

10-5-2000

Enrollment Forecast for Horizon Christian School 2005-2015

Portland State University. Population Research Center

Risa S. Proehl
Portland State University

Follow this and additional works at: <https://pdxscholar.library.pdx.edu/enrollmentforecasts>



Part of the [Urban Studies and Planning Commons](#)

Let us know how access to this document benefits you.

Recommended Citation

Portland State University. Population Research Center and Proehl, Risa S., "Enrollment Forecast for Horizon Christian School 2005-2015" (2000). *School District Enrollment Forecast Reports*. 71.
<https://pdxscholar.library.pdx.edu/enrollmentforecasts/71>

This Technical Report is brought to you for free and open access. It has been accepted for inclusion in School District Enrollment Forecast Reports by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: pdxscholar@pdx.edu.

**Enrollment Forecast
for Horizon Christian School
2005-2015**

**Prepared by
Risa Proehl**

**Population Research Center
Portland State University
Portland, OR 97207**

October 5, 2000

Summary

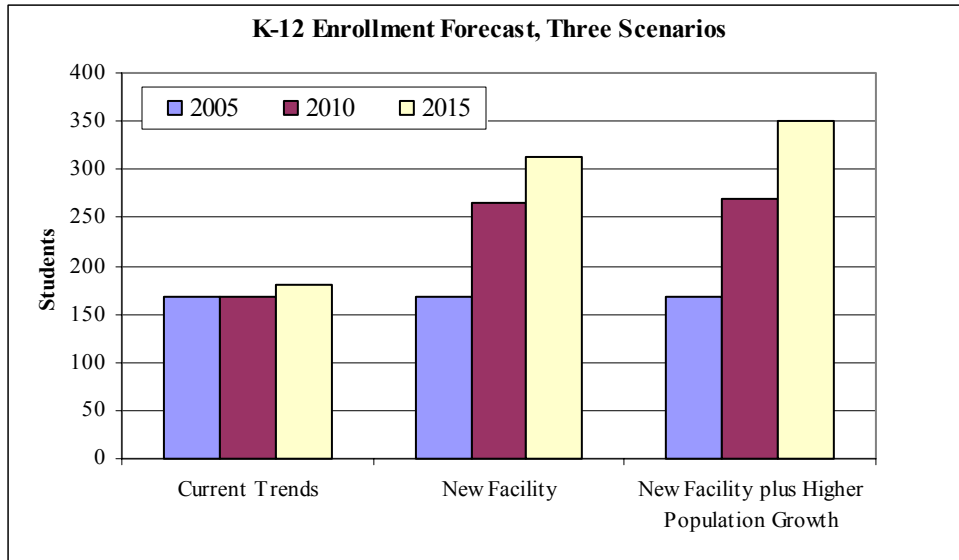
This report provides a 2005-2015 school enrollment forecast for Horizon Christian School by grade level, and includes background demographic information and analysis for Horizon Christian School's market area. The market area for this study consists of Northern Wasco County and Hood River County School Districts in Oregon, and White Salmon School District in Washington.

Horizon Christian School, offering grades pre-kindergarten through 12, is located in the city of Hood River and its classrooms are located in rented spaces at three different sites throughout the city. Plans to construct a new facility to house Horizon on one campus have been made.

The factors that are likely to affect Horizon's enrollments are considered in this report, including the occurrence of demographic events and the construction of a new school facility. Three different scenarios of enrollment changes were developed to account for different probabilities of demographic changes and the effects a new school facility will have on enrollments. Each of the three enrollment forecasts uses one of the following assumptions: (a) current demographic and enrollment trends will continue throughout the forecast period; (b) a new school facility will be constructed and operational beginning in the 2006-07 school year, and (c) a new school facility will be operational beginning in the 2006-07 school year and population growth in Horizon's market area will increase during the forecast period.

Under each of the three scenarios, Horizon's enrollment will increase from 2005 to 2015, but by varying amounts. If current trends continue, the change in K-12 enrollment from 2005 to 2015 will be mild, and there will be an overall increase from the present level of 167 students to 181 students. This change represents an increase of 14 students during the forecast period. Adding pre-K students, total enrollment is expected to reach 200 by 2015. If a new facility is constructed and operational by the 2006-2007 school year and current demographic trends continue, K-12 enrollment is expected to increase by 145

students, increasing enrollment to 312 students in 2015. Including pre-K, total enrollment will reach 340 students. In the highest growth scenario with the construction of a new school facility and an increase in population growth, Horizon is predicted to gain 184 K-12 students and 351 students will be enrolled in grades K-12 at the end of the forecast period. Pre-K students will increase the total enrollment to 380.



Caution should be used when interpreting the future growth of school enrollments. The forecasts should be interpreted as suggestive rather than precise predictions. It is difficult to predict exactly when and how much population growth will occur and to gauge the magnitude of influence that population growth and the construction of a new school facility will have on enrollments.

Introduction

In 2001, two existing Christian schools merged to form Horizon Christian School. Horizon offers grades Pre-K –12. Its classrooms and students are divided amongst buildings in multiple locations in the city of Hood River. A new facility is planned for construction to house Horizon’s students on one campus.

This study forecasts enrollment changes for Horizon Christian School from 2005 to the year 2015 and includes background demographic and enrollment information for Horizon Christian School and its market area. Three enrollment forecasts were prepared each using a different scenario of population and enrollment growth. Two scenarios take into account the construction of a new facility and the effects a newly constructed facility will have on enrollments. One scenario considers changes in enrollment if recent and current demographic trends in Horizon’s market area were to continue.

Horizon’s Market Area

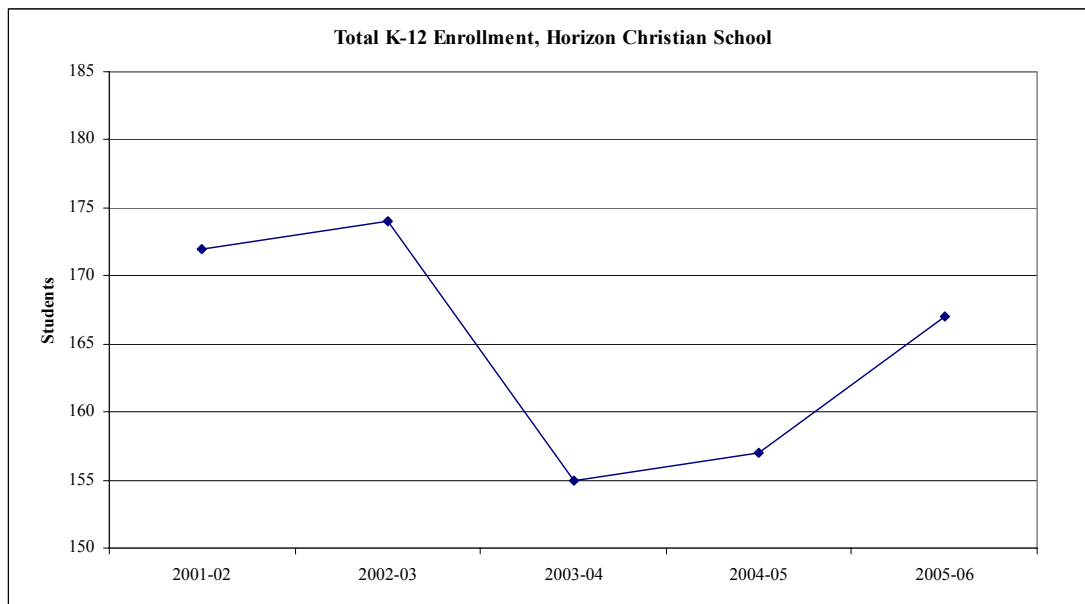
Horizon draws 98 percent of its students from Hood River County and North Wasco County School Districts in Oregon, and in White Salmon School District in Washington. For this enrollment forecast, the study area consists of these three school districts.¹ Hood River County School District covers the entire Hood River County; Northern Wasco County School District captures about 80% of Wasco County’s population; and about 30 percent of Klickitat County’s population resides in the White Salmon School District. A

¹ Since Horizon’s opening in 2001, between 1 to 4 Horizon students (0 .5 percent to 2.3 percent of Horizon’s enrollment), have resided in the Stevenson-Carson School District in Washington. Because the number of students residing there is so small, Stevenson-Carson School District is not included as part of Horizon’s market area in this study. Additionally, the percentage of children residing in the Stevenson-Carson School District attending public school is very high compared to school districts in the surrounding areas.

small portion of the White Salmon School District is located in Skamania County, but the population represents only 14 percent of the District’s population and 10 percent of Skamania County’s population. Skamania County is not included in the analysis completed for this study.

Horizon Enrollment Trends

Since 2001, K-12 enrollment has fluctuated between about 150 and 175 students. Pre-kindergarten added 19-20 students to Horizon’s total enrollment in the 2003-04 and 2004-05 school years².



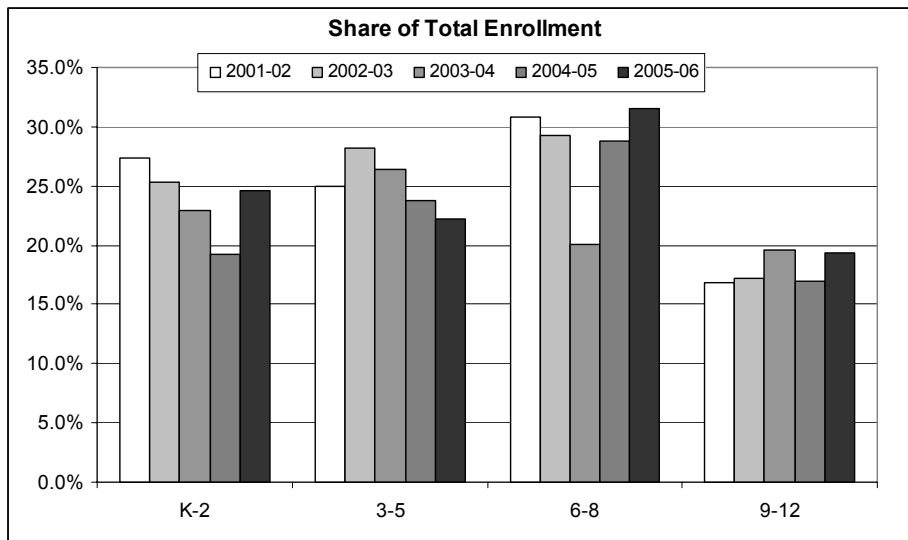
During most of the period since 2001, the greatest number and share of all Horizon’s students has been enrolled in grades 6-8, while the smallest number and share has been enrolled in grades 9-12.

² Data for pre-Kindergarten enrollment are only available for 2 years and are not complete for the 2005-06 school year.

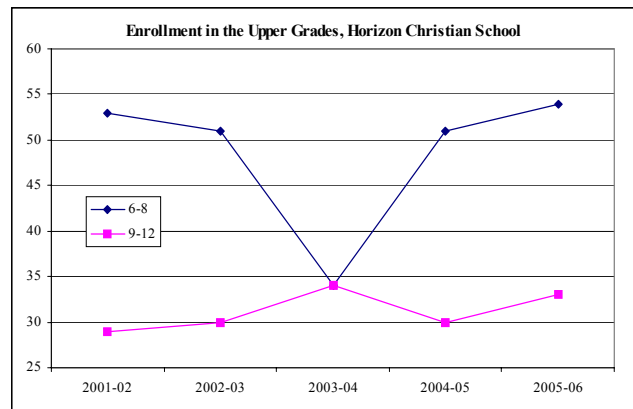
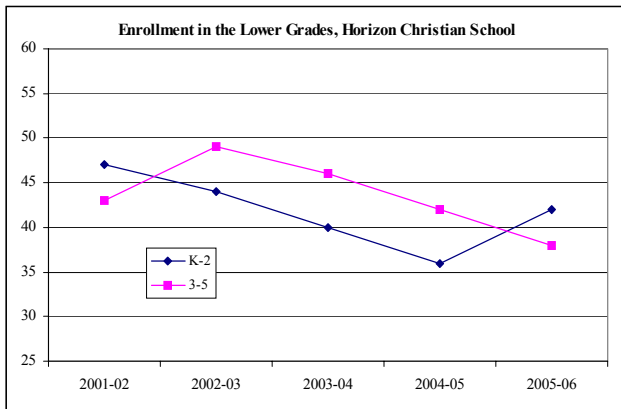
Horizon Christian School Enrollment

GRADE LEVEL	2001-02	2002-03	2003-04	2004-05	2005-06
K-2	47	44	40	36	42
3-5	43	49	46	42	38
6-8	53	51	34	51	54
9-12	29	30	34	30	33
Total K-12	172	174	154	159	167
Pre K	-	-	19	20	4*
Total Pre-K - 12					

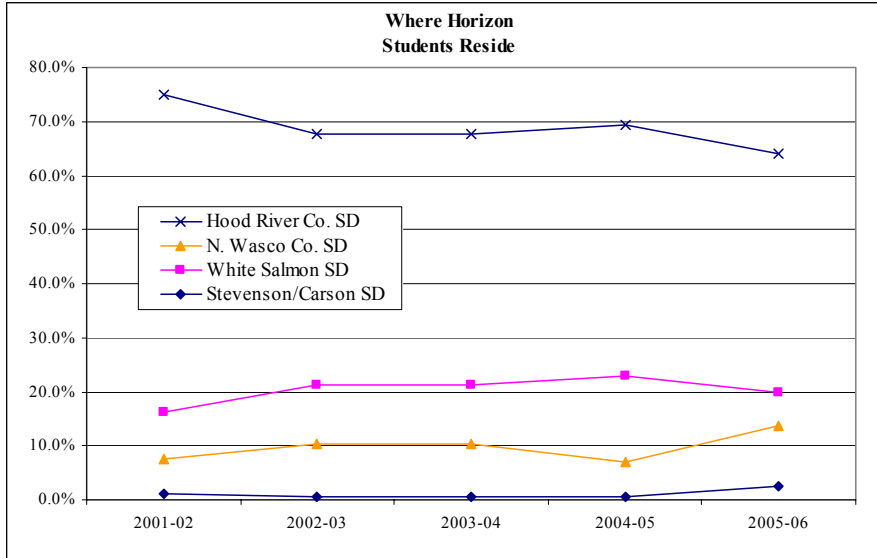
*Complete data are not yet available.



Since 2001, Horizon's enrollment in grades K-2 and 3-5 have decreased, and enrollment in grades 6-8 and 9-12 has slightly increased.



The majority of Horizon’s students reside in Hood River County School District (currently 64 percent). Fourteen percent reside in the Northern Wasco County School District, and 20 percent in White Salmon School District. Overall since 2001, fewer Horizon students are residing in the Hood River County School District, and more students are residing in Northern Wasco and White Salmon School Districts.



The proportion of Horizon students in grades K-2 and in grades 6-8 residing in the Hood River School District have declined in the past 4 years, while they have increased in White Salmon School District. Of Horizon’s students who live in White Salmon School District, most are enrolled in the lower grades, K-5. Students in grades 9-12 represent the highest share of students residing in Northern Wasco County School District.

Demographic Trends in the Market Area and Future Growth

Of the total population in the market area, about 45 percent resides in the Hood River County School District, 40 percent in the Northern Wasco County School District, and 14 percent in the White Salmon School District. Thus, demographic trends in the Hood

River County and Northern Wasco County School Districts have the greatest influence in Horizon's market area.

Population Trends in the Market Area

The total population in the market area is estimated to be approximately 47,400. The population of children ages 5-17 is estimated to be around 9,400. Since 2000, the total population in the market area has modestly been increasing at a rate of less than one-half of one percent per year (.4%). The growth rate for children ages 5-17 has been slightly less (.3% per year).

From 2000 to 2004, the total population increased in all three school districts in the market area, with most of the population growth occurring in the Hood River School District. The population of school-aged children increased a bit in both Hood River County and Northern Wasco County School Districts, but decreased slightly in the White Salmon School District.

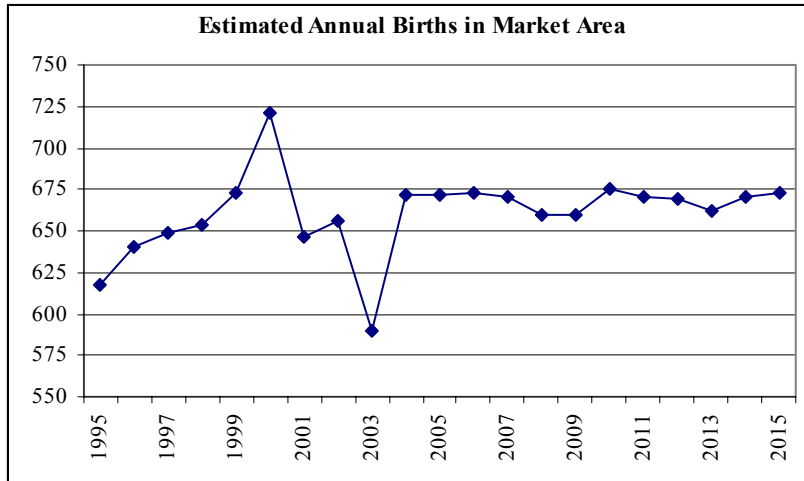
During 2005 to 2010, the total population in the market area is expected to increase at a greater rate than from 2000 to 2005, rising from an average annual rate of 0.4 percent to 0.8 percent per year. However, the school-age population is predicted to decrease, but at an average annual rate of -.05 percent, or by about 10 fewer children per year.

Total population and the population of school-age children are both expected to increase in Horizon's market area during 2010 to 2015. The total population is projected to reach almost 52,000 by 2015. About 300 additional children ages 5-17 are predicted to be residing in the market area at the same time.

Births

Since 1995, the estimated average annual number of births that have occurred in the market area is around 650. About 48 percent of the births occur in the Hood River School District, 40 percent in Northern Wasco County School District, and 12 percent in the White Salmon School District.

The number of births in the market area is predicted to increase to an average of around 670 per year during the forecast period (2006-2015). During the period, births are expected to increase in North Wasco County School District, decrease in Hood River School District, and remain fairly stable (about the same) in White Salmon School District.



Private School Capture Rates and Horizon’s Share of Private School Enrollment

Horizon Christian School captures almost 20% of those attending private school in the market area, where about 10 out of 100 school-age children attend private school.

Amongst the three school districts in the market area, the private school capture rate is highest in White Salmon where 12 out of 100 school-age children attend private school. In Hood River County School District, 10 out of 100 attend private school, and in Northern Wasco County, the number is 8 out of 100 school-age children.

Capture rates of private school are higher for grades K-2 and 3-5 than for the upper grades. In Hood River County School District, most private school students are enrolled in grades 3-5. In Northern Wasco County and White Salmon School Districts, most are in grades K-2.

Information about the Effects a New Facility has on Enrollments

Horizon's architect has collected data on how enrollments have changed following the construction of a new school facility. The sources of the data are from five previous private school building projects that they have managed throughout the U.S. within recent years.

The number of years that enrollment numbers were monitored ranges between 1 and 5 years. All five schools experienced an increase in enrollments following the construction of a new school facility. However, the magnitude of change in enrollment varies. One school experienced an average annual increase of 6 percent over 2 years, and another school saw a 5-year average annual increase of 32 percent after the new facility opened. The average annual increase in enrollments for all 5 schools was about 19 percent during the first two years after opening the new facility. (See Appendix 2 for detailed notes from the architect).

Enrollment Forecast – Results for Three Scenarios

Three enrollment forecasts were developed under different population and enrollment growth scenarios, each using one of three assumptions: (a) current demographic and enrollment trends will continue throughout the forecast period; (b) a new school facility will be constructed and operational beginning in the 2006-07 school year, and (c) a new school facility will be operational beginning in the 2006-07 school year and population growth in Horizon's market area will increase during the forecast period.

In all three enrollment forecasts, enrollment changes by grade level will vary. However, the greatest increases will be consistently seen in grades 3-5.

Current Trends Enrollment Forecast

Under the current trends scenario, the current rate of population growth in the market area, which is estimated to be an average of 0.4 percent per year, will continue throughout the forecast period. The current trends forecast anticipates that there will be an average of 20 additional school-age children residing in the market area each year from 2005-2015.

The capture rate of private school is anticipated to remain the same during the forecast period, with Horizon attracting about 2 percent of the school-age children residing in the market area.

The current trends forecast predicts that Horizon enrollments will be fairly stable with a very slight enrollment increase from the present to the year 2015. Total enrollment (including pre-K) will increase by 15 students, or 8 percent, between 2005 and 2015. An average of 1 to 2 students will be added each year during the forecast period. Enrollment by grade level, however, will be uneven. Enrollments for grades 3-5, increasing by 28 percent between 2005 and 2015, will be more rapid than those for total enrollments. An overall decrease in enrollment is seen for grades 6-8 and 9-12.

Current Trends	2005	2015	2005-2015 Change	
			Number	Percent
Grades K-2	42	48	6	13.2%
Grades 3-5	38	49	11	28.4%
Grades 6-8	54	52	-2	-3.4%
Grades 9-12	33	32	-1	-2.7%
Total K-12	167	181	14	8.1%
Pre-K	18*	19	1	3.7%
Total Pre-K - 12	185	200	15	7.7%

*Estimated for 2005; actual data not yet available.

Enrollment Forecast with a New Facility

The forecast that includes the construction of a new facility assumes that the facility will be operational in the 2006-07 school -year. Total enrollment is presumed to increase by 19 percent in the 2006-07 and 2007-08 school years. The retention rate of Horizon’s students is expected to increase due to the attraction of new curricular programs and the state-of-the-art learning environment that are anticipated to be offered. During the first two years that the new facility is operational, an increase of 77 students is predicted (35 in 2006-07 and 42 in 2007-08).

Under the new facility scenario, there will be an increase in total pre-K - 12 enrollment by 155 students, or by 84 percent, between 2005 and 2015. An average of 16 students per year will be added. Overall enrollment increases in 2015 under this scenario will be 141 students higher than under the current trends forecast. The new facility forecast suggests that enrollment will increase in all K-12 grade levels at least by 60 percent during the forecast period.

New Facility	2005	2015	2005-2015 Change	
			Number	Percent
Grades K-2	42	68	26	61.4%
Grades 3-5	38	82	44	115.9%
Grades 6-8	54	97	43	79.6%
Grades 9-12	33	65	32	97.9%
Total K-12	167	312	145	86.9%
Pre-K	18*	28	10	56.7%
Total Pre-K - 12	185	340	153	83.9%

*Estimated for 2005; actual data not yet available.

Enrollment Forecast with New Facility plus Increased Population Growth

Under the higher growth scenario, it is assumed that in addition to the construction of a new facility, the rate of population growth in the market area will increase during 2010-2015, raising the average annual rate to about 1 percent. Following several years with a fairly stable children’s population, an average of 58 additional school-age children will be residing in the market area each year toward the end of the forecast period.

In the forecast that includes the construction of a new school facility and an increase in population growth, there will be stronger growth in enrollment over the next ten years. This high enrollment forecast suggests that total enrollment will increase by 195 students, or by 106 percent, between 2005 and 2015. An average of 20 students will be added to Horizon’s enrollment each year during the forecast period.

New Facility plus Higher Population Growth	2005	2015	2005-2015 Change	
			Number	Percent
Grades K-2	42	70	28	66.4%
Grades 3-5	38	91	53	140.8%
Grades 6-8	54	113	59	109.5%
Grades 9-12	33	77	44	132.0%
Total K-12	167	351	184	110.2%
Pre-K	18*	29	11	61.6%
Pre-K - 12	185	380	195	105.5%

*Estimated for 2005; actual data not yet available.

Methods used in Horizon Christian School Forecasts

The enrollment forecasts prepared for Horizon Christian School employed a Grade Progression Model or a modified version of the it. The following section describes the model and other methods used to develop the enrollment forecasts under the three growth scenarios. Data sources are listed in Appendix 3.

Grade Progression Model

Current Trends Forecast

To prepare the current trends enrollment forecast a grade progression model was created. The grade progression model is comprised of recent grade progression ratios (GPR) for Horizon's students by grade level. The GPR is the proportion of students enrolled in one grade level divided by the number of students enrolled in the preceding grade level in the previous year. One ratio is associated with each grade level for students entering grades 1 through 12. Recent local trends are captured in the construction of the GPR model. The model accounts for demographic changes in the market area as they are reflected in the changes in school enrollments.

In order to determine the GPRs for the future, weighted averages of the ratios for each grade level from the past four years were calculated. A heavier weight is applied to the years that are assumed to have more bearing on future enrollments, allowing the trends of those to dominate over the other years.

The 2005 enrollments were multiplied by the GPR weighted averages to forecast 2006 enrollments. The same GPRs were then applied to the 2006 enrollments to calculate the forecasted 2007 enrollments and so on until the 2015 enrollments were calculated.

Enrollment Forecast with a New Facility

Modifications were made to the Grade Progression Model developed for the current trends enrollment forecast to account for the construction of a new school facility. Based

on the data on the effects a new facility has on private school enrollments mentioned above, Horizon's total enrollments were increased by 18.9 percent in 2006 and again in 2007.

To determine the distribution of students by grade level in 2006 and 2007, the percentage that students in each grade level represent of the total enrollment was calculated for the past 5 years. A 5-year weighted average of the percentage of students in every grade level was computed and then multiplied by the increased total enrollments in 2006 and 2007.

The students were progressed through the model as in the current trends scenario to forecast enrollment from 2008 to 2015. However, slight adjustments were made to the weighted average GPRs to account for the higher retention rate of Horizon's students.

Enrollment Forecast with a New Facility and Higher Population Growth

To project Horizon's enrollments under the higher population growth scenario, additional modifications were made to the GPR model used to forecast enrollment with a new facility. Adjustments were made to the grade progression ratios by grade level to account for increased population growth during the forecast period. A multiplier was applied to the weighted GPRs on an individual year basis to accelerate growth. The adjustments were based on findings from the analysis of data on 2005-2015 population projections developed by Oregon's Office of Economic Analysis and Washington's Office of Financial Management for counties in the market area. Recent growth rates estimated for the cities, counties and the unincorporated county regions within the market area were also considered.

Kindergarten and Pre-Kindergarten Forecast

The numbers of students entering kindergarten from 2006 to 2015 were forecasted by another method. To predict the number of kindergartners that will attend Horizon Christian School, a "kindergarten capture rate", the ratio of the actual number of Horizon's kindergarten students to the number of births in the market area five years earlier, was calculated for five separate years. A weighted average of the "kindergarten

capture rates” was multiplied by the number of births in the market area to forecast the number of kindergartners that will attend Horizon in 2006 to 2015. Birth data are only available up to 2003, therefore, to predict kindergartners after 2008, the number of annual births during 2004 through 2010 had to be predicted. The births were projected based on historical trends from 1996 to 2003. After the births were predicted, the kindergarten capture rate was applied to forecast the number of kindergartners 5 years later.

A similar method to forecast the number of pre-kindergartners was used. However, a 4-year “pre-kindergarten capture rate” was developed to account for children attending pre-school 4 years after birth. Data for pre-kindergarten enrollment in Horizon were only available for 2 years (2003-04 and 2004-05). Enrollment was estimated for 2005-06 and the “pre-kindergarten capture rate” was calculated for three years.

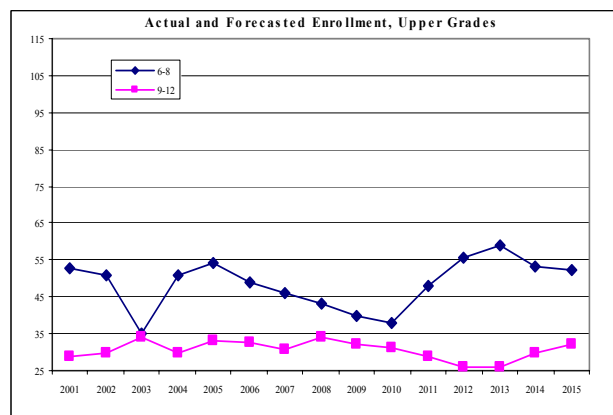
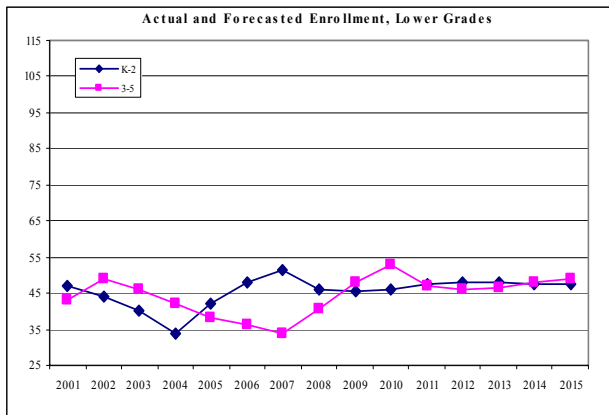
Appendix 1

Detailed Enrollment Forecast Tables

Horizon Christian School Enrollment Forecast under the Current Trends Scenario

ACTUAL	CURRENT TRENDS	PRE-K	K-2	3-5	6-8	9-12	K-12 TOTAL
	2001	-	47	43	53	29	172
2002	-	44	49	51	30	174	
2003	19	40	46	35	34	155	
2004	20	34	42	51	30	157	
2005	18*	42	38	54	33	167	
FORECAST	2006	18	48	36	49	33	166
	2007	17	51	34	46	31	162
	2008	19	46	41	43	34	164
	2009	19	46	48	40	32	166
	2010	19	46	53	38	31	168
	2011	19	47	47	48	29	171
	2012	18	48	46	56	26	176
	2013	18	48	47	59	26	179
	2014	19	48	48	53	30	178
	2015	19	48	49	52	32	181

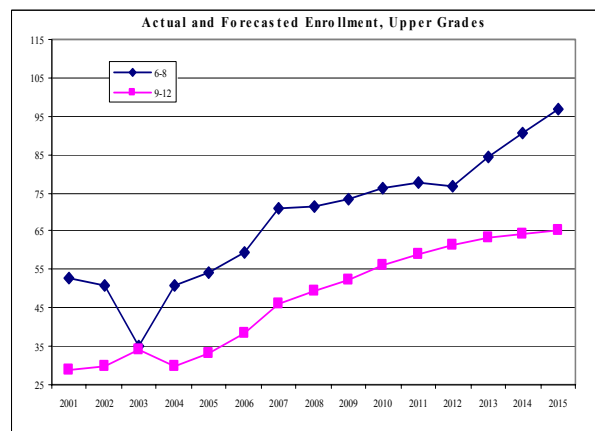
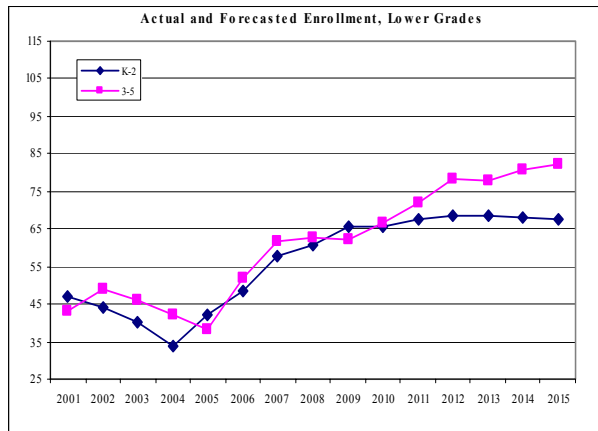
*Estimated for 2005; actual data not yet available.



Horizon Christian School Enrollment Forecast under the New Facility Scenario

ACTUAL	NEW FACILITY	PRE-K	K-2	3-5	6-8	9-12	K-12 TOTAL
	2001	-	-	47	43	53	29
2002	-	-	44	49	51	30	174
2003	19	19	40	46	35	34	155
2004	20	20	34	42	51	30	157
2005	18*	18*	42	38	54	33	167
FORECAST	2006	22	49	52	60	39	199
	2007	26	58	62	71	46	236
	2008	26	61	63	72	49	244
	2009	26	66	62	73	52	253
	2010	26	65	67	76	56	264
	2011	26	67	72	78	59	276
	2012	26	69	78	77	62	285
	2013	26	68	78	84	63	294
	2014	27	68	81	91	64	303
	2015	26	68	82	97	65	312

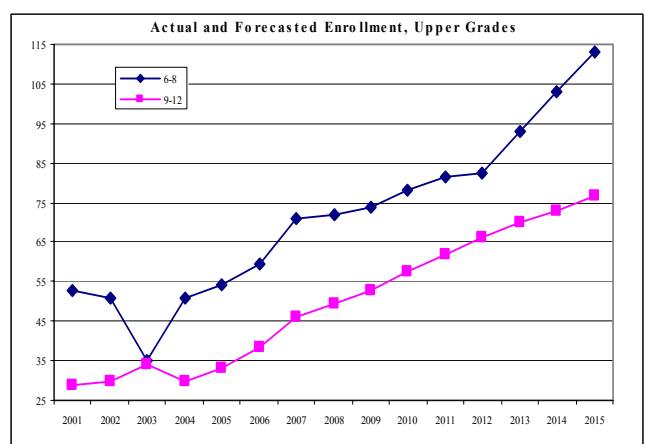
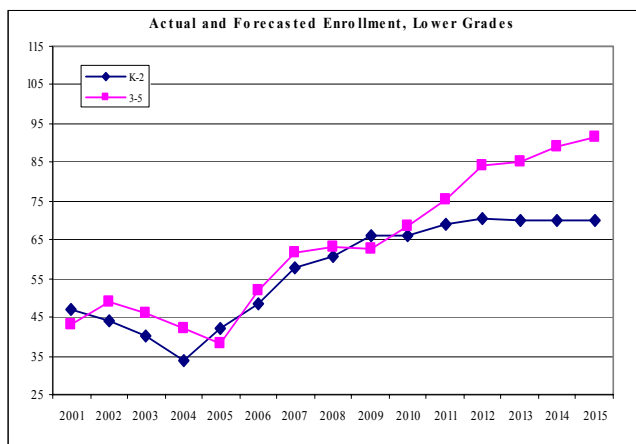
*Estimated for 2005; actual data not yet available.



Horizon Christian School Enrollment Forecast under the New Facility plus Higher Population Growth Scenario

ACTUAL	NEW FACILITY PLUS HIGHER POPULATION GROWTH	PRE-K	K-2	3-5	6-8	9-12	K-12 TOTAL
	2001	-	47	43	53	29	172
2002	-	44	49	51	30	174	
2003	19	40	46	35	34	155	
2004	20	34	42	51	30	157	
2005	18*	42	38	54	33	167	
FORECAST	2006	22	49	52	60	39	199
	2007	26	58	62	71	46	236
	2008	26	61	63	72	49	245
	2009	26	66	63	74	53	256
	2010	26	66	68	78	57	270
	2011	26	69	75	82	62	288
	2012	26	70	84	83	66	304
	2013	26	70	85	93	70	318
	2014	27	70	89	103	73	335
	2015	26	70	91	113	77	351

*Estimated for 2005; actual data not yet available.



Appendix 2

Information of the Effects a New Facility has on Private School Enrollment

**From: Stephen Hartman, CEO and Brenda Reyes, Marketing Director
Daniel Cook and Associates; September 2005.**

Salisbury Christian School: Salisbury, MD

In the first year following its Building God's Way construction, the school increased enrollment from 470 to 492 students. The second year, enrollment rose to 530 students. This growth was in line with the school's original vision. Building Committee Chair Jeff Downs feels that the new gymnasium and facilities have given people an elevated perspective toward the school. This in turn resulted in a \$100,000 donation that allowed SCS to complete their athletic field and along with a pending donation for landscaping.

Lighthouse Christian School: Gig Harbor, WA

Enrollment at LCS drew by 10% in the first year following its Building God's Way construction program. The school expects to grow by at least that amount during their second year also. Campus Administrator David Peters says the building allowed them to add new curricular programs. "The building has become a real blessing to our school and to the community," he says. "We have had several community teams rent the gym for their basketball practices and have three churches using our auditorium for their meeting place each weekend."

Atlantic Christian School: Egg Harbor Township, NJ

The schools enrollment of 226 in the 2002-2003 school year grew to its anticipated enrollment of 500 for the 2005-2006 school year.

Christian Heritage School: Riverdale, UT

This school of 450 students opened its High School facility in September 2002. CHS experienced an increase of 100 students the first year and 80 additional the second year. That enrollment boost represents nearly 40% growth over two years based on the excitement and awareness generated by the new building.

From: Daniel Eldridge via Stephen Hartman and Brenda Reyes; September 2005.

Riverside Christian in Fayetteville, TN

Riverside is now in their 5th year of operation.

They began with 62 students, pre 3 to 6th grade.

They now school pre 3 thru to 10th grade and have 305 students.

This area has a great public school system available as well but they expect enrollment to reach 4-500 students in the next 2 years.

They have had to do little marketing of the school. They are in a small community with the county of population of 30,000. They have a great relationship with their local newspaper who will print pretty much everything they send them with the same priority as any other story.

There are still a few rooms upstairs that have not been completed and halls are still concrete, but there is no telling how God will bless it.

Appendix 3

Data Sources

Population Data

- U.S. Department of Education’s National Center for Education Statistics, School District Demographics compiled from the 2000 Census School District Tabulation from the U.S. Census Bureau, 2003.
- U.S. Census Bureau, Population Census, SF1, 2000.
- Office of Economic Analysis, Department of Administrative Services, State of Oregon, 2000 – 2040 Forecasts of Oregon's County Populations by Age and Sex, April 2004.
- Office of Financial Management, State of Washington, 2002-2025 County Projections by Age, Intermediate Projections, developed February 2003 and revised March 2005.
- Office of Financial Management, State of Washington, Washington State County Postcensal Estimates of the Total Resident Population by Year for Counties, Cities, the Unincorporated and Incorporated Areas: 2000 to 2004, developed February 2003 and revised March 2005.
- Population Research Center, Portland State University, 2001- 2004 Certified Estimates for Oregon Counties and Cities, released December 2004.

Birth Data

- Office of Financial Management, State of Washington, Projected Births for Growth Management and Other Purposes 2005-2025, Intermediate Series, 2002.
- Department of Health, Center for Health Statistics, State Of Washington, 1995-2003 Births by County of Residence, 2005.
- Oregon Department of Human Services, Center for Health Statistics, 1995-2003 Oregon Resident Births by County and Zip Code, 2005.

- Office of Economic Analysis, Department of Administrative Services, State of Oregon, Forecasts of Oregon's County Populations and Components of Change, 2005 – 2040 Births, 2004.

Enrollment Data

- Horizon Christian School, 2001-2005 Enrollment Data by Grade Level and Area of Residence, 2005.