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North Santiam School District Population and Enrollment Forecasts, 2006-07 to 2025-26

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NORTH SANTIAM SCHOOL DISTRICT
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Prepared By
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EXECUTIVE SUMMARY

The North Santiam School District (NSSD) covers about 100 square miles of Marion and Linn Counties in Western Oregon, and includes the communities of Lyons, Mehama, Stayton, and Sublimity. The area served by the District has experienced sustained growth in population, housing, and public school enrollment in recent years. This report presents the results of a forecast conducted by the Portland State University Population Research Center (PRC) indicating that NSSD enrollment will continue to grow during the next twenty years. PRC's methodology links enrollment trends with the area's population dynamics. Population and housing are closely related to access to jobs. 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 increase at all grade levels.

Population in the District is forecast to grow by an average of 1.4 percent annually between 2000 and 2020, slightly higher than the 1.3 percent annual growth rate for Marion County and 0.8 percent rate for Linn County forecast over the same period.[1] The labor markets that include the mid-Willamette Valley region are expected to add nearly 37,000 jobs in a ten year period, an annual average job growth rate of 1.3 percent.[2] The area served by NSSD is poised to capture a share of this growth due to the availability of both residential and industrial land, particularly in the cities of Stayton and Sublimity, where Marion County's current Comprehensive Plan and the cities' own plans anticipate population growth rates significantly higher than for the County overall.[3,4]

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[1]County growth rates for 2000-2020 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.

[2]"Employment Projections by Industry, 2004-2014." Oregon Employment Department, Workforce Analysis, July, 2005. Combined employment in the Marion/Polk/Yamhill and Benton/Lincoln/Linn regions was 262,940 in 2004 and 299,720 in the 2014 forecast.

[3]"Marion County Comprehensive Plan, Population Coordination Project." Marion County Ordinance No. 1091, adopted October 21, 1998, updated by Ordinance No. 1201, adopted November 10, 2004. Available at http://publicworks.co.marion.or.us/Planning/population.asp.

[4]"Buildable Lands Inventory" City of Stayton, Resolution No. 755, adopted June 6, 2005.

Table 1 below contains NSSD's recent historical and forecast enrollments in five year intervals. Following the table are highlights of this study — district-wide enrollment forecasts and enrollment forecasts for individual schools.

Table 1
Historic and Forecast Enrollment, North Santiam School District

	Actual		Forecast			
	2000-01	**2005-06**	**2010-11**	**2015-16**	**2020-21**	**2025-26**
K-3	647	722	766	838	892	934
5 year growth		*75*	*44*	*72*	*54*	*42*
4-5	342	362	404	433	474	496
5 year growth		*20*	*42*	*29*	*41*	*22*
6-8	607	574	625	660	719	769
5 year growth		*-33*	*51*	*35*	*59*	*50*
9-12	748	773	802	822	910	989
5 year growth		*25*	*29*	*20*	*88*	*79*
Total	**2,344**	**2,431**	**2,597**	**2,753**	**2,995**	**3,188**
5 year growth		***87***	***166***	***156***	***242***	***193***

District-wide Enrollment Forecast <u>between 2005-06 and 2015-16</u>

- Total enrollment is expected to grow by more than 300 students.
- Percentage growth in total enrollment is 13 percent, or an average of 1.2 percent annually.
- Average annual growth exceeds the 0.7 percent average that occurred during 2000-01 to 2005-06.
- Combined enrollment in elementary and middle school (K-8) grows by about 270 students (an average of 1.5 percent annually), continuing the recent trend of larger elementary grades.
- High school (9-12) enrollment grows by about 50 students (an average of 0.6 percent annually).

District-wide Enrollment Forecast between 2015-16 and 2025-26

- Total enrollment is expected to grow by more than 400 students.
- Percentage growth in total enrollment is 16 percent, or 1.5 percent annually.
- Combined enrollment in elementary and middle schools (K-8) grows by about 270 students again (the annual average of 1.3 percent is lower due to the larger base).
- High school (9-12) enrollment grows by about 170 students (an average of 1.8 percent annually) in part due to momentum from previous K-8 growth.

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. This scenario may not be realistic over the long-run, because school districts typically respond to enrollment change in various ways including attendance area boundary changes, grade reconfiguration, building new or expanded facilities, transporting students to schools outside their community, or other permanent or stopgap measures. However, the individual school forecasts may help to identify where the greatest facilities needs are. Although enrollments at Mari-Linn, Sublimity, and Stayton High have been relatively stable or have fallen slightly in recent years, all of the District's schools are expected to grow during the forecast period due to new housing construction that is attracting a variety of households that include families with young children, rental housing that is relatively more affordable, or both. Individual school forecasts are shown in Table 2 on the next page.

Table 2
Historic and Forecast Enrollment, Individual Schools

	Actual		Forecast			
	2000-01	**2005-06**	**2010-11**	**2015-16**	**2020-21**	**2025-26**
Mari-Linn (K-8)	260	233	253	269	285	300
5 year growth		*-27*	*20*	*16*	*16*	*15*
Stayton Elem (K-3)*	509	486	498	549	584	612
5 year growth		*-23*	*12*	*51*	*35*	*28*
Stayton Mid (4-8)*	479	596	687	710	782	829
5 year growth		*117*	*91*	*23*	*72*	*47*
Sublimity (K-8)	348	343	357	403	434	458
5 year growth		*-5*	*14*	*46*	*31*	*24*
Stayton High (9-12)	748	773	802	822	910	989
5 year growth		*25*	*29*	*20*	*88*	*79*

** 2000-01 figures reflect K-4 configuration for Stayton Elementary and 5-8 for Stayton Middle.*

INTRODUCTION

During the 2005-06 school year, the North Santiam School District (NSSD) requested that the Portland State University Population Research Center (PRC) prepare enrollment forecasts for use in the District's long-range planning. The study integrates information about NSSD enrollment trends with local 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 Marion County and the Oregon Office of Economic Analysis, employment trends and forecasts from the Oregon Employment Department, and personal interviews with city, county, and school district officials.

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 the district-wide enrollment forecast by grade level is presented annually through 2015-16 and for the subsequent five year intervals, 2020-21 and 2025-26. For each of the District's five existing schools, total enrollment forecasts based on current boundaries and grade configurations are presented for the same 20 year horizon as the district-wide forecast. The conclusion contains a brief discussion of the nature of forecasts and forecast error.

Compiling data was only part of the research conducted in the course of this study. We would like to acknowledge (in alphabetical order) the help of the following individuals who contributed their time and particular expertise about their communities by answering questions and providing local insight:

- Paula Baker, North Santiam School District
- Randy Cranston, Sublimity Planning Commission
- Sharon Etzel, North Santiam School District
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- Melanie Norman, North Santiam School District
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- Les Sasaki, Marion County Planning Department
- Rick Schindler, St. Mary's School
- Allison Thayer, City of Stayton

POPULATION AND HOUSING TRENDS

During the decade between the 1990 and 2000 Censuses, total population within the boundaries of the North Santiam School District grew by 21 percent, from 11,861 persons to 14,305. During this time period, population within the district grew at a slower rate than in Marion County's 25 percent increase, but faster than Linn County's 13 percent growth. About 1,700 children were born to women residing within the NSSD's boundaries in the 1990s, exceeding the number of deaths by several hundred persons. The largest source of population growth during the decade, however, was net migration — nearly 2,000 more people moved into the District than moved out. This growth was facilitated by housing construction and proximity to jobs. Job growth between 1990 and 2000 occurred at a faster pace than population growth. Together, Marion and Linn Counties added nearly 35,000 jobs between 1990 and 2000, a 26 percent increase.[5]

Between the 2000 Census and the most recent population estimates in 2005, employment and population in the region has continued to grow, but at a slower rate. Employment levels in Marion and Linn Counties overall were stagnant between 2000 and 2003, reflecting the recession that impacted all of Oregon.[5] However, most employers in the core industries in the NSSD communities, which include food processing, building materials, construction, metal fabrication, and wood products manufacturing, did not reduce their workforces significantly during the recession. Between April, 2000 and July, 2005, Marion County's population grew by 6 percent, and Linn County grew by 4 percent.[6] During the same period, estimated population growth in NSSD's incorporated cities was 10 percent in Stayton, 8 percent in Lyons, and 4 percent in Sublimity.

By 2005 and early 2006 the pace of growth increased. Job growth statewide in 2005 was

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

[6]"2005 Oregon Population Report." Portland State University, Population Research Center, April, 2006.

greater than expected.[7] In the two year period between March 2004 and March 2006, the unemployment rate for Linn County residents dropped by three percentage points, from 10.5 percent to 7.4 percent, and two and one half points for Marion County residents, from 9.0 percent to 6.5 percent. The two counties added nearly 2,500 jobs in 2004 and 7,400 in 2005, a one year growth rate of 4.4 percent.

In addition to quantifying growth in population and housing, 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 school-age 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 observed population at the end of a period (the year 2000 in this case) with the population that would be expected given the births and deaths that naturally occur.

Population by age group for 1990 and 2000 is shown in Table 3 on the next page. During the decade population grew for all age groups except ages 25 to 34, but the growth rate for school-age population (17 percent) was lower than the growth rate for total population (21 percent). Below Table 3, Chart 1 shows the estimated population change that each age group contributed due to migration between 1990 and 2000. Net losses due to migration for the age groups between 20 and 29 and large gains for ages 30 to 39 are typical of areas outside of large urban centers, as young people move away for college and other opportunities, and slightly older adults settle in the area for employment, housing availability, or a small town lifestyle. The NSSD area also attracts more residents in older age groups, chiefly due to the presence of Marian Estates, which has about 400 residents age 55 and older.

[7]"Oregon Added Lots of Jobs in 2005". Oregon Employment Department, OLMIS, December 21, 2005.

Table 3

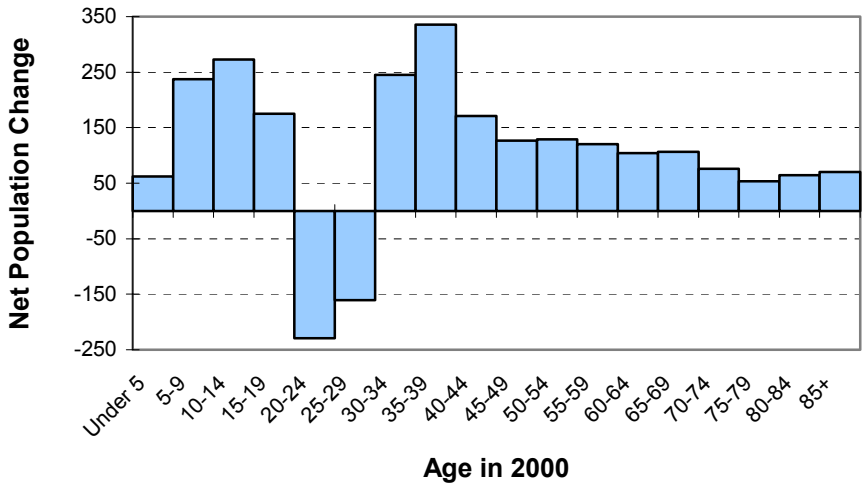
Population by Age Group
North Santiam School District, 1990 and 2000

	1990	2000	1990 to 2000 Change	
			Number	Percent
Under Age 5	894	962	68	*8%*
Age 5 to 9	1,005	1,020	15	*1%*
Age 10 to 14	1,006	1,165	159	*16%*
Age 15 to 17	514	766	252	*49%*
Age 18 to 19	289	411	122	*42%*
Age 20 to 24	624	770	146	*23%*
Age 25 to 29	759	635	-124	*-16%*
Age 30 to 34	944	862	-82	*-9%*
Age 35 to 39	936	1,083	147	*16%*
Age 40 to 44	832	1,096	264	*32%*
Age 45 to 49	628	1,041	413	*66%*
Age 50 to 54	533	936	403	*76%*
Age 55 to 59	505	720	215	*43%*
Age 60 to 64	533	598	65	*12%*
Age 65 to 69	539	554	15	*3%*
Age 70 to 74	474	518	44	*9%*
Age 75 to 79	367	458	91	*25%*
Age 80 to 84	240	363	123	*51%*
Age 85 and over	239	347	108	*45%*
Total Population	**11,861**	**14,305**	**2,444**	***21%***
Total age 5 to 17	2,525	2,951	426	*17%*
share age 5 to 17	*21.3%*	*20.6%*		

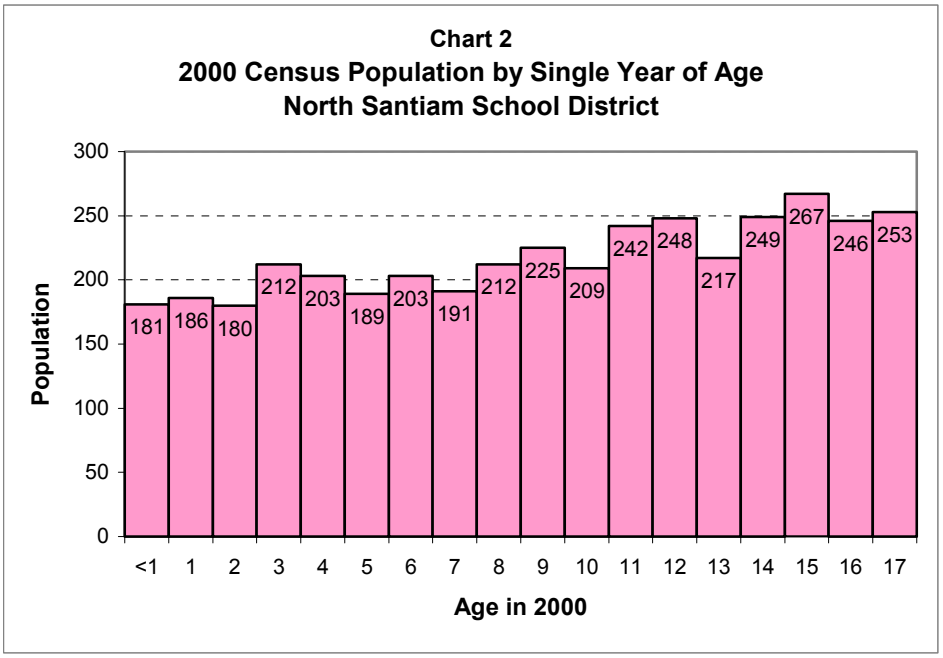
Source: U.S. Census Bureau, 1990 and 2000 Censuses; data aggregated to NSSD boundary by Portland State University Population Research Center.

Chart 1

Population Change Due to Migration, 1990 to 2000
North Santiam School District by Age Group



The fact that adults age 35 to 49 greatly outnumbered those age 20 to 34 in the NSSD at the time of the 2000 Census is reflected in the ages of the children, shown in Chart 2 below. There were significantly more children in their teenage years than in their preschool years. Many families move to the area after their children have already started school, suggesting that the housing market may consist more of "move-up" rather than "starter" homes, or that families with children are attracted to the area, or both. The median home value reported for NSSD in the 2000 Census was 10 percent higher than the Marion County median and 17 percent higher than Linn County. Prices have escalated everywhere since 2000, but the relative price differences likely persist.



The annual birth totals for the NSSD have been increasing, but not as fast as the overall population. Table 4 on the next page reports the number of births each year from 1990 to 2004. The total has fluctuated from year to year, but there were more births in the late 1990s than in the early 1990s. In the most recent five years, from 2000 to 2004, there were about the same number of births as in the previous five years, but the 2003 and 2004 totals are among the highest throughout the historic period.

Table 4

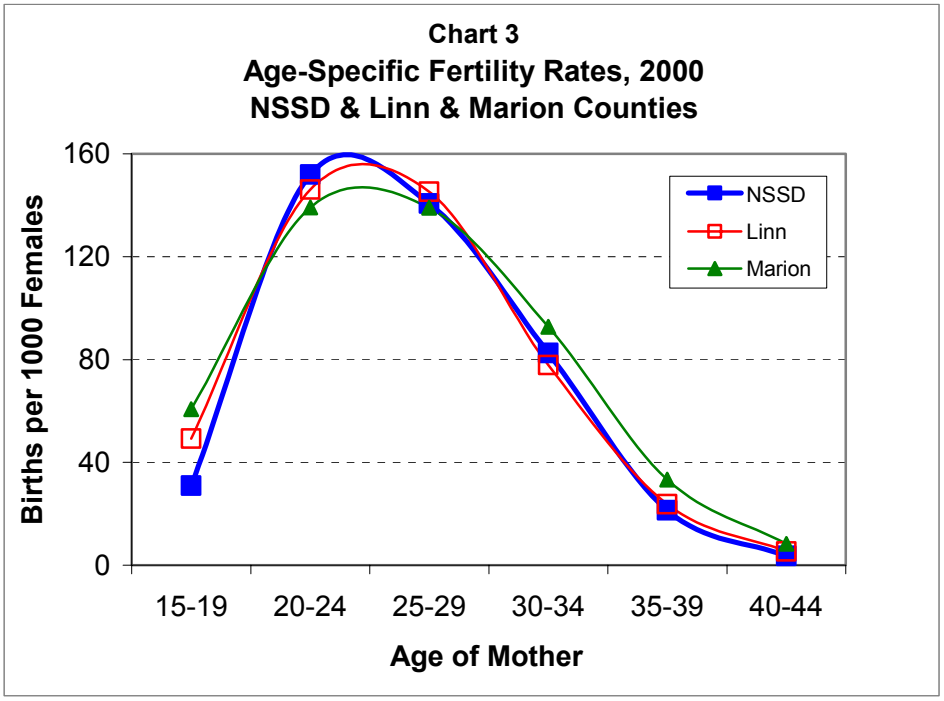
Annual Births, 1990 to 2004
North Santiam School District and Attendance Areas

	NSSD Total	Mari-Linn School Area	Stayton Elem/Mid Area	Sublimity School Area
1990	165	27	105	33
1991	139	26	96	17
1992	166	36	102	28
1993	165	19	117	29
1994	150	30	95	25
1995	177	28	123	26
1996	187	40	124	23
1997	182	25	139	18
1998	186	32	129	25
1999	176	27	129	20
2000	174	22	132	20
2001	180	26	127	27
2002	173	24	133	16
2003	196	27	140	29
2004	185	29	129	27

Source: PSU-PRC estimates using Oregon Center for Health Statistics zip code data, 1990-2004 and individual birth records, 2001-2003.

Fertility rates for the NSSD and for Linn and Marion Counties overall in 2000 are shown in Chart 3, on the top of the next page. They were calculated for each age group by dividing the number of births in calendar year 2000 by the female population counted in the 2000 Census. For example, there were 45 births to mothers age 25 to 29 and a population of 320 women age 25 to 29. So the fertility rate is 45/320 = 0.1406 births per female, or 140.6 per thousand. Chart 3 shows that age-specific fertility rates within NSSD are closer to the rates for Linn County than those in Marion County overall.

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 2000 TFR for the District was 2.16. Comparable rates for Linn and Marion Counties in 2000 were 2.24 and 2.37, respectively. In 1990, the TFRs for Linn and Marion Counties were 2.21 and 2.40.



Total Fertility Rates changed very little in both Linn and Marion Counties between 1990 and 2000, and do not appear to have changed much since 2000. Although fertility rates were much higher for Hispanic women than for non-Hispanic women and the number of births to Hispanic women in Linn and Marion Counties more than doubled between 1990 and 2000, TFRs for Hispanic women in the region decreased by 16 percent, and TFRs for non-Hispanic women decreased by five percent. In the calculation of fertility rates for the population overall, the declines offset the increased Hispanic share, so rates were relatively stable. Hispanic fertility rates are expected to continue to fall as the population changes from mostly 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.[8]

During the 1990s, the number of housing units within the District's boundaries increased by about 1,000. Table 5 on the next page reports the change and also includes changes in the characteristics of the District's housing. The share of single family detached units in the District's overall housing stock changed very little, but multiple family housing

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

(apartments) increased from 16 percent of the total housing stock in 1990 to 20 percent in 2000, and the number of mobile homes or other types of housing units fell slightly. The average number of persons per household fell slightly, from 2.75 in 1990 to 2.71 in 2000.

The average home in the NSSD is a bit more likely to include children under the age of 18, compared with Marion and Linn Counties overall. In 2000, the share of households with at least one child under the age of 18 was 39 percent in the NSSD, 35 percent in Linn County, and 38 percent in Marion County. The difference may be related to the size of homes. Among homes in the NSSD in 2000, 62 percent had three or more bedrooms, compared with 57 percent in Linn County and 55 percent in Marion County.

Table 5
North Santiam School District
Housing and Household Characteristics, 1990 and 2000

			1990 to 2000 Change	
	1990	2000	Number	Percent
Housing Units	4,418	5,446	1,028	*23%*
Single Family	2,974	3,618	644	*22%*
share of total	*67%*	*66%*		
Multiple Family	694	1,100	406	*59%*
share of total	*16%*	*20%*		
Mobile Home and Other	750	728	-22	*-3%*
share of total	*17%*	*13%*		
Households	4,232	5,160	928	*22%*
Households with children under 18	1,693	2,033	340	*20%*
share of total	*40%*	*39%*		
Households with no children under 18	2,539	3,127	588	*23%*
share of total	*60%*	*61%*		
Household Population	11,637	13,976	2,339	*20%*
Persons per Household	2.75	2.71	-0.04	*-1%*

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

Most of the area's housing growth occurs within the cities of Stayton and Sublimity. Between 1990 and 2000, Stayton accounted for 72 percent of the District's housing growth, Sublimity accounted for 20 percent, the City of Lyons accounted for three percent, and the NSSD's unincorporated areas accounted for just five percent of housing growth. Similar development patterns are expected to continue; city officials in all three communities identified subdivisions currently being developed or planned. The pace of

housing growth in the City of Lyons may increase slightly, as three small subdivisions are currently underway, and the number of residential building permits in Lyons is expected to be higher this year than in any of the past five years. The improvements to the City of Stayton's wastewater treatment system currently underway play a major role in the development potential for both Stayton and Sublimity.[9] The bulk of future residential growth in Stayton will not be within the current city boundary, but will be within the City's Urban Growth Boundary (UGB), portions of which the City is likely to annex as development occurs. Residential building permits within incorporated cities for the past 10 years are shown in Table 6 below.

Residential growth outside of the UGBs has been limited by the Exclusive Farm Use or Timber Conservation zoning that maintains the historic pattern of very large parcels. Measure 37 claims have been filed within the NSSD, but the development potential is uncertain, depending on the availability of infrastructure. There probably will be individual homes built under Measure 37 that could not have been built before, but large subdivisions are less likely.

Table 6
Housing Units Authorized by Building Permits

	City of Stayton		City of Sublimity		City of Lyons	
Year	Single Family	Multiple Family	Single Family	Multiple Family*	Single Family	Multiple Family
1996	42	8	25	0	4	0
1997	51	89	46	27	8	0
1998	32	6	30	20	9	0
1999	34	20	0	0	10	0
2000	25	0	4	0	12	0
2001	28	2	8	16	5	0
2002	30	2	7	16	2	0
2003	23	6	7	8	7	0
2004	30	7	24	0	5	0
2005	37	0	12	37	6	0
2006 (Jan-Mar)	11	0	5	0	2	0

**Note: Most of the multiple family units authorized in the City of Sublimity are in Marian Estates (independent living age 55 and over), and do not directly impact school enrollment.*

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

[9] "Water and Wastewater Master Plan Approved." Stayton Mail, April 19, 2006.

ENROLLMENT TRENDS

Total enrollment in the North Santiam School District has increased in four of the past five years, growing from 2,344 students in the 2000-01 school year to 2,431 in the current year (2005-06). Although overall growth in the past five years has been a modest 87 students (3.7 percent), the largest growth has been in the earliest grades, which will influence enrollments in other grades for the next several years.

The District total for grades K-4 is 916, an increase of 104 students (12.8 percent) from 2000-01. Nearly all of the K-4 increase (99 students) occurred at Stayton Elementary School. To handle the growth in Stayton, the District moved 4th grade from Stayton's Elementary campus to its Middle School campus. Sublimity experienced more stable enrollment, increasing by a few students at the lower grades and decreasing by a few students in the upper grades. Although Mari-Linn lost 27 students overall between 2000-01 and 2005-06, the lower grades have not lost enrollment, and their current kindergarten class size of 32 is larger than in any of the previous seven years. On the next page, Table 7 summarizes the enrollment history for the District and individual schools from 1998-99 to 2005-06.

Several current trends indicate that future growth is likely at each of the District's schools.

- Larger current enrollment in Stayton grades K-4 will influence upper grade enrollments at Stayton Middle and Stayton High School over the next several years.

- The particularly large kindergarten class this year at each of the three NSSD elementary schools is likely not an anomaly, as pre-enrollment for fall kindergarten is higher in May 2006 than in May 2005 at each of the schools.

Table 7

North Santiam School District, Historic Enrollment, 1998-99 to 2005-06

Grade	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06		5 year Change 2000-01 to 2005-06	
K	166	143	156	175	171	160	148	177			
1	163	170	166	155	186	199	158	156			
2	166	163	162	174	155	187	202	178			
3	185	172	163	171	186	161	196	211			
4	193	185	165	172	182	196	162	194			
5	193	198	177	176	179	188	192	168			
6	190	208	193	181	182	186	188	205			
7	194	198	208	201	180	189	188	187			
8	189	188	206	215	206	196	177	182			
9	190	201	195	205	217	213	201	183			
10	195	187	199	196	203	215	207	198			
11	195	183	197	205	217	196	213	216			
12	147	182	157	138	153	187	165	176			
Total	**2,366**	**2,378**	**2,344**	**2,364**	**2,417**	**2,473**	**2,397**	**2,431**		**87**	***4%***
K-3	680	648	647	675	698	707	704	722		75	*12%*
4-5	386	383	342	348	361	384	354	362		20	*6%*
6-8	573	594	607	597	568	571	553	574		-33	*-5%*
9-12	727	753	748	744	790	811	786	773		25	*3%*

Historic Enrollment by School

School	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06		5 year Change 2000-01 to 2005-06	
Mari-Linn (K-8)[1]	298	288	260	252	270	263	236	233		-27	*-10%*
Stayton Elem.(K-3)[2]	522	508	509	539	547	602	578	486		-23	*-5%*
Sublimity (K-8)	341	348	348	348	351	330	336	343		-5	*-1%*
Stayton Mid.(4-8)[2]	478	481	479	481	459	467	461	596		117	*24%*
Stayton High	727	753	748	744	790	811	786	773		25	*3%*

1. Mari-Linn includes kindergarten at Mehama prior to 2000-01.

2. Grade 4 included with Stayton Elementary prior to 2005-06.

Data Source: North Santiam School District

- The number of kindergartners in 2005-06 was greater than the number of births within the District five years earlier, implying that children are moving into the area. Relatively higher birth totals in 2003 and 2004 suggest that kindergarten enrollment will continue to climb in the next few years.

- Private school enrollment has been decreasing, as discussed below.

- In spite of relatively slow housing growth in the 2000 to 2005 period, year-to-year comparisons show a net gain in enrollment at most grades at all schools. This is also explained below.

- Where enrollment losses have occurred, they have been primarily due to the age distribution illustrated in the previous section, where older children outnumber younger children in the existing population. That pattern continues to influence high school enrollment, but appears to be leveling in elementary grades.

The NSSD area's population has historically had a very high share of its children enrolled in private schools. Within the NSSD boundaries are three private schools, including a K-8 Catholic school (St. Mary), a Catholic high school (Regis), and a non-denominational K-8 school (Stayton Christian). There are also private schools outside the District, such as those in or around Salem, that enroll a small number of NSSD residents. Data from the 2000 Census shows that the private school enrollment shares for the NSSD were 18 percent of kindergartners, 16 percent of 1^{st}-8^{th} grade students, and 13 percent of 9^{th}-12^{th} grade students.

The share of school-age children residing in the District and attending private schools at the time of the 2000 Census was also confirmed by comparing the population counted in the Census with the public school (NSSD) enrollment by grade level. For purposes of forecasting enrollment, the ratios of kindergarten and first grade public school enrollment to overall population in the corresponding ages are most important. These ratios are called "capture rates." Once a student is enrolled in the public schools in first grade, it is very likely that they will continue to be enrolled in subsequent grades, unless their family

moves out of the District. At the time of the 2000 Census, the kindergarten capture rate was calculated to be 0.76, and the first grade capture rate was 0.86. That implies that about 24 percent of kindergarten-age children and 14 percent of first grade age children were not enrolled in public schools. If 18 percent of kindergarteners attended private schools, it is possible that another six percent were not enrolled in any school. For older children, the share of children who were home-schooled appears to be very low, perhaps about one percent.

Since 2000, the private school share has decreased, due to enrollment losses at St. Mary. The school enrolled 289 students in 1999-2000, and only 228 in the current year (2005-06). Regis High School expects future enrollment loss due to the smaller grades articulating from St. Mary. The area's population growth has likely not included as many families planning to send their children to Roman Catholic schools, in part because of new Catholic school options in the Salem area.

The year-to-year growth for individual grades at each NSSD school is evident from an analysis of historic 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 grade transition. In high school grades, 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 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. For individual schools, rates above 1.00 can indicate positive net migration, or students transferring from other schools.

Table 8 on the next page shows the average of the most recent five years of GPRs beginning with the 2000-01 to 2001-02 rates and ending with the 2004-05 to 2005-06

rates. For both Stayton and Sublimity, seven out of eight grade transitions had rates above 1.00, indicating positive net migration during the period. At Mari-Linn, small class sizes can result in year-to-year fluctuation, but the lower grades generally had net in-migration and the upper grades had net out-migration. Sublimity's GPRs were the highest of any school, despite its overall stable total enrollment. This is because its attendance area consists mostly of owner-occupied single family homes that attract families after their children have already started school, so the number of 8th grade students graduating each year has been larger than the number of kindergartners entering. The housing mix is Stayton is more diverse, so the upper grades have been growing due to migration, as in Sublimity, but the "entry" grades (K and 1st) have been larger in the past few years, perhaps due to the presence of more affordable rental housing.

Table 8

Average Grade Progression Rates*

North Santiam S.D., 2000-01 to 2005-06

Grade Transition	District-wide	Mari-Linn	Stayton	Sublimity
K-1	1.052	1.172	0.979	1.322
1-2	1.039	0.993	1.046	1.062
2-3	1.051	1.052	1.039	1.087
3-4	1.034	1.014	1.035	1.051
4-5	1.031	1.049	1.016	1.075
5-6	1.033	0.916	1.062	1.051
6-7	1.016	0.975	1.053	0.952
7-8	1.010	0.950	1.018	1.038
8-9	1.020			
9-10	0.989			
10-11	1.027			
11-12	0.795			

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

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 at the time of the most recent census (the 1999-2000 and 2000-01 school years) are compared to the population at the appropriate ages counted in the census. The "capture rate," or ratio of enrollment to population, is an estimate of the share of area children who are enrolled in NSSD 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. If there is evidence that capture rates have changed since the time of the census, they may be adjusted in the forecast. That is the case for the NSSD, where a lower share of District residents attended private schools in 2005-06 than in 1999-2000. Observed and forecast capture rates are shown in Table 9 below.

Table 9
Capture Rates*
North Santiam School District

School Year	Kindergarten	Grade 1
1999-2000	0.759	0.857
2009-10 Forecast	0.840	0.880
2025-26 Forecast	0.840	0.880

**The ratio of enrollment in District schools to total population in the District.*

Once the students are in first grade, a set of baseline grade progression rates (GPRs) are used to move students from one grade to the next. These baseline GPRs, usually 1.00 for elementary grades, represent a scenario under which there is no change due to migration. Enrollment change beyond the baseline is added (or subtracted, if appropriate) at each grade level depending on the migration levels of the overall population by single years of age. Table 10 shows the average GPRs for the seven years of observed historic enrollment (1998-99 to 2005-06), the baseline GPRs used in the model, and the average GPRs calculated from the enrollment forecasts between 2005-06 and 2025-26.

Table 10
Grade Progression Rates[1]
North Santiam School District

Grade Transition	7 year Historic Average: 1998-99 to 2005-06	Baseline (without the influence of migration)	20 year Forecast Average: 2005-06 to 2025-26
K-1	1.064	--[2]	1.070
1-2	1.021	1.000	1.027
2-3	1.042	1.010	1.037
3-4	1.018	1.000	1.022
4-5	1.020	1.000	1.020
5-6	1.031	1.010	1.030
6-7	1.017	1.000	1.020
7-8	1.009	1.000	1.020
8-9	1.028	1.010	1.034
9-10	0.988	0.960	0.985
10-11	1.018	0.980	1.009
11-12	0.824	0.850	0.850

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

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

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 earliest year available (1998-99) 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" 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 20 years.

The past may hold clues about the type of growth that the NSSD can expect in the future, but is less helpful in predicting the amount of growth. For the long-range (ten to twenty years), the NSSD population forecast is consistent with the following employment and population forecasts produced by state and local agencies:

- Employment in the region is forecast to grow by 14 percent in a ten year period (1.3 percent annually).[10]

- Between 2000 and 2020 Marion County's population is forecast to grow by 29 percent (1.3 percent annually), and Linn County's population is forecast to grow by 17 percent (0.8 percent annually).[11]

- In the Marion County Comprehensive Plan, the 2020 population forecast for the City of Stayton is 9,250. The City's recently adopted forecast for 2020 is 10,698. Comparing these forecasts with the 2000 Census population of 6,816 implies a 20 year growth rate of 36 percent using the County's forecast, or 57 percent using the City's forecast.

[10]"Employment Projections by Industry, 2004-2014." Oregon Employment Department, Workforce Analysis, July, 2005. Combined employment in the Marion/Polk/Yamhill and Benton/Lincoln/Linn regions was 262,940 in 2004 and 299,720 in the 2014 forecast.

[11]Growth rates 2000-2020 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.

- Also in the Marion County Comprehensive Plan, the 2020 population forecast for the City of Sublimity is 3,590. The City's adopted forecast for 2020 is 3,173. Comparing these forecasts with the 2000 Census population of 2,148 implies a 20 year growth rate of 67 percent using the County's forecast, or 48 percent using the City's forecast.

- Combining the Stayton and Sublimity forecasts from the Marion County Comprehensive Plan with the 2020 population forecast for NSSD implies that 85 percent of the District's 2000 to 2020 population growth will occur in the cities of Stayton and Sublimity, and 15 percent will occur in the balance of the District.

The District-wide population forecast by age group is presented in Table 11 on the next page. Total population is forecast to grow by 32 percent between 2000 and 2020, at an average annual rate of 1.3 percent between 2000 and 2010 and 1.5 percent between 2010 and 2020. School-age population ages 5 to 17 is expected to grow by 16 percent. The much slower growth in school-age population is partly due to the age distribution in the base year of 2000. The number of children age 15 to 17 was very large that year, so the 20 year growth for age 15 to 17 is only forecast to be nine percent. The younger school-age population age 5 to 9 is expected to grow by 24 percent. But much of the area's population in 2020 will be in age groups that are not likely to contribute to the growth in school-age population. In particular, the very large "baby boom" generation will be age 55 to 74 in 2020, and Table 11 shows that the highest growth rates will be in those age groups.

Table 11

Population by Age Group
North Santiam School District, 1990 to 2020

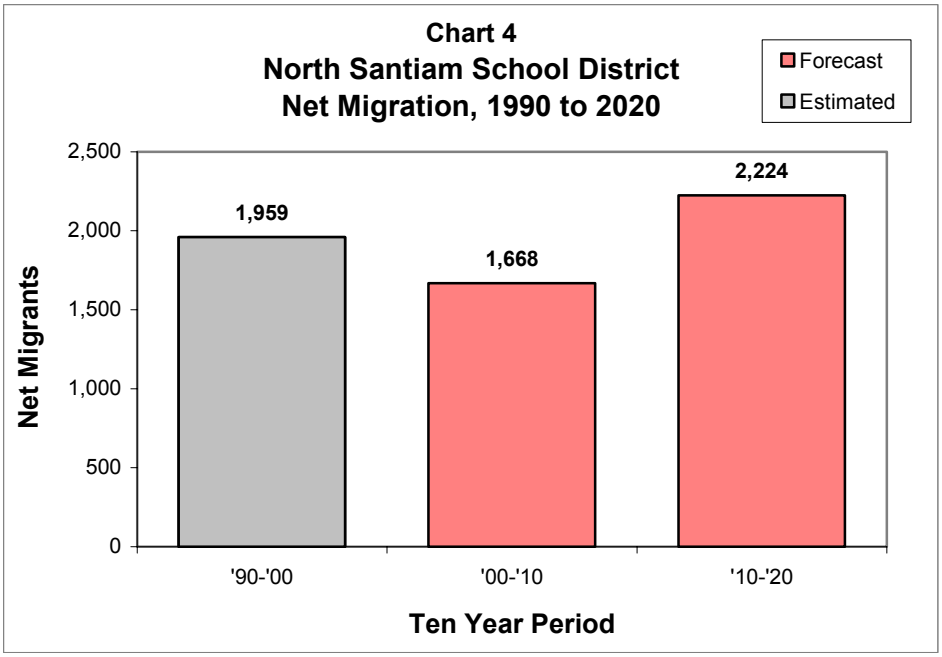
	1990 Census	2000 Census	2010 Forecast	2020 Forecast	2000 to 2020 Change	
					Number	Percent
Under Age 5	894	962	1,025	1,152	190	*20%*
Age 5 to 9	1,005	1,020	1,074	1,266	246	*24%*
Age 10 to 14	1,006	1,165	1,209	1,311	146	*13%*
Age 15 to 17	514	766	777	833	67	*9%*
Age 18 to 19	289	411	420	436	25	*6%*
Age 20 to 24	624	770	923	1,005	235	*31%*
Age 25 to 29	759	635	907	948	313	*49%*
Age 30 to 34	944	862	1,032	1,165	303	*35%*
Age 35 to 39	936	1,083	933	1,215	132	*12%*
Age 40 to 44	832	1,096	997	1,213	117	*11%*
Age 45 to 49	628	1,041	1,161	1,078	37	*4%*
Age 50 to 54	533	936	1,182	1,121	185	*20%*
Age 55 to 59	505	720	1,108	1,229	509	*71%*
Age 60 to 64	533	598	995	1,280	682	*114%*
Age 65 to 69	539	554	742	1,167	613	*111%*
Age 70 to 74	474	518	556	938	420	*81%*
Age 75 to 79	367	458	454	612	154	*34%*
Age 80 to 84	240	363	373	411	48	*13%*
Age 85 and over	239	347	443	486	139	*40%*
Total Population	**11,861**	**14,305**	**16,311**	**18,866**	**4,561**	***32%***
Total age 5 to 17	2,525	2,951	3,060	3,410	459	*16%*
share age 5 to 17	*21.3%*	*20.6%*	*18.8%*	*18.1%*		

		1990-2000	2000-2010	2010-2020
Population Change		**2,444**	**2,006**	**2,555**
Percent		*20.6%*	*14.0%*	*15.7%*
Average Annual		*1.9%*	*1.3%*	*1.5%*

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

Most of the change in population by age group is due to existing residents "aging in place." People who are 36 years old in 2006 will be 50 years old in 2020. If they continue to live in the NSSD area they will contribute to the population increase in the 50 to 54 age group. But many people move into and out of the District. Assumptions about the level of future migration influence the population forecasts, and impact the enrollment forecasts. Forecasts of migration are guided by the estimates of past migration, as well as the forecast job opportunities and expectations of housing growth. The population increase that is attributable to net migration is shown in Chart 4 on the next page. Population growth due to net migration is expected to be similar in the

forecast as it was in the 1990 to 2000 period, but somewhat lower in the 2000 to 2010 period and somewhat higher in the 2010 to 2020 period.



District-wide Enrollment Forecast

Table 12 on the next page contains grade level forecasts for the North Santiam School District for each year from 2006-07 to 2015-16 and for the years 2020-21 and 2025-26. The forecasts are also summarized by grade level groups (K-3, 4-5, 6-8, and 9-12). Over the next 20 years, total NSSD K-12 enrollment is forecast to grow by 757 students. The numeric increase seems large, but it occurs over a very long forecast period. For better or for worse, users of any forecast often pay most attention to the overall change between the current year and the end year, envisioning a giant leap which is actually composed of baby steps along the way. For long-range planning, the five and 10 year forecasts by grade level groups may be of equal or greater importance than the 20 year forecast.

Another way to view the forecast is in terms of annual growth. The average annual growth of 1.4 percent between 2005-06 and 2025-26 is about twice as high as the 0.7 percent annual average observed between 2000-01 and 2005-06. That 2000 to 2005 period included a severe recession and relatively slow housing growth. There will be

Table 12

North Santiam School District, Enrollment Forecasts, 2006-07 to 2025-26

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	15 year 2020-21	20 year 2025-26
K	177	181	176	182	182	181	184	187	191	195	199	209	220
1	156	184	185	184	189	196	195	198	202	206	211	223	233
2	178	161	189	190	188	194	201	200	204	208	212	227	237
3	211	185	167	196	196	195	201	209	207	212	216	233	244
4	194	217	190	171	200	200	199	205	214	212	217	236	247
5	168	200	223	195	175	204	204	203	209	218	216	238	249
6	205	175	207	231	201	180	210	210	209	215	224	241	254
7	187	211	180	212	236	205	183	214	214	213	219	239	256
8	182	193	216	185	217	240	209	186	218	218	217	239	259
9	183	190	200	224	191	224	248	216	192	225	225	243	264
10	198	181	187	197	220	188	221	244	213	189	222	234	257
11	216	201	183	189	198	222	189	223	246	215	191	238	255
12	176	177	169	153	159	168	189	162	191	209	184	195	213
Total	**2,431**	**2,456**	**2,472**	**2,509**	**2,552**	**2,597**	**2,633**	**2,657**	**2,710**	**2,735**	**2,753**	**2,995**	**3,188**
K-3	722	711	717	752	755	766	781	794	804	821	838	892	934
4-5	362	417	413	366	375	404	403	408	423	430	433	474	496
6-8	574	579	603	628	654	625	602	610	641	646	660	719	769
9-12	773	749	739	763	768	802	847	845	842	838	822	910	989

	5 Year Growth: 2005-06 to 2010-11		10 Year Growth: 2005-06 to 2015-16		15 Year Growth: 2005-06 to 2020-21		20 Year Growth: 2005-06 to 2025-26	
	Change	**Pct.**	**Change**	**Pct.**	**Change**	**Pct.**	**Change**	**Pct.**
K-3	44	*6%*	116	*16%*	170	*24%*	212	*29%*
4-5	42	*12%*	71	*20%*	112	*31%*	134	*37%*
6-8	51	*9%*	86	*15%*	145	*25%*	195	*34%*
9-12	29	*4%*	49	*6%*	137	*18%*	216	*28%*
Total	**166**	***7%***	**322**	***13%***	**564**	***23%***	**757**	***31%***

be periods of slow growth in the future, so the year-to-year pattern of actual growth may deviate from the steady growth implied in the forecast. However, the long-term enrollment growth is consistent with population, employment, and housing growth expected in the region, in the context of continued urbanization in the Salem area and other parts of the mid-Willamette Valley.

District-wide Enrollment Forecast between 2005-06 and 2015-16

- Total enrollment is expected to grow by more than 300 students.
- Percentage growth in total enrollment is 13 percent, or an average of 1.2 percent annually.
- Average annual growth exceeds the 0.7 percent average that occurred during 2000-01 to 2005-06.
- Combined enrollment in elementary and middle school (K-8) grows by about 270 students (an average of 1.5 percent annually), continuing the recent trend of larger elementary grades.
- High school (9-12) enrollment grows by about 50 students (an average of 0.6 percent annually).

District-wide Enrollment Forecast between 2015-16 and 2025-26

- Total enrollment is expected to grow by more than 400 students.
- Percentage growth in total enrollment is 16 percent, or an average of 1.5 percent annually.
- Combined enrollment in elementary and middle schools (K-8) grows by about 270 students again (the annual average of 1.3 percent is lower due to the larger base).
- High school (9-12) enrollment grows by about 170 students (an average of 1.8 percent annually) in part due to momentum from previous K-8 growth.

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. This scenario may not be realistic over the long-run, because school districts typically respond to enrollment change in various ways including attendance area boundary changes, grade reconfiguration, building new or expanded facilities, transporting students to schools outside their community, or other permanent or stopgap measures. However, the individual school forecasts may help to identify where the greatest facilities needs are.

The methodology for the individual school forecasts relies on grade progression rates observed for each of the schools in the past three years, and the ratio of kindergarten enrollment to lagged births within the school's attendance area. New kindergarten classes were forecast each year based on recent trends and historic and forecast births. Subsequent grades were forecast using the GPRs. The sums of the initial forecasts produced with this method were relatively close to the overall District figures for the K-3, 4-5, 6-8, and 9-12 grade groupings throughout the forecast period. The final forecasts for individual schools shown in Table 13 on the next page have been controlled to match the district-wide forecasts.

Although enrollments at Mari-Linn, Sublimity, and Stayton High have been relatively stable or have fallen slightly in recent years, all of the District's schools are expected to grow during the forecast period due to new housing construction that is attracting a variety of households that include families with young children, rental housing that is relatively more affordable, or both. By the end of the 20 year forecast period, moderate enrollment growth at Mari-Linn will bring the school close to its 1998-99 enrollment level (when the Mehama facility was in use). Enrollment growth in grades K-8 at the schools in Stayton is already increasing and growth there will continue in the short and long run. Significant growth in Sublimity and at Stayton High School is not expected immediately, but will occur later in the forecast period.

Table 13

North Santiam School District, Enrollment Forecasts by School

School	Actual 2005-06	Forecast 2006-07	>>> 2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	15 year 2020-21	20 year 2025-26
Mari-Linn (K-8)	**233**	**241**	**242**	**244**	**253**	**253**	**255**	**258**	**269**	**267**	**269**	**285**	**300**
K-3	106	109	109	119	114	115	119	121	119	121	122	130	136
4-5	53	61	56	47	55	66	58	56	62	64	63	66	69
6-8	74	71	77	78	84	72	78	81	88	82	84	89	95
Stayton Elem. (K-3)	**486**	**478**	**476**	**488**	**490**	**498**	**500**	**510**	**525**	**537**	**549**	**584**	**612**
Sublimity (K-8)	**343**	**354**	**340**	**341**	**354**	**357**	**352**	**371**	**389**	**395**	**403**	**434**	**458**
K-3	130	124	132	145	151	153	162	163	160	163	167	178	186
4-5	76	90	80	61	74	86	81	84	98	97	93	102	107
6-8	137	140	128	135	129	118	109	124	131	135	143	154	165
Stayton Mid. (4-8)	**596**	**634**	**675**	**673**	**687**	**687**	**679**	**673**	**685**	**698**	**710**	**782**	**829**
4-5	233	266	277	258	246	252	264	268	263	269	277	306	320
6-8	363	368	398	415	441	435	415	405	422	429	433	476	509
Stayton High (9-12)	**773**	**749**	**739**	**763**	**768**	**802**	**847**	**845**	**842**	**838**	**822**	**910**	**989**
District Total	**2,431**	**2,456**	**2,472**	**2,509**	**2,552**	**2,597**	**2,633**	**2,657**	**2,710**	**2,735**	**2,753**	**2,995**	**3,188**

	5 Year Growth: 2005-06 to 2010-11		10 Year Growth: 2005-06 to 2015-16		15 Year Growth: 2005-06 to 2020-21		20 Year Growth: 2005-06 to 2025-26	
	Change	**Pct.**	**Change**	**Pct.**	**Change**	**Pct.**	**Change**	**Pct.**
Mari-Linn	20	*9%*	36	*15%*	52	*22%*	67	*29%*
Stayton Elem.	12	*2%*	63	*13%*	98	*20%*	126	*26%*
Sublimity	14	*4%*	60	*18%*	91	*27%*	115	*34%*
Stayton Mid.	91	*15%*	114	*19%*	186	*31%*	233	*39%*
Stayton High	29	*4%*	49	*6%*	137	*18%*	216	*28%*

CONCLUSION

By exploring recent population, housing, and enrollment trends in the North Santiam School District, linking population and enrollment forecasts in the demographic model, and producing enrollment forecasts for 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 some schools may grow very little or not at all in the first few years of the forecast. 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.

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. Both of these factors have contributed to increased kindergarten enrollment in 2005-06 and a likely increase in 2006-07. Sustained increases in kindergarten will influence District enrollment totals for years to come, since students have 13 years to progress through the system. Conversely, if the trend of larger kindergarten classes is reversed, it could dampen enrollment growth in the long run.

Chart 5 on the next page shows NSSD total K-12 enrollment observed from 1998-99 to 2005-06 and forecast from 2006-07 to 2025-26. Although the overall growth rate is obviously higher in the forecast than it has been in the recent past, that is largely due to a forecast of gradual growth in the entry grades, kindergarten and first grade. The rate of growth each year for individual cohorts due to migration (e.g. more 2nd grade students

next year than 1st grade students this year) is similar to the past. Recent slow growth was also influenced by the economic downturn and the predominance of older students in the District's population (resulting in more students exiting high school than entering kindergarten each year). Current increases in elementary enrollment have resulted in more of a balance between the upper and lower grades, and will influence future growth at all grades.