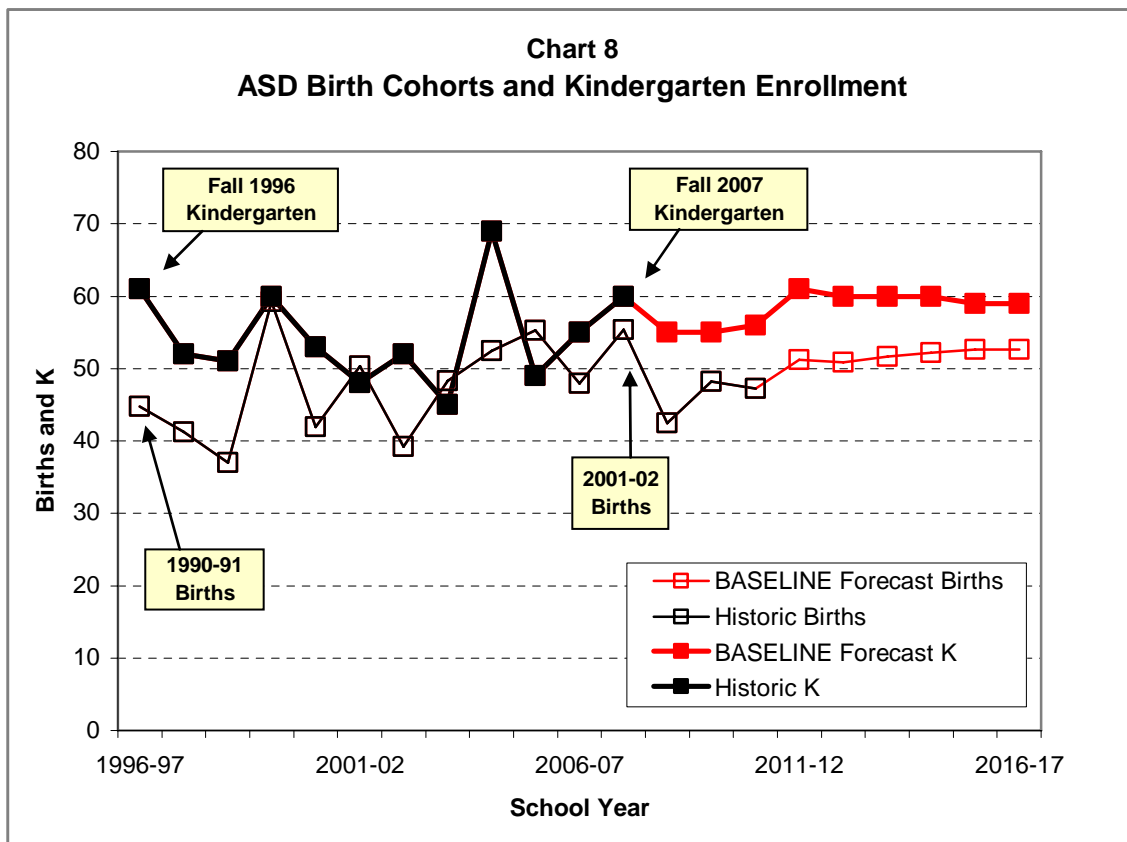
that the District gains population due to migration between birth and age five. After the initial year of the forecast, the baseline kindergarten forecast remains between 12 and 19 percent higher than the number of lagged births.

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. The way that migration is integrated in the forecast is described below.

Once the students are in first grade, a set of grade progression rates (GPRs) are used to move students from one grade to the next. These GPRs, usually 1.00 for elementary grades, represent a scenario under which there is no change due to migration. Enrollment change beyond these migration-neutral rates is added (or subtracted, if appropriate) at each grade level depending on the migration levels of the overall population by single year of age. Table 16 shows the average GPRs for the most recent ten years of observed

			BASELINE	HIGH RANGE
Grade Transition	Historic Average: 1997-98 to 2007-08	Forecast (without the influence of migration)	Forecast Average: 2007-08 to 2017-18	Forecast Average: 2007-08 to 2017-18
K-1	1.06	--[2]	1.06	1.08
1-2	1.02	1.00	1.04	1.04
2-3	1.04	1.00	1.03	1.04
3-4	1.02	1.00	1.03	1.03
4-5	1.04	1.00	1.02	1.03
5-6	0.99	0.98	1.00	1.00
6-7	0.99	0.99	1.00	1.02
7-8	1.02	1.00	1.02	1.03
8-9	1.15	1.08	1.10	1.10
9-10	0.92	0.95	0.96	0.97
10-11	0.94	0.95	0.97	0.97
11-12	0.94	0.98	0.96	0.99

Table 16
Grade Progression Rates[1]
Amity S.D., Historic and Forecast

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 GPRs are not used.

historic enrollment (1997-98 to 2007-08), the GPRs used in the model, and the average GPRs calculated from the baseline and high range enrollment forecasts between 2007-08 and 2017-18.

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 1989-90 and extending to the most recent year (2007-08). 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.

Table 17 on the next page contains grade level baseline forecasts for the Amity School District for each year from 2008-09 to 2017-18. The forecasts are also summarized by grade level groups (K-5, 6-8, and 9-12). Overall K-12 enrollment is forecast to be stable for the first three years of the forecast, and then grow very slowly after 2010, for an overall K-12 enrollment increase of 59 students (seven percent) between 2007-08 and 2017-18. Enrollment growth in elementary grades between now and 2010 is offset by expected declines in high school enrollment. Births have not increased in the past several years and fertility rates are expected to continue to decline, so incoming kindergarten and 1st grade class sizes are forecast to be relatively stable throughout the forecast in spite of modest growth in the young adult population.

On the subsequent page, Table 18 contains grade level high range forecasts. Because of greater population growth and stable fertility rates in the high range, the kindergarten and 1st grade classes grow between the beginning and end of the forecast horizon. Their growth combined with higher migration of school age children results in a 161 student (20 percent) increase in K-12 enrollment, led by an 86 student (24 percent) increase in elementary enrollment.

Table 17
Amity School District, *BASELINE* Enrollment Forecasts, 2008-09 to 2017-18

Grade	Actual 2007-08	Forecast 2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
K	60	55	55	56	61	60	60	60	59	59	59
1	60	64	59	59	59	64	64	63	62	62	62
2	59	63	67	61	61	61	66	66	65	64	64
3	61	62	66	69	63	63	63	68	68	67	66
4	61	63	64	68	71	65	65	65	70	70	69
5	59	63	65	65	69	72	66	66	66	71	71
6	56	59	63	65	65	69	72	66	66	66	71
7	55	57	60	63	65	65	69	72	66	66	66
8	74	56	58	61	64	66	66	70	73	67	67
9	59	82	62	64	67	70	72	72	77	80	73
10	68	57	80	60	62	65	67	69	69	74	77
11	73	66	55	77	58	60	63	65	67	67	71
12	77	70	63	53	74	56	57	61	63	64	65
Total	**822**	**817**	**817**	**821**	**839**	**836**	**850**	**863**	**871**	**877**	**881**
K-5	360	370	376	378	384	385	384	388	390	393	391
6-8	185	172	181	189	194	200	207	208	205	199	204
9-12	277	275	260	254	261	251	259	267	276	285	286

	5 Year Growth: 2007-08 to 2012-13		5 Year Growth: 2012-13 to 2017-18		10 Year Growth: 2007-08 to 2017-18	
	Change	Pct.	Change	Pct.	Change	Pct.
K-5	25	7%	6	2%	31	9%
6-8	15	8%	4	2%	19	10%
9-12	-26	-10%	35	14%	9	3%
Total	**14**	**2%**	**45**	**5%**	**59**	**7%**

Note: Does not include students enrolled at the Ballston Community School chartered by the Amity School District in 2006.

Population Research Center, Portland State University, December 2007.

Table 18
Amity School District, *HIGH RANGE* Enrollment Forecasts, 2008-09 to 2017-18

Grade	Actual	Forecast									
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
K	60	57	58	59	64	64	65	65	66	66	67
1	60	67	63	62	63	69	69	70	70	71	71
2	59	63	70	65	64	65	72	72	73	73	74
3	61	62	66	72	67	66	67	75	75	76	76
4	61	63	65	68	74	69	68	69	77	77	79
5	59	63	65	66	69	76	71	70	71	79	79
6	56	60	64	65	66	69	76	71	70	71	79
7	55	57	61	65	66	67	70	77	72	71	72
8	74	57	59	62	66	67	69	72	79	74	73
9	59	82	63	65	68	73	74	76	79	87	82
10	68	57	80	61	63	66	71	72	74	77	84
11	73	66	56	77	59	61	64	69	70	72	75
12	77	71	64	55	75	58	61	64	69	69	72
Total	**822**	**825**	**834**	**842**	**864**	**870**	**897**	**922**	**945**	**963**	**983**
K-5	360	375	387	392	401	409	412	421	432	442	446
6-8	185	174	184	192	198	203	215	220	221	216	224
9-12	277	276	263	258	265	258	270	281	292	305	313

	5 Year Growth: 2007-08 to 2012-13		5 Year Growth: 2012-13 to 2017-18		10 Year Growth: 2007-08 to 2017-18	
	Change	Pct.	Change	Pct.	Change	Pct.
K-5	49	13%	37	9%	86	24%
6-8	18	10%	21	10%	39	21%
9-12	-19	-7%	55	21%	36	13%
Total	**48**	**6%**	**113**	**13%**	**161**	**20%**

Note: Does not include students enrolled at the Ballston Community School chartered by the Amity School District in 2006.

Population Research Center, Portland State University, December 2007.

FORECAST UNCERTAINTY

By exploring recent population, housing, and enrollment trends in the Amity School District, linking population and enrollment forecasts in the demographic model, and producing district-wide enrollment forecasts by grade level, we have completed a study that we believe will be useful for a variety of long-range planning needs of the District.

Overall K-12 enrollment is expected to continue to grow under both scenarios, by 59 students in the next 10 years under the baseline forecast, or by 161 students under the high range forecast. Both of these forecasts represent a change from the trend observed during the past ten years, during which the District's K-12 enrollment fell by 111 students.

In spite of our assertions that enrollment has bottomed out and the forecasts in this report showing stable or increasing enrollment, there may be years when enrollment does decline. There will be cycles of faster and slower economic and population growth in the future which no forecast will be able to predict, so the year-to-year pattern of actual growth will deviate from the forecast. However, the long-term enrollment changes are consistent with population, employment, and housing growth expected in the region.

The intent of this section is to 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 migration expectations.

Another uncertainty in the forecast involves the entry grades, kindergarten and 1st grade. The relationship between births and subsequent kindergarten and 1st 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 Fall 2007 kindergarten

enrollment of 60 students is 20 percent *greater* than our estimate of 50 births to ASD residents between September 2001 and August 2002 (this year's kindergarten cohort). On the other hand, the Fall 2005 kindergarten enrollment of 49 students was 16 percent *less* than our estimate of 58 births in the corresponding cohort. Populations of 50 or 60 are very difficult to accurately forecast, as a change of only 10 students either way will cause a 20 percent error. If there are sustained increases in kindergarten and 1st grade, they will influence District enrollment totals for years to come, since students have 13 years to progress through the system. Conversely, if kindergarten and 1st grade enrollments consistently fall short of the forecast, overall K-12 enrollments will ultimately be lower than forecast.

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. The Amity School District currently has about 4,500 residents, a very small population that may fluctuate beyond the range envisioned in these forecasts.

Because of the uncertainties of forecasts described in this section, it is important to monitor the results and update the forecast as needed, or as new information becomes available. New information may be school enrollment data that diverges from the forecast, new census data, proposals for major new housing development, or land use changes that may result in housing or economic growth that differs significantly from recent and current trends.